

1. NYC got more channels because they had wide talent bases.
- iv. Did anyone foresee the way the allocation table would give market power to networks? Or was the concept of affiliates unknown? Were there already radio affiliates? Was that sort of market dominance going on in radio?

IV. Impact of allocations

- a. Creation of local advertising/content markets
 - i. Radio - Areas of Dominant Influence (ADIs)
 - ii. Television - Designated Market Areas (DMAs)

V. AT&T microwave network in the 1930s and 1940s

- a. Buying or producing content was costly for networks
- b. Economic benefit of distributing to many stations
- c. To reach stations, must have a way to transmit content.
- d. AT&T provided that through its microwave network.
- e. There was a time when AT&T was in the broadcasting business, but through a deal with NBC? CBS? RCA? AT&T got out of the radio business in exchange for an agreement that the radio networks would use the AT&T network to broadcast. AT&T would also give preferential pricing to the remaining, select radio networks. The preferential pricing lasted for decades (why?).
- f. How long did the microwave method dominate the industry? At some point other technologies must have taken over or at least introduced some competition into the mix?
- g. Transmission costs were high for everyone, even those with the benefit of preferential pricing.

VI. Networks started getting affiliate stations all over the U.S.

- a. Stations were either NBC, CBS, or ABC affiliates?
 - i. A handful tried to double-dip, but the networks didn't like that and would drop them even if the contracts did not contain exclusivity clauses.
 - ii. Exclusivity in radio
 1. Two types, station exclusivity (stations could not be affiliates of more than one network), and territorial exclusivity (where networks agree not to provide similar content to another station in the territory, even if the station decides not to broadcast a particular segment).⁷
 2. These types of exclusivity are described in FCC Regulation 3.101 and 3.102.
 3. Public interest & exclusivity: Did FCC intervene on the basis of the public interest to regulate the network's ability to contract away territorial exclusivity? Could stations, consistent with the public interest component of being a licensee, refuse to broadcast certain selections?
 4. Station exclusivity clauses did not appear in radio contracts until 1935. Before that time, the exclusivity was "only implied and

⁷ THOMAS PORTER ROBINSON, RADIO NETWORKS AND THE FEDERAL GOVERNMENT 148-64 (1943).

Radio group allowed to use AT&T lines

- previously had to use Western Electric lines
(lower quality)

in exchange - RCA agrees only to use AT&T lines

and AT&T agrees to preferential rates.

~~(toll experiment by AT&T - earlier)~~

AT&T had to get out b/c of pressure.

RCA then forms NBC

1927 Radio Act.

[1926-27 LOT GOING ON]

reg regime set up - public interest std adopted.

FRC given task of assigning licenses

1927/28 - FRC adopts gen order 40 - shutting down low power stations

First in time gives priority to get license

- distance criteria for station separation.

~~majority~~ bigger guys already had high power stations.

so they got control of new stations.

Set the pattern for only
a few high power stations.

economics of networking - only economic to have 3

when
radio
allocations?

were gentlemen's agreements. They were not signed."⁸ "The facts are that prior to 1935 [NBC] generally had no written contracts with its affiliates but the relationship, the oral relationship, had always been exclusive and from time to time prior to 1935 stations has been dropped because they did not regard themselves as exclusive affiliates . . . Exclusivity . . . had been implicit in the arrangement since 1927."⁹

5. Arguments for station exclusivity:¹⁰

a. Elimination of confusion for listeners

- i. FCC response: In 1939, 25 stations were affiliated with NBC & Mutual, and 5 stations with CBS and Mututal, with no evidence of confusion. Listeners care about the quality of the programming, not who is providing it.

b. Without exclusivity, networks will have no incentive to produce programming

c. Exclusivity is a "legitimate competitive device which provides the necessary degree of stability for network operation"

d. Exclusivity "divides network business more equitably between the small and large stations"

6. Territorial exclusivity was added to a contract only "after a knock down and drag out fight."¹¹

iii. Timing of radio exclusivity – along the same time that tv was putting down roots. Any documentation in the link between radio and tv exclusivity? Look at those FCC hearing transcripts.

- b. The network with the most people listening draws the most advertising money.
- c. Four major networks at the time: NBC, CBS, ABC, and Dumont – all pursuing national affiliate strategies. (Did anyone try a regional network?) However, the 4th network, Dumont, didn't get much of the advertising funds because advertisers wanted to get the most for the advertising buck. Networks like Dumont (and smaller) could not deliver enough viewers to bring in advertising money. For national campaigns, they would go with the big networks to get the broadest impression of their message.
- d. The cost of the AT&T microwave + lower advertising revenues squeezed smaller networks like Dumont off the air.
- e. ABC was marginal until the 1950s? – evidence of the dominance of the bigger networks?

⁸ THOMAS PORTER ROBINSON, RADIO NETWORKS AND THE FEDERAL GOVERNMENT 150 (1943) (citing Mr. Trammell at the Senate Interstate Commerce Committee Hearings, Transcript p.464).

⁹ THOMAS PORTER ROBINSON, RADIO NETWORKS AND THE FEDERAL GOVERNMENT 150 (1943) (citing Mr. Hennessey counsel for NBC, at the FCC Hearings, Docket 5060, Transcript p.9055).

¹⁰ THOMAS PORTER ROBINSON, RADIO NETWORKS AND THE FEDERAL GOVERNMENT 151 (1943).

¹¹ THOMAS PORTER ROBINSON, RADIO NETWORKS AND THE FEDERAL GOVERNMENT 158 (1943).

⊖ Allocations - go back to 1920's.

4/12/06

next week - 2nd session on entire book.

① threads

② overall

Radio + TV

competition early → highly monopolistic

"natural ~~monopoly~~ monopoly

1921/22 radio took off, largely offspring of KDKA/Westinghouse
work.

WWI tech dev.

1919 - patent negotiation - rights split bet.

Radio group + AT&T
GE RCA Westinghouse
vacuum tubes + telephony
Broadcast Corp of America

Rosen - 1980
Modern Antennas
J. Policy Hist

Receivers — claim on transmitters

both built up networks

Hoover holding radio confs.

no regulatory authority

1926 - Zenith - govt didn't have
auth to deny a license

1926 - congressional interest - interference -

legislation concern - monopoly - ~~but~~ Cong doesn't want AT&T in radio biz
- interference

1926 - Radio + AT&T deal → AT&T out of radio, stations sold.

①

RADIO NETWORKS
and the
FEDERAL GOVERNMENT

By THOMAS PORTER ROBINSON

✕

"The angles to this dispute are so many . . . that to
tell them would take a book."

Editorial, *New York World Telegram*

✕

New York : Morningside Heights
COLUMBIA UNIVERSITY PRESS

1943

form has been greatly enlarged. In this sense the government has become more a matter of men than of law.

An understanding of the men in the relationship to be studied, therefore, particularly of the government representatives who hold the reins of power—a comprehension of what they believe and of what they plan—is most germane. From the standpoint of the network industry, it would seem that such an understanding is almost tantamount to survival, since in a dispute with a stronger opponent only through understanding can adjustments essential to continued existence be made.

Certainly, we cannot hope to solve the problems of this industry—to reach a sound long-term policy—until we comprehend the issues between the government and the networks and how these issues arose. Then, too, there are other questions, more basic than the specific issues in the dispute, which must be considered and which vitally impinge upon the future of broadcasting.

We shall attempt an answer to some of these basic questions. Aside from a strictly legal settlement, it comes down fundamentally to the issue: what *use* do we want to make of the *means* of broadcasting and in what manner can this be accomplished most efficiently in the public interest? Essentially involved in the determination of these questions is a choice between democratic and totalitarian principles.

Commercially financed network broadcasting and the entertainment which it provides have already been exploited to a large degree in the United States. Many of the cultural, educational, and social possibilities of this medium, however, have not been realized. The future policy for broadcasting must be shaped in terms of all of these functions if its potentialities are to be fulfilled. Broadcasting as an instrument of social change, broadcasting as a means of cultural and educational diffusion, broadcasting as a tool in achieving a greater world-wide ethnological homogeneity—these are some of the vistas that open up when we look forward. It all depends upon how we *use* this *means*. It is frightening to conjure up the results of unscrupulous use; but it is equally heartening to contemplate the possibilities of wise and enlightened use.

✕ Chapter 2 ✕

EARLY HISTORY OF BROADCASTING

The Radio Corporation of America

THE RADIO CORPORATION of America, of which the National Broadcasting Company is a 100-percent-owned subsidiary, was formed on October 17, 1919. At that time the use of wireless was primarily limited to point-to-point and ship-to-shore communication. These messages were transmitted in Morse code. Most of this business in the United States was carried on by the Marconi Wireless Telegraph Company of America, a subsidiary of a British concern, the Marconi Wireless Telegraph Company, Ltd. A number of domestically owned corporations, however, such as General Electric, Westinghouse Electric, and Western Electric Company, the manufacturing subsidiary of the American Telephone and Telegraph Company, were conducting research in the field of radio transmission.

As these research activities yielded important results, exclusive patents were taken out and these in turn served as formidable obstacles to the creation of a national system of radio broadcasting. Each company needed the patented inventions of the others. Not only was there no cross-licensing of patents but these pioneers were continually subject to patent infringement suits.

The declaration of war by this country in April, 1917, temporarily solved this problem, because under its war powers the government combined the patents and scientific resources of all the electrical manufacturing companies. These assets were put into a common pool for the production of radio apparatus for the United States forces. This combining of what was known at that time regarding radio transmission proved to be fortunate. Out of it came the invention and improvement of many of the vital devices which underlie our system of radio broadcasting today.

With the end of the war the situation reverted to exclusive pat-

ents. Confusion and a serious threat to the development of the science were the inevitable results. Furthermore, the British Marconi Company continued to own the principal transmission facilities in this country. It was recognized that foreign control of American radio communications was decidedly not in the national interest and that some arrangement should be worked out whereby the exclusive patents of the individual companies could be shared.

The Radio Corporation of America was born of these two problems. The General Electric Company had developed and patented the Alexanderson alternator, a device then regarded as of prime importance in long-distance radio transmission, and in 1919 G.E. was carrying on negotiations for the sale of the exclusive rights on this invention to the British Marconi Company. There was an outcry of opposition to this contemplated action—the transfer of a vital patent to foreign control.

As a result, General Electric reconsidered and formulated a comprehensive plan whereby a new corporation, the Radio Corporation of America, would be formed and would purchase the British stock interest in the American Marconi Company. The plan further provided that the patents held exclusively by General Electric, the American Marconi Company, and certain other companies in the field would be made available to R.C.A., in which General Electric was to receive a large stock interest.

This pooling of exclusive patents was enlarged in 1920 and 1921 when the American Telephone and Telegraph Company and Westinghouse Electric were admitted to the combine. According to these later cross-licensing agreements, General Electric and Westinghouse Electric were granted the exclusive right to manufacture radio receiving sets; the Radio Corporation of America was given the exclusive right to sell radio receiving sets, which were to be purchased from General Electric and Westinghouse Electric; and American Telephone and Telegraph received the exclusive right to make, lease, and sell broadcasting transmitters.

Both American Telephone and Westinghouse Electric were also given large stock interests in the Radio Corporation of America. Although by January 18, 1923, A.T.T. had disposed of its stock, Westinghouse and General Electric continued to occupy a domi-

nating position in the affairs of R.C.A. until 1932. As a result of an antitrust action brought by the Department of Justice, the Supreme Court in that year granted a consent decree forcing General Electric and Westinghouse Electric to divest themselves of their R.C.A. holdings. This, as we shall see later, marked the culmination of the problem of radio patent monopoly.¹ It is interesting to note that whereas in the early days of broadcasting the government gave its blessing to the patent pool, later on this pool was condemned as a monopoly in restraint of trade, and the Federal authorities felt obliged in the public interest to break it up.

The Radio Corporation of America has flourished. Today it is a great sprawling enterprise sitting astride the American radio industry. In its early days, before the inception of regular broadcasting, the operations of R.C.A. were largely confined to providing radio apparatus for ships, to maintaining ship-to-shore and point-to-point communication service, and to supplying amateurs and experimenters with parts used in assembling radio sets.

With the advent in 1920 of regular broadcasting as contrasted to sending messages in code, the activities of R.C.A. expanded prodigiously. In 1921 the company's gross sales of radio receiving sets were \$1,468,920. The next year they were \$11,286,489, and by 1924 they totaled about \$50,000,000. The president of the company testified at the F.C.C. hearings in 1938 that R.C.A. had become by 1926 the largest distributor of radio receiving sets in the world.

By virtue of an agreement with General Electric and Westinghouse Electric in 1930, the Radio Corporation of America received the additional right to manufacture receiving sets. It now commands a dominant position in this field. It also secured permission from American Telephone in 1932 to manufacture, lease, and sell broadcast transmitting equipment, in which activity it occupies a prominent place at the present time.

In addition R.C.A. plays a major role in the other phases of radio manufacturing and selling. Until 1922 the company had almost complete control of the manufacture, sale, and use of all types of

¹ On August 7, 1942, Thurman Arnold, head of the antitrust division of the Department of Justice, sought to have the 1932 consent decree vacated and indicated that new antitrust suits would be filed against the Radio Corporation of America, General Electric, American Telephone and Telegraph, and others.

exclusive
rights

radio tubes, and since the expiration of basic patents in that year it has continued to retain a substantial portion of the business. Through Radio-Keith-Orpheum, a company operating a chain of vaudeville and motion picture theaters, R.C.A. gained and still holds an important foothold in the motion picture industry, which of course has a direct relationship to television and its future development. From the competitive standpoint, the motion picture industry is perhaps the most vulnerable to this new type of radio transmission. Finally, the Radio Corporation of America, through its subsidiary, R.C.A.-Victor Company, is entrenched in the business of manufacturing phonograph records and electrical transcriptions for broadcasting purposes.

In 1940 R.C.A. reported net sales of approximately \$128,000,000 and net profits of about \$9,200,000. At the end of that year the corporation had total tangible assets of approximately \$95,000,000, and its 13,881,000 shares of common stock were in the hands of about 250,000 persons. The fact that no holder owned more than one half of one percent of the total stock outstanding in that year is stressed by the management as indicating the wide public support of the corporation. It should be noted that this dilution of ownership also increases the powers of the management enormously. There is no substantial individual block of stock which could be voted in opposition. Furthermore, in view of the disinterest of the average small stockholder in company affairs, any opposing combination of stock is unlikely.

In summary, the Radio Corporation of America is one of our great industrial enterprises—one that has pioneered in the science of radio transmission, has made important contributions to the art through research, and from the beginning has taken the leadership in developing our system of network broadcasting. The company occupies a leading position in the whole radio field. The public interest requires, therefore, that its policies and activities be under close Federal scrutiny.

Early Broadcasting

Radio broadcasting of sound has been defined as the transmission of sound from a transmitter using a certain wave length (or fre-

quency) to receivers attuned to the same wave length, without the aid of physical connection by wire. It is the sending of the human voice or the notes of a musical instrument through the ether on radio carrier waves.

Almost from the start, offers from commercial concerns willing to supply program material in return for the opportunity to advertise over the radio were being received and accepted by broadcasting stations. But even the most sanguine in the industry in those early days had no conception of the gold mine that radio advertising was to become.

The technical history of broadcasting dates from November 1, 1920, when the Westinghouse Electric station KDKA in Pittsburgh was placed in regular operation. The studio of this first sound-broadcasting station was the garage adjacent to the home of Dr. Conrad, an engineer associated with the company. The only receiving sets in the hands of the public in those days were confined to amateur telegraph operators. Phonograph records made up the bulk of the program content, and in order to overcome the extremely bad acoustical conditions Dr. Conrad purchased and erected a canvas tent inside his garage which helped to reduce the reverberations.

KDKA inaugurated the first outside pick-up on January 2, 1921, when it broadcast the church service from the Duquesne Club in Pittsburgh. On April 11 the Ray-Dundee fight was put on the air and this represented the first broadcast of a boxing contest. In August the Davis Cup tennis matches were broadcast for the first time, and in the same month a small privileged group of the American public received its first eye-witness account of a baseball game by radio.

On June 1, 1921, Westinghouse Electric opened its second station, WJZ in New York, which, however, did not begin a regular program schedule until the following October. The first full-time announcer, Milton J. Cross, was engaged by WJZ at that time and he is still with the National Broadcasting Company.

In these early days of broadcasting, transmitting conditions were extremely bad, receiving sets were crude, static was present to an almost intolerable degree, and program content was dull. The

novelty of radio broadcasting and reception had caught the public's fancy, but as the typical evening program schedule taken from the WJZ log book of 1921 will indicate, the broadcasting fare was meager and intermittent.

7:55—8:05—Two test records on Edison phonograph.

8:10—8:15—Newark *Sunday Call* news read by Thomas Cowan.

8:15—8:18—Stand by 3 minutes.

All Quiet.

8:20—Sacred selections on Edison phonograph.

8:35—Sacred selections on Edison phonograph.

8:50—Stand by 3 minutes. KZN and WNY.

8:55—Sacred selections on Edison phonograph.

9:15—End of concert.

WJZ signing off.

9:50—Explain Arlington time signals.

9:55—10:00—NAA time signals.

10:05—Weather forecast.

10:10—WJZ signing off.

10:25—Played an Edison record for Walton 2B2H, a local manager, the gentleman who installed Westinghouse receivers.

The first studio at WJZ was on the second floor of the Newark factory. It was one end of the women's cloak room and was divided from the rest of the room by a sliding curtain. The room contained a phonograph, piano, table, and chair, and the phonograph records were broadcast by placing the microphone in front of the phonograph horn. "Electrical pickups with direct connections to amplifiers were unheard of, and the combination of the acoustical recording, mechanical pickup, mica diaphragms, tin horns and carbon microphones produced a form of complex distortion that one can hardly bear to think of today."²

In the early part of 1923 R.C.A. acquired exclusive control of WJZ and later in the year the company commenced to operate station WRC in Washington, D.C. In this way R.C.A. entered the broadcasting business directly. With a hook-up between WJZ and General Electric's station WGY in Schenectady, New York, the first network broadcast by R.C.A. took place in December, 1923. It is interesting to note that prior to the formation of the National

² O. B. Hanson, at F.C.C. Hearings re Docket 5060, Transcript, p. 671.

Broadcasting Company in 1926 the Radio Corporation of America in its network activities was limited to the use of Postal and Western Union Telegraph lines, since the American Telephone Company kept its own wires for the exclusive use of its own stations or those licensed under A.T.T. patents. Today most network wire facilities are A.T.T. lines, since they are superior in transmission fidelity to telegraph cables.

Early Advertising

The early days of radio advertising are associated with the stations of the American Telephone Company, particularly WEAf, now the key New York station of the N.B.C. Red network. Under the cross-licensing agreements of 1920 and 1921, A.T.T. contended that its exclusive right to make, sell, and lease broadcasting transmitters also included the exclusive right to sell broadcasting time. The successful assertion of this claim gave the American Telephone Company a position of dominant leadership in early radio advertising and, until the time the National Broadcasting Company was organized in 1926, prevented Westinghouse Electric and later the Radio Corporation of America from exploiting their stations commercially. This inability to sell time on the air, combined with the necessity of using the inferior telegraph cables, explains why the broadcasting activities of R.C.A. developed in the beginning far more slowly than those of A.T.T.

Advertising was the fairy godmother of the broadcasting business. The principal problem at first was how to finance the programs which were essential if radio receiving sets were to be sold. The opinion was practically unanimous that, if possible, a government subsidy should be avoided, as being un-American and involving serious dangers to our form of government. Advertising by radio was the answer.

In 1922 when the radio advertising activities of A.T.T. commenced, all stations in the New York area were required to operate on a single frequency. The American Telephone and Telegraph Company was deluged with requests for radio transmitters for broadcasting purposes. According to the testimony given at the F.C.C. hearings by Mr. Hanson, vice-president and chief engineer

of the National Broadcasting Company, who in 1922 was staff engineer with A.T.T., the company refused to sell these transmitters because of the intolerable confusion that would have resulted.

Instead, A.T.T. decided to erect in New York City "a single high quality station, which would be operated as a public 'toll' station." At the First National Radio Conference held in Washington in the early part of 1922, "toll" broadcasting was defined as "broadcasting where a charge is made for the use of the transmitting station." The following recommendations, among others, were made at the conference with regard to "toll" broadcasting:

It is recommended that subject to public interest and to the reasonable requirements of each type of service the order of priority of the services be Government, Public, Private, Toll.

It is recommended that the degree of public interest attaching to a private or toll broadcasting service be considered in determining its priority in the granting of licenses, in the assignment of wave frequencies, and in the assignment of permissible power and operating time, within the general regulations for these classes of service.

It is recommended that toll broadcasting service be permitted to develop naturally under close observation, with the understanding that its character, quality and value to the public will be considered in determining its privileges under future regulations.

In erecting this first "toll" station American Telephone went on the theory that public interest would be served and that the service could be supplied with maximum economy through making available to those wishing to communicate with the public by radio a single, centrally located station, relatively free from interference. The present sponsored program developed out of this idea of a "toll" broadcasting station.

On July 25, 1922, a limited commercial license was granted to A.T.T. for station WBAY to operate with 500 watts' power and on a wave length of 360 meters. Regular program transmission was started at that time, but because of acoustical difficulties, WBAY was closed and WEAf was opened by the Telephone Company as a "toll" station on August 16, 1922, on the roof of the Western Electric laboratory at 463 West Street, New York City.

Among the regulations promulgated by the radio division of the Department of Commerce in August of 1922 was one which pro-

hibited the use of mechanically operated musical instruments, such as phonographs, for broadcasting purposes. This original taboo on the use of transcriptions is in vivid contrast to the situation today, when electrical recordings play such an important part in the broadcasting industry. The major networks still, however, do not usually permit the use of transcriptions during network time. Although this early dictum provided a convenient precedent for this policy, as we shall see later, the reasons for the current prohibition are entirely different.

The first advertising client to use WEAf was the Queensboro Corporation, a real-estate company which was developing a section of Jackson Heights, Long Island, and this first commercial program, which took place on August 28, 1922, resulted, according to Mr. Hanson, in the sale of two apartments at the price of \$32,000 each and brought three additional prospective purchasers. Thus commercial broadcasting financed by the advertising dollar was launched on its highly profitable career.

Station WEAf is distinguished for many "firsts" in the early history of broadcasting. For instance, the first outstanding field broadcast over long lines occurred on October 28, 1922, when the Princeton-Chicago football game at Stagg Field in Chicago was broadcast by WEAf. The first opera broadcast took place on November 11, 1922, the program being *Aida*, and the first broadcast of a large orchestra took place on November 18. The first of a series of weekly concerts by the Philharmonic Society of New York, then playing in the Great Hall of the College of the City of New York, commenced over the air on November 22.

The WEAf log book for December 25, 1922, reads "WEAf off the air to permit employees to spend Christmas at home." The night before, however, the station broadcast the first Trinity Church Christmas Eve service. With Governor Alfred E. Smith of New York, Haley Fiske, president of the Metropolitan Life Insurance Company, Charles M. Schwab, and Secretary of Commerce Herbert Hoover in attendance, the first broadcast of a banquet was made on January 27, 1923; it consisted of the program for the annual dinner of the Metropolitan Life Insurance Company at the Hotel Astor.

The first presidential address over long lines to be broadcast occurred on June 21, 1923. President Harding spoke from the Coliseum in St. Louis on the subject of the "World Court." This program was brought to WEAF by long-distance telephony. The first presidential broadcast took place seven months earlier over WJZ when President Harding spoke at Madison Square Garden.

November 6, 1923, marked the date of the first broadcast from the House of Representatives when President Coolidge read his initial message to Congress. His address was carried by WEAF, WCAP, WMAF, and WJAR. About three months later the predecessor of the "fireside chat" occurred when President Coolidge spoke for the first time over the radio direct from the White House.

By the end of 1923 radio broadcasting was an established advertising medium. Some of the sponsors of commercial programs over WEAF in that year were Haynes Automobile Company, Colgate Company, Gotham Silk Hosiery, I. Miller Shoes, California Prune and Apricot Growers, Davega Sporting Goods, Lily Cup Company, Gimbel Brothers, Corn Products Company, and Knit Underwear Manufacturers. With regard to the standards of radio advertising at this time it is interesting to cite the following excerpts from a speech given over wire facilities from New York City by W. E. Harkness, manager of broadcasting for the American Telephone Company, at the annual meeting of the Association of National Advertisers, held at the Westchester Biltmore Country Club on November 12, 1923:

By agreement with the Government, no direct advertising matter is to be broadcast. This restricts the use of the medium to indirect, or what may be called institutional advertising. . . . In considering the presentation by radio of . . . advertising matter our first thought is "what will be the reaction of the public to the matter presented?" If, in our opinion, based on our experiments in presenting other subjects, the proposed presentation will be more than acceptable to the public we will put it on our program. Otherwise, it is rejected or the prospective customer advised how it can be rearranged or an entirely different plan developed to accomplish the results desired. . . .

As has been mentioned the style required for vocal presentation differs from that used when printed copy is employed. It may also be desirable to use either male or female voices in presenting a subject, or, in some cases, more than one person may be required . . .

The subjects presented and the methods employed have been varied so that our experience today covers a rather wide range—from a ten-minute talk to a complete program of high-class entertainment so arranged as to present the name of the firm to the public in the most favorable manner.

We recently sent out 25,000 questionnaires . . . and received back over 45%, completely filled in. . . . The answers to questions on this subject (music) showed that 80% desired symphony or similar types of music, and only 49% desired dance music, 43% popular songs, 60% violin, and 53% piano music.

Two things should be noted with respect to this talk, aside from the general discussion of standards: (1) that radio advertising was limited to the institutional type and that direct appeals for the sale of particular products was prohibited; and (2) that nearly twice as many persons in the listening audience who replied to the questionnaire desired to hear symphony music as those desiring to hear dance bands. Both of these conditions, of course, are in marked contrast to the broadcasting situation today when most of us are exasperatingly annoyed at times by the direct selling appeals of advertisers and when the overwhelming choice of the listening public is for swing.

From 1923 on, radio advertising expanded rapidly and by the time of the formation of the National Broadcasting Company it provided not only the financial support for putting programs on the air but it had also become a very profitable business in itself. Chain broadcasting had developed along with this growth and we must now turn to this subject because radio advertising and networks go hand in hand. Each is the corollary of the other.

Early Networks

It is axiomatic that advertising tries to reach more and more people. Except where a specialized market is desired, the larger the circulation the better. The 130,000,000 people in the United States represent radio's potential circulation, and broadcasting has become the most effective means for mass communication in the history of the world.

Assuming a willingness to listen on the part of the radio audience and the possession of the facilities to do so, there are two methods

by which a broadcasting station can enlarge its potential circulation—by increasing the power used or by linking the station up with others in a chain or network. With the entrance of advertising into radio and under the impetus of the advertiser's main objective to secure as large an audience as possible, the broadcasting industry went in both of these directions. There was a clamor for more power, and the trend toward chain broadcasting was irresistible. The broadcasting system today, as we shall see in detail later, is an unsatisfactory combination of these two elements with the network principle being predominant.

Radio advertising in the absence of unlimited power thus made networks inevitable. This is not to say that the advertising revenue was the sole motive in expanding the simultaneous reception of the same program. Undoubtedly some of the pioneers of early commercial broadcasting realized the tremendous opportunity offered for bringing programs of high quality and importance to the nation as a whole. It seems clear, however, that the plain economics of the situation was the principal determining factor in the development of radio networks with national coverage.

In this connection Mr. Hanson offers a somewhat different explanation for the origination of chain broadcasting. He testified that putting outstanding events on the air by WEAF in 1922 created a great interest on the part of the public.

Most receivers used earphones and it was not difficult to hear WEAF signals at night at a distance of a thousand miles and many stations in other cities, not having equipment available for pickups of such outstanding events, shut down in order that their audience could tune in on WEAF's signals from New York. The audience's pressure on local stations to attempt to get wire connections to the New York studio of WEAF deluged the Telephone Company with requests that such facilities be provided. . . . The management of WEAF was faced with the ever-increasing cost of the handling of these special broadcasts and it became apparent that if the cost of such pickups could be shared by a number of stations partaking in the program, funds would be available to extend the pickup service to even better and more interesting program material.³

According to Mr. Hanson, therefore, American Telephone prepared a special circuit between New York and Boston. On January

³ F.C.C. Hearings re Docket 5060, Transcript, p. 694.

4, 1923, station WNAC (Shepard's Store, Boston) was connected by a long-line telephone circuit to the studio of WEAF (New York), and a special program was broadcast as a demonstration. Although this was merely an experiment and did not represent the first regular network broadcast, the occasion marked the first time in the history of broadcasting that two transmitters in widely separated cities were connected to a common program by wire lines.

It remained for the son of Hetty Green—the lady of Wall Street fame—to participate in the first regular network broadcast. In the spring of 1923, Colonel Green became interested in broadcasting and erected a Western Electric transmitter on his estate at Salter's Point, South Dartmouth, Massachusetts. The Colonel, however, lacked program material to broadcast and consequently he asked A.T.T. if they would program his station. On July 1, 1923, the first of a series of programs which ran until September 30 was transmitted by wire lines from the WEAF studio in New York to Colonel Green's station, WMAF. This date, July 1, 1923, marks the beginning of regular network broadcasting.

Shortly after this noteworthy event the Telephone Company decided to erect a transmitter in Washington, D.C. This was a duplicate of the WEAF transmitter, and WCAP in Washington was connected by wire lines with WEAF in New York. During the summer of 1923 WCAP, along with Colonel Green's station WMAF, was furnished with program material over long-distance wires from the New York studio. This period marked the inauguration of network sustaining programs because there were times when two programs were transmitted simultaneously from the New York studio, one sustaining program for the two network stations and the other a commercial program going out on the air over WEAF.

By the end of 1923 there were 542 broadcasting stations in operation in the United States. The mortality rate was high, however, because in that year 264 new stations were licensed and 285 stations discontinued operations. The tendency to link stations up into a chain was also very much in evidence. As already noted, at about this time WJZ attempted to organize a network using Western Union Telegraph wires, and the first connection was between WGY in Schenectady and WJZ in New York. On December 11, 1923, WSYR in Syracuse was added. But WEAF, because of its ex-

clusive right to accept sponsored programs, took the lead in the development of network broadcasting. Station WJAR in Providence, Rhode Island, was linked to the New York station on October 19, 1923, and, except for Colonel Green's station, it became the first independently owned station to be permanently connected with the WEAF network.

Expansion from this time on was rapid. The first transcontinental broadcast occurred on February 8, 1924, when seven stations across the country were connected by long-line wire facilities to the studios of WEAF. Havana, Cuba, linked to the chain by submarine cables, also participated in this program, which represented the first network connection outside the continental United States.

By the end of 1924 five new stations, in Worcester and Boston, Massachusetts; Pittsburgh and Philadelphia, Pennsylvania; and Buffalo, New York, had been added to the WEAF network. WJZ had also extended its network by telegraph lines to Washington, D.C., and Westinghouse Electric was experimenting with short-wave transmission across the country to station KFKX in Hastings, Nebraska.

The report of the Third National Radio Conference held in Washington in October, 1924, made the following statement with respect to the rapidly growing network industry:

The interconnection of stations so as to provide for simultaneous broadcasting has been the most important development of the last 18 months. It has now made possible a wide extension in knowledge of national events. It means a vast improvement in programs. It makes the talent of our great cities available everywhere. It has reached the point where a few stations are now thus interconnected as a matter of routine and regular procedure. There have been very recently several actual demonstrations of the possibility of nationwide simultaneous broadcasting by interconnection. The conference affirmatively finds that simultaneous broadcasting of national events is today practicable over a large portion of the United States. It believes that nationwide broadcasting by interconnection of stations deserves every encouragement and stimulation, and to that end recommends the appointment by the Secretary of Commerce of a continuing committee which will give consideration to the working out of the necessary plans for its full accomplishment.

In keeping with the attitude expressed in the report the Department of Commerce early in 1925 gave WEAF permission to in-

crease its power to 5,000 watts in steps of 500 watts, the full increase not being reached until September 1, 1925. This transmitter remained in operation until 1927, when one with still higher power replaced it.

The evening of July 11, 1925, affords an example of the use of the WEAF network by advertisers. The evening's broadcasting fare consisted of Vincent Lopez' orchestra sponsored by Gimbel Brothers, Jones and Hare sponsored by Happiness Candy, the Ever-ready Quartet sponsored by the National Carbon Company, the Gold Dust Twins sponsored by the Gold Dust Company, and the Fisher Astor Coffee dance orchestra sponsored by Astor House Coffee.

By the end of 1925 there were 26 stations on the WEAF network, which reached as far west as Kansas City. Chain broadcasting financed by the advertiser's dollar had become an important industry in its own right.

ACTING DIRECTOR OF
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✕ Chapter 3 ✕

THE NATIONAL NETWORK COMPANIES

The National Broadcasting Company

MR. DAVID SARNOFF, now president of the Radio Corporation of America and chairman of the board of the National Broadcasting Company, on June 17, 1922, wrote a letter to Mr. E. W. Rice, then honorary chairman of the board of the General Electric Company, suggesting the organization of such a company as N.B.C. The letter is interesting because it indicates that this leading figure in the business did not even at this relatively late date anticipate the flood of advertising revenue.

In the second place, the letter is noteworthy for its complete recognition of the public responsibility resting on the shoulders of the industry. As we proceed, we shall see how well the National Broadcasting Company has lived up to its role of public service as here outlined by Mr. Sarnoff. The more significant excerpts from his letter to Mr. Rice are as follows:

Broadcasting represents a job of entertaining, informing and educating the nation and should therefore be distinctly regarded as a public service. . . . It requires expert knowledge of the public's taste. . . . That the manufacturing companies or communication companies are not at present organized and equipped to do this kind of a job in a consistent and successful way, is to my mind . . . clear.

If the foregoing premises be correct, it would seem that the two fundamental problems calling for a solution are:

- 1) Who is to pay for broadcasting.
- 2) Who is to do the broadcasting job . . .

To my mind none of the suggestions yet made with which I am acquainted are sufficiently comprehensive or capable of withstanding the test of real analysis, and this largely because the major portion of the suggestions thus far offered build a structure on a foundation which calls for voluntary payment by the public for the service rendered through the air.

Subscription
service not
workable
for radio

With respect to problem No. 1 . . . I am of the opinion that the greatest advantages of radio, its universality and generally speaking its ability to reach everybody everywhere, in themselves limit if not completely destroy that element of control essential to any program calling for continued payment by the public.

Stated differently, it seems to me that where failure to make a payment does *not* enable the discontinuance of service, as for example in wire telephony, gas, electric light or water supply, the temptation to discontinue payments on the ground of poor service, and so forth, is too great to make any system of voluntary public subscription sufficiently secure to justify large financial commitments or the creation of an administrative and collection organization necessary to deal with the general public. . . .

For these reasons I am led to the conclusion that the cost of broadcasting must be borne by those who derive profits directly or indirectly from the business resulting from radio broadcasting. This means the manufacturer, the national distributor, the Radio Corporation of America, the wholesale distributor, the retail dealer, the licensee and others associated in one way or another with the business.

As to No. 2, when the novelty of radio will have worn off, and the public no longer is interested in the means by which it is able to receive but rather in the substance and quality of the material received, I think that the task of reasonably meeting the public's expectations and desires will be greater than any so far tackled by any newspaper, theatre, opera, or other public information or entertainment agency. . . . The broadcasting station will ultimately be required to entertain a nation. No such audience has ever before graced the efforts of even the most celebrated artists, or the greatest orator produced by the ages. . . .

With the foregoing in mind, I have attempted to arrive at a solution of both problems, No. 1 and No. 2. . . . Let us organize a separate and distinct company to be known as the Public Service Broadcasting Company, or National Radio Broadcasting Company, or American Radio Broadcasting Company, or some similar name, this company to be controlled by the Radio Corporation of America, but its board of directors and officers to include members of the General Electric Company, Westinghouse Electric, and possibly also a few from the outside, prominent in national and civic affairs. The administrative and operating staff of this company to be composed of those considered best qualified to do the broadcasting job—such company to acquire the existing broadcasting stations of Westinghouse Electric and General Electric as well as the three stations to be erected by the Radio Corporation, to operate such stations and build such additional broadcasting stations as may be determined upon in the future.

Since the proposed company is to pay the cost of broadcasting as well

as the cost of its own administrative operations, it is of course necessary to provide it with a source of income sufficient to defray all of its expenses.

As a means for providing such income, I tentatively suggest that the Radio Corporation pay over to the Broadcasting Company 2% of its gross radio sales, that General Electric and Westinghouse Electric do likewise, and that our proposed licensees be required to do the same.

. . . Once the structure is created opportunities for providing additional sources of income to increase the "pot" will present themselves. For example, if the business expands, the income grows proportionately. Also, we may find it practicable to require our wholesale distributors to pay over to the broadcasting company a reasonable percentage of their gross radio sales, for it will be to their interest to support broadcasting. It is conceivable that the same principle may even be extended in time to the dealers. . . .

Since the broadcasting company is to be organized on the basis of rendering a public service commensurate with its financial ability to do so, it is conceivable that plans may be devised by it whereby it will receive public support, and, in fact, there may even appear on the horizon a public benefactor, who will be willing to contribute a large sum in the form of an endowment. . . .

I feel that with suitable publicity activities, such a company will ultimately be regarded as a public institution of great value in the same sense that a library, for example, is regarded today. . . .

The person who in the future may endow a broadcasting station . . . will be a still greater public benefactor because of the many advantages which a broadcasting service offers to all classes of people, not only in the matter of education, but also in entertainment and health services, etc. Important as the library is, it can only provide the written word and at that it is necessary for people to go to the library in order to avail themselves of its services, whereas in broadcasting the spoken word is projected into the home where all classes of people may remain and listen.

Not until 1926 did Mr. Sarnoff's plan for a separate broadcasting company become a reality. In that year, under a plan for a general readjustment of relations between the American Telephone Company and the so-called radio companies (R.C.A., Westinghouse Electric, and General Electric), A.T.T.'s direct participation in the broadcasting field, where it had pioneered and gained a dominating position, came to a sudden end when it withdrew from the business and transferred all of its broadcasting properties and interests to the "Radio Group."

A subsidiary corporation, the Broadcasting Company of America, had been incorporated by the Telephone Company in May of 1926, and WEAf and the network operations aligned with this station were transferred to this new concern. On November 1, 1926, the Radio Corporation of America purchased for \$1,000,000 the assets of the Broadcasting Company of America. This purchase made possible the sale of broadcasting time by R.C.A. As part of the agreement, A.T.T. covenanted not to compete with R.C.A. in the field of radio broadcasting for a period of seven years, under penalty of repaying \$800,000 of the \$1,000,000 purchase price. Furthermore, the Telephone Company agreed to make its telephone lines available to R.C.A. for network broadcasting, and a stipulation was entered into whereby the latter would use only A.T.T. lines whenever they were available.

The National Broadcasting Company was formed by the Radio Corporation of America on September 9, 1926, to take over its network broadcasting business, including the properties which were to be purchased from the Telephone Company, and until the organization of the Columbia Broadcasting System in 1927 R.C.A. through this subsidiary enjoyed a practical monopoly of network broadcasting, having under its control the only two national networks—the Red (WEAF) and the Blue (WJZ). R.C.A., General Electric, and Westinghouse Electric owned the outstanding capital stock of N.B.C. in the ratio of 50, 30, and 20 percent respectively. On May 23, 1930, however, the Radio Corporation of America acquired the N.B.C. stock owned by General Electric and Westinghouse, the National Broadcasting Company thus becoming a wholly owned subsidiary of R.C.A.

Since its organization the National Broadcasting Company has been an exceedingly successful enterprise. During every year except its first the company has earned a profit. Both the volume of business and earnings increased sharply, as shown by Table 1, taken from the F.C.C. *Report on Chain Broadcasting*.¹

The authorized capital stock of N.B.C. is fifty thousand shares of no par common, of which thirty-three thousand shares have been issued at a price of \$100 per share. The company has never had any bonds or other securities outstanding.

¹ Page 17.

TABLE 1

TIME SALES AND NET INCOME OF THE NATIONAL BROADCASTING COMPANY

Year	Time Sales (after Discounts; before Agency Commissions)	Net Income for the Year before Federal Income Tax
November 1926—December		
1927	\$3,384,519	\$464,385 ^a
1928	7,256,179	427,239
1929	11,353,120	798,160
1930	15,701,331	2,167,471
1931	20,455,210	2,663,220
1932	20,915,979	1,163,310
1933	18,005,369	594,151
1934	23,535,130	2,436,302
1935	26,679,834	3,656,907
1936	30,148,753	4,266,669
1937	33,690,246	4,429,386
1938	35,611,145	4,137,503
1939	37,747,543	4,103,909
1940	41,683,341	5,834,772

^a Deficit.*The Columbia Broadcasting System*

On January 27, 1927, the United Independent Broadcasters, which later became the Columbia Broadcasting System, was incorporated in New York. The purpose of United was to furnish broadcasting programs, to contract for radio station time, and to sell time to advertisers. In short it was to be a broadcasting "time broker" and a program agency. Before the concern commenced operations, however, the Columbia Phonograph Company became interested in it in April, 1927, through the Columbia Phonograph Broadcasting System, which had been organized to act as the sales unit of the network. The Columbia Phonograph Company and four individuals originally owned the outstanding stock of the Columbia Phonograph Broadcasting System.

The first regular broadcast took place on the United network on September 25, 1927. United contracted to pay \$500 per week for

ten specified hours of time to each of the sixteen stations on its original network. However, the company ran into financial difficulties, owing to its inability to sell sufficient time to advertisers to carry out these agreements and heavy losses were experienced. Consequently, the Columbia Phonograph Company and the four individuals withdrew from the venture in the fall of 1927. Following this, United acquired all the outstanding stock of the Columbia Phonograph Broadcasting System and the name of the sales company was changed to the Columbia Broadcasting System. Subsequently, the sales company was dissolved and United assumed its activities and its name in January, 1929. The network has been known as the Columbia Broadcasting System since that time.

In September, 1928, William S. Paley and his family purchased a 50.3 percent stock interest in the network, and the Paley family at the time of the F.C.C. hearings still controlled sufficient stock to elect a majority of the board of directors of fourteen.

TABLE 2

TIME SALES AND NET INCOME OF THE COLUMBIA BROADCASTING SYSTEM

Year	Time Sales (after Discounts; before Agency Commissions)	Net Income (before Provision for Federal Income Tax)
Apr. 5, 1927 to Dec. 31, 1927	\$176,557 ^a	\$220,066 ^b
1928	1,409,975 ^c	179,425 ^b
1929	4,453,181	474,203
1930	6,957,190	985,402
1931	10,442,305	2,674,158
1932	11,518,082	1,888,140
1933	9,437,100	1,083,964
1934	13,699,649	2,631,407
1935	16,391,565	3,228,194
1936	21,449,676	4,498,983
1937	25,737,627	5,194,588
1938	25,450,351	4,329,510
1939	30,961,499	6,128,686
1940	35,630,063	7,431,634

^a Agency commissions have also been deducted from the figure for this short period.^b Deficit.^c Includes sales of talent and other services.

The Columbia Broadcasting System has been even more profitable than N.B.C. as Table 2, from the F.C.C. *Report on Chain Broadcasting*,² indicates.

Like N.B.C., Columbia is engaged in all phases of the broadcasting industry. As early as 1930 it entered the talent business; in 1938 it purchased from Consolidated Film Industries, Inc., the capital stock of the phonograph record company known as the American Record Corporation; and in 1940 Columbia entered the transcription field.

The Mutual Broadcasting System

The Mutual Broadcasting System is different in set-up from National and Columbia. Instead of owning stations, the network is owned by a group of stations. Except for European news broadcasts, Mutual does not produce any programs—sustaining performances are all provided by the individual stations for network distribution, and commercial programs are produced either by the originating outlet or by the advertiser himself. Hence Mutual has no studios or artists' bureau.

On September 29, 1934, the Mutual Broadcasting System was organized. WGN Inc., Bamberger Broadcasting Service, Inc., Kunsky-Trendle Broadcasting Corporation, and Crosley Radio Corporation—who were the licensees of stations WGN in Chicago, WOR in Newark, WXYZ in Detroit, and WLW in Cincinnati, respectively—contracted for wire-line facilities from the American Telephone Company and entered into an agreement among themselves in order to secure contracts with advertisers for network broadcasting of commercial programs. In a supplementary contract on the same date, a new corporation, the Mutual Broadcasting System, Inc., was organized and incorporated in Illinois on October 29, 1934, which was to carry on the business of selling time to advertisers over the four-station network. The ten shares of capital stock of Mutual were originally owned equally by WGN, Inc., a subsidiary of the Chicago *Tribune*, and the Bamberger Broadcasting Service, Inc., a subsidiary of L. Bamberger and Company, which in turn is a subsidiary of R. H. Macy and Company.

² Page 24.

The structure of the Mutual network became more complex as the number of outlets increased. There were two member stations, WGN and WOR, holding stock control of Mutual at the time of the F.C.C. hearings in 1939. In addition there were four participating member organizations—the Colonial Network, the United Broadcasting Company, the Don Lee Network, and the Western Ontario Broadcasting Company, Ltd. All other stations associated with Mutual were affiliates.

In January of 1940, however, Mutual issued stock to the four companies mentioned above as well as to the Cincinnati *Times-Star* Co., licensee of WKRC in Cincinnati. After these changes, the issued capital stock of Mutual was 100 shares held as follows: 25, WOR; 25, WGN; 25, Don Lee; 6, Colonial Network; 6, United Broadcasting Company; 6, Cincinnati *Times-Star*; 6, Western Ontario Broadcasting Company, Ltd.; and 1, Fred Weber (qualifying share).

Although the volume of Mutual's business has increased since its formation, its activities are on a far smaller scale than those of Columbia and National as the following figures,³ showing network time sales after discounts but before commissions, indicate:

1935	\$1,108,827
1936	1,884,615
1937	1,650,525
1938	2,272,662
1939	2,610,969
1940	3,600,161

The Blue Network Company

Under pressure from the Federal Communications Commission and in view of the widespread opinion that such action was desirable in the public interest, the Radio Corporation of America took steps to divorce the Red and the Blue networks of the National Broadcasting Company. The actual separation took place on January 9, 1942, when incorporation papers for the Blue Network Company, Inc., a separate, wholly owned subsidiary of R.C.A., were filed. With permission of the F.C.C., the new company continued

³ F.C.C., *Report on Chain Broadcasting*, p. 28.

to operate the Blue chain and to own and manage stations WJZ in New York City, WENR in Chicago, and KGO in San Francisco. The company also continued to furnish program service to more than 100 stations previously affiliated with the Blue network. Mark Woods and Edgar Kobak, former N.B.C. executives, became president and executive vice-president, respectively, of the new company, and Niles Trammell, president of N.B.C., was made chairman of the executive committee. The separation of the two chains was, therefore, one more in name than in fact.

This was fully recognized by the Commission, despite the fact that Regulation 3.107 had been rescinded. The arrangement was regarded as temporary, pending the finding of an outside purchaser to assume the operation of the Blue network. At a luncheon in Chicago on January 15, 1942, celebrating the formation of the new company, Chairman Fly stated that the Blue network could and should be sold as a going concern under independent management and that the F.C.C. would give every aid to facilitate its transfer to other interests. He declared that the United States has room for four separate national chains and that the potentialities of the Blue network were too great to let it continue as anyone's "little brother."

✕ Chapter 4 ✕

NETWORKS AND ADVERTISING

Two Basic Considerations

THERE ARE about 900 standard broadcast stations¹ in the United States. Each one is regarded by the Federal authorities as a sovereign, independent unit which must be in a position to broadcast a different program at the same time. This is the fundamental philosophy of the government's licensing policy. As a result, each station of sufficient power or geographical proximity to cause interference with another station is licensed on a different frequency.

A radio transmitter emits two kinds of waves. The ground wave travels near the earth. Where 50 KW, the maximum power now permitted, is used, the ground wave during both the day and the night provides primary service in an area with a radius of about 150 to 200 miles. On the other hand, the sky wave travels upward and is reflected back to earth at night by the ionosphere.² It, therefore, renders secondary service during the night hours in far distant places.

Thus when a station is operated on the maximum power at night, a clear channel frequency may be required to avoid program interference. As a result of international agreements, there were in 1942 twenty-five Class I channels available in the standard band for the use of such high-powered (Class I A) stations in this country. In addition, there were available under less rigid engineering standards seven other Class I channels.

Twenty-three of the first group of twenty-five Class I channels

¹ Commercial stations make up the bulk of so-called standard broadcast stations, or those using the standard broadcast band. Frequency modulation and television stations are not included in the standard band. They operate on short-wave and in the part of the radio spectrum designated as the high frequency broadcast band.

² Ionized layers of air above the earth and frequently referred to as the Kennelly-Heaviside Layer.

EXCLUSIVITY

EXCLUSIVITY, which means what it says—that something will be exclusive—is today one of the most significant words in the English language to network broadcasting. It has two principal applications in the standard affiliation contract: (1) it defines the type of time option which the affiliate grants to the network; and (2) it defines the general relationship that shall exist between the network and the individual station. When the major issue of option time is discussed in Chapter 14, we shall see how very important exclusivity is in that connection.

When this term is applied to the general network-outlet relationship it must also be considered from two points of view. In the first place, from the station standpoint it deals with a contractual arrangement whereby the affiliate agrees not to broadcast the programs of any other network. This type of exclusive association is called "station exclusivity."

The other type is the reciprocal of this and treats the matter of exclusivity from the network standpoint. It is termed "territorial exclusivity." By such a provision in the contract the network agrees not to furnish its programs to any other station in the territory served by a regular affiliate even when that regular affiliate does not broadcast a particular network program. In other words under territorial exclusivity if a certain outlet does not put a network program on the air the community in which this outlet is located simply does not hear the program.

Until 1942, the National Broadcasting Company required in its standard contract that the affiliate agree not to broadcast the program of any other network—in short, station exclusivity was enforced. On the other hand, the company, even though Mr. Sarnoff testified that the "obligation ought to be reciprocal," did not reciprocate by extending territorial exclusivity, the corresponding

provision in the contract merely reading that the station agrees "not to authorize, cause, permit, or enable anything to be done whereby any other station may broadcast any program which we supply to you." Notice that this says nothing about N.B.C. not furnishing a program to another station in the same territory of the regular affiliate either as a straight duplication or in the event the regular outlet was not broadcasting it. In this latter instance, assuming the desirability of the program and assuming N.B.C. furnishes it to another station, this non-reciprocal arrangement is more in the public interest than a territorial exclusivity agreement which would deprive the listeners of that community from hearing the program. Nevertheless, from the network-outlet standpoint, such non-reciprocation is obviously unfair to the affiliate, which grants the exclusive use of its facilities to N.B.C.

In contrast, the Columbia Broadcasting System has always had in its standard affiliation contracts a thoroughly reciprocal provision with respect to exclusivity.¹ The provision reads:

Columbia will continue the station as the exclusive Columbia outlet in the city in which the station is located and will so publicize the station and will not furnish its exclusive network programs to any other station in that city, except in case of public emergency. The station will operate as the exclusive Columbia outlet in such city and will so publicize itself, and will not join for broadcasting purposes any other formally organized or regularly constituted group of broadcasting stations. The station shall be free to join occasional local, statewide or regional hook-ups to broadcast special events of public importance.

Before a more detailed review is presented of these two issues—station and territorial exclusivity—which are covered by Regulations 3.101 and 3.102, it is important to understand where exclusivity fits into the present pattern of network broadcasting through affiliation contracts.

With respect to the question of how long such contracts should run, the statement has been made that this matter would become academic if the value of the contract in securing the necessary willingness of the individual stations to broadcast the same program at the same time was abolished. It was further stated that this value

¹ For full text of the C.B.S. standard affiliation contract, see Appendix, p. 261.

of the contract lies principally in exclusivity and option time. This needs further clarification. Station exclusivity applies only to those periods when the outlet is not actually being used by the network. Territorial exclusivity is merely a negative provision. It does not in itself secure the willingness; it simply says willingness will not be sought elsewhere. Station and territorial exclusivity are, therefore, only the wrapping. It is true they tend to bind the network and the affiliate together—to make them more mutually dependent—but in the last analysis they are not indispensable. Exclusive option time is the essence of the contract; it is the principal means whereby the network secures this willingness. If a chain organization had an exclusive option on all of the time of each of its affiliates and used all of this time, there would be no need for station and territorial exclusivity, and, except for the problem of program duplication, there would be no issue.

Station Exclusivity

Prior to 1935, the National Broadcasting Company did not have written provisions in its affiliation contracts dealing with station exclusivity. This clause was added at the same time that the length of the contract was extended to five years. It was testified, however, both at the F.C.C. hearings and the Senate hearings that such an exclusive relationship had always been implied and understood. "They [exclusive contracts] were only implied and were gentlemen's agreements. They were not signed," stated Mr. Trammell.² And Mr. Hennessey, counsel for N.B.C., stated, "The facts are that prior to 1935 National generally had no written contracts with its affiliates but the relationship, the oral relationship, had always been exclusive and from time to time prior to 1935 stations had been dropped because they did not regard themselves as exclusive affiliates . . . Exclusivity . . . had been implicit in the arrangement since 1927."³

The station exclusivity provision adopted by N.B.C. in 1935 and continued until December, 1941, read as follows:

For the purpose of eliminating confusion on the part of the radio audience as to the affiliation and identity of the various individual stations

² Senate Interstate Commerce Committee Hearings, Transcript, p. 464.

³ F.C.C. Hearings re Docket 5060, Transcript, p. 9055.

comprising radio networks, you agree not to permit the use of your station's facilities by any radio network, other than ours, with which is permanently or occasionally associated any station serving wholly or partially a city or county of 1,000,000 or more inhabitants.

Observe that the provision does not make a formal exception of national emergencies, as is true of the C.B.S. contract. The provision is less drastic than Columbia's, however, in its definition of what constitutes a competing network.

In defense of station exclusivity the networks present four principal arguments: (1) that it eliminates confusion (as indicated in the N.B.C. provision itself); (2) that, since the network provides sustaining program service to the affiliate and thereby enhances its good will and advertising value, it is not fair to permit a competing chain to reap the profit from these assets and that if station exclusivity is abolished, all incentive to produce such sustaining programs will be destroyed; (3) that it is a legitimate competitive device which provides the necessary degree of stability for network operation; and (4) that it divides network business more equitably between the small and large stations.

With respect to the confusion argument, Mr. Hedges testified at the F.C.C. hearings that "It is inherent to the American system of network broadcasting and has been from its inception that there be a fidelity of the network to its stations and the stations to the network. It is necessary from the viewpoint of the listeners that the identity of the station and its affiliation be well known to them so that they may know where they receive N.B.C. programs."⁴

The government answers this assertion by pointing out that twenty-five stations in 1939 were affiliated with both N.B.C. and Mutual and five with C.B.S. and Mutual, and no such confusion resulted in those situations. The F.C.C. also stresses the fact that listeners generally are keenly aware of the quality of the shows being broadcast and follow their favorites from station to station. "Numerous ratings of programs show that the power of programs to attract listeners varies widely among programs broadcast over the same station. Indeed, the whole effort to improve programs by spending large sums on talent and material is founded upon the

⁴ F.C.C. Hearings re Docket 5060, Transcript, p. 1852.

theory that good programs attract large audiences."⁵ The chief statistician of the National Broadcasting Company confirmed this conclusion when he declared, "It [a survey of listening audiences] merely shows that there are wide shifts of the audience from station to station, depending on programs; that the audience does not stay with any particular station throughout the morning or afternoon . . . There is no constant level of listening nor constant level of listening to any one station."⁶

The second or "sustaining program" argument is stressed by Mr. Hedges and Mr. Sarnoff. The former emphasizes that chain broadcasting by a joint enterprise creates good will which is enjoyed by both the affiliates and the network. "For one party to be faithless to the other to the extent that it barter the good will which has been built through the broadcasting of N.B.C. programs by disposing of its time to another network is unfair to N.B.C. . . . The N.B.C. provides . . . a vast amount of sustaining network programs. These sustaining programs are offered to maintain continuously the interest of the audience in the station being thus served so that the time on that station may be of more value to the National Broadcasting Company and may be of more value to the station individually. There would be no incentive for N.B.C. to continue to serve its stations with such a vast amount of sustaining service if it were reduced to a status of a mere time brokerage, as it would be in the case that a station could play fast and loose with its affiliations between networks."⁷

Mr. Hedges' memory is short. In speaking about one party's being faithless to the other in bartering good will, no mention is made that the N.B.C. contractual provisions regarding exclusivity were non-reciprocal and permitted the network organization to give over its good will enjoyed by the affiliate to another station. The affiliate must not barter, but N.B.C. can. That was the actual situation existing until recently. However, there is a definite reasonableness in the contention, granted the exclusive provisions are reciprocal, that the good will and advertising value of the outlets, built up through program efforts at great expense, should not be handed

⁵ F.C.C. *Report on Chain Broadcasting*, p. 53.

⁶ Mr. Beville, at F.C.C. Hearings re Docket 5060, Transcript, pp. 418-19.

⁷ F.C.C. Hearings re Docket 5060, Transcript, pp. 1853-54.

over to another competitive network organization. Mr. Sarnoff stresses this point: "Obviously, if a network spent money, as we are doing, to develop the popularity of an individual broadcasting station in some territory, if we gave them sustaining programs and they attracted a listening audience and they built up circulation, and then some other organization came along that did none of these things, but just had a commercial program, and asked that broadcasting station to take their program and put behind it the good will and the circulation and the pioneering that had been done by whoever built that station up, of course, that somebody would have a temporary advantage."⁸

However, memory again is short. The statement that N.B.C. gives sustaining programs to its affiliated stations overlooks the fact that these stations waive compensation for the first sixteen "unit" hours of network commercial programs broadcast by them in payment for such sustaining service. And this is the government's first answer to the "sustaining program" argument. Furthermore, the F.C.C. emphasizes that the main incentive of a network for supplying good sustaining programs to its affiliates is to build up a listening audience for commercials, and therefore that it would not permit the stations on its chain to broadcast poor programs during non-network time. "The evidence . . . leads to the conclusion that the elimination of exclusivity will not bring any deterioration in the over-all quality of network sustaining programs. Indeed, as an historical matter, N.B.C. supplied its affiliates with sustaining programs for 10 years before it adopted exclusivity . . . Audiences are not N.B.C.'s to use or withhold as it sees fit, even though N.B.C. claims that they were attracted in part by virtue of its sustaining programs. The licensee must remain free to use its time and facilities, when they are not being utilized by N.B.C., in any way that it sees fit in the public interest."⁹

The justification of the use of station exclusivity as a competitive weapon is brought out by the following testimony of Mr. Hedges and, paradoxically, by the testimony of Mr. Louis Caldwell, counsel for the Mutual Broadcasting System, which, as we have seen,

⁸ *Ibid.*, p. 8521.

⁹ F.C.C. *Report on Chain Broadcasting*, p. 54.

sides with the Federal Communications Commission in the dispute. Mr. Hedges testified: "The clause . . . that refers to any radio network serving wholly or partially a city or county of 1,000,000 or more inhabitants was a definition—it may not be a perfect one, but at least it expressed the intent which we had that it should define a network which might be presumed to be competitive with N.B.C. . . . and was, in effect, designed to apply to any network which would seek to establish itself as a national advertising medium . . . This paragraph is not in every contract but it should be in all of them . . ." ¹⁰

Mr. Caldwell, in explaining the reasons for Mutual's entering into contracts having exclusive and time option features, stated: "There was an endeavor to raid Mutual in the latter part of 1939 and the early part of 1940 by a new organization known as the Transcontinental. . . . Mutual felt it had no alternative if it was to live but to enter into such arrangements . . . It [Mutual] does not . . . propose the complete elimination of exclusivity in cities where there are enough stations so you don't have to worry about competition." ¹¹

The Commission, in fact, argues that prohibiting competing networks from making any use of the audiences of affiliates is really the main purpose and function of station exclusivity. And then the Report contends that "No station should be permitted to enter into an exclusive agreement which prevents it from offering the public outstanding programs of any other network or hinders the entrance of a newcomer in the field of network broadcasting."

The assertion that station exclusivity is necessary to stable network operation is unequivocally made by the industry.

Under the new rule [Regulation 3.101 eliminating station exclusivity] all will be chaos and confusion. Stations will rush for the best features of every network service. Advertisers will try to pre-empt the best hours on the best stations. Time brokers will inject unfair methods of competition. Advertising agencies will make their own arrangements for "front page" position with the bigger and better stations. . . .

The destruction of exclusivity would have an equally serious effect on non-commercial or sustaining programs . . . The possibility of get-

¹⁰ F.C.C. Hearings re Docket 5060, Transcript, p. 1858.

¹¹ *Ibid.*, pp. 8908-10.

ting a satisfactory line-up for public service features becomes remote. Every public-service program which N.B.C. would offer would be measured by the stations against the commercial and public-service offerings of every other network for that particular period. . . . Whatever element of public service remains will be local service. National service will be the exception, not the rule.¹²

This claim is denied in the F.C.C. Report as follows:

We cannot agree that so essential a factor in the operation of a network—the number and character of the affiliated stations which are its customers—should be removed from the field of competition. We cannot agree that the field should be forever limited to the present incumbents. . . . This attempted justification of exclusivity fails to take into account the function of competition in our economy. . . . Programs may be good; they are not perfect. . . . Competition is in the public interest not because the particular service offered by a new unit is better than the existing service, but because competition is the incentive for both the old and the new to develop better service.¹³

This statement is very significant because it reflects the Commission's conception of the nature of a broadcasting network in our economy and reinforces the emphasis on the competitive function of the individual station. The affiliates are portrayed as being the customers of the network. The network in turn becomes a seller of programs to the individual stations—merely a program-producing agency. Although in some important respects under our present system of chain broadcasting a network organization is a program agency, the concept of a network would lose most of its meaning without stations. They are indispensable according to the government's definition of chain broadcasting, as given in the Communications Act—"the simultaneous broadcasting of an identical program by two or more *connected stations*." ¹⁴

Furthermore, as network executives will confirm, their principal customers are not the stations but national advertisers. Stations on a network are the necessary distributing points for its circulation. To attempt to make them something else, to insist that they must be entirely free, is to deny the basic nature of chain broadcasting.

¹² Mr. Trammell, at Senate Interstate Commerce Committee Hearings, Transcript, p. 508.

¹³ F.C.C. Report on Chain Broadcasting, pages 55-56.

¹⁴ Italics added.

In the writer's opinion, a network should not have to compete with its own outlets any more than the outlets should have to compete with their own network. But such a situation has always existed to some extent and the regulations make this inconsistency the guiding competitive principle in the entire industry.

The final industry argument in favor of station exclusivity is that it divides network business more equitably between the small and large stations. "By preventing a station from being the exclusive outlet of a network, and a network from offering a definite fixed line-up of stations, these rules cut an essential link out of the broadcasting chain, and set stations and networks adrift. . . . What would happen if the best organizations, the best features and the largest advertising accounts gravitated, as they would, to the 50 or 60 largest and most powerful stations in the country? Yet that is exactly what would happen under the so-called non-exclusivity rule . . . [it] would lead to a concentration of advertising support for broadcasting over large stations and in larger communities, weaken the economic structure of hundreds of smaller stations, and make for inadequate service in many parts of the country that are now suitably covered by network broadcasting."¹⁵

The government denies that such inequitable results would follow the elimination of station exclusivity. On the contrary, it is argued that through such elimination the number of networks should increase. It is further contended that the quality of programs should improve with "increased competition among networks for the time of outlet stations. Not only the more powerful stations, but those with less desirable facilities, and the public as well, will benefit. From a practical standpoint, this contention by the networks overlooks the highly important matter of cost of time. The large stations in each city cannot monopolize the best commercial programs unless the advertising sponsors are willing to pay the higher rates charged by such stations."¹⁶ And then the Report goes on to state that on the basis of some twenty-five cities suitable for a "basic" network and on the basis of a fifty-two week program schedule, the cost to the advertiser of the most high-powered stations

¹⁵ Mr. Trammell, at Senate Interstate Commerce Committee Hearings, Transcript, pp. 507-8.

¹⁶ F.C.C. *Report on Chain Broadcasting*, p. 56.

in each of these communities would exceed by approximately \$50,000 the cost of purchasing the N.B.C. Red network. Admitting that some advertisers might be willing to meet these increased costs, the F.C.C. rebuttal concludes that if high-powered stations become too commercial to the exclusion of public service programs, the Commission will have something to say about it.

The attitude of the Commission with respect to station exclusivity is, therefore, very definite. It was found to restrict the station's choice of programs and its ability to compete with other stations, to tend to deprive the listening public of programs of other networks, and to hamper the development of existing and future chains. Hence, station exclusivity is contrary to the public interest.

Our conclusion is that the disadvantages resulting from these exclusive arrangements far outweigh any advantage. A licensee station does not operate in the public interest when it enters into exclusive arrangements which prevent it from giving the public the best service of which it is capable, and which, by closing the door of opportunity in the network field, adversely affect the program structure of the entire industry.¹⁷

On the basis of this conclusion the Commission promulgated Regulation 3.101, which reads as follows:

No license shall be granted to a standard broadcast station having any contract, arrangement, or understanding, express or implied, with a network organization * under which the station is prevented or hindered from, or penalized for, broadcasting the programs of any other network organization.

* The term "network" as used herein includes national and regional network organizations.

Station exclusivity, as we have noted, is not vital to the operation of a network under our present system, granted exclusive option time is permitted. The National Broadcasting Company, of course, despite its arguments to the contrary, realized this. Consequently, Mr. Hedges on December 10, 1941, sent a letter to all affiliates stating that N.B.C. had decided to "eliminate as a term of network affiliation any obligation pursuant to which an N.B.C. affiliate may not broadcast the programs of another network at such times as do not conflict with the station's obligation to broadcast N.B.C. pro-

¹⁷ *Ibid.*, p. 57.

grams." The present N.B.C. affiliation contract,¹⁸ therefore, does not contain any provision for station exclusivity. The Columbia Broadcasting System, on the other hand, had not abandoned it up to 1943.

Territorial Exclusivity

Territorial exclusivity is the reciprocal of station exclusivity. Through the former provision the network agrees not to furnish its programs to any other station located in the territory served by an existing affiliate. Although both the Columbia Broadcasting System and the Mutual Broadcasting System grant territorial exclusivity to their outlets, the National Broadcasting Company, as we have seen, never has had this clause in its standard contract. In fact, Mr. Hedges testified that in the few cases where the company had been forced by the individual station to incorporate this feature in the contract it had been granted only "after a knock down and drag out fight."

MR. DEMPSEY—In general what provision do you make, if any, in your contracts with your affiliates with respect to your future contracts with other stations that may serve the same area?

MR. HEDGES—There is no such provision within the general contract.

MR. DEMPSEY—Do you have it in some of your contracts?

MR. HEDGES—There have been certain restrictions placed upon us in certain contracts. I have in mind KMO at Seattle, Washington, which restricts us from placing stations within 125 miles of that station. . . .

MR. DEMPSEY—And in general, that is the basis on which you grant it or refuse it?

MR. HEDGES—After a knock down and drag out fight.

MR. DEMPSEY—And under compulsion, if it is necessary to get the station, you will give it to them?

MR. HEDGES—Yes.

MR. DEMPSEY—You think quite different principles apply there as to the question of network exclusivity. . . .

MR. HEDGES—I think it adds up to about the same thing. Simply a station places such a high valuation upon its affiliation with the N.B.C. that it zealously guards that affiliation and wants to keep it for itself. I can't blame any station for feeling that way about us.

MR. DEMPSEY—If they still have to knock you down and drag it out of you to get it, is that right?

¹⁸ See Appendix, p. 247.

MR. HEDGES—That is right, because the less restrictions that we have upon us are always to be preferred.¹⁹

The conclusion should not be drawn from the above testimony, however, that N.B.C. generally duplicates network programs in the same area. Obviously, few advertisers would be willing to pay twice for the same coverage. However, in keeping with its policy of retaining flexibility and wherever possible avoiding restrictions on its freedom of action, the company reserves the right in the great majority of contracts to duplicate the program if it sees fit, and, as noted when the question of rural coverage was discussed in Chapter 9, duplication has been allowed to occur in some instances in order, as Mr. Hedges put it, to give "an added punch" in an important advertising market.

In so far as territorial exclusivity prevents duplication of network programs in the same territory—which is an unnecessary waste of program service and an undesirable dilution of program choice on the part of the listening audience—it is not an issue in the controversy. In this connection Mr. Telford Taylor, general counsel of the Federal Communications Commission, declared, "We have no objection to such a practice as long as it is intended to prevent duplication. Duplication would be wasteful."²⁰

The major issue concerns the question: Should another station in the same territory be prevented from broadcasting a network program if the regular affiliate of that network has turned the program down. There is also the subsidiary technical problem of what constitutes the same territory or how to define program duplication in terms of the area served.

Mr. Charles Evans Hughes, Jr., counsel for the Columbia Broadcasting System, strongly defended the territorial exclusivity provision in the company's contracts. He argued that it enables the affiliated station to build itself up through Columbia programs of national prestige. This is particularly important to the weaker station, and, instead of acting as a restraint, the provision actually promotes competition because it forces the national advertiser to accept the smaller outlet. If the advertiser had complete freedom of choice,

¹⁹ F.C.C. Hearings re Docket 5060, Transcript, p. 1842.

²⁰ Injunction Suit, Oral Arguments, January, 1942, Transcript, p. 206.

he would prefer to have his network made up of only the highest powered stations with the greatest potential circulation—a Columbia outlet here and an N.B.C. outlet there—"to give him a 50,000 watt, unlimited time, clear channel station in every town he wanted to cover." The result would be that the strongest stations would get most of the business and the weaker stations would suffer correspondingly.

"Under this plan of the C.B.S. affiliation contract, however, the advertiser, when he deals with Columbia, has to take its network over-all; he has to take the weaker stations with the stronger ones, and it enables, even in a city where N.B.C. has a 50,000 watt station and we have a 5,000 watt station, that intrinsically weaker station to be built up by reason of having exclusively the Columbia programs."²¹

This argument of Mr. Hughes assumes that the Columbia affiliate broadcasts all of the programs offered to it by the network and therefore it does not meet the principal objection to territorial exclusivity, namely, that a community should not be deprived of hearing a program which has been rejected by the regular affiliate. Under circumstances in which the individual station did not have this right of rejection, however, the argument of Mr. Hughes is sound, in the writer's judgment. An advertiser should not be able to pick and choose his stations completely at will, and territorial exclusivity undoubtedly curbs his freedom of action in this respect.

Here again we see the conflicting nature of the chain broadcasting system as it is established today. On the one hand, it is generally agreed that territorial exclusivity prevents wasteful duplication of program service in the same area and is a financial boon to the weaker station. Therefore, it is in the public interest. On the other hand, the licensing policy of the Commission insists that the individual station must be sovereign, retaining at all times the right to reject a network program, and territorial exclusivity is condemned because in the event of such rejection it would deprive a community of service. Therefore, it is not in the public interest.

²¹ Mr. Hughes, Injunction Suit, Oral Arguments, January, 1942, Transcript, pp. 126-28.

Declaring that it is as reprehensible for an affiliate to agree to a contract preventing another station from carrying a network program as it would be for an affiliate to drown out that program by electrical interference, the *Report on Chain Broadcasting* concludes with respect to territorial exclusivity: "The crucial point is that it is not in the public interest for a station licensee to enter into an arrangement with a network to preclude other stations in the area from broadcasting network programs which it rejects."²²

Regulation 3.102 covers the question of territorial exclusivity. In its original form it read as follows:

No license shall be granted to a standard broadcast station having any contract, arrangement, or understanding, express or implied, with a network organization, which prevents or hinders another station serving substantially the same area from broadcasting the network's programs not taken by the former station, or which prevents or hinders another station serving a substantially different area from broadcasting any program of the network organization.

Notice that the definition of what constitutes a station's territory is left extremely vague. It is dismissed with the phrases "serving substantially the same area" and "serving a substantially different area." What "same" and "different" mean remains unexplained except for the general connotations of the words themselves. The technical determination of service areas, however, is a highly complicated and changeable one fraught with misunderstandings and variations. Consequently, the rule would seem to be most difficult of equitable enforcement.

Chairman Fly does not share these views. He believes that the regulation is sufficiently precise and that its proper interpretation is clear. Nevertheless, as the following colloquy illustrates, this assumed precision turns out to be pretty much the personal interpretation of the Chairman. It should also be noted that Mr. Fly in the testimony given below twice concedes—inadvertently no doubt—the necessity for exclusive affiliation contracts.

CHAIRMAN WHEELER—Before you go to that let me direct your attention, if I may, to rule 3.102, which has created some misapprehension in the

²² Page 59.

minds of some broadcasters. A question involving an interpretation of that rule arises in my mind which might best be answered if I relate a specific case.

I have in mind a 50,000-watt station and a 1,000-watt station operating in the same community such as Washington, D.C. Both stations serve the city itself, where you have the main concentration of population but the larger station sends its signal beyond the metropolitan area. Both stations are affiliated with competing networks . . . Would you say that these stations served substantially different areas or not?

MR. FLY—In the example given, sir, I would say that such stations do serve substantially the same area. It is the general rule, and it will be found that even with the smallest stations the commission has licensed there is adequate service over the entire metropolitan area where the station is located. Therefore, so far as these rules are concerned we should consider as comparable all stations that are so located as to serve metropolitan areas . . .

CHAIRMAN WHEELER—I was going to say that some of these small stations have been worried for fear all the good programs would go to the big stations, and that under your rules the network would simply say: "Well, we will not put it on the little station . . ." If that were permitted it would seem to me you would be eliminating the small station.

MR. FLY—Yes; and it will be seen that under the rules the advertiser would not have the privilege of picking and choosing in that way, *because he is up against the contract which affiliates the station to the network.*

CHAIRMAN WHEELER—. . . But, for example, if an advertiser plans on advertising by radio in the sparsely settled western area, he will want to reach the largest number of listeners possible with the smallest number of stations. Consequently it is probable that an advertiser would not want to put his program on the smaller stations in Spokane or in Salt Lake City or in Denver. I think an advertiser would want to go on the big stations because the big stations get the listeners; and unless the small station can get good programs you will be giving the big stations a monopoly. I think that is one thing you have to guard against because certainly when you are trying to tear down one monopoly you do not want to be building up another—putting the small stations out of business. That is one thing you have to guard against.

MR. FLY—Mr. Chairman, I think we are in absolute agreement on that. I do think that to give the small station the first refusal of a program, and *tying it up by contract*, to make that permissible under the rules, is the protection. Of course, it is not the intention of the Commission that the big stations shall take advantage of the small ones. If that starts to happen we will have to reexamine that phase of the subject.

CHAIRMAN WHEELER—. . . It could not be true unless the rules would let the advertiser pick and choose whatever station he pleased.

MR. FLY—We would not go along with that construction of the rule.²³ [*Italics added.*]

The vagueness of the original regulation, however, was not the principal industry argument against it. It was pointed out that the most inequitable aspect of the rule was the fact, as Mr. Fly states above, that whereas Mutual or any other network, if it is shut out of a certain market, can use under Regulation 3.101 any station affiliated with another chain, the network organization is supposed to give its outlets first call on all programs, despite the fact that some of these outlets would be competitively inferior. At the Senate hearings Mr. Paley, president of the Columbia Broadcasting System, gave strong expression to this criticism.

This idea that we are to have an affiliation arrangement by which the station makes no commitment to us but by which we are to give it the first option on all our programs is not to be found in the rules themselves. It seems to have emerged as an answer of necessity to a question from the committee which involved a practical problem. Are we being told that we have to make one-sided arrangements of that kind with our affiliates in the future? If exclusivity is to be broken down, is it conceivable that at the same time we are to be asked not to try to avail ourselves of open time on competitive stations? In other words, according to the statement made by Mr. Fly, we might have a station in a town that had inferior facilities, and we would have to give that station first call on everything we had. That station would have no obligation to take our programs. We would not have the right to go to a better station in that town if we found that an advertiser would give us more business in case we had that better station. No; we have to remain faithful to the affiliate, but he has no loyalty whatsoever to us.²⁴

The necessity mentioned by Mr. Paley refers to the objection raised by Senator Wheeler in the testimony already cited, namely, that, without such a first call's being granted to the affiliate, network business would tend to gravitate toward the highest-powered station in each community. To meet this objection, but with no adequate explanation of why a chain organization should be expected to grant such program priority to its affiliate which would be

²³ Senate Interstate Commerce Committee Hearings, Transcript, pp. 131-33.

²⁴ *Ibid.*, p. 414.

under no obligation to the network, the Commission amended Regulation 3.102 by adding the following sentence:

This regulation shall not be construed to prohibit any contract, arrangement, or understanding between a station and a network organization pursuant to which the station is granted the first call in its primary service area upon the programs of the network organization.

By this amendment the vagueness of what constitutes a station's "area" is somewhat clarified. Presumably it is to be regarded as the station's primary service area. Such clarification is not very helpful. As already noted, the precise demarcation of a primary service area under the Commission's standards is a difficult, prolonged, and dubious job. The primary area changes from day to day with changes in sunspot activity, climatic conditions, and man-made electrical interference. Consequently, the regulation remains about as unsatisfactory as it was before, both from the standpoint of feasible enforcement and of notifying the network industry what the rules for their business are to be.

In its Supplemental Report the Commission stated that the added sentence "does not change the meaning of Regulation 3.102 but is intended to eliminate confusion with respect to its interpretation. Regulation 3.102 is not intended to and does not prohibit a regular affiliation contract whereby a network agrees to make a first offer of all its programs to one particular station in a given community. The Commission believes, however, that in the case of non-commercial public service programs of outstanding national or international significance, such first offer should not constitute an exclusive offer and that the network should be left free to furnish such programs to other stations in the same area."²⁵

Thus the network is expected, contrary to the natural wish of the advertiser, to continue to furnish commercial programs to its weaker affiliates in certain markets but to make outstanding sustaining programs available to all—and this in a situation in which the individual station is to be under no obligation to the network.

²⁵ Page 5.

✕ Chapter 13 ✕

STATION OWNERSHIP AND REJECTION OF PROGRAMS

ONE of the contradictions in our present system of chain broadcasting lies in the fact that while a station may be owned or leased by a network organization, it still has the right to reject any network program. Station ownership or lease implies network sovereignty; the right of rejection implies station sovereignty. In principle, therefore, the two concepts are in fundamental conflict. It is as if the government said to the Atlantic and Pacific Tea Company, "Yes, we approve of the chain store system of food distribution. But when you have bought or rented stores in the different communities of the country, and when you have engaged a manager for each store, you are not to have authority as to how those stores shall be operated."

Despite this contradiction, however, and despite the fact that the network organization officially grants to its owned or leased outlets the right to reject any network program which they may consider contrary to the "public convenience, interest, or necessity," ownership or lease in actual practice provide the means whereby the national chain secures the maximum assurance that these key stations located in the principal advertising and talent markets will be willing to broadcast the same program at a given time. Although rejection is permitted in theory, the prerogatives of ownership, as would be expected, generally prevail and allow an assured network circulation to be secured over these key facilities.

Network Ownership and Lease of Stations

The inherent conflict between network sovereignty and station sovereignty is brought out by the testimony of Alfred Morton, who at the time of the F.C.C. hearings was vice-president of N.B.C. in

✕ Chapter 6 ✕

FEDERAL REGULATION DURING
NETWORK PERIOD

A COMPREHENSIVE examination of the regulatory history of broadcasting since the enactment of the Communications Act is unnecessary. Nevertheless, in order to understand the issues between the government and the networks, it is desirable to review briefly certain significant developments which directly relate to the controversy.

Communications Act of 1934

The title of the Act is a misnomer. The Communications Act in its most important sections, which deal with radio broadcasting, is little more than a repetition of the Radio Act of 1927. The industry in 1942 was therefore operating under a fifteen-year-old statute. This fact alone constitutes a strong argument in favor of a new Federal law, because during this time the complexion of the business drastically changed. To the writer the 1934 Act does not seem realistically adaptable to the modern problems of network broadcasting in the public interest.

This piece of legislation, however, did represent a constructive step forward in that it placed the regulation of all "interstate and foreign commerce in communication by wire and radio" in the hands of a single agency. The jurisdiction of the Federal Radio Commission was limited to radio communication.

The 1934 Act also made a noteworthy distinction with respect to "common carriers." Whereas telegraph and telephone companies were, of course, included in this category, radio broadcasting was exempted. The concept—strongly reinforced by the Supreme Court in 1940 in the *Sanders Brothers* case—of broadcasting as a domain of free competition and as not being appropriately susceptible to the grant of a governmental monopoly was, therefore,

given statutory enunciation. This exemption of radio broadcasting from the classification of "common carriers" is provided in Section 3 (h) of the Communications Act:

"Common Carrier" or "carrier" means any person engaged as a common carrier for hire, in interstate or foreign communication by wire or radio or in interstate or foreign radio transmission of energy, except where reference is made to common carriers not subject to this Act; but a person engaged in radio broadcasting shall not in so far as such person is so engaged, be deemed a common carrier.

The Federal Communications Commission, established by the 1934 Act, is composed of seven commissioners appointed by the President, by and with the advice and consent of the Senate, one of whom the President designates as chairman. James Lawrence Fly, mainspring of the government's attempt to reform the network industry, was chairman of the Commission in 1943 and was appointed in 1939 to succeed Chairman McNinch.

The Act further provides that each member of the Commission shall be a citizen of the United States, that his tenure of office shall be seven years, and that each commissioner shall receive an annual salary of \$10,000. The office of the Commission is in Washington, D.C., and the more significant powers granted to the F.C.C. are defined as follows:

Section 1—For the purpose of regulating interstate and foreign commerce in communication by wire and radio so as to make available, so far as possible, to all the people of the United States a rapid, efficient, nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges, for the purpose of the national defense, for the purpose of promoting safety of life and property through the use of wire and radio communication, and for the purpose of securing a more effective execution of this policy by centralizing authority heretofore granted by law to several agencies and by granting additional authority with respect to interstate and foreign commerce in wire and radio communication, there is hereby created a Commission to be known as the "Federal Communications Commission," which shall be constituted as hereinafter provided and which shall execute and enforce the provisions of this Act.

Section 4 (i)—The Commission may perform any and all acts, make such rules and regulations, and issue such orders, not inconsistent with this Act, as may be necessary in the execution of its functions.

tion, the company was rendering an over-all balanced service. But now that N.B.C. controls only one network, the economics of chain broadcasting financed by advertising results in a disproportionate share of the broadcast day—particularly those hours when the greatest number of persons are in a position to listen—being given over to commercial entertainment programs. This situation has been accentuated by the fact that the Red network was heavily weighted with commercials in the past.

This conclusion does not apply only to N.B.C. It is true of C.B.S. and M.B.S. It is one of the unavoidable consequences of commercially financed network broadcasting. In short, despite the distinction between sustaining and commercial programs and the potentialities of the former, the cultural and educational possibilities of radio from the standpoint of a national network and national coverage will largely remain dormant until these functions of broadcasting which are now incompatible with advertising have been divorced from commercial network jurisdiction and provided in some other way with the necessary economic support, or until the public becomes more discriminating.

Rural Coverage

"The real danger in the economics of broadcasting is that the interest of the advertiser in reaching large masses of listeners and the profit that is to be made in accommodating him will result in laying down too many tracks of good reception to thickly inhabited centers and too few, or none at all, to sparsely settled areas which are not such attractive markets."²

Today millions of people in this country have no acceptable broadcasting service at all. Other millions are entirely dependent upon nighttime sky wave propagation. Certainly it is axiomatic that every man, woman, and child, granted they possess a receiving set and can secure the necessary electricity to operate it, should be able to enjoy during the day and night the benefits of radio broadcasting from at least one station. Anything less than this, in the writer's opinion, is a betrayal of a public trust and shows that we

² F.C.C. Engineering Report re Docket 4063, p. 5.

have been derelict in fulfilling the minimum possibilities of this medium. Through radio communication many of the dark corners of life can be lighted. It gives relaxation and rest after toil; it brings entertainment and renewed hope to the poor and unfortunate; it can educate the people and bring the artistic masterpieces into the average home. It can, in short, lead on to a better and a happier world. Why then have we failed to live up even to this minimum?

The clear-channel policy of the Commission, which has permitted the highest powered stations operating on an exclusive frequency to be concentrated in metropolitan areas, is in large measure responsible. The lack of rural electrification in some areas and the inability to afford the purchase of receiving sets have also been retarding influences. Finally, the economics of our commercially financed system of broadcasting, as the quotation at the beginning of this section indicates, work against the extension of network radio service to sparsely settled and unremunerative communities. The advertiser is almost exclusively interested in the densely populated areas with relatively high purchasing power. The chain organizations, in business to make a profit and dependent upon the advertiser's dollar in doing so, are under enormous pressure to pattern their coverage policy solely in terms of the advertiser's demands. Before discussing the manner in which the industry has met this problem, however, it seems desirable to review the two possible methods of securing national coverage aside from transcriptions, and to comment further on the questions of clear-channel stations and primary and secondary service areas.

Assuming for the moment that a program being put on the air is suitable for broadcasting to the entire nation and also assuming that each family in the country has a receiving set and has access to the required electricity, there are two possible ways of making this program available to all: through transmission by a single station operating with very high power; or by linking up individual stations on lower power into a chain. Mr. Sarnoff originally thought in terms of the single high-powered station, and this principle has been followed up to the relatively low maximum of 50 KW permitted by the F.C.C. Because of this government limitation on the amount

of power allowed and because coverage does not increase proportionately with increase in power, the development of broadcasting in this country has inevitably tended more toward the network method.

As we have seen, a high-powered station at night requires a clear channel—otherwise intolerable interference would be present from another station operating on the same frequency but broadcasting a different program. This problem of clear channels and their use to secure the maximum coverage has been and remains one of the most disputed issues between the government and the industry. The networks, of course, want high-powered stations. In this way they can reach more people and the signal strength will be greater than that of a competitor station in the same market which broadcasts on lower power. But the network organizations are not primarily interested in using these high-powered clear-channel outlets for rural coverage purposes. Because the advertiser is their *raison d'être* and because the advertiser is concerned with a market's size and purchasing power, these Class I A stations have been located—with the approval of the Commission—in the highly populated and relatively affluent communities in the eastern part of the United States and on the Pacific Coast.

The government now insists, however, and rightly so, that the only justification for a clear-channel station in our present system is to give program service to rural areas, far removed from the centers of population. The inconsistency of having chain broadcasting, coupled with clear-channel outlets, concentrated in large cities was emphasized by Chairman Wheeler. "It seemed to me that there was perhaps some justification for these cleared channels before there was chain broadcasting. But with chain broadcasting as it is at the present time, I do not feel that the chains ought to be allowed to pick out just the areas where they can make the most money. The chains can put stations anywhere and tie them up to the chain so that people can hear them. . . . A broadcasting corporation is in the nature of a public service corporation, and it ought to place its stations, or to tie up with stations, so that people in the rural areas can hear them. . . . After all, broadcasters are dependent upon a Government license and the networks are, there-

fore, in a different position from that of other businesses in the United States." ³

Some years ago there were fifty clear channels. Subsequently they were decreased to forty and by 1942 they had been further reduced to twenty-five. The network companies control the clear channels or Class I A stations—the lion's share being in the hands of N.B.C. and C.B.S. Before directional antennas were employed a great deal of the service of these stations was wasted over the oceans, and even today, because of their location, a large part of the potential service which these stations could provide is not being utilized. Speaking of these clear-channel stations in a colloquy with Senator Wheeler, Chairman Fly declared:

MR. FLY—They generally have the best wave lengths, and they are situated in the best and most lucrative markets. Unfortunately, rather than serve the larger purpose of the cleared-channel station—that is, to reach out to great distances and tap unserved rural areas—the tendency has been in the past—and, of course, the Commission must bear some share of the responsibility—

SENATOR WHEELER—I should say it must bear a lot of it.

MR. FLY—The tendency has been to crowd these cleared-channel stations, not where they will reach the vast rural areas, but where they will skim the cream of the market. Boston is a minor example, but consider New York, Chicago, and Los Angeles . . . The question is, considering all these factors, how can the public get the most in terms of public service out of these clear channels? I think that is a very grave question.⁴

Commissioner Craven, testifying at the Senate hearings, explained that competitive considerations constituted the main reason for the Commission's continuing to permit a concentration of high-powered stations in metropolitan areas. "Heretofore I have endeavored to apply modern engineering principles to bring about an improvement in rural service. I have been unsuccessful so far because the Commission majority has continued to increase the number of stations in the large metropolitan centers. I believe that in doing this they have overemphasized the doctrine of unlimited competition at the expense of radio service to the people as a whole." ⁵

³ Senate Interstate Commerce Committee Hearings, Transcript, p. 26.

⁴ *Ibid.*, p. 25.

⁵ *Ibid.*, p. 303.

The problem of clear channels and that of broadcasting service areas are closely related. The primary service area⁶ of a station is served by the ground wave which gives acceptable reception only at relatively short distances from the transmitter (up to 200 miles when power of 50 KW is used). The secondary service area of a station is served by the sky wave, which generally speaking, because of factors having to do with the ionosphere, gives service only at night. This service is provided through reflection of the sky wave, and the amount of reflection that occurs depends primarily upon the degree of ionization and the angle of incidence at which the wave strikes the ionosphere. Sunspot activity appears to be the major controlling factor in the effectiveness of sky wave propagation. Although much more study of this question will be necessary before sky wave transmission is adequately understood (competent observations of the eleven-year sunspot cycle in its relation to sky wave propagation have not as yet been made), the evidence to date clearly indicates that the greater the sunspot activity the shorter the distance of sky wave transmission. It has been estimated, for instance, that the sky wave of a 50 KW station in 1935 gave serviceable signals in as wide an area as a 500 KW station in 1938, when sunspot activity was much greater.

In short, besides being a problem with important social implications, the question of national radio coverage is a highly technical one. Sky wave propagation in the standard band is extremely random. It is characterized by severe fading and is greatly subject to man-made electrical noise, changes in atmospheric conditions, and sunspot activity. Much has yet to be learned about it. However, the science of radio broadcasting is constantly progressing, and sky waves now provide an acceptable although uncertain service. Furthermore, the day may come when the entire country will enjoy

⁶ The F.C.C. standards of good engineering practice define acceptable primary service as falling within the .5 millivolt per meter contour for population centers up to 2,500 people, the 2 millivolt per meter contour for population centers from 2,500 to 10,000 people, and the 10 to 25 millivolt per meter contour for population centers from 10,000 people and up, these conditions to prevail 90 percent of the time. Secondary service is defined in terms of the same signal strengths as applied to population size but the conditions are required to prevail only 50 percent of the time. It is interesting to note in this connection that our standards of acceptable signal strength are considerably below those of England.

primary service and when sky wave propagation will not be needed. There do not appear to be any conclusive technical reasons, therefore—particularly if scientific advance and adaptation are coupled with a far-sighted governmental licensing policy and with a more enlightened attitude on the part of the networks—why the whole nation cannot in the future receive radio program service.

In attempting to achieve such national coverage, program duplication, which has been defined as "the simultaneous serviceable availability of the same program from two or more stations in a given area" should of course be avoided where an acceptably strong signal is present. On the other hand, it is in the public interest to encourage all the duplication of broadcasting facilities which the traffic will bear—broadcasting facilities in competition on the basis of different program content. Such a situation would represent the ideal, for then the public would enjoy the maximum variety of programs from which to choose.

Mr. Hedges, vice-president of N.B.C. in charge of station relations, believes, however, that program duplication in certain communities is justified. To him, advertising considerations are paramount. When asked by Mr. Hennessey, counsel for the company, to what extent he would be influenced by duplication of program content in deciding whether to add a station to the N.B.C. network, Mr. Hedges replied:

I would have no hesitation in adding a station in a large market . . . one of the first 25 in the United States . . . even though that market might be receiving primary service from a station servicing another market which was adjacent to it. If for example I were asked today whether or not I would add WTMJ in Milwaukee to the network, although WMAG is very close to Milwaukee, I most certainly would add it because in a market of that importance it is desirable to have affiliation with a station which is primarily concerned with Milwaukee interests, and to give in effect an added punch within Milwaukee to the program which we would have on the network.

But when it comes to other regions where there are smaller markets, I would not place a station within the primary area of another affiliate for the simple reason that I want the affiliate to secure the full benefit of the audience which he can create with the network affiliation, instead of having him share it with someone else.⁷

⁷ F.C.C. Hearings re Docket 5060, Transcript, pp. 1661-62.

And now the final questions we must ask are: Within the scientific and licensing limitations of the radio art today and within a reasonable standard of profitable operation, how have the networks met this problem of national coverage? Have they succumbed to the advertiser's restrictive inclinations or have they resisted maximum profits in order that the greatest number of people may enjoy their programs? The record shows that almost exclusively profit considerations have again been decisive; unless an unaffiliated station looks like "pay dirt" it will not be taken on the network.

This attitude is shown by Mr. Hennessey's testimony at the F.C.C. hearings when he declared that abrogating the five-year contract would be disastrous to small stations which are taken on by the networks as a "spec" because his company could not assume this risk unless a period of time at least this long was permitted to allow the arrangement to work out profitably. To these remarks Chairman Fly replied, "You are getting back now to the economics of it, and to the position that no matter how much money you make elsewhere, you are not going to lose any money on any one particular station in bringing the national service to that community."⁸

There is, of course, a basic network which the advertiser must purchase in its entirety during the evening hours. It is stated that one of the reasons for this requirement is to force the advertiser to render greater national coverage. The profitability of such a requirement is undoubtedly the most impelling reason. In any event, this policy does guarantee—the advertiser's wishes to the contrary—a greater coverage than as if he were completely free to pick and choose the individual stations.

Although this basic network requirement has been extended during the past ten years, in the writer's judgment the policy of requiring the advertiser to purchase more of the total network should be extended much further. Except for the basic network rule, which is generally enforced only in the evening, the advertiser still has far too great a latitude in choosing his particular combination of stations.

In this connection, however, the Columbia Broadcasting System in 1942 announced a new policy of giving a substantial discount to

⁸ F.C.C. Hearings re Docket 5060, Transcript, p. 8813.

an advertiser if he would take the entire network. This is a significant and most encouraging development and should result in the C.B.S. network providing more continuously a greater national coverage.

The position of the chains in refusing to take on a new affiliate—both basic and supplementary—unless it can justify itself from the profit standpoint is clearly shown in connection with so-called bonus stations. A bonus station is one that is thrown in for good measure if an advertiser takes a certain other station. In 1938 N.B.C. had four bonus stations, which received no remuneration for broadcasting network commercial programs except in the case of cut-in announcements. It is true they did receive sustaining service free of charge, although frequently they were required to assume wire-line costs. Furthermore, in apparent contradiction of the provisions of the Communications Act, a bonus station had no voice in the decision as to whether a network commercial program would be broadcast over its facilities.

A bonus station is usually to be found in a minor market, a minor market, however, which has some value to the network which warrants our affiliation with it, and when I speak of "value to the network," I mean merely the extension of our program service into areas which we do not now adequately serve; where the economic opportunities, however, for that region, due to the sparsely settled territories served by the station, are not sufficient to warrant it coming on the network as a station with a rate.⁹

Briefly, maximum profit considerations and the desire of the advertiser to restrict his appeal to the more populated communities with relatively high purchasing power have been decisive in shaping the national coverage policy of the network industry in the past. This has resulted in vast rural areas going without network program service and shows the conflict between the commercially financed chain and true national coverage. But the author is convinced that the future will tell a different story. It will eventually be fully recognized by the network companies that the public interest is really their best interest. As Chairman Wheeler declared, "I am not complaining because of the fact that you are making money.

⁹ Mr. Hedges, at F.C.C. Hearings re Docket 5060, Transcript, p. 1652.

The only point I want to make is that when you are making a good profit, there does not seem to me to be any reason why, if you want to continue to make the profit, you should not give up part of the profit you are making to see to it that the rural communities get better programs. That would be intelligent selfishness on your part—and on the part of all the networks and the national advertisers.”¹⁰

One Network Organization Operating Two Networks

The National Broadcasting Company controlled until January of 1942 two networks—the Red and the Blue. At the time of the F.C.C. hearings in 1938 the company had two outlets in over thirty cities, and by 1940 the number had increased to about forty cities. This situation of course gave N.B.C. a tremendous competitive advantage over the other two national chains—the Columbia Broadcasting System and the Mutual Broadcasting System.

From the standpoint of operation and earnings, however, the Red and the Blue networks showed a great disparity. The disproportion between commercial and sustaining programs on the Red network in 1938, for instance, was even more marked than in 1937. In the former year 74 percent of the network programs on the Red were commercial as compared to only 26 percent on the Blue. Furthermore, in 1938 N.B.C. paid to the seventeen independently owned basic stations on the Red a sum of \$2,803,839 for broadcasting network commercial programs, whereas to the eighteen similar basic stations on the Blue the company paid only \$794,186.

Except for the basic and so-called basic supplementary stations, the standard affiliation contracts with the independent outlets associated with N.B.C. did not specify whether they were to be considered a part of the Red network or a part of the Blue network. The company retained the right to shift a station from one network to the other. Such an arrangement afforded the advertiser a much greater latitude in selecting a particular combination of stations to meet his special marketing requirements and gave N.B.C. another competitive advantage over its rivals.

An additional competitive weapon available only to the National

¹⁰ Senate Interstate Commerce Committee Hearings, Transcript, p. 370.

Broadcasting Company by virtue of its control of two networks was the company's discount policy of allowing a discount to advertisers of 25 percent, based on the amount of total time purchased. Thus an advertiser who was already sponsoring one program on the Red network, could secure additional time on the Blue for another program at a substantially reduced price.

The operation of the two chains also represented a significant benefit with respect to programming and audience building, for N.B.C. had at its disposal twice as much time as the two other national networks. For any specific hour it was not forced to choose between a commercial or sustaining program. It could sell the period on the Red to an advertiser and broadcast a sustaining program simultaneously on the Blue.

The National Broadcasting Company contends that independent station demand for affiliation with the company constituted the main reason for the original development of the two networks under its management. In addition, N.B.C. claims that the Red and the Blue were competitive with each other, and not merely co-operative as the F.C.C. asserts.

CHAIRMAN McNINCH—Mr. Royal, I understand . . . you do have the direction of both the Red and Blue network programs?

MR. ROYAL—That is correct.

CHAIRMAN McNINCH—And I understand you to say that they are actually competitive?

MR. ROYAL—We try to make them that way; yes.

CHAIRMAN McNINCH—You try to make them that way?

MR. ROYAL—Yes sir.

CHAIRMAN McNINCH—Is that at all a difficult performance on your part, to compete with yourself in that sense?

MR. ROYAL—I don't think that I am competing with myself, Mr. Chairman . . .

CHAIRMAN McNINCH—Does the fact of common ownership and common direction by your one mind complicate the difficulties of having the Red and the Blue networks compete with each other?

MR. ROYAL—I think I made myself pretty definite, Mr. Chairman, that it was not one mind, that one mind could not do it, that it was an organization, a large organization, and that a large organization, in my opinion, I think finds it practical and successful to compete with the Red and Blue networks.

CHAIRMAN MCNINCH—But as to all matters that are left open to decision what mind determines as to programs?

MR. ROYAL—Mine.

CHAIRMAN MCNINCH—Then that is what I thought. Now, does the fact of common ownership of the two networks by the same company, which employs you, enable you to have a fair, square chance to balance competitively, not coöperatively, the programs between those two?

MR. ROYAL—Yes.

MR. DEMPSEY—Mr. Royal, in your organization do you make any distinction as to the duties, particularly in your New York organization, between the people who work on Blue and the people who work on Red network programs?

MR. ROYAL—No.

MR. DEMPSEY—And in the field, except so far as your staff on the particular stations are concerned, do you make any such distinction?

MR. ROYAL—No.

CHAIRMAN MCNINCH—And you think you do perform that psychological and mental feat successfully?

MR. ROYAL—Definitely.¹¹

At another point during the hearings, it was admitted that the only way the Red and the Blue could compete was for listener attention. The claim was made that N.B.C. entered into competition with its own advertisers to make this possible. The following testimony is significant in this connection.

MR. DEMPSEY—You said, I think, that you tried to have one network compete with the other?

MR. ROYAL—That is right.

MR. DEMPSEY—In what ways can they compete with each other except in giving programs? Compete for listener attention, is that it?

MR. ROYAL—That is it. . . .

MR. DEMPSEY—You are trying to take the listeners away with your Blue network programs which may be sustaining in character from the advertiser who is buying time on the Red network at the same time?

MR. ROYAL—That is correct.

MR. DEMPSEY—And vice versa?

MR. ROYAL—That is correct.

MR. DEMPSEY—And you schedule the best sustaining programs you can get in order to take listeners away from the commercial programs?

MR. ROYAL—That is correct.¹²

¹¹ F.C.C. Hearings re Docket 5060, Transcript, pp. 644-47.

¹² *Ibid.*, p. 618.

The finances of the Red and Blue networks were not segregated. All revenue from both went into a common pool and all expenses of both were paid out of this common pool. Mr. Mark Woods, vice-president and treasurer of N.B.C., agreed there was no financial competition between the two chains. In addition, Mr. Witmer, vice-president in charge of sales, as well as Mr. Royal, testified that all of the N.B.C. sales department, with the exception of a few special salesmen who were exclusively attempting to increase the business on the Blue, sold time to advertisers on either network. Hence, there was not a group trying to sell time on the Red in competition with another group trying to sell time on the Blue.

MR. DEMPSEY—Mr. Woods, is it your idea of competition that two companies can be competing with each other when their income cannot be segregated, their expenses cannot be segregated, and their income goes into a common pot, and expenses are all paid out of that common pot? In the ordinary sense of the word are they competitive?

MR. WOODS—I think they can be. The program people who are competing in building these programs know nothing whatsoever of what might happen to the revenue. . . . It seems to me it does not make so much difference where your money comes from as long as you have some money to work with. Then if you provide certain people, who have ideas, who have ability to produce programs with that money, and say, "you are now competing with someone else," they will go out to do the very best job that they can and build the best programs that they can, without thought of where the money comes from, because they never know, or the majority of them never know.

MR. DEMPSEY—If you are in business and you have a competitor, and you are using your income to finance the competition and you are getting your competitor's income to finance your competition with him, and your expenses are all paid out of the same funds, and your income all goes to the same place, would you ordinarily define yourself as in competition with that person . . . ?

MR. WOODS—In the financial sense there is no competition, because the money goes into one pocket. In the economic sense, I would say that there was very definitely competition, because the people that are providing the sales don't know where their pay comes from. . . .

MR. DEMPSEY—As I understand it, Mr. Witmer says that all of the sales department with the possible exception of a special Blue group, will sell time on either network?

MR. WOODS—That is correct.

MR. DEMPSEY—So that there are no Red network salesmen in the sense

that they only are allowed or authorized or employed to sell time on the Red network?

MR. WOODS—I think that is right.¹³

Perhaps because he felt that the criticisms of the above situation were valid or because he hoped to forestall regulatory action by the Commission, Mr. Trammell, when he became president of the National Broadcasting Company in the summer of 1940, separated the activities of the Red and Blue networks. The separation of the Red and the Blue as carried out under Mr. Trammell's direction, however, did not satisfy the Federal Communications Commission. The final *Report on Chain Broadcasting* contained Regulation 3.107, which was to become effective in ninety days and which declared:

No license shall be issued to a standard broadcast station affiliated with a network organization which maintains more than one network: *Provided*, That this regulation shall not be applicable if such networks are not operated simultaneously, or if there is no substantial overlap in the territory served by the group of stations comprising each such network.

This regulation in effect required N.B.C. to sell one of its networks within ninety days. Since the Blue was the least profitable, it was the obvious candidate for disposal. The Federal Communications Commission in its Report defended this regulation as follows:

It seems clear that the Blue has had the effect of acting as a buffer to protect the profitable Red against competition. Available radio facilities are limited. By tying up two of the best facilities in lucrative markets—through the ownership of stations, or through long-term contracts containing exclusivity and optional-time provisions—N.B.C. has utilized the Blue to forestall competition with the Red. We have already noted that Mutual is excluded from, or only lamely admitted to, many important markets. . . . We are impelled to conclude that it is not in the public interest for a station licensee to enter into a contract with a network organization which maintains more than one network. With two out of the four major networks managed by one organization, a station which affiliates with that organization thereby contributes to the continuation of the present non-competitive situation in the network-station market. The re-establishment of fair competition in this

¹³ F.C.C. Hearings re Docket 5060, Transcript, pp. 2564-69.

market is contingent upon ending the abuse inherent in dual network operation; our regulation is a necessary and proper means of re-establishing that fair competition.¹⁴

Commissioners Case and Craven in their Minority Report agreed in principle with the majority. They recognized the desirability of segregating the Red and the Blue networks and stated in this connection, "There is strong presumption that four competing national networks independently operated might afford opportunity for improved service, although there is nothing in the record to establish that stations affiliated with the company operating two networks have not rendered a good public service. It is, therefore, recommended that informal discussions begin forthwith between the Commission and the company operating two networks with a view of obtaining a voluntary segregation."

The opinion was widely expressed that N.B.C. would experience no trouble in finding a purchaser for the Blue. Senator Tobey declared, "If the rumors are true, and we have some evidence of their authenticity, there are plenty of purse strings loose to pocketbooks that are ready to grab up that network on almost a minute's notice."¹⁵

Chairman Fly was even more optimistic. He did not think there would be any difficulty in disposing of the Blue network. "I do not think for a moment that there will be any difficulty. It will not be wiped out. . . . I cannot imagine that they would be guilty of such business indiscretion. We are not going to tell them how to do it, but it certainly is the view of the Commission that they ought to be able to sell that network, lock, stock, and barrel, with all of the equipment and all of the personnel, existing contracts, affiliations, program sources, and everything else that would go with it, and the public that is receiving the program service from that network should not feel on the following day the slightest impact."¹⁶

Notice that Chairman Fly declared in the above statement that the Blue network could be sold with all of the "existing contracts." That would appear to be an impossibility, however, because the other regulations make "existing contracts" illegal. Furthermore,

¹⁴ F.C.C., *Report on Chain Broadcasting*, pp. 71-72.

¹⁵ Senate Interstate Commerce Committee Hearings, Transcript, p. 59.

¹⁶ *Ibid.*, p. 96.

the question as to whether N.B.C. would have the authority to "barter with the rights" of the independent stations affiliated with the Blue was pressed by Mr. Trammell.

MR. TRAMMELL—I do not know whether we could transfer those affiliation contracts to a new owner. Mr. Fly says we could.

SENATOR WHITE—. . . You would have to look into each contract, I suppose, to see whether or not, by the terms of the contract itself, the rights given to you by it are assignable. I do not know whether they are or not.

MR. TRAMMELL—. . . I would judge that they are more or less personal in their nature and I question that they are assignable.

SENATOR WHITE—If they are personal and not assignable all you can sell would be the stations you own.

MR. TRAMMELL—One station and a half is all we own. Yet we have been building up the business under certain concepts and certain interpretations of the Act, and we are given ninety days to dispose of a business that has been rendering service. . . . We do not know what we have to sell and we do not know how we can sell it, under these new regulations. . . .

SENATOR WHITE—. . . If you are obligated to dispose of your entire network, which includes plant, contracts, and everything of the sort, if you are required, under the Commission's order to do that and then because of the terms of the contract you have not anything that you can dispose of, then whatever value there may be to you in these contracts is just wiped out. Is not that so?

MR. TRAMMELL—Exactly.¹⁷

Reflecting the difficulties of a forced sale and stating that it expected a separation to occur without a "legal mandate"—because separate ownership of the two chains was so generally recognized to be desirable—the Federal Communications Commission in its Supplemental Report issued in October, 1941, indefinitely suspended the effective date of Regulation 3.107.

As we have seen, the Radio Corporation of America was quick to take the hint and the Blue Network Company, Inc., was organized with the sanction of the F.C.C. in January, 1942, thus formally, at least, segregating the operations of the Red and the Blue. To reiterate, however, this solution is regarded as only temporary by the Commission and has its approval only for such time as is re-

¹⁷ Senate Interstate Commerce Committee Hearings, Transcript, p. 487.

quired to find an outside purchaser to assume operation. In the writer's opinion the record indicates the definite desirability from the standpoint of competition—granted a fair price can be secured and a feasible and orderly plan of transfer worked out—of the eventual sale of the Blue network to an entirely independent owner.

Engineering Report of the Federal Communications Commission

The *Report on Chain Broadcasting*, resulting from the investigation and issued in May, 1941, temporarily climaxed the exercise of the broad powers allegedly granted to the F.C.C. by the Communications Act in the social and economic domains, as contrasted to the engineering field previously regarded as demarcating the proper scope of the Commission's jurisdiction. Such presumed latitude of authority, however, was intimated in the *Report on Social and Economic Data on Broadcasting* rendered by the Engineering Department of the F.C.C. on July 1, 1937.

This Engineering Report was based on the evidence produced at informal hearings on the subject of "Allocation Improvements in the Standard Broadcast Band 550-1600 KC." At the hearings, which commenced on October 5, 1936, a considerable amount of data bearing on social and economic factors in radio broadcasting were introduced in response to the notice of the hearings stating that "The broadcast division of the Commission desires to obtain the most complete information available with respect to this broad subject of allocation, not only in its engineering but also in its corollary social and economic phases . . ." ¹

Despite the fact that the preliminary report issued on January 11, 1937, declared that recommendations covering social and economic factors were not within the proper province of the Engineering Department, the final Report made these significant statements:

The Engineering Department has not attempted to delve into all the problematical policy discussions involving the application of radio broadcasting to the service of the public. We have felt that it was unnecessary for us at this late date to discuss whether broadcasting is a service to the people. We have accepted broadcasting as one of the greatest agencies of mass communication yet devised by the genius of man. We have felt that broadcasting has demonstrated commendable service to the public with potentiality for still greater service. Whether this potentiality is developed depends, in our opinion, upon the wisdom and foresight of the governmental regulatory authority and the actions of those who are regulated. . . .

The evidence at the October hearing led to the inescapable conclu-

¹ F.C.C. Engineering Report, Docket 4063, p. 1.

sion that since, under the law, the regulatory functions of the Federal Government are aimed at the maximum of service to the greatest number of people in accord with their interest, convenience, and necessity, the social and economic aspects of broadcasting must be considered concurrently with its engineering phases.²

Here is the intimation of the investigation to come, for the *Report on Chain Broadcasting* and the regulations contained therein represent an attempt by the Federal Communications Commission to solve the social and economic problems of network broadcasting. Whereas previously the Commission had largely restricted itself to engineering matters in the exercise of its regulatory functions—to being the allocation policeman of the air waves—it embarked, properly or otherwise, on an aggressive reform program. The two major network companies claim not only that the Commission in following such a line of action exceeded its authority, but also that the regulations themselves are arbitrary and capricious and constitute an illegal invasion of the domain of private business.

The F.C.C. Hearings on Chain Broadcasting

On March 18, 1938, the Federal Communications Commission adopted Order No. 37 which stated in part that

Whereas under the provisions of Section 303 of the Communications Act of 1934, as amended, "The Commission, from time to time, as public convenience, interest, or necessity requires, shall—(1) have authority to make special regulations applicable to radio stations engaged in chain broadcasting"; and *Whereas* the Commission has not at this time sufficient information in fact upon which to base regulations regarding contractual relationships between chain companies and network stations . . . now therefore It Is *Ordered* That the Federal Communications Commission undertake an immediate investigation to determine what special regulations applicable to radio stations engaged in chain or other broadcasting are required in the public interest, convenience, or necessity. . . .

The Order further required that hearings be held at which evidence should be presented by the network organizations and other interested parties with respect to certain subjects, such as the contractual rights and obligations of stations engaged in chain broad-

² *Ibid.*, pp. 2 and 3.

casting; the extent of the control of programs, advertising contracts, and other matters exercised and practiced by stations engaged in chain broadcasting; contract provisions in network agreements providing for exclusive affiliation; the number and location of stations licensed to or affiliated with networks; competitive practices of stations engaged in chain broadcasting; the effect of chain broadcasting upon stations not affiliated with or licensed to any chain or network organization; practices or agreements in restraint of trade or furtherance of monopoly in connection with chain broadcasting; and the extent and effects of concentration of control of stations by means of chain or network contracts.

The hearings were open to the public and all interested persons and organizations were permitted to appear and present evidence. The three national networks—N.B.C., C.B.S., and M.B.S.—regional networks, station licensees, and electrical transcription companies were directed by the Commission to testify and to produce evidence with respect to twenty specific aspects of the broadcasting industry.

A committee composed of Commissioners Sykes, Brown, Walker and Chairman McNinch was authorized on April 6, 1938, to supervise and direct the investigation and to hold hearings in connection therewith. Originally scheduled for October 24, 1938, the hearings did not actually commence until November 14, 1938, and continued through May 19, 1939. Ninety-six witnesses were heard on 73 days during the six-month period. The evidence presented covers 8,713 pages of transcript, and 707 exhibits were introduced.

The original impetus for the investigation did not come from either the Federal Communications Commission or the industry, but from Congress. Senator Wheeler, chairman of the Senate Interstate Commerce Committee, declared that at the time "Both the industry and the Commission opposed an investigation."³

In 1937 three resolutions were introduced in the House and one in the Senate calling for an investigation of monopolistic control over radio broadcasting. House Resolution 61, introduced by Representative Connery on January 13, 1937, read in part, "There is reason to believe that contrary to the intent and the spirit, as well as the language of laws in force, a monopoly exists in radio

³ Senate Interstate Commerce Committee Hearings, Transcript, p. 11.

broadcasting, which radio broadcasting monopoly is believed to be profiting illegally at the expense and to the detriment of the people through the monopolistic control and operation of all clear-channel and other highly desirable radio broadcasting stations."

Senator White of Maine stated in a speech before the upper House on March 17, 1937: "The Congress at the time the 1927 Act was passed while perhaps not fully appreciating the growth of the chain system, did recognize the possibilities of the situation and wrote into this early Act the authority to make special regulations applicable to radio stations engaged in chain broadcasting. This provision was contained in the 1934 Act. The regulating body has seemed indifferent to the problem or without definite views concerning it." And later in that year Senate Resolution 149, introduced by Senator White on July 6, 1937, called for "A thorough and complete investigation of the broadcasting industry in the United States and of broadcasting, and the acts, rules, regulations, and policies of the Federal Communications Commission with respect to broadcasting," and charged that "With the approval of the Commission there has come about a monopolistic concentration of ownership or control of stations in the chain companies of the United States."

Chairman Fly declared before the Senate Interstate Commerce Committee in June of 1941: "It was in the midst of this Congressional atmosphere and in the midst of widespread concern in many quarters over the growing monopoly and concentration of control in radio broadcasting that the Commission on March 18, 1938, by Order No. 37, authorized an investigation . . . [which] originated up here and in effect was delegated to the Commission. . . . I want to say that, although I was not with the Commission at the time, that the Commission itself did not give birth to this investigation. . . . The Congress afforded all the motivating forces for the investigation. I say with some degree of reticence that that was done only under the compulsion of both Houses of Congress . . ." ⁴

Chairman McNinch in opening the hearings on November 14, 1938, asserted that "Cross examination of witnesses generally will

⁴ Transcript, p. 15.

be by the Committee and by its staff . . . [the] Committee will not permit this hearing to be used as a sounding board for any person or organization. We are after facts and intend to get them. . . . On the basis of the facts developed in the course of the investigation, appropriate rules and regulations dealing with such matters will be promulgated by the Commission, and if such facts demonstrate the necessity therefor, legislative recommendations made to the Congress by the Commission.”⁵

The F.C.C. Report on Chain Broadcasting

Having concluded the hearings on May 19, 1939, the Federal Communications Commission, after more than a year of study of the record, issued its preliminary report on June 12, 1940. Thereafter briefs were filed by the national networks and oral arguments were presented before the Commission on December 2 and 3. Five months elapsed before the issuance of the final majority report on May 2, 1941, in which five of the commissioners concurred. At the same time Commissioners Craven and Case made public their minority report, opposing the views of the majority. Eight regulations, which were to become effective in ninety days, were adopted as part of the majority report.

The Commission postponed the effective date of the regulations with respect to existing contracts and network station licenses successively on June 13, July 27, and August 28, 1941. The Mutual Broadcasting System on August 14, 1941, petitioned the Commission to amend two of the regulations. Briefs were filed, oral arguments heard, and as a result the Commission on September 12, 1941, issued its *Supplemental Report on Chain Broadcasting* with Commissioners Case and Craven again dissenting. In this Supplemental Report, the Commission amended three of its original regulations, but declared that they should become effective immediately,

Provided, That with respect to existing contracts, arrangements, or understandings, or network organization station licenses, the effective date shall be deferred until November 15, 1941; *Provided Further*, That the effective date of Regulation 3.106 [dealing with network ownership

⁵ F.C.C. Hearings re Docket 5060, Transcript, pp. 13 and 14.

of stations] with respect to any station may be extended from time to time in order to permit the orderly disposition of properties; and *Provided Further*, That the effective date of Regulation 3.107 [dealing with two networks being operated by the same organization] shall be suspended indefinitely and any further order of the Commission placing said Regulation 3.107 in effect shall provide for not less than six months' notice and for further extension of the effective date from time to time in order to permit the orderly disposition of properties.⁶

With respect to the immediate enforcement of the new regulations, the F.C.C. on October 31, 1941, issued a Minute in an attempt to quiet the industry's accusations that the Commission's procedure in carrying out the regulations was arbitrary and irreparably damaging to the network business of N.B.C. and C.B.S. This Minute stated that if a station wished to contest the validity of the new rules, its license would be set for hearing and until a final determination of the issues raised at such hearing the Commission would continue the station's license. Furthermore, if the validity of the regulations is sustained by the courts, the Commission would grant a renewal to the licensee without prejudice, the only stipulation being that the station conform to the new rules.

The Sanders Brothers Case

The Sanders case⁷ was decided by the Supreme Court on March 25, 1940, upholding the concept that radio broadcasting constitutes a domain of free competition and that therefore the principles of the "common carrier" are not applicable to it. The opinion also reinforces the doctrine that the granting of a license carries no property rights in the frequency assigned and gives definite enunciation to the dictum that economic injury to a competitor is not proper grounds for refusing a license to an applicant.

Briefly, the facts of the case were these. Station WKBB at East Dubuque, Illinois, had been operated for some years by the Sanders brothers. On May 14, 1936, they applied for a permit from the Federal Communications Commission to move the transmitter and studios to Dubuque, Iowa, which was directly across the Mississippi

⁶ F.C.C. Supplemental Report, September 12, 1941.

⁷ Federal Communications Commission v. Sanders Brothers Radio Station, 309 U.S., 470 (1940).

River from East Dubuque, and to install their station there. Previous to the filing of this application, the *Telegraph Herald*, a newspaper published in Dubuque, had sought permission from the Commission on January 20, 1936, to erect a broadcasting station in that city.

Claiming that there was not sufficient advertising revenue or talent in Dubuque to support two stations, that Dubuque was already being rendered adequate service by station WKBB, and that the granting of the *Telegraph Herald* application would not serve the public interest, convenience, and necessity, the Sanders brothers on August 18, 1936, intervened in the *Telegraph Herald* proceeding. Both parties presented evidence before the F.C.C. to support their respective applications. The Sanders brothers showed that station WKBB had been operated at a loss and that the station proposed by the *Telegraph Herald* would serve the same area and would have to rely on the same group of advertisers.

As a result, the examiner recommended that the application of the *Telegraph Herald* be denied and that of the Sanders brothers be granted. However, after oral arguments, each application was granted as being in the public interest, convenience, and necessity. The broadcasting division of the F.C.C. in taking this action pointed out that both applicants were legally, technically, and financially qualified to undertake the proposed construction and operation. Furthermore, it was stressed that there would be no electrical interference between the two stations and that Dubuque and the surrounding territory needed the services of both.

The Sanders brothers appealed to the Court of Appeals for the District of Columbia. Pointing out in its decision that one of the factors which the Federal Communications Commission should have taken into account in granting both applications was the alleged economic injury to WKBB by the establishment of another station in Dubuque, the Court of Appeals, in the absence of such consideration, set aside as arbitrary and capricious the permit which had been granted to the *Telegraph Herald*.

The case was then appealed to the Supreme Court. The F.C.C. argued that economic injury to a competitor is not proper grounds for refusing a broadcasting license under the Communications Act.

With Mr. Justice Roberts delivering the opinion, the Supreme Court on March 25, 1940, handed down its decision, reversing the judgment of the Court of Appeals and upholding the contentions of the government.

The more significant excerpts from this decision which deal with economic injury as a basis for denying a license and the question of property rights involved in the broadcasting franchise are as follows:

We hold that resulting economic injury to a rival is not in and of itself, and apart from considerations of public convenience, interest, or necessity, an element the petitioner must weigh and as to which it must make findings in passing on an application for a broadcasting license. If such economic loss were a valid reason for refusing a license this would mean that the Commission's function is to grant a monopoly in the field of broadcasting, a result which the Act itself expressly negatives. . . .

The policy of the Act is clear that no person is to have anything in the nature of a property right as a result of the granting of a license.

The Sanders case decision, however, is most noteworthy because of its discussion of the role of competition in the broadcasting field. The government in its controversy with the networks relies on that part of the language which stresses the competitive nature of broadcasting, whereas the industry goes to those portions of the opinion which emphasize that the Communications Act gives no supervisory control over the businesses of the chain organizations. The following are the more important portions of the opinion in these two connections:

In contradiction to communication by telephone and telegraph, which the Communications Act recognizes as a common carrier activity and regulates accordingly . . . the Act recognizes that broadcasters are not common carriers and are not to be dealt with as such. *Thus the Act recognizes that the field of broadcasting is one of free competition.* The sections dealing with broadcasting demonstrate that Congress has not, in its regulatory scheme, abandoned the principle of free competition as it has done in the case of railroads in respect of which regulation involves the operation of wasteful practices due to competition, the regulation of rates and charges and other measures which are unnecessary if free competition is to be permitted. . . .

Plainly it is not the purpose of the Act to protect a licensee against competition but to protect the public. Congress intended to leave com-

petition and the business of broadcasting where it found it, to permit a licensee who was not interfering electrically with other broadcasters to survive or succumb according to his ability to make his programs attractive to the public. . . .

But the Act does not essay to regulate the business of the licensee. The Commission is given no supervisory control of the programs, of business management or of policy. In short, the broadcasting field is open to anyone, provided there be an available frequency over which he can broadcast without interference to others, if he shows his competency, the adequacy of his equipment, and financial ability to make good use of the assigned channel. [Italics added.]

The White Resolution

On May 13, 1941, Senator White of Maine introduced in the Upper House the White Resolution, which provided for a comprehensive study by the Senate Interstate Commerce Committee of the new regulations promulgated by the Federal Communications Commission; "of the probable effects of these upon the broadcast system of the United States and in particular upon the network organizations and licensees affiliated with said organizations"; of whether the regulations confer upon the Commission supervisory control of programs, business management, or policies of network organizations and broadcast licensees; of whether the regulations constitute a threat to the freedom of speech by radio in the United States or will contribute to government ownership and operation of broadcast stations; of whether the new regulations are an attempt by the Commission to define monopolistic practices in broadcasting and on the basis of such definition to find a licensee guilty thereof, resulting in a denial of a license to an applicant because of such finding; of any problem of radio broadcasting which is raised or is affected by said regulations; and finally of the principles and policies which should be declared and made effective in legislation for the regulation and control of the radio industry. The Resolution requested the F.C.C. to postpone the effective date of the regulations until sixty days after the Committee had reported to the Senate.

The National Broadcasting Company and the Columbia Broadcasting System, along with the National Association of Broadcasters, which was holding its convention in May of 1941, strenuously sup-

ported the White Resolution. The Mutual Broadcasting System and the Federal Communications Commission just as strenuously opposed it. The Senate Interstate Commerce Committee, under the chairmanship of Senator Burton K. Wheeler, held hearings on the Resolution from June 2 through June 20, 1941. Nearly 400,000 words of testimony were given. The regulations and their effects, the Commission's power to promulgate and enforce them, and the basic issues in the controversy were discussed and argued from all points of view. The war situation and the fact that far more urgent legislation was pressing for attention worked against the passage of the Resolution from the beginning. Furthermore Chairman Wheeler took the position that Congress could not review all acts of executive agencies and pointed out the interminable delay that would be involved in such a procedure. Consequently, on June 20 the Resolution died in Committee when Senator Carl McFarland of Arizona, temporarily in the chairman's seat, announced a recess. That recess is still in progress as far as the White Resolution is concerned.

Other Highlights

Reference has been made to the injunction suit brought by N.B.C. and C.B.S. against the F.C.C. to enjoin the Commission from enforcing the new rules. The suit was brought in the District Court of the United States for the Southern District of New York in November, 1941. The Mutual Broadcasting System was a party to the proceedings, having intervened in December on the side of the Commission. Briefs were filed and on January 12 and 13, 1942, oral arguments were heard by a statutory court comprised of Judge Learned Hand of the Circuit Court of Appeals, and Federal District Judges John Bright and Henry W. Goddard.

A two-to-one decision was rendered by the court on February 20, 1942.⁸ Characterizing the new regulations as being in effect "no more than the declaration of the conditions upon which the Commission will in the future issue licenses" to radio stations and hence beyond the power of the court to rule on, the majority opinion, written by Judge Hand and concurred in by Judge Goddard, denied

⁸ 44 Fed. Supp. 688.

the temporary injunction on jurisdictional grounds. However, in the course of their remarks, the majority made this statement:

They [the networks] allege—and there seems to be no question about it—that their interests will be adversely affected by the enforcement of the regulations.

Judge Bright in dissenting agreed with the majority that damage would be done through enforcement and declared further that the court had jurisdiction to enjoin.

The particular agreements prohibited are presently contained in most of the affiliation contracts of the two complaining networks. They state those provisions are essential to the proper and successful conduct of their business, and in deciding the question of jurisdiction, I believe we must assume this to be true. It is also shown by them, without contradiction, that between the time the regulations were promulgated and the commencements of these actions, not less than 24 broadcasting stations having affiliation contracts with N.B.C. have cancelled their contracts as a result of the order in question, and not less than 24 others having such contracts, have served notice that they do not intend to abide by the terms of such contracts unless they are conformed to the Commission's order. . . . There is thus a present injury . . .

There is no question in my mind that the order sought to be refused is one which . . . we have jurisdiction to enjoin . . . Must these networks await the idle ceremony of a denial of a license before any relief can be sought when it is perfectly obvious that no relief will be given? And what relief could they get if they did wait? The networks are not to be licensed, only the individual stations who make application. But it is said the networks could intervene and be heard. All that might be said or urged in their behalf has doubtless been communicated to the Commission in the three years between March 18, 1938, and May 2, 1941, when the investigation was going on. Must they march up the hill and down again, with the probability of being met with the statement that the Commission has given the matter due consideration and has done what it intends to abide by, as it has definitely said in its report?

An appeal to the Supreme Court from this decision was immediately taken by N.B.C. and C.B.S. The two companies also sought a stay from the Southern District Court of New York and this was granted on March 2, 1942, by Judges Hand, Goddard, and Bright. In a supplemental opinion the majority explained its reasons for granting the stay in the following language:

In deciding whether a stay should be granted pending an appeal, we must assume that we may be mistaken, certainly a not unreasonable assumption in view of Judge Bright's dissent. If so, the plaintiffs will not be adequately protected. . . . Considering on the one hand that if the regulations are enforced the networks will be obliged to revise their whole plan of operations to their great disadvantage, and on the other that the Commission itself gave no evidence before these actions were commenced that the proposed changes were of such immediately pressing importance that a further delay of two months will be a serious injury to the public, it seems to us that we should use our discretion in the plaintiffs' favor to stay enforcement of the regulations until they can argue their appeal. For these reasons we will grant such a stay until the argument of the appeal before the Supreme Court or the first day of May, 1942, whichever comes first.

On March 16 the Supreme Court agreed to review the decision of the Lower Court. Oral arguments were presented in the early part of May. By a five-to-three decision, with Justice Black not participating, the Supreme Court on June 1, 1942, ruled that N.B.C. and C.B.S. were entitled to a judicial review of the new regulations.⁹ Justice Stone in presenting the majority opinion declared that all "the elements prerequisite to judicial review are present" and that "the threat of irreparable injury to the business" of the broadcasting chains had been established. On the other hand, Justice Frankfurter, who wrote the dissenting opinion, asserted that Congress did not authorize resort to Federal courts "merely because someone feels aggrieved, however deeply" by an F.C.C. action and asserted that "even irreparable loss" did not justify the review.

The National Broadcasting Company and the Columbia Broadcasting System then sought a permanent injunction, thereby testing the authority of the Federal Communications Commission to promulgate and enforce the regulations.¹⁰ In this connection, Chairman Fly had no doubt that the Supreme Court would uphold the power of the Commission. When asked by Senator Johnson of Colorado at the Senate hearings whether he believed the Commission had the authority to approve or disapprove affiliation contracts, Mr. Fly replied, "I would say yes; I think we have ample power to do just

⁹ 62 Sup. Ct. 1214; 86 L. Ed. 1088; 316 U.S. Sup. Ct. 407, 447.

¹⁰ On November 17, 1942, the District Court of the United States for the Southern District of New York dismissed the complaints of N.B.C. and C.B.S.

this. I have no doubt, gentlemen, that the Supreme Court ultimately will uphold these regulations. Frankly, I have no substantial doubt of it."¹¹

The injunction suit of N.B.C. and C.B.S. was not the only litigation in progress in the field of network broadcasting in 1942. The Department of Justice on December 31, 1941, commenced anti-trust suits against these two companies, charging that they "have been engaged . . . in a wrongful and unlawful combination and conspiracy in restraint of . . . interstate commerce and in a wrongful and unlawful combination and conspiracy to attempt to monopolize the . . . interstate commerce in radio broadcasting in violation of Section 1 and 2" of the Sherman Act. On January 10, 1942, the Mutual Broadcasting System filed suit against the Radio Corporation of America and the National Broadcasting Company for \$10,275,000, alleging that these two companies are engaged in "an unlawful combination and conspiracy among themselves and with third persons to injure plaintiffs by hindering and restricting Mutual freely and fairly to compete in the transmission in interstate commerce of nation-wide network programs."

¹¹ Transcript, p. 90.

✕ Chapter 7 ✕

RADIO CENSORSHIP AND FREE SPEECH

FREEDOM of expression is essential to the preservation of democratic institutions. Any acceptable solution of the broadcasting problem, therefore, must protect free speech over the air to whatever extent is possible within the medium's peculiar limitations. Furthermore, the antithesis of free speech—censorship—must be largely self-imposed if our liberties are to be preserved.

Censorship

The power of censorship over radio programs can be lodged in three places—the government, the industry (including labor, stockholders, and advertisers), and the general public. Our present system unavoidably entails censorship by all three, although in the last analysis the listening audience, as it should, determines what is broadcast. This democratic control of program content is strongly reinforced by the advertiser's main desire to attempt to please all people and if possible to offend none.

The Communications Act specifically states in Section 326 that the Federal Communications Commission is to have no power of censorship. Furthermore, any claim to such power has been publicly renounced on many occasions by the Commission. "I am unalterably opposed to Government censorship of broadcasting in any manner, shape or form. The Government should neither directly nor indirectly dictate what shall or shall not be said or who shall or who shall not speak over the air," asserted former Chairman McNinch in a 1939 press release. In commenting on this declaration Commissioner Thompson said, "I am in hearty sympathy with the Chairman's statement, and from my association here I really believe the Chairman speaks for the other members of the Commission."¹ And the present chairman, Mr. Fly, testified at the

¹ F.C.C. Hearings re Docket 5060, Transcript, p. 8573.

✕ Chapter 15 ✕

ARE THE REGULATIONS IN THE
PUBLIC INTEREST?

IT IS EVIDENT from what has preceded that the writer believes the regulations as a whole fail to meet the network broadcasting problem in a realistic and far-sighted manner consistent with the public interest. Before their principal shortcomings are summarized, however, certain background circumstances out of which the new rules emerged should be noted.

First, the Federal Communications Commission can be fairly charged with political bias and favoritism in the past. The following statements made by Senator Wheeler at the Senate Interstate Commerce Committee hearings went unchallenged:

There has been too much political—and other—pressure brought to bear upon the Commission in times past. If someone with “influence” appeared, no hearing might be held. They would grant the transfer of a station license, or grant this or that without any hearing. But if someone else appeared, a long hearing might be required, oftentimes making it impossible for a small station, because of the expense involved, to secure its rights.¹

The trouble has been that first a decision would go one way and then another on the same set of facts.²

I felt at the time that the Commission should have been investigated because it was being dominated by political and other considerations, wholly foreign to good administration. I thought there had been a good many scandals in connection with the Commission which should be brought to light. But those things have passed now, and we are not interested in old scandals and skeletons in the closet.³

It is difficult for the Commission to escape this inheritance, and even though an entirely new leaf has been turned such a background is not reassuring.

¹ Transcript, p. 179.

² *Ibid.*, p. 180.

³ *Ibid.*, p. 237.

In the second place, the regulations were discussed and weighed in an atmosphere of acrimony and intense partisanship—an atmosphere alien to an intelligent and calmly deliberated plan. The following colloquy between Chairman Wheeler and Mr. Fly is significant in this connection:

CHAIRMAN WHEELER—One unfortunate thing is evident in this whole controversy. There has been too much heat on the part of the broadcasters and probably too much heat on the part of the Commission. After all, we are trying to work out something which is in the interest of the public. I regard it as a grave mistake . . . for the industry and for the networks to make some of the statements and charges that they have made. On the other hand, I think the Commission makes a mistake when it loses its temper, perhaps, and makes too broad statements.

MR. FLY—By slugging with them?

CHAIRMAN WHEELER—Yes.

MR. FLY—I think you are right.

CHAIRMAN WHEELER—Instead of having a slugging match we ought to have the facts and we ought to have sane, cool judgment. There are vital problems of national policy involved in this matter.⁴

And finally, according to the testimony of Commissioner Craven, the regulations were adopted in haste, without adequate consideration, and in the absence of full understanding of their import and intent. “The rules were received by the various Commissioners—the rules themselves, not the Report—about eighteen hours before the meeting in which the final votes were taken. . . . There was no real discussion of the rules by the Commissioners. . . . I will wager that the majority itself does not know what the rules mean. Furthermore, I know that one member of the majority believes one of the rules [that dealing with option time] to be so impractical that it makes almost impossible the operation of chain broadcasting on a stable basis.”⁵

The past history of the Commission, the atmosphere in which the debate was conducted, and the procedure of adoption, therefore, militate against the new regulations constituting an enlightened and realistic solution to the network broadcasting problem and against their promoting a more efficient and better quality radio service for the people of this country. Furthermore, in the

⁴ *Ibid.*, p. 99.

⁵ *Ibid.*, pp. 268–69.

writer's judgment, the rules taken as a whole fail to meet these criteria for the following reasons:

(1) *The regulations, by outlawing exclusive option time as against other networks and by drastically curbing network ownership of key outlets, disregard the practical requirement that a network organization under our present system must be permitted to secure with as much certainty as possible the willingness of the individual sovereign stations to broadcast the same program at the same time.* The regulations in these respects, however, are consistent with the record which indicates that the network concept for commercial broadcasting has not been accepted by the majority members of the Commission, although their protestations are to the contrary. Mr. Fly declared at the Senate hearings, "Of course, I believe that the networks have been rendering invaluable national program service and will continue to do so."⁶ At another point he stated, "I think it ought to be a part of the Commission's job to see that they [networks] do not go out of business, because no one could contemplate with equanimity a substantial impairment of the nation-wide network service."⁷

And the *Report on Chain Broadcasting* contains similar expressions of acceptance. "Network broadcasting has been an important factor in the development of the broadcasting industry. Many improvements which have taken place in engineering, in program quality, and in the broadcasting of special events of national interest to ever-increasing audiences have been due, in considerable measure, to the advertising revenue brought to the radio broadcasting industry by the network method of broadcasting to nation-wide audiences. . . . We have exercised our jurisdiction upon the premise, generally accepted by the public and the industry, that the network method of program distribution is in the public interest. We subscribe to the view that network broadcasting is an integral and necessary part of radio."⁸

But the Commission's actions belie their words. The individual station licensing policy and the philosophy of individual station program sovereignty upon which it rests, is a direct contradiction of the essential nature of chain broadcasting. Furthermore, the

⁶ Senate Interstate Commerce Committee Hearings, Transcript, p. 87.

⁷ *Ibid.*, p. 95.

⁸ Pages 4 and 77.

basic objective of the Commission of seeking the maximum of competition between the network organization and its own outlets, and the rules covering network ownership of stations and exclusive option time are destructive of chain broadcasting.

(2) *The regulations make no attempt to resolve this fundamental conflict in our present system between the essential nature of a network, which necessitates the simultaneous broadcasting of the same program by a group of outlets connected in a chain, and the philosophy of individual station program sovereignty, which necessitates the right of rejection and the placing of all stations in a position to broadcast different programs at the same time.*

To Chairman Fly the regulations are entirely couched in terms of freedom. "The network is free; the radio station is free." In the writer's opinion this is fantastic. If chain broadcasting is to be preserved on any kind of a stable and efficient basis it is a sheer impossibility to have the network organization entirely independent and the stations making up the network entirely independent.

This conflict between the individual station concept of broadcasting (and the program sovereignty that goes with it) and the network concept of broadcasting is well illustrated again by the following testimony at the Senate Interstate Commerce Committee hearings.

SENATOR TUNNEL—You assume, of course, that under your regulations the broadcasting station is a free agent?

MR. FLY—The Supreme Court has declared that it is, sir.

SENATOR TUNNEL—The network is a free agent also, is it not?

MR. FLY—Both of them are always free, subject to the laws of the land, including the Sherman law which you have made specifically applicable.

SENATOR TUNNEL—Suppose the network, as a free agent, refuses to contract with the broadcasting company except on such terms as you have declared it to be impossible.

MR. FLY—It does not have to go into business.

SENATOR TUNNEL—It does not have to go into business, but it has to go out?

MR. FLY—Yes; that is right, if it does not want to conform to the law.⁹

We have already noted that up to the time of the investigation the emphasis was primarily on the network aspect of broadcasting,

⁹ Transcript, p. 37.

and the Commission, tacitly at least, gave its sanction to this emphasis. Now, however, the emphasis is on the individual station. In short, the pendulum has simply swung toward the other extreme. "There is a temptation to overemphasize local interests to the detriment of national interests. . . . The real goal should be efficiency of service from a national standpoint rather than a vague objective which fosters a conglomeration of local units uncoordinated for rendering a truly national service."¹⁰

(3) *Although the intent to promote greater competition in the broadcast field is in the public interest, the regulations as a means of accomplishing this are ill advised because they foster the wrong type of competition and will result in a chaotic condition of economic rivalry between networks for the same stations, which is destructive to chain broadcasting.* The Minority Report comes to the same conclusion. "It is, therefore, no exaggeration to predict that the decision of the majority instead of resulting in 'free competition,' would more likely create 'anarchy' or a kind of business chaos in which the service to the public would suffer."¹¹

(4) *The regulations tend to freeze a technical situation which is dynamic and do not give sufficient weight to the potential possibilities of the radio spectrum.* "It seems that no recognition is given to the fact that broadcasting is dynamic and not static. No consideration seems to be given to the probable effect of new developments," states the Minority Report of Commissioners Craven and Case with respect to the rules. Take, for example, Mr. Fly's assertion when he was speaking of Portland, Maine, that "I do not think any of us would contend that a network should own one of those stations, because just as surely as it does, then *for all time to come competition is frozen out there.* It is pretty well frozen out now . . . but *that would certainly make it permanent.*"¹²

(5) *In conducting the investigation and in formulating the regulations the Commission failed to explore the possibilities of making a greater supply of frequencies available for network broadcasting in the standard broadcast band through a reorientation of*

¹⁰ F.C.C. Report on Chain Broadcasting, Minority Report, p. 119.

¹¹ *Ibid.*, p. 116.

¹² Senate Interstate Commerce Committee Hearings, Transcript, p. 94. (Italics added.)

its allocation and licensing policies. The rules not only tend to deny the potential possibilities of the radio spectrum outside of the standard band but they are also based, as has been made abundantly clear already, on the fundamental premise that there is an extreme scarcity of wave lengths for commercial broadcasting purposes in the standard band itself—and that little can be done about it. This premise is perhaps nowhere better illustrated than by the following colloquy between Senator White and Chairman Fly:

SENATOR WHITE—One of the questions that has been in my mind is whether under these regulations you have not disregarded some of the physical facts in connection with the radio industry.

MR. FLY—No, indeed. They are in large part based on them. . . . Assuming now this physical limitation. That is where we have to begin. I could no more make it physically possible to put an unlimited number of stations, for instance in St. Louis, than the Supreme Court could make it possible to put additional terminal facilities in that same city.¹³

¹³ *Ibid.*, pp. 56-57.

✧ Chapter 16 ✧

NETWORK DOMINATION OF BROADCASTING

THE COMMISSION's primary objective of promoting greater competition in the broadcasting industry, particularly in the network-station market, is, as we have seen, founded on the conclusion that the restricted frequencies available in the standard band are dominated by the National Broadcasting Company and the Columbia Broadcasting System contrary to the public interest. Is this charge of domination by N.B.C. and C.B.S. substantiated by the evidence? The record indicates that it is.

At the end of 1938 there were 660 commercial stations in operation. Of these, 160 were affiliated with National and 107 with Columbia, or 40 percent of the total. There has been a steady growth in the proportion of the total licensees which serve as outlets for the two major national chains. This is indicated by Table 5 in Chapter 4.

Furthermore, the stations on the N.B.C. and C.B.S. networks are more desirable from the standpoint of frequency, power, and coverage. At the end of 1938 there were 44 clear-channel, unlimited-time (Class I A) stations in the United States. Of the 30 operating with the maximum power, 17 were affiliated with N.B.C. and 11 with C.B.S. All of the 14 clear-channel stations operating on power of 5 KW to 25 KW were affiliated with these two companies, 9 with National, and 5 with Columbia. Thus 95 percent of all unlimited-time, clear-channel stations were outlets for the two major network organizations. In addition, N.B.C. and C.B.S. had as affiliates the 8 part-time, clear-channel stations. In short, in December, 1938, National and Columbia either owned or had as outlets 50 (96.2 percent) of the 52 clear-channel stations.

Very much the same situation existed with respect to unlimited-time, regional channels. N.B.C. and C.B.S. shared equally the 8

high-powered stations in this category. Of the 196 unlimited-time regional stations operating on power of 1 KW to 5 KW, 80 were outlets for National and 58 for Columbia, which represented 70.4 percent of the total.

Using power as the index, a similar domination is shown. The 212 unlimited-time commercial stations affiliated with National and Columbia at the end of 1938 accounted for 1,618,000 watts or 86 percent of the total nighttime power of 1,869,400 watts used by all of the 475 stations broadcasting after sundown. Stations affiliated with N.B.C. represented 51 percent and those affiliated with C.B.S. 35 percent. Although the extent and economic value of coverage in terms of audience is not necessarily correlated with the amount of wattage used, the signal strength is, of course, improved as power is increased, and generally speaking audience coverage is extended. This is indicated by the fact that the 475 unlimited-time commercial stations in 1938 represented 86.3 percent of the total time sales of all the 660 commercial stations.

These facts indicate beyond reasonable doubt that at the end of that year the National Broadcasting Company and the Columbia Broadcasting System dominated the clear and regional channels employed for commercial broadcasting in the United States. These channels are, of course, the most desirable from the advertising standpoint and are therefore the most profitable. Except for the separation of the Red and the Blue networks, the situation has not changed materially since that time.

The domination of these two companies is further shown by the character of the stations owned or leased. As we have seen, these are the key outlets in the principal advertising markets and program origination centers. Notwithstanding the legitimate business reasons for such control, lease or ownership of these strategic stations has accentuated the dominating position held by the two major network organizations. For instance, almost half of the country's high-powered, clear-channel stations are owned or leased by National and Columbia.

The financial record also supports the charge of domination. The broadcasting industry in 1938 (all chain organizations and the 660 commercial stations combined) had net time sales amounting to \$100,892,259. N.B.C. and C.B.S. accounted for \$44,313,778, or

44 percent, as contrasted to net times sales by the Mutual Broadcasting Company of \$2,015,786, or about 2 percent. In addition, the net time sales for non-network programs of the stations owned or operated by N.B.C. and C.B.S. in that year were \$6,734,772. Consequently, National and Columbia, either through the sale of network time or through the sale of local time on stations owned or operated by them, accounted for more than half of the total broadcasting business in this country.

In 1938 the consolidated net operating income of the broadcasting industry was \$18,854,784. Of this amount, \$4,319,062 represented the net operating income of National and Columbia combined from network operations, \$30,384 represented the net operating income of the Mutual Broadcasting System, and \$14,505,338 represented the net operating income of the 660 commercial stations, this amount including payments for the broadcasting of network programs.¹ The figure of \$14,505,338 is further broken down as follows: \$9,696,156, or 67 percent, constituted the total profit of the 327 stations affiliated with but not owned or operated by the three national network organizations; \$4,958,289, or 34 percent, constituted the profit of the stations owned or operated by N.B.C. and C.B.S.; and \$149,107 in the aggregate constituted the loss shown by the 310 stations not affiliated with a national chain.² Consequently, the net operating income of the National Broadcasting Company and the Columbia Broadcasting System of \$4,319,062 from network programs and the net operating income of the stations owned or operated by them of \$4,958,289 give a consolidated total of \$9,277,351, or approximately half of the net operating income of the entire broadcasting industry in 1938.

The domination held by Columbia and National over the present restricted supply of broadcasting frequencies in the standard band is further confirmed by the following evidence. A list of cities³ (in order of size) having a population of fifty thousand or more, in which the Mutual Broadcasting System had no outlet on

¹ In this connection the F.C.C. Report points out that of these 660 stations, 420 showed a net income totaling \$16,728,533, while 240 stations operated at a loss amounting to \$2,223,195.

² Of these 310 stations, 162 operated profitably and showed a total net income of \$888,493, whereas 148 experienced a loss amounting to \$1,037,600.

³ Senate Interstate Commerce Committee Hearings, Transcript, p. 220.

May 1, 1941, in which N.B.C. or C.B.S. or both had affiliation contracts with full-time outlets, and in which no independent full-time outlet was available either to Mutual or to a new network, was introduced into the record at the Senate hearings. The list is as follows:

Milwaukee, Wis.
Toledo, Ohio
Dayton, Ohio
Worcester, Mass.
Youngstown, Ohio
Flint, Mich.
Jacksonville, Fla.
Erie, Pa.
Spokane, Wash.
Fort Wayne, Ind.
Reading, Pa.
Miami, Fla.
Peoria, Ill.
South Bend, Ind.
El Paso, Tex.

Evansville, Ind.
Utica, N.Y.
Schenectady, N.Y.
Sacramento, Calif.
Savannah, Ga.
Altoona, Pa.
Lansing, Mich.
Portland, Maine
New Britain, Conn.
Springfield, Ohio
Johnstown, Pa.
Montgomery, Ala.
Topeka, Kans.*
Terre Haute, Ind.
Charleston, S.C.

Wheeling, W. Va.
Charleston, W. Va.
Augusta, Ga.
Madison, Wis.
Springfield, Mo.
Jackson, Mich.
Kalamazoo, Mich.
Greensboro, N.C.
Fresno, Calif.
Durham, N.C.
Columbia, S.C.
Asheville, N.C.
Pueblo, Colo.

*Columbia station operates part time.

Another list was introduced at the same time, showing the cities in order of size (also as of May 1, 1941), having a population of fifty thousand or more, in which Mutual had a part-time station as an outlet, in which N.B.C. or C.B.S. or both had affiliation contracts with full-time, regional, or clear-channel outlets, but in which no full-time regional or clear-channel facilities were available to Mutual or to another network. This list is as follows:

Baltimore, Md.*
New Orleans, La.
Rochester, N.Y.
Louisville, Ky.
Columbus, Ohio
Atlanta, Ga.
Akron, Ohio
San Antonio, Tex.
Oklahoma City, Okla.

Hartford, Conn.
Nashville, Tenn.
Norfolk, Va.
Albany, N.Y.
Chattanooga, Tenn.
Wilmington, Del.
Knoxville, Tenn.
Duluth, Minn.

Wilkes Barre-Scranton, Pa.†
Little Rock, Ark.
Lincoln, Nebr.
Winston-Salem, N.C.
Roanoke, Va.
Mobile, Ala.
Macon, Ga.

* WFBR, a regional station, became affiliated with Mutual on October 1, 1941.

† Columbia station is part-time station, but uses most of the operating hours.

In the writer's opinion the conclusion is inescapable that the broadcasting industry in the United States is dominated by the National Broadcasting Company and the Columbia Broadcasting System. Breaking up this domination, promoting what the Commission believes to be the most desirable type of competition in the broadcast field, abolishing present contractual restraints in the network-station market, and supposedly opening the door of opportunity to Mutual and to new networks were the principal reasons behind the Commission's reform movement. "The heart of the abuse of chain broadcasting is in the network-outlet contract," states the conclusion of the Preliminary Report. And the final *Report on Chain Broadcasting* declares:

This Commission, although not charged with the duty of enforcing that law [Sherman Act], should administer its regulatory powers with respect to broadcasting in the light of the purposes which the Sherman Act was designed to achieve. In the absence of Congressional action exempting the industry from the anti-trust laws, we are not at liberty to condone practices which tend to monopoly and contractual restrictions destructive of freedom of trade and competitive opportunity. . . . The nature of the radio spectrum is such that the number of broadcasting stations which can operate, and the power which they can utilize, is limited. The limitations imposed by physical factors thus largely bar the door to new enterprise and almost close this customary avenue of competition. . . . Restrictive affiliation contracts might be tolerated if there were a dozen potential stations of comparable character in every city; they are intolerable when there are few cities which have (or can have) more than four stations of all kinds. . . .

If national networks compete for station outlets on the basis of performance, there will be a direct incentive to improve and expand the programs. . . . If stations are not tied exclusively to a single national network . . . each will be stimulated to improve the quality of the programs which it offers and hence its value as an outlet of a national network. This two-way competition—among network organizations for station outlets and among stations for network affiliation—will insure the listening public a well-diversified, high quality program service. . . .

N.B.C. and C.B.S. contend that the networks compete, and compete vigorously. Certainly there is a considerable degree of competition among networks for advertisers and for listening audiences; but this does not mitigate the restraints found with respect to network-station relationships. In the broadcasting field, three different markets must be

distinguished—the market in which networks and stations meet advertisers, the market in which networks and stations meet listeners, and *the intermediate or internal market where stations meet networks. It is in this intermediate network-station market that current practices have most directly restrained competition; no considerations of the extent to which the networks may compete for advertisers or listeners can conceal the extent to which they do not compete in the network-station market.*⁴

There is no question in the writer's mind that more competition of the right type in the network broadcasting field is desirable. The kind of competition, however, which the new regulations seek to encourage in contradiction of the nature and requirements of network operation, is destructive to chain broadcasting itself, is based upon the questionable assumption that the present scarcity of frequencies for commercial broadcasting, particularly in the standard band, is necessarily a permanent condition, and apparently springs from the traditional but antiquated belief that salutary economic rivalry can exist only as between individual competing units. Little weight is given to the possibility that aggregations of capital in competition with each other may be more in the public interest if properly regulated than the individualistic rivalry of pioneer days. *The real answer to the competitive problem in the chain broadcasting field, as the Report itself implies, is a greater available supply of frequencies for commercial broadcasting which in turn would result in a greater number of national networks.*

Aside from the fact that the record is replete with instances where the two major network organizations guarded and extended their domination—obviously it was good business to do so—there are two principal and more fundamental reasons, therefore, why this domination was able to be achieved. First, the limitation on the number of usable frequencies outside the standard band which has persisted, even though in lessening degrees, up to the present time. And second, the allocation and licensing policies of the Commission which have determined the number and use of standard broadcast frequencies themselves.

Although it is probably true that commercial broadcasting can never be competitive in the same sense as other industries, where

⁴ Pages 46-48. (Italics added.)

there is an unlimited potential supply of facilities, and although some of the statements made in the quotations cited hereafter are undoubtedly over-optimistic regarding the possibilities of increasing the usable supply of broadcasting wave lengths, it is indisputable that a vast portion of the radio spectrum remains unused and that there is a tremendous reservoir of high and ultra-high frequencies which will be employed in the future.

Scientific research has increasingly enlarged the number of usable radio frequencies. The process will continue. The present radio spectrum, which is either actually or potentially available for broadcasting purposes, is from about 10,000 cycles to 500,000,000 cycles. It is true that as one proceeds toward the shorter wave lengths, one is confronted with important technical problems of propagation and a technological lag in equipment; the average receiving set today is not capable of high frequency reception. In addition, the war will temporarily postpone the further development and use of shorter waves for commercial broadcasting purposes. Granted the government gives its approval, however, the eventual utilization of a much greater part of the radio spectrum in this manner appears certain, as the few frequency modulation and television stations now operated for commercial purposes testify. Consequently, the assumption of the Commission that there is a severe lack of frequencies for commercial broadcasting does not give sufficient weight to these potential factors.

Mr. Lohr, former president of N.B.C., declared at the F.C.C. hearings, "When you get to these very high frequencies, especially frequencies above 300 megacycles, there are ample channels available. As a matter of fact as you get into the microwave there could be a full width channel for every man, woman, and child in the United States."⁵ Mr. Sarnoff stated during the hearings, "There is no warrant for assuming that network operations must necessarily be within the present limited band of frequencies. . . . I can see the day when there will be more networks possible, technically, than people to use them. There is no reason I can see why there can't be a dozen, or two dozen, or several dozen national networks."⁶

Mr. Herman S. Hettinger, formerly associated with the Federal

⁵ F.C.C. Hearings re Docket 5060, Transcript, p. 2662.

⁶ *Ibid.*, p. 8520.

Communications Commission, wrote in the *Annals of the American Academy of Political and Social Science* for January, 1941, "There is no doubt that frequency modulation will materially alter the present sound broadcasting structure. . . . Thousands of stations can be accommodated if there is social or economic need for them. . . ."⁷

And finally, Edwin H. Armstrong, the inventor of frequency modulation, professor of electrical engineering at Columbia University and former associate of Professor Michael I. Pupin in research at the Marcellus Hartley Research Laboratory for twenty-one years, states: "For years there has been a shortage of 'wave lengths' or channel space, and the attempt to allocate equitably the inadequate facilities available has been the bane of the existence of those charged with this duty. . . . The new system (FM) offers a solution not only to the national and international interference problem, but to the problem of giving every community one or more channels on the air. . . . This result has come about because the system operates most effectively on wave lengths hitherto not put to use. . . . If in the future the demand for broadcast channels exceeds the facilities of the channel space now practically available, the engineering world is prepared to open up new bands in that space technically known as the ultra-high and microwave region where the ratio of the unused channel space compares to that now in use as the unsettled to the settled parts of the earth. The trend of radio inevitably will be upward into the higher frequencies."⁸

Hence the competitive problem in the network broadcasting industry resulting from the present-day lack of usable frequencies, assuming that the F.C.C. formulates its policies accordingly, will tend to correct itself as more and more potential lanes through the ether are opened up for commercial use. Chairman Fly at the Senate hearings gave some recognition to these dynamic possibilities of the radio art. In a colloquy with Senator Johnson of Colorado, Mr. Fly stated:

MR. FLY—I think we ought to bear in mind, in viewing this whole problem, that frequency modulation . . . has already come into operation.

⁷ Page 181.

⁸ *Annals of the American Academy of Political and Social Science*, January, 1941, pp. 154 and 161.

That is going to move out and will give us to a substantial degree a more diversified and improved radio service.

SENATOR JOHNSON—That will be a chain in itself, will it not?

MR. FLY—I think the chains will develop there. There is one now that is in the making.⁹

The standard broadcast band, which before the development of television and frequency modulation included all commercial stations and which still includes the great majority, occupies a very small portion of the radio spectrum. Out of the range of 10,000 cycles to 500,000,000 cycles, all standard broadcast stations are squeezed into the segment from 550,000 cycles to 1,600,000 cycles. In addition to television and FM, there is of course a great demand from other services—police, marine, amateur, etc.—for a place on the spectrum. The national interest requires that these demands be met but what part of the spectrum and how much of it should be allocated to each is certainly open to debate. Granted international agreements were revised, the standard band could be enlarged to some extent at both ends. Witness the addition of 100 KC (from 1,500 to 1,600 KC) within the past nine years. In other words, the present technical limitations on the supply of standard broadcast frequencies are a matter of degree and of evaluating the importance of one service as opposed to another. The Federal Communications Commission has attempted to establish a far-sighted, well balanced, and fair allocation system. Although the difficulties and perplexities of the problem are appreciated, the writer believes the Commission's success in accomplishing this is open to question.

But let us assume for the moment that the alleged natural and allocation limitations are entirely real and that commercial broadcasting is permanently limited to the present standard band—550 KC to 1,600 KC. It is obvious that even within this very narrow range, whether there is or is not a severe lack of frequencies, depends to a large degree upon how the frequencies in this segment are licensed.

Within this range there are available only 106 broadcasting channels because experience has shown that a separation of at least 10 KC is required between channels to prevent side-band interference.

⁹ Senate Interstate Commerce Committee Hearings, Transcript, p. 146.

Furthermore, this 10 KC separation is based on present-day wire lines which will transmit audio frequencies only up to about 5,000 cycles without serious attenuation.¹⁰ It appears almost certain that networks will eventually transmit either by wire lines, co-axial cable, or short-wave radio beams the full audio range, and the American Telephone Company has already perfected wire lines which make this possible. The cost of the wire lines and the inability of the average receiving set to accept these high audio frequencies are now the principal obstacles. But in the future, when this maximum audio fidelity is transmitted by chain broadcasting, it will require not a 10 KC separation but at least a 20 KC separation. Thus the available channels would be reduced to about 53 from 106 and the lack of frequencies would be even more acute.

The problem, therefore, is a crucial one. However, a basic premise of the Commission, as we have seen, is that, except in a very minor degree, it is impossible to increase the supply of frequencies in the present standard band available for network broadcasting. This premise is again illustrated by the following statement of Mr. Taylor, general counsel of the F.C.C., made during the Injunction Suit oral arguments in January, 1942:

The range of frequencies used in radio runs from 10 to 12 kilocycles per second up to, at the present time, 300 or more megacycles per second, and this range is known as the radio spectrum.

A very small portion of the spectrum—550 KC to 1600 KC—is used for standard broadcasting; the rest of the spectrum is devoted to police radio, marine radio, aeronautical, military, other and newer forms of broadcasting such as television and frequency modulation, and many other services; but the rules here challenged apply only to standard broadcasting.

The necessities of the radio art dictate that, if opportunity for selection by listeners among the radio signals is to be effective, there has to be a separation of approximately 10 KC between each cycle, so that between 550 to 1,600 KC you have about 106 channels available for standard broadcasting.

The result of all that is that facilities available for standard broadcasting stations are limited. True, as the plaintiffs have pointed out, the Commission allots to stations their power and their frequency, and it

¹⁰ The minimum and maximum of the audio range is from approximately 30 cycles up to 16,000 cycles.

has a certain amount of play within that range of available frequencies, but the Commission is not omnipotent and cannot extend the laws of nature. Therefore, we have to act within the pretty rigid limits, and there are very severe restrictions on the number of stations it will be advisable to put here, there and somewhere else, in order that we can get the most economic distribution and widest service.

That factor of limitation of facilities, particularly with respect to towns where there aren't as many as four stations, is one of the underlying reasons why the Commission found these regulations in the public interest.¹¹

It is clear that under the present system, where only individual stations are licensed, where each one is in a position to broadcast a different program at the same time, thereby requiring a separate frequency if program interference with another station would occur, and where many single stations have the exclusive use of unlimited-time clear channels, a severe shortage of frequencies for chain broadcasting in the standard band cannot be avoided. It is significant to note, however, that in July, 1937, the individual station licensing policy was still in the realm of debate. The following quotation from the Engineering Report of the F.C.C. will make this clear. "The Engineering Department believes that in the interest of clarification, all network stations, including those owned by a chain company, should be considered as separate licensees."¹²

And as late as January, 1942, Mr. Taylor referred to the policy as simply a "notion." He declared, "I should like to state very generally the basic lines of thought which the Commission's report and regulations involve. To begin with the notion of station responsibility. . . . Our administrative construction of the Act has consistently, since 1927, from the outset of the administration of this law, been based on this notion."¹³

The Commission takes the position that the best broadcasting establishment in the present standard band can be achieved through placing the principal emphasis upon the individual units in the industry in disregard of the essential requirements of chain broadcasting, and maintains that very little can be done in any event even if we wished to change the present system. In the next chapter

¹¹ Transcript, pp. 192-93, 199. (Italics added.)

¹² Page 17.

¹³ Injunction Suit, Oral Arguments, Transcript, pp. 203 and 214.

we shall review two interesting possibilities which are aside from the suggestion frequently made that the number of Class I A licensees should be further reduced as a means of accommodating for network broadcasting additional standard stations operating on lower power.

tioning would do both legally (claimants could argue that they had established greater rights via their payment for such) and practically (as any pecuniary payment to the treasury for broadcast rights would necessarily lower the intensity of competition for new licenses or renewals). It is only the "public interest" discretion that legislators or regulators may realistically employ to internalize benefits, once we see license fees as common resources owned jointly by government policymakers. Moreover, in proportion to their political strength, agents for organized nonindustry, non-governmental interests concerned with broadcasting tend to favor the licensing regime as transfers of wealth in terms of political currency. By being endowed with human capital specific to the public regulation process, they acquire rents not available to them in a common law-based regulatory structure for spectrum rights.

The behavior of regulators in this market is far less mysterious, or analytically error prone, than has been previously asserted. When viewed in the context of utility maximization, these actors have pieced together a regulatory apparatus that is entirely consistent. Although the modern interpretation of broadcast regulation has been built upon the view that federal licensing was a faulty allocational policy with unforeseen—and unfortunate—consequences, the construction of public interest licensing distributed property rights to spectrum in a manner in which the important regulatory players were compensated as anticipated. Most compellingly, a common-law solution to the "tragedy of the commons" problem was seen by the creators of the regulatory system as an unsatisfactory alternative, due specifically to its distributional effects. That the political marketplace pointedly vetoed a property rights solution that would bypass regulators and legislators while holding entry open into broadcasting was not a reflection of technical incompetence but of self-interested rationality.

self-interest
didn't want to
let go of control

fed govt involvement
doesn't persist to take
care of interference - it's
stays in the game by
~~avoid~~ virtue of its
self-interest

- write summary for first tv allocations. →
30s.

- page 151 books Stay Tuned.

- 1941 report on chain broadcasting

- policy docs / congressional hearings / speeches left
behind decisions

- robinson - copy p. 148-64.

copy 22-31

7-22.

- senate hearings - committee hearings - (where are they?)
└ House/senate

~~who are they~~

→ amended 1927 Radio Act.

Davis amendment - allocate evenly across country.

- localism/regionalism

(Barnow)

FCC library
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[Access article in PDF]

Radio Regulation Revisited: Coase, the FCC, and the Public Interest

David A. Moss and Michael R. Fein

It is now more than forty years since Ronald Coase's seminal article on the Federal Communications Commission first appeared in the pages of the *Journal of Law and Economics*.¹ The article remains important for a number of reasons, not least of which is that it offered his first articulation of the Coase Theorem.² Of even greater importance for our purposes, the article literally redefined the terms of debate over American broadcast regulation, in both historical and contemporary treatments of the subject.

Focusing particularly on the development of radio regulation, Coase rejected the prevailing notion that the establishment of the Federal Communications Commission (FCC) served the public interest. Rather, he concluded that its creation had been a mistake, the product of faulty economic reasoning. The complex regulatory apparatus developed under the Federal Radio Act of 1927 and recodified in the Federal Communications Act of 1934 was built on the flawed assumption that scarce resources—in this case the radio spectrum—had to be allocated by government fiat. A more efficient solution, Coase maintained, would have been to allocate the spectrum like any other scarce resource, on the basis of well-defined property rights and a free market guided by the price mechanism. Indeed, this is why he suggested that the spectrum ought to be cut up and sold at auction rather than regulated by the federal government.³

While Coase's economic reasoning and policy conclusions have since gained wide acceptance, the historical work on which the article [End Page 389] was based has taken quite a beating. Thomas Hazlett, in particular, has demonstrated that federal lawmakers of the 1920s were in no way blind to the property-rights option, but rather knowingly rejected it in favor of far-reaching regulation.⁴ In Hazlett's view, radio regulation was the product not of ignorance or mistaken reasoning, but rather of an implicit deal between policymakers on the one hand and incumbent broadcasters on the other, both of whom had much to gain from a regulatory solution. "That the political marketplace pointedly vetoed a property rights solution that would bypass regulators and legislators while holding entry open into broadcasting," Hazlett asserted, "was not a reflection of technical incompetence but of self-interested rationality."⁵ Yet even after contradicting Coase's rendition of the historical record, Hazlett applauded Coase's central policy conclusion—that a well-conceived plan to auction the spectrum would better serve the public interest than did the existing regulatory regime.⁶

At the heart of Hazlett's critique was not only a rejection of what he called the "error theory" of broadcast regulation, but also a rejection of the public-interest theory of policymaking that lay behind it.⁷ In Coase's version of the story, policymakers seem to have meant well: they failed to adopt a property-rights solution—and thus failed to serve the public interest, according to Coase—only as a result of bad reasoning, not bad motives. In Hazlett's version, by contrast, lawmakers were fully aware of the property-rights option but rejected it on the basis of "self-interested rationality."⁸

Like Hazlett and others who have studied the history of radio regulation in recent years, we find considerable evidence that proponents of the "error theory" (including Coase himself) mischaracterized the historical record. Unlike most other students of the subject, however, we do not believe the available evidence proves that lawmakers were guided mainly by self-interest, as opposed to their own sense of the public interest, in fashioning a regulatory regime for radio. According to our reading of the legislative record, American lawmakers presented a perfectly reasonable and logically consistent case for federal regulation of broadcasting. Their often-repeated concerns about limited spectrum, which so fascinated Coase, had less to do with their interest in

finding an economically efficient allocation of scarce bandwidth than with *their determination to prevent a potentially dangerous concentration of political power*. Coase's mistake, we believe, was not in assuming that lawmakers were guided by a concern for the public interest, but rather that efficiency [End Page 390] considerations were (or ought to have been) paramount in assessing the public interest.

What the record reveals is that democratic principles came into conflict with—and ultimately eclipsed—economic ones in the legislative debate, a result that was contextually specific to broadcasting. Had radio been more like newspaper, where there was no obvious limit on the number of independent voices that could be heard, policymakers might well have anticipated Coase's advice in adopting a market approach to spectrum allocation.

⁹ But, given the (apparent) reality of a limited radio spectrum *and* the extraordinary political influence that the right to broadcast seemed to convey, federal lawmakers turned fiercely against a market solution. It was not that they regarded regulation as the only way to prevent interference on the airwaves (as Coase maintained), but rather that they saw regulation as the best way to prevent the airwaves from being dominated by just a small number of voices.

These findings obviously raise questions about Coase's normative claim that spectrum auctions would better serve the public interest than regulation. As the early legislative record suggests, much depends on one's conception of the public interest. But these findings also pose a clear challenge to those who, in recent years, have reinterpreted the history of radio regulation from a rent-seeking perspective. Perhaps the officials who supported regulation fashioned arguments about concentrated political power merely as a means of covering up their true—and far more selfish—motivations. But perhaps not. The point here is that the legislative record offers little reason to doubt either their competence or their sincerity, and it thus offers little contradiction to the so-called public-interest theory of policy formation. While in no way denying that rent seeking may have played a role in the rise of radio regulation, we maintain that the public-interest theory of radio regulation has been too easily dismissed in the wake of Ronald Coase.

Coase and the History of the FCC

Ronald Coase's reading of the historical record led him to believe that the "main reason for government regulation of the radio industry was to prevent interference."¹⁰ First with ship-to-ship and ship-to-shore communication, and later with radio broadcasting, the cacophony of voices transmitted over a limited radio spectrum threatened [End Page 391] to undermine the utility of the entire medium. Convinced that regulation was the best (and perhaps the only) way to bring order to this otherwise chaotic technology, federal lawmakers passed the Radio Act of 1927, which created the Federal Radio Commission, the forerunner to the FCC.

Coase supported this account with numerous quotes from public officials. Perhaps most striking was an extended passage from a 1943 Supreme Court decision, in which Justice Felix Frankfurter (writing for the court) characterized the history and logic of radio regulation precisely as Coase had described it:

The plight into which radio fell prior to 1927 was attributable to certain basic facts about radio as a means of communication—its facilities are limited; they are not available to all who may wish to use them; the radio spectrum is simply not large enough to accommodate everybody. There is a fixed natural limitation upon the number of stations that can operate without interfering with one another. Regulation of radio was therefore as vital to its development as traffic control was to the development of the automobile. In enacting the Radio Act of 1927, the first comprehensive scheme of control over radio communication, Congress acted upon the knowledge that if the potentialities of radio were not to be wasted, regulation was essential.¹¹

Resource scarcity and the potential for interference, in other words, are what necessitated an aggressive regulatory response.

Satisfied that this was indeed the logic by which radio regulation had been (and continued to be) justified, Coase proceeded to rip it apart. "Notwithstanding the general acceptance of these arguments and the eminence of the authorities who expound them," he wrote, "the views which have just been quoted are based on a misunderstanding of the nature of the problem." The notion that radio required special economic treatment merely because of a dearth of usable frequencies struck Coase as absurd. It was, after all, "a commonplace of economics that almost all resources used in the economic system . . . are limited in amount and scarce." Since most scarce resources were allocated privately in the marketplace, rather than through government edict, why should radio be any different? "It is true," Coase conceded, "that some mechanism has to be employed to decide who, out of the many claimants, should be allowed to use [End Page 392] the scarce resource. But the way this is usually done in the American economic system is to employ the price mechanism, and this allocates resources to users without the need for governmental regulation."¹²

Though radio interference may have seemed like a novel problem at the time, particularly given the newness of this "mysterious technology," Coase insisted that the same essential problem affected every scarce resource, including land.¹³ "The use of a piece of land simultaneously for growing wheat and as a parking lot," he noted, "would produce similar results. . . . [T]he way this situation is avoided is to create property rights (rights, that is, to exclusive use) in land. The creation of similar rights in the use of frequencies would enable the problem to be solved in the same way in the radio industry."¹⁴ Had the nation's lawmakers simply thought more clearly and soberly about the challenge at hand, they would have recognized that well-defined property rights and the price mechanism—not regulation—were all that was needed to allocate the radio spectrum in a socially optimal manner. As it was, federal radio regulation was nothing more than the unfortunate product of poor economic reasoning.

Finding Error in the "Error Theory" of Radio Regulation

Although the historical treatment of radio regulation evolved considerably in subsequent years, Coase's reading remained largely intact until 1990, when Thomas Hazlett published a devastating critique—once again in the *Journal of Law and Economics*.¹⁵ Characterizing the prevailing interpretation as the "error theory" of federal licensing" (since it held that radio regulation was mostly attributable to muddled thinking), Hazlett provocatively argued that there was really no error at all.¹⁶ Federal policymakers had known exactly what they were doing in 1927. In fact, in Hazlett's view, the Federal Radio Act represented an explicit rejection of a recent judicial attempt to craft precisely the sort of property-rights regime that Coase would later recommend.

The key case upon which Hazlett relied was *Tribune Co. v. Oak Leaves Broadcasting Station*, a 1926 decision that addressed the interference problem by creating a homesteading right for existing stations. The defendant in the case, described as a "wave jumper," was ordered not to broadcast within 50 kilocycles of the plaintiff, a more established station with a longer record on the contested frequency. [End Page 393] "It was on this homesteading principle," Hazlett explained, "that the judge found a common-law remedy to the potential 'tragedy of the commons.' Relying on established law . . . the opinion granted a priority-in-use property-rights rule the force of law in radio broadcasting. Private rights in the ether under common law were immediately recognized as a solution to the interference problem."¹⁷

As Hazlett tells the story, the *Oak Leaves* decision was received like a lightning bolt at the U.S. Commerce Department, where Secretary Herbert Hoover "had been advocating broadcasting legislation since the early 1920s."¹⁸ What Hoover wanted was federal authority to grant radio franchises based on a "public interest" standard. A believer not only in big business but also in corporate service to the commonweal, Hoover insisted that every prospective radio licensee should be "compelled to prove that there is something more than naked commercial selfishness in his purpose."¹⁹ His vision, however, was profoundly threatened by the *Oak Leaves* decision, which promised to create a true property-rights regime tied neither to Hoover's regulatory authority nor to his expansive notion of the public interest.²⁰

Until 1926, Hoover's Commerce Department had been in the business of assigning broadcast licenses. Though the authorizing legislation (the federal Radio Act of 1912) was originally created to cover point-to-point communication, federal regulators took it upon themselves to extend its coverage to broadcasting as well, once radio broadcasting began to take shape around 1920. Yet in 1923 and again in 1926, federal courts ruled against the Commerce Department's licensing policy, denying that Congress had granted the department any real discretion over the allocation of radio licenses. The 1926 decision, announced several months before *Oak Leaves*, proved particularly debilitating, since it rejected the department's authority even to assign wavelengths and times of operation.²¹ Rather than try to appeal the case or encourage voluntary cooperation among broadcasters, Secretary Hoover seemed to throw in the towel, apparently content to allow chaos to consume the airwaves. "By any nonstrategic standard," Hazlett observed, "the regulatory reaction to market confusion was inexplicable."²² One possible answer is that Hoover's actions were in fact strategic. "Chaos," explains Hazlett, "was strategically introduced into the political process" to "pressure Congress for action."²³

By most accounts, the strategy—if that is what it was—appears to have worked. Congress moved quickly in late 1926 and early 1927 [End Page 394] to craft a comprehensive regulatory solution. Signed into law on 23 February 1927, the Radio Act created a new Federal Radio Commission and authorized it to grant broadcast licenses whenever it determined "that public interest, convenience, or necessity would be served."²⁴ Far from being fashioned out of ignorance, Hazlett maintains, the Radio Act represented a conscious rejection of the property-rights approach that was just then emerging in the courts.²⁵

In place of the flawed "error theory" of radio regulation, Hazlett has offered his own "franchise-rents" theory, which characterizes American radio law as the product of "self-interested rationality," in which the major players—particularly federal policymakers and the leading radio broadcasters—each achieved advantages that would have been unattainable in an unregulated market.²⁶ "The bargain instituted was a classic regulatory quid pro quo wherein incumbent radio broadcasters agreed to be subject to 'public interest' licensing requirements in exchange for barriers to new entry." Leading broadcasters were assured of increased rents (since the new regulatory regime would deny upstart competitors the right to "homestead unoccupied bands"), while Congress "gained some measure of authority over this newly evolving medium of expression."²⁷

There can be no doubt that Hazlett's work has dramatically advanced our understanding of the origins of broadcast regulation in the United States, overturning the "error theory" and underscoring the critical role of strategic and rent-seeking behavior on the part of broadcasters and lawmakers alike. Yet several important questions still remain unanswered. Why did Coase (and others who followed him) get the history so wrong? If, as Hazlett contends, "interference was not the problem," what led Coase to believe that it was in fact a problem of central importance?²⁸ And if the economic viability of the property-rights option was indeed plainly visible at the time, why were American lawmakers (well known for their anti-statist sentiments) so intent, as Senator C. C. Dill put it, on "prevent[ing] private ownership of wave lengths" and asserting the "full sovereignty over radio by Congress"?²⁹ Hazlett maintains that these lawmakers sought to place themselves at the "nexus of decision making in a brisk competitive rivalry for zero-priced frequency rights" and thus to provide themselves with "a very well understood discretion over the life and death of lucrative and influential broadcasters."³⁰ But then why did they not choose to regulate every industry to the same extent (or at least to the extent legally—or constitutionally—permissible)? Perhaps radio was special. But if so, why would Hazlett, [End Page 395] after correcting Coase's history, ultimately agree with Coase's normative conclusion that broadcast frequencies ought to be allocated in the private marketplace, on the basis of property rights and prices, like any other resource?³¹ Was radio special, or not?

The answer, in short, is that radio was special. Certainly other nations, which placed strong state controls over the medium, considered it to be so.³² And American lawmakers, though easing private access to the spectrum and promulgating a tamer version of public oversight, felt no differently about its exceptional nature. Radio was regarded as special, however, not because of some distinctive economic characteristics, but rather because of distinctive political characteristics associated with the power to broadcast and to shape public opinion. Surely some policymakers (though by no means all) understood that radio interference could be solved in the private marketplace once property rights in the spectrum were assigned. But they feared that such a strictly economic solution to the problem of interference could itself create a political problem of vastly greater consequence, permanently concentrating control over mass communication in too few hands. *What drove them toward a regulatory rather than a common-law solution, then, was the combination of spectrum scarcity on the one hand and radio's enormous political significance on the other.* Had either of these characteristics been absent, a property-rights approach would have sufficed. Together, they seemed to pose such a grave threat to the democratic process that lawmakers felt they had no choice but to establish direct regulatory control over the industry.

Fear of Concentrated Control over the "Most Potent Political Instrument of the Future"

Many scholars, including both Coase and Hazlett, have noted that federal policymakers often worried about broadcasters obtaining too much influence over public opinion. But it seems that no one has yet demonstrated just how pivotal this concern was in the shaping of federal radio legislation. As the historical record makes clear, a pervasive fear of *political* monopoly—that is, of concentrated control over this new and unparalleled means of political expression—profoundly influenced the legislative process at almost every step of the way. [End Page 396]

Such a fear already loomed large in 1924, when Secretary Hoover urged Congress to assert more explicit and expansive public control over the radio spectrum. "It is inconceivable," he declared during a congressional hearing,

that the American people will allow this new-born system of communication to fall exclusively into the power of any individual group or combination. Great as the development of radio distribution has been, we are probably only at the threshold of the development of one of the most important of human discoveries bearing on education, amusement, culture, and business communication. It can not be thought that any single person or group shall ever have the right to determine what communication may be made to the American people. . . .

[T]he fundamental thought of any radio legislation should be to retain possession of the ether in the public and to provide rules for orderly conduct of this great system of public communication by temporary permits to use the ether. It should be kept open to free and full individual development, and we should assure that there can be no monopoly over the distribution of material.³³

Not surprisingly, a representative of the Radio Broadcasters' Society of America, a group of independent stations, wholeheartedly agreed:

If [radio broadcasting] is put into the hands of a trust, into the hands of a monopoly—if a monopoly is not stopped now, and they get control in this country—it might well be that some official of the monopoly company, sitting in the quiet of his executive office, surrounded and protected and away from the public, where he can not be seen, will issue the fiat that only one kind of religion shall be talked over the radio; that only one kind of politics shall be talked over the radio; that only one candidate can give messages to the people; that only one kind of soap can be advertised.³⁴

When Raymond Asserson, speaking at the same set of hearings on behalf of the New York City Broadcasting Supervisor, expressed concern about superpower stations having "great power of influence over the public," Representative George W. Edmonds of Pennsylvania [End Page 397] replied, "The point you are making is this, that if it should get into the control of two or three hands, they could shut out certain lines of conversation, talk, or speeches over the radio, and allow others in, just to suit their purposes."³⁵ Asserson agreed, claiming that there is a "danger there, in advocating that policy [of allowing high-power broadcast stations], of really advocating monopoly of the air."³⁶ Although David Sarnoff of RCA insisted that superpower stations would not interfere with other wavelengths, Asserson maintained that the RCA-affiliated superstation in Bound Brook, New Jersey, was already blocking out independent broadcasters.³⁷

A related problem that concerned many lawmakers was the emerging secondary market for spectrum rights. By the mid-1920s, it had become commonplace for those seeking access to the spectrum to purchase existing stations and petition federal regulators for license transfers. Cognizant of the substantial investments involved, the Commerce Department typically reassigned licenses with little debate. As Hazlett explained it, Secretary Hoover "relied on market transactions to minimize broadcasting disruptions, à la the Coase Theorem."³⁸ But many legislators worried that if a license effectively ran with the radio apparatus, then there would be nothing to prevent the concentration of broadcasting rights in a single person or firm.³⁹

Believing that it was essential to preempt the creation of any true property rights in the spectrum, Senator Robert B. Howell of Nebraska proposed a bill reasserting the public's right to the ether in 1926. Solicitor Stephen B. Davis of the Commerce Department explained that the bill "would compel the disclaiming of any such claim" of vested rights in the ether. When Chairman C. C. Dill of the Senate Interstate Commerce Committee asked Senator Howell if he knew of any such claims, Howell replied that "such claims are contemplated," and that he introduced the bill "to force to the surface now, and not 25 years from now, any claim of vested right." This would "enable Congress to deal with them now in the infancy of this art."⁴⁰

Lawmakers apparently feared that tradable rights in the spectrum could easily lead to an unacceptable concentration of power in broadcasting. Afraid of precisely such an outcome, Senator James B. Couzens of Michigan quizzed Davis about the Commerce Department's routine approval of license transfers in the overcrowded Chicago market. "[I]f that policy was carried on," Couzens asked, "it could monopolize the whole district by buying up stations, could it [End Page 398] not?" Davis noted that there was no evidence as yet of any such monopoly forming, but Couzens persisted.

Couzens: If priority is ignored in that case then the apparatus controls the situation, and anyone that buys the apparatus can control the situation.

Davis: We have felt this way about it, Senator, that the license ran to the station rather than to the individual. In other words, we have never felt it wise to adopt a policy under which we would say to an individual, "Yes; go in and build this station at whatever cost there may be. If you die it is worth nothing. If you change your mind and want to quit broadcasting it is worth nothing. If you get into business trouble it is worth nothing to your creditors. It has only got a refuse value." We take the position that inasmuch as these licenses are only 90-day licenses anyway, that the license ran to the apparatus; a man can transfer his apparatus, and if there is no good reason to the contrary we will recognize that sale and license the new owner of the apparatus.

Couzens: Well, it seems to me, then, it is up to Congress to provide some means whereby no single interest can control the broadcasting of the district.⁴¹

Later on in the hearings, when the Chicago market again came to the fore, Solicitor Davis reassured the committee that there was "no absolute right of transfer."⁴² With more than forty stations in the Chicago area, there was no chance of one company monopolizing regional broadcasting, so long as no vested property rights were established in the ether.⁴³ But Couzens maintained that "if and of necessity these stations must be restricted in number, it is perfectly obvious to me that it will only be a short time before it becomes a monopoly, and there is nothing in the law, and there is nothing in your jurisdiction, which would prevent that as long as you have in mind, and somewhat properly so, that the investment itself is entitled to some protection."⁴⁴ When Davis explained that the elimination of a right to transfer would impose enormous costs on incumbents, severely compromising the value of their investments, Couzens declared that he did not object to a station owner "selling what rights he has so long as he does not tack on anything for his license from the Government. In other words, I do not believe that [End Page 399] we are justified in creating a franchise value for the privilege to broadcast."

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As Senator Couzens made clear, the creation of a "franchise value" in radio frequencies ran contrary to the spirit of the proposed legislation. Congress sought to maintain the spectrum as a publicly owned resource because of its special nature. It was not just that radio frequencies were scarce, but that radio was, in Representative Ewin L. Davis's words, "the most potent political instrument of the future."⁴⁶ If power over this instrument were ever concentrated in the wrong hands, it could threaten the very foundations of the republic.

Though a great many lawmakers adhered to this logic, Representative Luther A. Johnson of Texas probably articulated it as clearly as anyone ever did during a congressional floor debate in 1926. "There is no agency so fraught with possibilities for service of good or evil to the American people as the radio," he explained.

As a means of entertainment, education, information, and communication it has limitless possibilities. The power of the press will not be comparable to that of broadcasting stations when the industry is fully developed. If the development continues as rapidly in the future as in the past, it will only be a few years before these broadcasting stations, if operated by chain stations, will simultaneously reach an audience of over half of our entire citizenship, and bring messages to the fireside of nearly every home in America. They can mold and crystallize sentiment as no agency in the past has been able to do. If the strong arm of the law does not prevent monopoly ownership and make discrimination by such stations illegal, American thought and American politics will be largely at the mercy of those who operate these stations. For publicity is the most powerful weapon that can be wielded in a Republic, and when such a weapon is placed in the hands of one, or a single selfish group is permitted to either tacitly or otherwise acquire ownership and dominate these broadcasting stations throughout the country, then woe be to those who dare to differ with them. It will be impossible to compete with them in reaching the ears of the American public.

Subsidy of radio broadcasting would be far more effective and dangerous than subsidy of the press. For if every newspaper in the United States could be purchased by some trust or [End Page 400] combination, independent and competing newspapers could be established. But if the broadcasting stations, which are necessarily limited in number, can be acquired, or even a majority of the high-powered stations owned and controlled by a trust, then the public will be helpless to establish others, unless the Government protects them in this right. Freedom of the air will be impossible if the Government either licenses or permits monopoly ownership of radio sending stations.⁴⁷

Johnson's analogy to the newspaper industry went to the very heart of the issue. In his 1959 article, Coase claimed that there was no meaningful distinction between the publication of newspapers and radio broadcasting.⁴⁸ But the fact that entry could conceivably be limited in one but not the other, Johnson argued, made all the difference in an arena so critical to the democratic process.

As it turned out, the House and Senate each passed its own version of radio legislation at the end of 1926, prodded by recent court decisions and perhaps by Hoover's supposed chaos strategy as well. According to Senator Dill, while the two bills "differed widely as to who should have the authority to regulate radio [the Secretary of Commerce or the Federal Radio Commission], they both contained provisions to prevent the users of radio apparatus from maintaining or even asserting any claim to the ownership of any vested rights in wave lengths." With no time available to resolve their differences before the end of the legislative session, each house rushed to pass a joint resolution in 1926, negating any private claims of spectrum ownership in the meantime.⁴⁹

The new Congress that convened in 1927 moved quickly to pass a reconciled piece of legislation. An amalgam of the House and Senate versions, the resulting Radio Act included two strong antimonopoly provisions. One

prohibited the unlawful monopolization of radio communication, while another outlawed the ownership of radio and wire systems in combination.⁵⁰ With the behemoth AT&T clearly in mind, Congress sought to remove any possibility that radio broadcasting would fall into the hands of this, the nation's greatest communications monopoly.⁵¹ But it was the hallmark regulatory standard of "public interest, convenience, or necessity" that provided the new commission with its most powerful weapon for preempting concentrated control over radio broadcasting—and one that was conceptually distinct from the prevailing standard in antitrust law. [End Page 401]

Whereas the objective in antitrust was to bar "restraint of trade," the goal of the Radio Act was to prevent, among other things, restraint of diverse expression over the airwaves. To be sure, some lawmakers who were frustrated with the Justice Department's handling of antitrust matters (particularly Senator William Borah of Idaho, Senator Key Pittman of Nevada, and Representative Ewin Davis of Tennessee) hoped to create a new and far more aggressive antitrust vehicle under the guise of radio regulation. But this covert objective was more the exception than the rule. In its final form, the Radio Act split the power to control monopoly in the radio industry between the radio commission and the Justice department.⁵²

Such dual regulation struck Coase as unnecessary.⁵³ Yet what seemed redundant to Coase was in fact designed to provide critical flexibility in combating concentrated control over a resource that Carl J. Friedrich and Evelyn Sternberg tellingly characterized as a "molder of public opinion and an instrument of political power."⁵⁴ Under the Radio Act, if the Justice Department found evidence of monopolistic trade, the commission was authorized to revoke the offender's broadcast license. But that was only the tip of the iceberg. The statute's public-interest standard, in particular, allowed the commission to act *in advance* of specific antitrust violations and to address a much broader class of problematic behavior.⁵⁵ As early as 1941, an FCC report on chain broadcasting made clear that while the commission "should administer its regulatory powers with respect to broadcasting in light of the purposes which the Sherman Act was designed to achieve," its power extended beyond that act's narrowly conceived mission.⁵⁶ "We do not predicate our jurisdiction to issue the regulations on the ground that the network practices violate the antitrust laws. We are issuing these regulations because we have found that the network practices prevent the maximum utilization of radio facilities in the public interest."⁵⁷

Those who crafted the nation's radio legislation never fully explained why they believed existing antitrust law would be insufficient to achieve their objectives. Presumably, the notion that antitrust law, an economic instrument, would not be optimal for addressing concentrations of *political* power on the airwaves was so obvious that it was simply taken for granted.

Certainly, the notion that radio broadcasting carried special political significance was plain enough. In addition to establishing the public-interest standard, federal lawmakers also imposed a strict prohibition on broadcast licenses being granted or transferred to foreigners, [End Page 402] or even to "any company, corporation, or association of which any officer or director is an alien, or of which more than one-fifth of the capital stock may be voted by aliens or their representatives or by a foreign government or representative thereof, or by any company, corporation, or association organized under the laws of a foreign country."⁵⁸ As Representative Wallace H. White of Maine explained in 1924, "This means of communication within our borders should be in the hands and control of those loyal to this country."⁵⁹

The resulting prohibition on foreign control over broadcast licenses hardly fits neatly into a rent-seeking model of policy formation, since incumbent broadcasters must have recognized at the time that a legal constraint on the demand for their assets was unlikely to redound to their economic benefit. Nor can the prohibition be explained by appealing to a simple economic-efficiency version of the public-interest model. To be sure, a rule limiting foreign control over broadcasting would have been unnecessary had the radio spectrum merely constituted an economic resource like any other, as Coase later insisted. The truth is that this unusual prohibition was written into the law precisely because the spectrum was regarded as *no ordinary resource*. Indeed, Coase's contention that "there is nothing about the broadcasting industry which would lead us to believe that the allocation of frequencies constitutes an exceptional case" strangely overlooks the medium's enormous political consequence, which was almost universally recognized at the time.⁶⁰

Coase, Radio Regulation, and the Supreme Court

Not surprisingly, the same essential oversight also biased Coase's assessment of the Supreme Court and its take on radio regulation. As will be recalled, Coase dismissed Justice Frankfurter's argument for federal regulation, articulated in *FCC v. National Broadcasting Co.* (1943), as based on nothing more than simple resource scarcity: "Mr. Justice Frankfurter seems to believe that federal regulation is needed because radio frequencies are limited in number and people want to use more of them than are available. But it is a

commonplace of economics that almost all resources used in the economic system (and not simply radio and television frequencies) are limited in amount and scarce."⁶¹ [End Page 403]

Yet Frankfurter's opinion was considerably more sophisticated than Coase suggested. The justice clearly explained with regard to the Federal Communications Act of 1934 that its provisions "preclude the notion that the Commission is empowered to deal only with technical and engineering impediments to the 'larger and more effective use of radio in the public interest.'" ⁶² Indeed, as Frankfurter acknowledged, the FCC was charged with bringing about a *socially* optimal use of the medium that was not likely to be achieved in an unregulated market. Speculating about what might happen in the absence of public control over spectrum allocation, he wrote:

Suppose, for example, that a community can, because of physical limitations, be assigned only two stations. That community might be deprived of effective service in any one of several ways. More powerful stations in nearby cities might blanket out the signals of the local stations so that they could not be heard at all. The stations might interfere with each other so that neither could be clearly heard. One station might dominate the other with the power of its signal. But the community could be deprived of good radio service in ways less crude. One man, financially and technically qualified, might apply for and obtain the licenses of both stations and present a single service over the two stations, thus wasting a frequency otherwise available to the area.⁶³

Citing liberally from an opinion he had written three years earlier, Frankfurter explained that the scarcity of resources was not the single, nor even the most important, motivating factor behind radio legislation. Instead, concern over the concentration of private power in radio broadcasting drove the legislature to act. "Congress," he had observed in 1940, "moved under the spur of a widespread fear that in the absence of governmental control the public interest might be subordinated to monopolistic domination in the broadcasting field."⁶⁴ The Communications Act, which emerged from this regulatory impulse, was "not designed primarily as a new code for the adjustment of conflicting private rights through adjudication. Rather it expresses a desire on the part of Congress to maintain, through appropriate administrative control, a grip on the dynamic aspects of radio transmission."⁶⁵

If Coase underestimated Frankfurter's understanding of the interference problem and the logic of regulation, he himself relied on [End Page 404] a rather particular reading of the First Amendment. "The situation in the American broadcasting industry," Coase wrote,

is not essentially different in character from that which would be found if a commission appointed by the federal government had the task of selecting those who were to be allowed to publish newspapers and periodicals in each city, town, and village of the United States. A proposal to do this would, of course, be rejected out of hand as inconsistent with the doctrine of freedom of the press.⁶⁶

Yet when applicants for broadcast licenses appealed to the Supreme Court, complaining that a denial of a license constituted an abridgment of free speech, the court was unsympathetic. Not content with the absolutist view of the First Amendment that the broadcasters put forth, the majority concluded in 1943 that "denial of a station license . . . is not a denial of free speech."⁶⁷

The logic behind this distinction became clear some years later in a landmark 1969 decision, *Red Lion Broadcasting Co. v. FCC*. Here the court explained that far from restricting free speech, licensing restrictions actually helped to preserve it. The limited nature of the spectrum prevented all applicants from gaining access to broadcast stations. But in the absence of public regulation, those who gained access could easily use their power to preclude others from being heard. Thus the court determined that "the right of free speech of a broadcaster. . . does not embrace a right to snuff out the free speech of others."⁶⁸ It also clarified the essential justification for the FCC's equal-time rule, which the appellants in the case had vigorously protested as a violation of their First Amendment rights. "Where there are substantially more individuals who want to broadcast than there are frequencies to allocate," the court announced,

it is idle to posit an unbridgeable First Amendment right to broadcast comparable to the right of every individual to speak, write, or publish. If 100 persons want broadcast licenses but there are only 10 frequencies to allocate, all of them may have the same "right" to a license; but if there is to be any effective communication by radio, only a few can be licensed and the rest must be barred from the airwaves. It would be strange if the First Amendment, aimed at protecting and furthering communications, prevented the Government from making [End Page 405] radio communication possible by requiring licenses to broadcast and by limiting the number of licenses so as not to overcrowd the spectrum.

This has been the consistent view of the Court. . . .

. . . No one has a First Amendment right to a license or to monopolize a radio frequency. . . . It is the purpose of the First Amendment to preserve an uninhibited marketplace of ideas in which truth will ultimately prevail, rather than to countenance monopolization of that market, whether it be by the Government itself or a private licensee.⁶⁹

Red Lion made it clear that the First Amendment provided no immunity from the FCC's licensing power. Concern over the monopolization of the airwaves remained paramount in the justices' minds, a trend that was apparent as early as the 1940 *Pottsville* decision. As the court's successive rulings made clear, the needs of private broadcasting companies were subordinate to the public interest as determined by the FCC. Federal regulation of the airwaves was not, as Coase had insisted, equivalent to "selecting those who were to be allowed to publish newspapers and periodicals in each city, town, and village of the United States."

Within this context, moreover, Hazlett's economistic notion that the problem of scarcity would inherently be solved if frequencies were priced in the private market seems oddly out of place. The Court's sense of scarcity—defined presumably as insufficient opportunity for diverse and independent political expression on the airwaves—would hardly be solved by Coase and Hazlett's "price-rationing mechanism," even if "excess demand for licenses" were indeed "eliminated" in the process.⁷⁰ Surely, a market for another politically consequential resource, votes, would eliminate scarcity in strictly economic terms, by allowing those most interested in electoral outcomes to obtain the votes of the relatively apathetic. But it would do so only by generating unacceptable scarcity in a political sense, by denying sufficient opportunity for individual input into the democratic process.

Indeed, this was the implicit logic that led policymakers to react so strongly beginning in the 1920s against the notion of permanent property rights in the spectrum and the rationing of broadcast frequencies through the price mechanism. A proposal to allocate votes in the marketplace would obviously have been greeted with even greater alarm, but—and this is the important point—it would [End Page 406] have been opposed for many of the same reasons. There are certain places, apparently, where economic and political imperatives simply do not mix.

Radio Regulation and the Public Interest

By viewing the radio spectrum as nothing more than a standard economic resource, Coase missed what was for many lawmakers its defining characteristic. The unprecedented power to communicate and to shape public opinion that radio allowed had profound implications for American politics and, indeed, for the democratic process itself.

In a very real sense, radio broadcasting threatened one of the nation's most trusted bulwarks against tyranny. As James Madison had observed in *Federalist* 10, it was the cacophony of voices, spread out over vast distances, that served as the greatest guardian of the democratic process in America. Not only would a multitude of disparate factions render it virtually impossible for any stable—and potentially tyrannous—majority to form, but individual factions would find it hard to reach very far beyond their own locales in a nation as large as the United States. "The influence of factious leaders," Madison wrote, "may kindle a flame within their particular States but will be unable to spread a general conflagration through the other States." Because "communication is always checked by distrust, in proportion to the number whose concurrence is necessary," a demagogue's power would necessarily dwindle as it was projected further from its base.⁷¹ Madison's vision of a healthy democratic republic relied on a vigorous and disruptive competition among political interests—or, to put it another way, on intense and continuing *interference* in the political realm.

Radio broadcasting posed little threat to Madison's vision so long as it was filled with a cacophony of competing voices, crammed together on a raft of overlapping frequencies. But once the interference problem was solved through a rational method of spectrum allocation, broadcasting immediately threatened to provide some factions with unparalleled access to the public, based on a technology that collapsed space in the transmission of the human voice.⁷² Broadly speaking, this is why policymakers so feared the potential for concentrated control over broadcasting, why so many of them took for granted that spectrum allocation could never be left entirely [End Page 407] to the private market, and why the Supreme Court so steadfastly guarded the authority of federal regulators in the years after the FCC was created.

Perhaps because the case for regulation was rarely stated with the kind of logical precision that economists demand of themselves, Coase misinterpreted the impassioned support for radio regulation that he found in the historical record merely as an expression of mass anxiety about a mysterious new technology. Convinced that the radio spectrum was indeed no different than any other economic resource, Coase refused to believe that the lawmakers' near universal support for a regulatory solution could be guided by anything but a "misunderstanding

of the nature of the problem." It was a bit like Herbert Spencer, who claimed in the late nineteenth century that despite all the stories to the contrary, scientists should understand that it was physically impossible to throw a curve ball. Spencer's physics proved faulty because in thinking "scientifically" about the trajectory of a sphere moving through space, he assumed away two critical facts about the problem at hand: that there were stitches on baseballs and friction in the air.⁷³ We believe that Coase committed a similar error in his work on the FCC by ignoring the crucial political significance of radio broadcasting.

Of course, all of this is not to say that pervasive fear about the potential for political monopolization of the airwaves was the *only* factor that led contemporary lawmakers to adopt the regulatory approach that they did. Hazlett's powerful insights about the benefits that major players derived from the arrangement remain as relevant as ever.⁷⁴ Nor are we suggesting that the FCC has fully achieved the legislative objective of assuring diversity of expression on the airwaves that Congress set for it in the 1920s and 1930s.

Indeed, there is little doubt that federal radio policy favored commercial broadcasters over ideologically and religiously charged stations from the beginning. The regulators' chief goal—avoiding the monopolization of a scarce and politically significant resource—did not extend to protecting single-issue stations. Instead, the goal was to promote stations that offered broadly oriented programming.

Although network radio derived great benefit from this regulatory approach (as Hazlett correctly maintains), it is simply too great a leap to interpret this outcome as strong evidence that congressional lawmakers and commercial broadcasters had colluded from the outset. As the relevant historiography makes clear, the regulators' preference for network broadcasters is consistent with an anti-labor [End Page 408] thesis, a procorporate thesis, a rent-seeking thesis, and an antimonopoly thesis. It is also consistent with the simple proposition that regulators viewed these commercial broadcasters as especially unlikely to tyrannize the airwaves.⁷⁵ The three bland networks that the FCC long tolerated—and even fostered—may not have created the sort of vibrant diversity that Congress originally intended; but neither did they exercise tyrannous control over political speech.

Our point is simply this: that the bulk of the evidence strongly suggests that the fear of concentrated control over mass communication mattered a great deal in the making of American radio regulation. The record also suggests that this concern about concentrated political power provided lawmakers with a perfectly reasonable basis upon which to conclude that a property-rights solution would *not* have been socially optimal. This was because their conception of the public interest—of what actions would be socially optimal—had at least as much to do with democratic principles as with notions of economic efficiency. Even if it arose as a result of purely voluntary market transactions, concentrated control over radio broadcasting could still represent a major threat to the republic. Coase's misreading of the historical record should thus serve as a warning to students of law and economics about the perils of assuming away critical real-life factors that do not fit neatly into our models, like those nettlesome stitches on a baseball.

This story, we believe, should also serve as a reminder that the public-interest theory of policymaking, long dismissed as naive, actually requires further evaluation.⁷⁶ The fact that lawmakers advanced coherent arguments in support of federal radio regulation during the 1920s and 1930s is obviously not sufficient to confirm the public-interest theory. But it does provide a good reason to give the theory another look. If the lawmakers' often-repeated claim about the perils of concentrated control over the airwaves really were nothing more than a cover for selfish rent-seeking, then one would have to admit they put on a phenomenal show. We may never be certain about the true motivations of these lawmakers. What should be clear now, however, is that a public-interest reading of federal radio legislation finds little contradiction in the legislative record itself.

In fact, even today, ongoing developments in the arena of radio regulation seem only to bolster the public-interest perspective. As is well known, there has been a major push in recent years to deregulate the airwaves. Proponents of deregulation have sought, in particular, to create more genuine markets for spectrum rights (based [End Page 409] initially on government auctions) and to reduce restrictions on media ownership (such as the rule blocking any individual company from owning more than a certain number of television and radio stations in a particular locale). This debate is of interest here for at least three reasons.

To begin with, there can be little doubt that Coase's ideas about the optimality of a market-based approach to spectrum allocation have ended up playing a central role in redefining the "public interest" and, in turn, in driving deregulation of the industry on public-interest grounds. Speaking in support of spectrum auctions to a House subcommittee in 1997, FCC Chairman Reed Hundt emphasized both his pursuit of the public interest and his debt to Ronald Coase:

Congress and the FCC need to affirm a new paradigm of spectrum policy that relies on market techniques for commercial uses of spectrum. I believe that such a policy is the best way to ensure that spectrum is used to benefit the public. Market-based spectrum policy is not based on new radical economic theories, but rather on sound principles that have been tried and true for 50

years. Nobel Laureate Ronald Coase wrote an article advocating market-based approaches for the FCC more than 35 years ago.⁷⁷

In 2001, thirty-seven economists—among them Ronald Coase himself, two former members of the President's Council of Economic Advisors, ten former justice department officials, and six former FCC officials, including Thomas Hazlett—wrote a brief to the FCC urging "the Commission to advance the 'public interest' by eliminating barriers to the productive use of radio spectrum" (particularly with respect to wireless communications technologies). Noting that "none of us has been retained by any client concerning this submission" and that many economists had "written articles showing the benefits" of their proposed approach, they insisted that "market-oriented rules opening the radio spectrum" would capture "its full potential for society."⁷⁸ The current chairman of the FCC, Michael Powell, appears to have been duly convinced, suggesting in a recent interview that "the famous Ronald Coase treatise that won the Nobel Prize was about this—that [the traditional command-and-control] spectrum policy is lunacy. The market could work this out."⁷⁹

The relevant point for this article is that although notions of how best to serve the public interest have changed as a result of [End Page 410] Coase's powerful economic arguments, there is no question that ideas about the public interest, however defined, are still of great import in shaping the policy debate. Indeed, there is a certain irony in the fact that many of the same economists who, in their scholarship, are quick to attribute legislative and regulatory outcomes to self-interested, rent-seeking behavior have nonetheless lobbied hard in recent years for deregulation of the spectrum—and, on top of that, that they have done so explicitly on *public-interest grounds* and have proved remarkably influential!

A second intriguing point to emerge from the current debate over deregulation of the airwaves is that the traditional argument about preventing concentrated control over a politically sensitive resource still resonates in the halls of Congress, though certainly not as loudly as it once did. Responding to continued calls for deregulation in 2001, for example, Senators Ernest Hollings and Byron Dorgan wrote in the *Washington Post*, "For decades, our communications policy has imposed sensible restrictions on media ownership to promote and preserve multiple, independent voices. . . . [I]f media consolidation is allowed to continue unfettered . . . local control, local coverage and a robust marketplace of ideas will suffer." Significantly, Hollings and Dorgan explicitly distinguished their goal of promoting "diversity and localism" on the airwaves from "narrow antitrust notions of competition," just as Congress had done in 1927.⁸⁰

Even Hollings and Dorgan acknowledged, however, that this traditional argument in support of radio regulation was facing mounting criticism on the grounds that "current ownership restrictions are outmoded because of the proliferation of new media outlets." Which brings us to the third, and perhaps most fascinating, point about the current debate. According to a growing number of critics, the rise of the Internet, cable and satellite television, and the like have rendered the FCC obsolete, since there is no longer any meaningful limit on the number of independent voices that can be heard.⁸¹ Proponents of the traditional regulatory regime, including Hollings and Dorgan, counter this argument by noting that "most people still get their information from local newspapers, radio and television stations," rather than from the Internet.⁸²

What we find most striking, however, is that this newest argument about the obsolescence of radio regulation is in fact perfectly consistent with the logic that was used to justify radio regulation in the first place. As we have shown, the early advocates of the FRC [End Page 411] and the FCC rested their case on a *combination* of spectrum scarcity on the one hand and broadcasting's special political significance on the other. There was no need to regulate newspapers in the same way, they believed, because newspapers were characterized by only one of these attributes (political significance), but not both. If it is indeed correct to think about the Internet and other new communications technologies as effectively eliminating spectrum scarcity in broadcasting, as some now argue, then the traditional case for regulation—even if once correct—might now be defunct.

Curiously, all of these goings-on remind us of the old adage that the more things change, the more they stay the same. With respect to spectrum allocation, old conceptions of the public interest are now under attack, by Coasians on the one hand and new communications technologies on the other. Yet much of the debate still revolves around the special political significance of broadcasting. And despite the fact that there are many powerful and influential interests involved, it still appears that the current debate (like the historical one) can be understood fundamentally as a contest of ideas about how best to serve the public interest. How that debate is likely to turn out is a question that lies well beyond the scope of this article. But the very nature of the debate—and the fact that social scientists like Coase and Hazlett are themselves deeply involved in it (as experts, not rent-seekers)—should help to reinforce our historical argument that the public-interest perspective remains highly relevant, even if intensely unfashionable, in the realm of policy studies.

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Endnotes

1. Ronald H. Coase, "The Federal Communications Commission," *Journal of Law & Economics* 2 (1959): 1-40.
2. *Ibid.*, 26-27.
3. *Ibid.*, esp. 12-40.
4. Thomas W. Hazlett, "The Rationality of U.S. Regulation of the Broadcast Spectrum," *Journal of Law & Economics* 33 (1990): 137-38 nn. 12-14.
5. *Ibid.*, 175.
6. Thomas W. Hazlett, "Assigning Property Rights to Radio Spectrum Users: Why Did FCC License Auctions Take 67 Years?" *Journal of Law & Economics* 41 (1998): 529. See also Hazlett, "Rationality of U.S. Regulation," 174.
7. Hazlett, "Rationality of U.S. Regulation," 138.
8. Since 1959, of course, the public-interest theory on which Coase relied has fallen into disrepute, with the study of policy formation focusing increasingly on [End Page 412] economic explanations, in which lawmakers are assumed to behave as simple rent-seekers rather than as guardians of the public interest. This change was first evident in the works of Stigler, Posner, and Pelzman with respect to regulation; but it subsequently reached the study of legislation as well. See George J. Stigler, "The Theory of Economic Regulation," *Bell Journal of Economics and Management Science* 2 (1971): 3-21; Richard A. Posner, "Theories of Economic Regulation," *Bell Journal of Economics and Management Science* 5 (1974): 335-58; Sam Pelzman, "Toward a More General Theory of Regulation," *Journal of Law & Economics* 19 (1976): 211-40; George L. Priest, "The Origins of Utility Regulation and the 'Theories of Regulation' Debate," *Journal of Law & Economics* 36 (1993): 289-23.
9. With regard to the equal-time rule, for example, a Senate report stated explicitly in 1959, the year Coase published his article: "If the number of radio and television stations were not limited by available frequencies, the committee would have no hesitation in removing completely the present provision regarding equal time and urge the right of each broadcaster to follow his own conscience. . . . However, broadcast frequencies are limited and, therefore, they have been necessarily considered a public trust" (Senate Report No. 562, 86th Cong., 1st sess. 1959, 8-9, as cited in *Red Lion Broadcasting Co. v. FCC*, 395 U.S. 367 [1969], 400).
10. Coase, "Federal Communications Commission," 25.
11. *National Broadcasting Co. v. United States*, 319 U.S. 190 (1943), 213, as quoted in Coase, "Federal Communications Commission," 12-13.
12. Coase, "Federal Communications Commission," 14.
13. The phrase "mysterious technology" appears in Coase, "Federal Communications Commission," 40.
14. Coase, "Federal Communications Commission," 25-26.
15. For historical treatments of American radio regulation prior to Hazlett, see esp. Jora R. Minasian, "The Political Economy of Broadcasting in the 1920s," *Journal of Law & Economics* 12 (1969): 391-403; Erik Barnouw, *A History of Broadcasting in the United States: A Tower in Babel, Vol. 1—to 1933* (New York, 1966); Philip T. Rosen, *The Modern Stentors: Radio Broadcasters and the Federal Government, 1920-1934* (Westport, Conn., 1980).
16. Hazlett, "Rationality of U.S. Regulation," 138 (where the first reference to "error theory" appears). A survey of "error theory" literature can be found at 142, notes 25-27. See also Hazlett, "Assigning Property Rights to Radio

Spectrum Users."

17. Ibid., 151.

18. Ibid., 152.

19. Herbert C. Hoover, "The Urgent Need for Radio Legislation," *Radio Broadcast* 2 (1923): 211, as quoted in Hazlett, "Rationality of U.S. Regulation," 152.

20. How important the *Oak Leaves* decision was in prompting federal action is a matter of some debate. Charlotte Twight, in particular, has argued that the ruling could not have been a pivotal factor since Congress had already begun moving toward enactment months before it was issued. See Charlotte Twight, "What Congressmen Knew and When They Knew It: Further Evidence on the Origins of U.S. Broadcasting Regulation," *Public Choice* 95 (1998): 247-76. Rather more sympathetic to Hazlett's account, Hugh Aitken concedes that it "is a heavy burden to place on a single decision in a single state court. *Oak Leaves*, however, was no ordinary decision. It was widely noted and widely discussed. It had the potential, if accepted as a precedent, to determine the future of the broadcasting industry" (Hugh G. J. Aitken, "Allocating the Spectrum: The Origins of Radio Regulation," *Technology and Culture* 35 [1994]: 712).

21. *Hoover v. Intercity Radio Co.*, 286 Fed. 1003 (1923); *United States v. Zenith Radio Corp.*, 12 F. 2d 614 (1926).

22. Hazlett, "Rationality of U.S. Regulation," 158.

23. Ibid., 158; Rosen, *Modern Stentors*, 93-95. [End Page 413]

24. Radio Act of 1927, P.L. 632, 44 Stat. Chap. 169, 23 February 1927, section 11, 1167.

25. Hazlett, "Rationality of U.S. Regulation," esp. 160-61.

26. Ibid., 175.

27. Hazlett, "Assigning Property Rights to Radio Spectrum Users," 541.

28. Hazlett, "Rationality of U.S. Regulation," 162.

29. As quoted in Hazlett, "Assigning Property Rights to Radio Spectrum Users," 542.

30. Hazlett, "Rationality of U.S. Regulation," 172.

31. See esp. Hazlett, "Assigning Property Rights to Radio Spectrum Users."

32. Significantly, no other nation opted for a market-based solution. For a comparative international perspective on radio regulation, see Aitken, "Allocating the Spectrum," 688-89; Morton Keller, *Regulating a New Economy: Public Policy and Economic Change in America, 1900-1933* (Cambridge, Mass., 1990), 82.

33. House of Representatives, Committee on the Merchant Marine and Fisheries, Hearings on H.R. 7357 *To Regulate Radio Communication*, 11-14 March 1924, 8, 10. The first sentence of this passage has been modified to correspond to the version, presumably corrected, that appears in the Congressional Record. See *Congressional Record*, 69th Cong., 2d sess., 1927, 68, pt. 3:2571.

34. House, Hearings, *To Regulate Radio Communication*, 36.

35. Ibid., 201, 202.

36. Ibid., 202.

37. Ibid., 202.

38. Hazlett, "Rationality of U.S. Regulation," 144.

39. See esp. House of Representatives, Committee on the Merchant Marine and Fisheries, Hearings, *To Regulate Radio Communication*, 6, 7, 14, 15 January 1926, 207-8.

40. Senate, Committee on Interstate Commerce, Hearings on S.1 and S.1754 *Radio Control*, Part I, 8-9 January 1926, 34.
41. *Ibid.*, 39.
42. *Ibid.*, 43-44.
43. *Ibid.*, 42-44.
44. *Ibid.*, 46.
45. *Ibid.*, 47.
46. *Congressional Record*, 69th Cong., 2d sess., 1927, 68, pt. 3:2572. Ewin L. Davis was the ranking Democratic member of the radio subcommittee.
47. *Congressional Record*, 69th Cong., 1st sess., 1926, 67, pt. 5:5558. Johnson himself ultimately opposed the House bill because he did not think it went far enough in preventing monopoly.
48. Coase, "Federal Communications Commission," esp. 7, 12, and 38.
49. Clarence C. Dill, *Radio Law: Practice and Procedure*, (Washington, D.C., 1938), 82.
50. Radio Act of 1927, sections 13 and 17. The Radio Act is reprinted in Dill, *Radio Law*, 255-71. As former FCC chief economist Dallas Smythe explained, "Congress was impressed with the dangers of monopoly control over broadcasting by means of patents or any of the other devices which the fertile human mind might concoct, and wrote special sanctions into its broadcast policy. Ordinary private enterprise was subject to the Anti-trust laws. Additional penalties were prescribed for broadcasters who violated those laws" (Dallas W. Smythe, "A National Policy on Television?" *Public Opinion Quarterly* 14 [1950]: 465).
51. Legislators of the time frequently worried about industrial monopolies, and kept a particularly close eye on AT&T. According to Ithiel de Sola Pool, the "frequent alarms [in the mid-1920s] about the threat of broadcasting monopoly" often had more to do with the specter of AT&T than with the nascent broadcasting networks. See Ithiel de Sola Pool, *Technologies of Freedom* (Cambridge, Mass., 1983), 136. **[End Page 414]**
52. See Donald G. Godfrey and Val E. Limburg, "The Rogue Elephant of Radio Legislation: Senator William E. Borah," *Journalism Quarterly* 67 (1990): 214; Marvin Bensman, *The Beginning of Broadcast Regulation in the Twentieth Century* (Jefferson, N.C., 2000), 189.
53. Coase, "Federal Communications Commission," 16.
54. Carl J. Friedrich and Evelyn Sternberg, "Congress and Control of Radio-Broadcasting I," *American Political Science Review* 37 (1943): 809.
55. *Ibid.*
56. Report cited in *National Broadcasting Co. v. United States*, 223.
57. *Ibid.*, 224. See also discussion in section IV *infra*.
58. Radio Act of 1927, section 12.
59. *Reaffirming the use of the ether for radio communication, or otherwise, to be the inalienable possession of the people of the United States and their government*, House Report No. 719, 68th Cong., 1st sess., 13 May 1924, 3.
60. Coase, "Federal Communications Commission," 19.
61. *Ibid.*, 14.
62. *National Broadcasting Co. v. United States*, 217.

63. Ibid., 217-18.

64. Ibid., 219, citing *FCC v. Pottsville Broadcasting Co.*, 309 U.S. 134 (1940), 137.

65. *FCC v. Pottsville Broadcasting Co.*, 138.

66. Coase, "Federal Communications Commission," 7.

67. *National Broadcasting Co. v. United States*, 227.

68. *Red Lion Broadcasting Co. v. FCC*, 387.

69. Ibid., 388-90. On *Red Lion* and the structure of radio regulation, see Edwin C. Baker, "Turner Broadcasting: Content-Based Regulation of Persons and Presses," in Dennis J. Hutchinson, David A. Strauss, and Geoffrey R. Stone, eds., *The Supreme Court Review 1994* (Chicago, 1995), 57-128.

70. Hazlett, "Assigning Property Rights to Radio Spectrum Users," 568.

71. Clinton Rossiter, ed., *The Federalist Papers*, "No. 10," (New York, 1961), 77-84.

72. The Federal Radio Commission, for example, declared in 1928, "There is not room in the broadcast band for every school of thought, religious, political, social, and economic, each to have its separate broadcasting station, its mouthpiece in the ether. If franchises are extended to some, it gives them an unfair advantage over others. . . . As a general rule, postulated on the laws of nature as well as on the standard of public interest, convenience, or necessity, particular doctrines, creeds, and beliefs must find their way into the market of ideas by the existing public service stations, and if they are of sufficient importance to the listening public the microphone will undoubtedly be available. If it is not, a well-founded complaint will receive the careful consideration of the Commission in its future action" (*Great Lakes Broadcasting Company*, unpublished 1928 report of the Federal Radio Commission, as quoted in "The Federal Radio Commission and the Public Service Responsibility of Broadcast Licensees," *Federal Communications Bar Journal* 11 [1950]: 8).

73. This story comes from the institutional economist John R. Commons, who claimed that it played an important role in inspiring his distinctive approach to economics. "Ever after," Commons wrote in his autobiography, "I looked for the omitted factors, or the ones taken for granted and therefore omitted, by the great leaders of the science of economics. That was how I became an economic skeptic" (John R. Commons, *Myself* [New York, 1934], 28).

74. Importantly, several particulars of the history of radio regulation cannot be explained by our fear-of-monopoly logic and instead are more consistent with Hazlett's franchise-rents framework. For instance, the failure to increase the spectrum available to broadcasters, in accordance with the wishes of big radio corporations, [End Page 415] suggests that more than anxiety over concentrated control of radio was at play. In addition, all users of radio waves, and not solely broadcasters, were subjected to extensive regulation. If *only* fear of political monopoly were at work, then nonbroadcast uses of the spectrum could have been left to the private market. Yet it appears from recent history that broadcasting is still regarded as special and that the fear of monopoly is still operative when it comes to the federal government's treatment of the spectrum. In the 1990s, Congress enthusiastically backed the auctioning of portions of the nonbroadcast spectrum but placed severe limits on the auctioning of broadcast licenses (Hazlett, "Assigning Property Rights to Radio Spectrum Users," 560-70; Aitken, "Allocating the Spectrum," 716; Keller, *Regulating a New Economy*, 81-85). As Hazlett himself acknowledged, "The broadcasting sector was pointedly singled out for special treatment" and "broadcasting license auctions have been authorized such that they will not much matter" (Hazlett, "Assigning Property Rights to Radio Spectrum Users," 565, 568).

75. On criticism of the FCC, see, e.g., Hazlett, "Assigning Property Rights to Radio Spectrum Users," 540-41, 544. On the preference for commercial broadcasters, see Robert Horwitz, *The Irony of Regulatory Reform: The Deregulation of American Telecommunications* (New York, 1988), 167-74; Robert McChesney, *Telecommunications, Mass Media, and Democracy: The Battle for the Control of U.S. Broadcasting, 1928-1935* (New York, 1993), chap. 2; Rosen, *Modern Stentors*, 12-13; Nathan Godfried, *WCFL, Chicago's Voice of Labor, 1926-78* (Urbana, 1997).

76. See also Joseph P. Kalt and Mark A. Zupan, "Capture and Ideology in the Economic Theory of Politics," *American Economic Review* 74 (1984): 279-300.

77. Statement of Reed E. Hundt, Chairman, Federal Communications Commission, on Spectrum Management Policy, before the Subcommittee on Telecommunications, Trade, and Consumer Protection, Committee on

Commerce, U.S. House of Representatives, Federal Document Clearing House Congressional Testimony, 12 February 1997. See also Gregory L. Rosston and Jeffrey S. Steinberg, "Using Market-Based Spectrum Policy to Promote the Public Interest," Federal Communications Commission Report, January 1997. Available at <http://wireless.fcc.gov/auctions/data/papersAndStudies.html>.

78. Gregory L. Rosston and Thomas W. Hazlett et al., "Comments of 37 Concerned Economists," in the Matter of *Promoting Efficient Use of Spectrum Through Eliminating Barriers to the Development of Secondary Markets*, Federal Communications Commission, WT Docket No. 00-230, 7 February 2001, 2, 4, 7.

79. As quoted in Nicholas Lemann, "The Chairman: He's the Other Powell, and No One Is Sure What He's Up To," *New Yorker*, 7 October 2002, 48.

80. Ernest F. Hollings and Byron Dorgan, "Your Local Station, Signing Off," *Washington Post*, 20 June 2001, A27.

81. See, e.g., Yochai Benkler and Lawrence Lessig, "Net Gains," *The New Republic*, 14 December 1998, 12; Yochai Benkler, "Overcoming Agoraphobia: Building the Commons of the Digitally Networked Environment," *Harvard Journal of Law & Technology* 11 (1998): 287; Eli Noam, "Spectrum Auctions: Yesterday's Heresy, Today's Orthodoxy, Tomorrow's Anachronism. Taking the Next Step to Open Spectrum Access," *Journal of Law & Economics* 41(1998): 765; Lawrence Lessig, *Code and Other Laws of Cyberspace* (New York, 1999), 182-85; Cass R. Sunstein, "Television and the Public Interest," *California Law Review* 88 (2000): 511-12; Neil Hickey, "Power Shift: As the FCC Prepares to Alter the Media Map, Battle Lines Are Drawn," *Columbia Journalism Review* 41 (March-April 2003): 26-31.

82. Hollings and Dorgan, "Your Local Station, Signing Off."

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160

ALLOCATION OF TELEVISION CHANNELS



The following is the opening statement of Chairman Coy at the conference held on September 13, 1948, in Dockets No. 8975 and 8736. While this is not an official document of the Commission, it is drawn largely from annual reports of the Federal Radio Commission and the Federal Communications Commission.

INTRODUCTION

- [91:16] 1. This Industry-Commission conference regarding future procedure pertaining to television broadcast allocations may well be regarded as an unusual procedure. I am quite sure it reflects the desire of all of us that we take every opportunity presented to plan the best television system possible for this country. Our mutual responsibilities in this regard are great. It is my observation that the planning aspects of any radio service are never ended. This is another way of saying that we never know and never pretend to know at any one time all there is to know about radio propagation in any particular part of the spectrum. After many years of standard broadcasting we still are learning about Sky Wave propagation. As our knowledge increases, our Engineering Standards must be reexamined.
2. But the use of the radio spectrum cannot be delayed until the scientists tell us that they now know all there is to know about the spectrum. Engineers are always making application of scientific data in arguing for the establishment of new radio services. As we develop radio services we continue to increase our knowledge and to improve the standards for the betterment of the service.
3. We stand at this point today with respect to television service in the VHF frequencies. Service was inaugurated in these bands prior to the war. The commercial use of these bands is almost entirely a post-war development. Many of the characteristics of these frequencies were indicated in the early use of them by the television service and today there is a larger body of information available because of the increased number of stations utilizing the frequencies in the band between 54 and 216 Mc.
4. In the allocation proceedings pursuant to the order of the Commission issued May 5, 1948, representations were made to the Commission of the serious affects of tropospheric interference in the present television allocation plan and in the proposed television allocation plan. These claims of interference are in general supported by the studies made by the Commission's Bureau of Engineering and I understand by studies made by other agencies of the Government. We cannot close our eyes to new scientific data. The standards of good engineering practice must reflect what we know about tropospheric propagation. And any allocation plan must be based upon standards of good engineering practice, at the very least recognizing all the scientific data reflected in the standards if not affording stations protection from all of the interference known.
5. What we are considering today, therefore, is important to the future of television service in this country. The Commission regards the problem important enough to discuss it with the industry people who will provide the

television service on frequencies assigned by the Commission and under standards of good engineering practice and rules and regulations prescribed by the Commission.

6. In the final analysis, it is the Commission's responsibility but I am sure this Commission will feel better able to cope with this problem having had your advice as the result of this consultation today. And I hope that you will feel better about the future of television in the VHF bands, having had this opportunity to consult with us about these problems.

7. In considering the future of a radio service, it seems to me to be important that we all be in agreement on the current situation. Perhaps in arriving at a statement as to where we are today with respect to television service in the VHF band it is worthwhile to recapitulate how we got here. I propose to do just that, then to summarize and then to raise the questions about where we go from here.

8. This paper of mine has been taken in very large part from the annual reports of the Federal Radio Commission and the Federal Communications Commission. In addition it has drawn upon the personal knowledge of those who have participated in the various actions of these two governmental agencies, and from the testimony of government and industry witnesses in various proceedings before these agencies.

9. I think the paper presents a fair picture of what has happened in the past several years. I hope the effort in preparing it is a worthwhile one and will contribute to an improved television service.

Early History of Television Development (1928-1941)

10. The Federal Radio Commission's annual report for the year ending June 30, 1928, indicates that "visual" broadcasting then was "only a matter of speculation". The very limited number of stations operating in the standard broadcasting band were permitted to experiment with "visual" broadcasting, but their operating time was limited due to the interference which might result to standard broadcast reception.

11. At this time, 1928, the radio spectrum was considered to be composed of the low frequency band (below 550 kc), the broadcasting band (550-1500 kc) and the "high frequency band". This last band then included the frequencies from 1500 to 6000 kc. Frequencies higher than about 6000 kc were not in general use but their potentialities for long distance broadcasting were recognized and there was some experimental development of television in this "high frequency band".

12. By 1929, the Federal Radio Commission had made an allocation for "visual" broadcasting which included four 100 kc channels between 2000 and 3000 kc. The rules governing "visual" broadcasting permitted only experimental operation.

13. By 1933, the industry was beginning to realize that better quality television could be obtained but that this would require higher carrier frequencies and higher scanning speeds with correspondingly greater band widths. Television broadcasting still was in an experimental stage and no effort had been made to adopt any standards of transmission.



14. Although the industry's interest in television seemed to lag during 1934, public interest was stimulated by the publicity given television developments in Europe, especially in Great Britain and Germany. In this country, it apparently was considered premature to propose standards for television broadcasting.

15. By 1935 continued efforts to obtain better picture definition had pushed the experimental television stations to still higher frequencies in the bands 42—56 Mc and 60—86 Mc. A band width of 3000—4000 kc was considered necessary for high quality transmission.

16. During 1936, an informal engineering conference formulated recommendations with respect to frequency allocations for "visual" broadcasting and pursuant to that conference, the Commission, in 1937, adopted Order No. 19, allocating a total of nineteen channels to television.

17. Even as late as 1938, all applications received for television facilities were for the development of equipment and experimentation. It was not until 1939 that the Commission began to receive applications for television facilities which involved commercial enterprise and television broadcasting to the general public. In that same year, the Commission formed a "Television Committee" composed of several of the Commissioners. This Committee made a thorough study of television developments and the problems involved in connection with commercial television broadcasting. On May 22, 1939, this Committee issued the first FCC report on television and stated the opinion that television broadcasting still was in a developmental stage and that, since no system standards could be agreed upon by the industry, the Commission would be in error to adopt standards for television broadcasting. The Commission amended Order No. 19 during 1939. The same nineteen channels allocated in 1937 were retained, but three of them were allocated also for general or specific research and experiments not necessarily directed toward an established service, on a non-interference basis to any television station.

18. On November 15, 1939, the Commission's Television Committee issued its second report which resulted in the tentative adoption, on December 22, 1939, of rules which permitted the licensing of a class of station to render sponsored programs to the public on a limited basis. However, these proposed rules were the subject of a hearing called for January, 1940. This hearing revealed that there was still considerable difference of opinion relative to standards for line and frame frequencies.

19. In a report issued February 29, 1940, the Commission announced the tentative adoption of new rules which provided for two classes of television stations:

- Class (1) —Experimental television and research
- Class (2) —Experimental program facilities

The Commission stated, in its report, that the evidence pointed to the substantial possibility of television broadcasting being on the "threshold of significant advances". Pointing to the differences of opinion with respect to standards, the Commission stated that further experimentation was necessary; that it was undesirable to freeze the system standards for television; and that, although experimental programming would be

permitted, nothing should be done to encourage a large public investment in television receivers. Despite this warning, a large-scale advertising campaign for the sale of television receivers was begun shortly after these rules were adopted. Because it was believed that wide-spread purchases of receivers by the public, at that time, would either cause the freezing of system standards to those embodied in such receivers, or else make such receivers obsolete, as a result of the later adoption of different television system standards, the Commission, after further hearings, issued a report which repealed the previous authorization of limited program operation.

20. With the cooperation of the FCC, the Radio Manufacturers Association, in 1941, formed a committee, known as the National Television Systems Committee (NTSC), to study the television situation. The NTSC submitted a report on January 21, 1941, which was followed by a Commission hearing on March 20, 1941. The object of this hearing was to obtain as much factual evidence as possible regarding the state of the art. The NTSC presented evidence indicating that the industry finally could agree on standard line and frame frequencies. The NTSC recommendations fixed the line and frame frequencies at 525 and 30, respectively. The NTSC report indicated that color standards could not be agreed upon and that color television still was in the experimental stage.

21. Pursuant to this hearing, new television rules were adopted on April 30, 1941. These rules permitted commercial television operations and adopted the NTSC standards. They required a minimum of fifteen hours of program time per week. This was later reduced to four hours per week, because of wartime conditions. Only 18 commercial channels were available, since one of the original 19 had been deleted to provide for an expansion of FM broadcasting into the 44—50 Mc band.

Situation During World War II

22. Two commercial television stations began operating in New York City on July 1, 1941. By September, 1941, an additional station went on the air in Philadelphia. By November 1, 1941, eight commercial authorizations were outstanding. In February, 1942, the fourth television station went into operation in Schenectady. With the exception of one additional station in Chicago, all further construction of commercial television stations was halted during the War by Orders of the Commission in April and October, 1942, prohibiting further authorizations for commercial television stations, where such authorizations involved the use of critical war materials. Thus there were five commercial television stations authorized which kept the art alive during the war.

23. On April 9, 1942, the NTSC submitted a report which recommended that the FCC retain the existing monochrome standards. The same report indicated that the state of the art did not yet justify color television standards. By June, 1944, much interest was being shown in the postwar establishment of commercial television stations and fifty-two applications for such stations were on file. At the end of the fiscal year of 1945, a total of six commercial television stations and three experimental television stations were furnishing program service, and 118 applications for commercial television facilities had been received. On October 7, 1945, the Commission rescinded its orders of April and October, 1942, thereby removing the restrictions on the construction of new broadcast stations.



1944 - 5 Service-Allocation Hearing

24. On August 15, 1944, the Commission issued an Order scheduling a general allocation hearing to commence on September 28, 1944. The purpose of this hearing was to establish a plan for the service-allocation of radio frequencies between 10 kc and 30,000,000 kc. It was the most comprehensive proceeding of its kind in the history of radio. Its significance and its impact on the eventual television allocations later adopted must be recognized in order to correlate the prewar development of television broadcasting and the post-war commercial television broadcast service which now has been established in the VHF spectrum (30-300 Mc).

25. The Commission was faced in this 1944 service-allocation hearing with the conflicting views of those who favored color television in the UHF spectrum (300-3000 Mc) and those who favored monochrome in the VHF spectrum (30-300 Mc). The Commission heard extensive testimony regarding such factors as the provision of space for color and/or superior monochrome systems of television; channel widths; economic and social effects of too few or too many channels; possibilities of rendering television service to as many people as possible under different allocation plans; and, the overall requirements for spectrum space of all the established radio services as well as a host of new radio services which did not even exist before the war.

26. In the Commission's Report of Proposed Allocations issued in January, 1945 pursuant to the 1944 hearing, only 12 VHF channels were provided. These were not intended to represent a satisfaction of television's requirement; 12 simply represented the most VHF spectrum space — 72 Mc — which, on a relative basis, the Commission then believed was justifiable for a wide-band service whose full accommodation obviously would have to be higher in the spectrum. There were many other services for which provision was made, but the "key" service allocations were:

	Space Mc
(a) Civil Aviation 108-132 Mc	24
(b) Military communications 225-400	175
(c) FM broadcasting 88-108 (not finalized until June, 1945)	20
Total	219 Mc

These three provisions alone total 219 Mc of space below 400 Mc, and, when added to 72 Mc of space for VHF television, the four add up to 291 Mc of the 356 Mc between 44 and 400 Mc. The remaining 65 Mc of space in this portion of the spectrum was distributed among a number of prewar services and new postwar services which theretofore had never been recognized. An inspection of the table of frequency allocations in the January, 1945, Report (Docket 6651) will indicate the allocations to all the services. It was for these reasons that the Commission sought a UHF allocation for television, and was unable to provide the 30 or more channels believed at that time to be required for a nation-wide and competitive system of television broadcasting. The broadcasting service, overall, received 532 Mc of the 876 Mc between 44 and 920 Mc, leaving

about 3/8 of this portion of the spectrum or 344 Mc of space for all the services other than broadcasting. This group included civil aviation, land mobile, maritime mobile, navigation aids, and government including military. The situation today is, of course, that tremendous sums of money have been spent by all the services in developing their 1945 allocations, and some of the allocations, e.g. 108-132 Mc, since have been standardized internationally.

27. The proposed allocation of 12 VHF channels represented a one-third reduction in the number of VHF channels available to a service whose full establishment on a commercial basis was delayed only because of the war. Wartime advances in electronic techniques and the postwar demands of the public for a television broadcasting service tended to accelerate developments in television and appeared to justify an increase in the number of channels to some figure greater than eighteen. It was obvious that the proposed VHF allocation of January 1945, of only twelve channels, was not compatible with the expressed need for expansion of this service. The testimony in the hearing tended to indicate that approximately thirty channels were necessary; and that the minimum number of channels, below which a satisfactory service could not be established was somewhere between 15 and 26. And, it seemed clear that a nationwide and competitive system of television broadcasting could not be established with only 12 channels. (See transcript Docket 6651.)

28. The January, 1945, proposal for twelve VHF channels was the subject of an oral argument and hearing in February and March, 1945. This proceeding was especially significant; for the first time the industry could present evidence and testimony with specific reference to a complete post-war table of service allocations and could furnish the Commission with information which would indicate the feasibility of the proposed allocation of twelve VHF television channels. The testimony at this hearing indicated the industry's opinion that 12 VHF channels were adequate to establish an initial commercial television service.

29. Following this hearing of February and March 1945, the Commission issued its Report of Allocations of May 25, 1945, and concluded on page 97 therein that:

⁶⁶No objections were made or exceptions taken to the Commission's proposed allocations regarding this service (television). Proposals were submitted, however, regarding further suggested channel assignments.

⁶⁶Television Broadcasters Association, Allen B. DuMont Laboratories, Inc., and the Radio Corporation of America all proposed that the 6 megacycle band which the Commission had left unassigned be allocated now for the benefit of television instead of reserving the allocation of this band as had been proposed by the Commission in its proposed report. The Commission is unable to comply with this request so far as this unassigned space is concerned. Two megacycles are being assigned to facsimile (see Sections 8 and 16). As to the remaining 4 megacycles the Commission finds that the needs of the fixed and mobile services for these frequencies in this portion of the spectrum outweigh the requirements of television. However, the Commission is able to assign an additional channel to television as the band between 174 and 180 megacycles which the Commission's



proposed report assigned to navigation aids has been assigned to television."

"Television Broadcasters Association further proposed that a definite nationwide television allocation plan be set out by the Commission and that television be given the primary right on the channels it is to share with other services. The Commission expects to issue a nationwide television allocation plan for assignment of television channels as soon as possible. However, as is pointed out in Section 2 of this Part, it is not contemplated that any service should have primary right to the shared channels. The assignments of the services to these channels will be on a mutually non-interference basis so that interference will not result either to television or to the sharing services.

"As is pointed out in Section 8 no final decision is being made at this time concerning the precise location of the six television channels in the 44-108 Mc region. Three alternative allocations are suggested. It should be noted that under alternative No. 3 television channel No. 5 would not be immediately available because of the presence of aviation markers centering on 75 Mc. Under alternative plans 2 and 3, the FM or the Fixed and Mobile services would be assigned to this portion of the spectrum and hence all television channels would be available at once.

* * * *

"The portion of the spectrum between 480 and 920 Mc has been made available for experimental television. The portion between 1245 and 1325 Mc has been assigned for television relay stations to be used by "pick-up" stations for relaying program material to the main television station for broadcasting. In addition, frequencies between 480 and 920 Mc will be available for this type of service until they are needed for television broadcasting. The determination of the channel width to be used must wait until the channel requirements of the equipment developed are known.

"As was pointed out in the proposed report, the Commission is still of the opinion that there is insufficient spectrum space available below 300 megacycles to make possible a truly nationwide and competitive television system. Such a system, if it is to be developed, must find its lodging higher up in the spectrum where more space exists and where color pictures and superior monochrome pictures can be developed through the use of wider channels. In order to make possible this development of television the Commission has made available the space between 480 and 920 megacycles for experimental television. The time which may elapse before a system can be developed to operate on wider channels on these ultra-high frequencies is primarily dependent upon the resourcefulness of the industry in solving the technical problems that will be encountered. In this portion of the spectrum it is contemplated that the Commission will license the entire band between 480 and 920 megacycles for

experimental television and will not designate any particular channels. Applicants desiring to operate in this portion of the spectrum should consult with the Chief Engineer as to the exact frequencies they should utilize.

"The Commission repeats the hope expressed in its proposed report that all persons interested in the future of television will undertake comprehensive and adequate experimentation in the upper portion of the spectrum. The importance of an adequate program of experimentation in this portion of the spectrum cannot be over-emphasized, for it is obvious from the allocation which the Commission is making for television below 300 megacycles that in the present state of the art the development of the upper portion of the spectrum is necessary for the establishment of a truly nationwide and competitive television system."

30. The choice between the three alternative plans detailed in the May 1945 report, was the subject of a hearing on June 22 and 23, 1945. Following this hearing, the Commission issued, on June 27, 1945, its Report of Allocations between 44 and 108 Mc. This completed the basic service-allocation table for the spectrum above 25 Mc and resulted in thirteen VHF television channels twelve of which were shared with the fixed and mobile services. This same Report also tabulated data with respect to the following vagaries of propagation:

sporadic E

F2

tropospheric effects.

While these data were reproduced in connection with the location of the FM broadcasting band, they are independent of the type of radio service which might employ frequencies of this order. They were tabulated so as to illustrate the principle of employing greater separations between co-channel station assignments whenever it is desired to minimize the interference resulting from tropospheric effects.

Geographical Allocation Plans

31. Shortly after the issuance of the June 27, 1945, Report, studies were begun on methods of allocating to cities on an equitable basis, the 13 channels available. An engineering committee, representing members of the Television Broadcasters Association and such other television engineers as could serve, worked from time to time with the engineering staff of the Commission to develop various allocation plans.

32. One of the first plans worked out by the Committee and strongly supported by the industry engineers on the committee set up four classes of stations: A, B, C, and D, as follows:

Class A Stations. These were assigned to the large metropolitan centers from Chicago, east, and from Washington, D. C., north. Their co-channel separation was in the order of 170 miles and their



adjacent channel separation approximately 85 miles. The radiation was equivalent to 50 kw with a 1000 foot antenna.

Class B Stations. These were assigned in smaller cities located in the area east of Chicago and north of Washington, D. C. They were assigned in the order of 120 miles from class A stations on a co-channel basis. Their radiation was to be so limited as not to degrade the service area of the class A stations. Their service area was not to be protected by the class A stations.

Class C Stations. These were to be located particularly throughout the South and West and their size varied with each city, the only limitation being that the service in adjacent cities was to be adequately protected. In order to provide the maximum service to rural areas, it was contemplated that service areas of class C stations would approach, and in some cases exceed, that of class A stations. However, class C stations would not be permitted to degrade the service of the class A stations.

Class D Stations. These were local stations with limited service areas intended to serve cities not having adequate service from other classes of stations. Their minimum co-channel separation was about 90 miles.

All classes of stations were to be allocated in the general area between Chicago and the East Coast and Washington, D. C. to the Canadian Border. The C stations, and to some extent the D stations, were to be allocated in the South and the West.

33. The Committee working on allocation plans agreed upon the separations to be maintained between co-channel and adjacent channel stations and recommended that wherever possible it would be desirable to provide at least 150-mile co-channel and 75-mile adjacent channel separations for metropolitan stations.

34. However, when specific plans were drawn up on this basis, it was found that many of the larger metropolitan cities in congested areas would be allocated only a very limited number of channels. Accordingly the Commission prepared and proposed a suggested plan of its own which was released to the public on September 20, 1945, and amended on October 3, 1945.

35. In this plan of September 20, 1945, each of the first 140 metropolitan cities with one exception, was allocated at least one channel. This was accomplished by earmarking three channels, channels 1, 12 and 13, for community operation. These community stations were spaced at 90 and 45 miles, respectively, for co-channel and for adjacent channel operation, thus limiting them to two millivolt contour protection. This plan limited the number of stations in the critical areas, and, in general, provided service to the 500 uv/m contour of most stations. It provided Cleveland with three channels; Washington, three channels; Philadelphia, three channels; Chicago, five channels; and New York, four channels. Other cities likewise were allocated considerably fewer channels than provided in the plan now in the Rules.

36. In this September 20, 1945, plan the Commission attempted to take

into account tropospheric propagation effects. A form of safety factor was used in the assignment plan which kept the assignments as far apart as practicable. Hence, the average station separation in the eastern part of the United States was considerably higher than that in the present assignment plan.

37. On October 11, 1945, at the hearing on Rules, Regulations, and Standards for Television, where the Commission's plan of September, 1945 was considered, the industry, represented by the Television Broadcasters Association, opposed the Commission's plan on the grounds that the larger metropolitan areas required more channels to handle the existing demand (Docket 6780; TR 28-31). New York City, for example, already had four times as many applications as channels allocated under the Commission's proposal.

38. The TBA at the same October, 1945, hearing, brought forth its own allocation plan which supported an increase in the number of channels allocated to most large cities (Docket 6780; TR 48). This was to be accomplished largely through the use of directional antennas and closer spacing. Also, channels 12 and 13 were to be reserved for metropolitan areas, and all the first 140 metropolitan areas were to be allocated channels. The number of cities requiring directional antennas under this TBA plan was forty-eight, or over 10% of the 401 assignments to be made available. Spacing between co-channel metropolitan stations was reduced to as little as sixty miles between two directional stations and as low as seventy-eight miles between a directional and non-directional station. Many of the directional antennas in the proposed TBA plan required locations known to be unsatisfactory to the Civil Aeronautics Administration. The industry expressed very strong opinions as to the vital need for more channels in the larger metropolitan areas, regardless of whether these extra channels were secured by directional arrays or by other means. It was stated, for example, by a network representative (Docket 6780; TR 87-8), that a minimum of seven channels was needed in New York City to give television the necessary incentive to go ahead, even if this meant the elimination of the only channel allocated to New Haven.

39. Following the October 11, 1945, hearing, the Commission gave considerable study to the directional plan submitted by the Television Broadcasters Association, but decided against it chiefly because of antenna site limitations.

40. The plan adopted by the Commission and incorporated into the Television Rules on November 21, 1945 (Docket 6780) provided the same number of channels in each city as the TBA plan, except that no directional antennas were utilized. An attempt was made to keep the co-channel spacing in this new plan at a minimum of 150 miles, but in critical areas this was impossible.

41. In December, 1946, and January and February, 1947, the Commission held a hearing on a petition submitted by the Columbia Broadcasting System which proposed the establishment of color television standards in the UHF band which had been allocated for television in 1945. The Commission issued a report on March 18, 1947, which denied this petition (Docket 7896).

42. It will be recalled that the FCC allocation of 1945 provided that 12 of the 13 VHF television channels be shared with the fixed and mobile services. This "sharing" was never implemented; however, exhaustive studies were conducted



leading to this end, and an informal engineering conference on this subject was held in June, 1947. On August 14, 1947, the Commission issued a proposal (Docket 8487), the chief provisions of which were the deletion of sharing of twelve of the thirteen VHF television channels with the fixed and mobile services, and the deletion of television channel 1. Also included in the proposal was a revision of the television rule which allotted channels to cities. This new plan was based on the assumption of twelve channels in lieu of the thirteen then allocated. The cities previously allocated channel 1 were, in all but three instances, fitted into the remaining 12 channels. This involved, in several instances, some further reductions in co-channel spacings. Adjacent channel separations between metropolitan and community stations were reduced to as little as 45 miles and co-channel metropolitan-community allocations were spaced at distances as low as 80 miles.

I 43. The geographical television allocation plan of August 14, 1947, was considered at the hearing held in November, 1947, on the entire Docket 8487 proposal. The Report in this Docket issued on May 8, 1948, resulted in the elimination of sharing of the television channels and the deletion of channel 1 (44-50 Mc). This report indicated that the public welfare and national security required the establishment at the earliest possible date of stable allocations for the vital safety and protective services. The Commission did not make a finding on the proposed reallocation of the 12 remaining channels to the several cities; its report indicated that a new proposal was being issued in this respect. The new proposal was issued on the same date, May 8, 1948, and, pursuant to the decision which had been announced in the Bridgeport case on March 23, 1948, provided that changes in the allocation plan could only be made by rule-making.

44. The revised proposal of May 8 had become necessary because of the increasing demand for channels from smaller cities and towns throughout the country. There had been recurring requests made to the Commission to assign to metropolitan areas certain unassigned channels which could have been used for small cities in the same area. The Miami area was a good example of this condition. The 13-channel allocation plan, as published in the Rules now in force, assigned only four channels to Miami. Three additional channels were feasible from an interference standpoint at Miami, but were also feasible for possible use at West Palm Beach and Lake Worth. When the number of applications from Miami exceeded the four assigned channels, the Commission was requested to assign additional channels.

45. The separations followed in the May, 1948, revised proposal were 150-mile co-channel and 75-mile adjacent channel, wherever possible. Such separations meant, in a number of cases, that fairly large cities would receive only one channel and, in some cases, no channels. In such instances, the geographical separation was reduced to accommodate the city. In critical cases, the distance figures were drastically reduced to meet the situation.

46. On June 29, 1948, the Commission began hearings on this May 8 plan. At the hearing, questions were raised regarding the effects of tropospheric propagation, the utilization of directional antennas, and restrictions on power and antenna heights. These matters are enumerated in the Notice calling today's conference.

Border Allocations

47. Beginning in the later part of 1947, engineering conferences have been carried on with Canada on television border allocations. These discussions indicated certain adjustments would be necessary in the proposed allocation plan based on twelve channels. Such adjustments indicated a certain reduction in the number of channels for metropolitan cities would be necessary, and these were embodied in the May 8 proposal.

48. A similar border allocation problem would appear to exist with Mexico but no negotiations in this regard have been initiated as yet. The most critical area would seem to be in the vicinity of San Diego. The Commission's plan provides San Diego with only 4 channels, although 5 would be feasible from an engineering standpoint. This provision was made with the thought that if television is to develop in Mexico on the same frequencies used in the United States, there will have to be at least one channel in the Tijuana-Agua Caliente area.

49. The problem with respect to Cuba is similar except that the interference potentialities do not appear to be too serious. No negotiations have been initiated with Cuba as yet.

50. These three border allocation problems should be resolved at the earliest possible date in order that the U. S. plan adopted may be stable in this regard.

SUMMARY

51. To summarize "where we are" —

(a) There were 18 commercial VHF television channels available at the outbreak of the last war, but this number has now been reduced to 12, primarily because of the requirements for spectrum space of other radio services. The Commission has issued 116 authorizations for Commercial television stations and 304 applications are now pending. 36 of the stations authorized are now in operation in 21 cities and the remaining 79 in 68 cities are under construction.

(b) The geographical allocation plan for television now pending reflects a continuing effort to obtain the maximum number of assignments with the few frequencies available. We have continually thrown away the "safety factor" of greater mileage separations in a series of progressive steps, and today the assignments on these 12 channels are exposed to interference due to tropospheric propagation, because of the relatively close spacings between stations in many sections of the country.

(c) The Commission is now confronted with a basic conflict in the desires of the industry to obtain stations with large service areas and at the same time have a large number of assignments in each of the various cities. Evidences of this are:

- 1) Testimony about tropospheric interference to existing authorizations.
- 2) Directional antenna proposals and opposition to them.
- 3) Proposals for increased power.
- 4) Proposals for even closer spacing between stations than in the Commission's present proposal.



52. The Commission's notice providing for this conference today set forth these issues:

1. Whether the Commission should initiate proceedings to revise the television allocation rules and standards prior to final decision in Dockets 8975 and 8736.

2. If the standards are to be revised, what policy should be adopted with respect to applications now pending before the Commission.

3. What procedures should be adopted in order that the revised standards can be based on the best available engineering information.

53. Issues 1 and 3 must, of necessity, be considered together. We cannot have any understanding of the problem in issue 1 without knowing what the procedures would be to effect a revision of our standards of good engineering practice and allocation rules. The time required for such changes in our standards of good engineering practice and allocation rules is likewise an important factor, particularly in relation to Issue No. 2.

54. If changes are to be made to reflect in our standards of good engineering practice current information about tropospheric propagation it would seem that the logical steps are as follows:

1. An engineering conference should be held to discuss methods of measuring tropospheric effects. Such a conference might well include engineers interested in the VHF television service and the FM service. The methods of measuring tropospheric effects are mutually applicable to these services. Data on tropospheric propagation now in the hands of the Commission can be put in shape for distribution to those concerned within the next month. A reasonable period of time for study of this information would seem to be 30 days so that we might think in terms of a general engineering conference about the middle of November.

2. Following that general engineering conference, two further engineering conferences could be held. One would discuss what standards on tropospheric propagation, if any, would be incorporated in the standards of good engineering practice for television, and the other to do the same thing for the FM service.

3. The next logical step would be the incorporation of such standards respecting tropospheric propagation in the rules of the Commission.

4. The revision of the television allocation plan based upon the new standards, or recognition in the Commission's standards of good engineering practice of the effects of tropospheric propagation with a specific provision, however, that protection will not be accorded in making allocations of television channels to the various cities.

55. You can make your own estimate of the time required for the various steps outlined above as well as I. It seems to me that the minimum amount of time is in the order of 6 months for such a revision of the Commission's standards and rules. Nine months might well be taken as a better estimate of the time that will actually transpire. I do not want to minimize this



problem at all, and the longer the period of time that elapses, the more aggravated becomes Issue 2 now before us.

56. This particular phase of the problem raises the question of whether we want adequate planning reflected in the television service or whether we are going to yield to the insistent pressures of applicants who are now willing to take whatever they can get but who, like persons now holding authorizations, will then want large service areas and protection from interference. It seems obvious that if we are to pursue the procedures I have been talking about, the processing of applications will necessarily need to be held up pending the adoption of a final rule on a new allocation plan.

Freeze order
followed on 9/30/48

book

radio went licensed → unlicensed in 20's

big hoopla @ Congress:

radio natl or local?

↓
only a few
stations

high-power

↓
low-power

big city v. rural

west v. east

allocation ^{late} in '20's ^{by} Fed Radio Comm'n

localism - 6 multi

first table

second table VHF TV 40's

- drew upon radio

interested in tv, but need radio

Jody
Jody @ McLean - 10am-3pm
(703) 761 2807



Kyle + Becky's:

6639 Morning View Ct

395 S

Duke St

S. Van Dorn St 2.3 m

(R) Franconia

(L) 613 S 3.0 m

(R) View Lane

(L) Morning View Ln

(L) Morning View Ct

Ronto Marion

123 S

larger value is front

end of street - white house

~~McLean, VA 22101~~

1117 Marion Ave

Cases -

Stations suing FCC to get allocation?

copies - Noll p. 99-120

note - Bensman ~~PRVTA~~ - summaries of Radio Conferences.

localism began w/ radio - noll p100

Congress was concerned that radio stations were too concentrated.

1934 Act

1934 - frequencies ^{allocations} but no channels &

> 1938 - 1st table of allocations (experimental) & channel #'s.

(tech-notes.tv/history&trivia (what happened to channel 1?))
→ but no standard.

1940 - no standard adopted - no consensus.

no standard pre-war, but did allocate channels
in 1938

technical std.

1941 - Standard, auth of commercial broadcasting (7/41)

WWII put it on hold.

↑ by FCC
get this?

1944 - spectrum eval @ FCC

1946 - channel of allocations, power.

first real table / commercial allocations

1948 - ~~new~~ allocation hearings

9/29/48 - freeze begins



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ALLOCATION

The Federal Communication Commission's (FCC) methods of allocating broadcasting frequencies in the United States have long been a subject of debate and controversy. The key issues have been: first, whether television should be controlled by the few strongest networks; second, whether the FCC is responsible for setting aside frequencies for non-commercial or educational broadcasters, even though the media operate within a privately held system; and third, whether spectrum allocations should change when new technologies, requiring use of the airwaves, are introduced. The Communication Act of 1934 provides for a way to maintain federal control over all channels of interstate and foreign radio transmission, and to provide for the use of such channels, but not their ownership.

The Act outlines a four-step process for allocating frequencies. An entity that applies for a construction permit (the right to build a broadcast station) must seek a specific channel, antenna location, coverage area, times of operation and power level of preference. If that applicant is selected for an allocation, the FCC then issues the construction permit. When the station is built, the owners must prove their transmitter and antenna can perform to FCC standards. The aspirant can then apply for a station license. Usually, applicants must also prove U.S. citizenship, good character free of criminal records, sufficient financial resources and proof of expert technical abilities.

When a few experimenters first put voice over wireless telegraphy at the turn of the century, there was no immediate need for a system of allocation. Many "broadcasters" were amateurs working with low-power systems. Even so, other uses were apparent and growth of radio use was rapid. It was interrupted, however, by World War I, when the government chose to take over all domestic frequencies to insure control of airwave communication. After the war, when the British government chose to retain political power of its broadcast frequencies and form a public broadcasting system, the U.S. government instead decided to rely upon the entrepreneurial spirit and allow private profit from broadcasting. The technology and the industry were regulated

With regard to station allocations, the FCC's Sixth Report and Order was a most salient document.

There the Commission decided to maintain placement of the existing VHF stations, though a few were ordered to change bandwidth within the VHF spectrum. The new plan created 2,053 allotments in 1,291 communities.

The FCC aggressively assigned UHF stations to smaller towns and left VHF for large cities. The number of stations per community depended upon population. For example, a community with 250,000 to one million people received four to six stations. Except for Los Angeles and New York which secured seven stations in the VHF spectrum, the FCC allocated no more than four VHF stations per locality. Spacing of the same channel between communities depended on such factors as geographical location, population density, and tropospheric interference. Cities at least 170 miles apart could have received allotment of the same channel.

The FCC made a historically significant ruling when it chose to enter UHF broadcasting without materially altering existing allocations. Since many sets had no UHF equipment, the stations with VHF station assignments had the upper hand over new UHF stations. It would be years before any large population could receive UHF. More importantly, the decision created a situation of the early bird catching the worm. The companies with the first granted allocations, namely NBC and CBS, also had the best signal positions. The FCC chose to maintain network dominance of television and essentially gave the large networks control over the future of the new medium. For most viewers, it was easier to tune to the broadcasting giants than to new networks or independent stations.

Allocation of non-commercial stations was another important provision of the Sixth Report and Order. FCC Commissioner Frieda Hennock, a New York attorney, argued for spectrum space for educational television. She established her place in broadcasting history when the FCC decided to make 252 non-commercial assignments, including 68 VHF and 174 UHF stations. This was one tenth of all stations assigned. Any community with

get this - when?

post-freeze allocations

general rule/method

exception

under the provisions of the Radio Act of 1912 which placed control in the U.S. Department of Commerce, then administered by Secretary Herbert Hoover.

The Second National Radio Conference, 20 March 1923, addressed problems associated with increasing the number of signals on the broadcast spectrum. The Conference recommendations included the equitable distribution of frequencies to local areas and discussed wavelengths, power, time of operation and apparatus. More importantly, the Conference suggested three concepts that have not changed with time and technology. The first recognized that broadcasting usually covers a limited area and sanctioned local community involvement in the licensing process. The second concept acknowledged the limited amount of frequency space in the electromagnetic spectrum and supported the assignment of one consistent wavelength to broadcasters. The third concept proposed that once a broadcasting organization was assigned a certain frequency, it should not have to move that placement due to new regulation.

These recommendations died in the U.S. House Committee on the Merchant Marine and Fisheries and in Senate committee. No action was taken. Commerce Secretary Hoover believed government control had no place in American broadcasting; those using the airwaves should join together and regulate themselves.

Congress reflected the conflicting views. Though litigation against the government rendered the Radio Act of 1912 virtually inoperable, 50 separate bills failed in Congress before the federal legislature passed the Radio Act of 1927. Cases such as *Hoover v. Intercity Radio* (1923) held that the government could not refuse a license to an interested party, but could designate a frequency and police interferences. In the next major case, *United States vs. Zenith Radio Corporation* (1926), a federal judge ruled the Commerce Department had no jurisdiction to regulate radio. Other rulings by the U.S. Attorney General completely nullified Department of Commerce control.

Yet more radio broadcasters wanted frequencies and with 716 radio stations on the air, national regulation was more and more necessary. With the Radio Act of 1927, the federal government decided to retain ownership of the airwaves but allow private interests to hold continuing licenses. The licenses were renewable after three years, depending on the holder's ability to serve the "public interest, convenience, and necessity."

Networks had grown substantially after 1926. Religious, educational, cultural, civil liberties and

one or two VHF stations in operation won a VHF educational television frequency. The first non-commercial station reached the airwaves in 1954.

Television station allocations moved slowly until the middle 1970s. ABC, operating largely on UHF stations, jockeyed for positioning against the stronger networks, CBS and NBC. In 1975, in a period of government deregulation, the FCC liberalized both frequency allocations and methods of television delivery. The large fees required for satellite receiving stations had diminished, enhancing the possibilities for both satellite and cable delivery of television to homes and businesses.

The FCC again began an aggressive period of television station allocations between 1975 and 1988, primarily assigning UHF spectrum licenses. During this period, more than 300 stations began telecasting. In 1975, 513 VHF and 198 UHF stations were on the air. By 1988, 543 VHF and 501 UHF stations broadcasted shows. The advent of cable somewhat leveled the competitive lead of lower-numbered VHF stations; the reception of each station was equal when provided through the wire and many homes now subscribed to cable systems. The added popularity of remote controlled, hundred-plus channel, cable-ready receivers made any signal a finger-press away.

Deregulation also created still more television signal competition, all governed through FCC allocations. Low power television, or short range signals serving communities within cities and smaller towns in rural areas, grew as additional licenses were granted in the 1980s. Though these stations were originally expected to handle either home shopping or community access programs, many low power stations became competitive with other television stations by becoming cable carriers.

Because the major networks already held affiliate contracts in most markets, these new UHF and LPTV stations were largely independently owned. The existence of more and more unaffiliated stations opened a door for the creation of new television networks and new program providers. In 1985, the FOX Broadcasting Network was created as a fourth network by linking a number of the new, largely independent stations. Specialty networks, such as the Spanish-language Univision and Telemundo networks, and broadcast-cable hybrid networks such as Home Shopping Network and Trinity Broadcast Network (religious) developed in the late 1980s. In 1994, Paramount and Warner Bros. Studios entered the arena with networks of broadcast stations airing new programming. The shows presented on these alternative networks have most often been

2 of 5

labor organizations also sought a voice amidst the privately held, commercially supported licensees. Yet the 1927 Act did not successfully regulate the system. It was replaced seven years later by the Communications Act of 1934.

The two acts had many similarities and neither altered the allocations already in place for the burgeoning broadcast networks CBS and NBC. Among existing non-profit broadcasters, many educational institutions were still forced to share frequencies and in the end most educators dropped their partial licenses and chose to be silent. Yet the lobbying efforts of Paulist Priest John B. Harney made Congress realize the airwaves could be used for social good by non-profit interests and the 1934 Act included a provision to study such allocations. Still, the conflict was not resolved until 1945 when 20 FM channels between 88 and 92 MHz were reserved for non-commercial and educational broadcasting. These frequencies represented 20 percent of the broadcast band.

Among the commercial networks, each had considerable power over its affiliate stations until an FCC ruling limited the degree of contractual control over affiliate operations. But practical authority over the dependent affiliates persisted since networks supplied most programming.

By 1938 NBC and CBS commanded the great majority of licensed wattage through owned stations or affiliates. In 1941 the FCC's Report on Chain Broadcasting was accepted by the Supreme Court in *NBC v. U.S.* (1943). The ruling led to a separation of NBC into two radio networks, one of which was later sold and became ABC. Four way network competition began in the radio marketplace among Mutual, the fledgling ABC, and the dominators, CBS and NBC.

As of 1941, six television stations had been approved and two were in operation; CBS and RCA stepped in early to receive construction permits and licenses. The major networks were joined by receiver maker Alan B. DuMont and each ventured into television as network programmers in the 1940s. The three networks divided the week, each programming two or three nights without competition.

The FCC settled the placement of the radio bandwidth in 1945, but allocation problems did not end. Television's impending maturity created more spectrum confusion. As it had done with radio, the government had issued experimental and early frequency allocations for television on the VHF and UHF spectrums. Large broadcasting corporations obtained early signal assignments both to monopolize the new medium and to sell a

outside the scope of the large networks. Some have challenged traditional network notions of "taste" or programming standards and have presented new types of shows. Others have focused on a selected audience such as Spanish-speakers or home shoppers.

In 1994, FOX Broadcasting Company became concerned with the signal power, and resulting audience reach, of its affiliates. The network made a series of contract changes, in essence trading several of its UHF outlets for stronger VHF stations. In those deals, many independent broadcasters were pushed aside for stations owned by broadcast groups such as New World Entertainment. The end result was an increase in VHF placements for FOX shows without resort to issues or problems related to allocation.

The future of station allocation is unclear. In the early 1990s, when High Definition Television (HDTV) was expected to overtake U.S. television, skeptics pointed to the history of U.S. television allocations. HDTV could have required more extensive bandwidth, and therefore, the reordering of spectrum allocations. But in the past, except for the shifting of some VHF stations required by the Sixth Report and Order, the FCC has not changed a previously granted allocation no matter how compelling or leveling the reason. The dominance of the major networks has always been preserved. The channel positions have never changed materially, and audiences have remained comfortable with familiar placements. It is unlikely that the FCC will dabble with allocations in the future. Yet, as viewers grow increasingly dependent on cable as their television provider, the role of station placement may decrease in importance. Future station assignments and changes will hardly affect either cable channel placement or the social routines of the television viewer.

-Joan Stuller-Giglione

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do we have these?

new product, television receivers.

The problem with television allocations was the limited amount of bandwidth compared to radio signal space. The FCC had planned eighteen channels, each six megacycles wide between 50 and 294 megacycles. In the VHF spectrum space, only 13 channels existed which could support television signals. Cities 150 miles apart could share a channel; towns 75 miles apart could have consecutively placed station signals. When the Commission considered rules in September of 1945, it was decided that 140 metropolitan districts would be allocated VHF broadcasting channels.

The Television Broadcast Association supported shorter distances between localities using the same spectrum space for signal transmission. ABC and CBS believed the future of television existed in the more generous UHF spectrum space. Several network leaders argued either to transfer all television delivery to the more capacious UHF or to allow existing stations to slowly move to UHF. Instead, the FCC approved a VHF delivery plan in November 1945. 500 stations would be allocated to the 140 communities, with no allocations planned for channel 1. The FCC plan did not move any previously granted station frequencies. It did, however, allow shorter distances between eastern U.S. station assignments. New York City was given seven channels; smaller towns were allocated limited coverage and lower powered television signals.

By 1948, the FCC realized the November 1945 plan would not work and advocated moving all television to UHF. By then fifteen stations were on the air. While a final plan could be developed, the FCC added some VHF signal restrictions and completely eliminated use of channel one. Also that year, the FCC again held further allocation hearings. The resulting ruling increased the number stations but questioned the use of UHF for television delivery. The new plan now placed 900 stations in more than 500 communities, still utilizing only the VHF band. Confusion, conflict, and controversy continued and on September 29, 1948 the FCC halted further allocation of station licenses. Only 108 stations were on the air. This action became known as The Freeze of 1948.

Construction of the stations previously approved, but not built, continued and more VHF stations did begin broadcasting between 1948 and the end of the freeze in April 1952. Many television industry interests still supported UHF utilization, but manufacturers had not yet developed transmission equipment for UHF. Television sets were not being built to receive the higher signals. Potential problems with UHF included signal

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See also Educational Television; Federal Communications Commission; "Freeze" of 1948; Hennock, Frieda B.; United States, Networks; United States, Communication Act of 1934

TV
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Freeze
1948 -
1952

strength and interference. Nevertheless, the FCC decided to begin UHF television without additional testing.

SPECTRUM ALLOCATION

Overview

In the United States, the FCC and the NTIA manage the spectrum through a system of frequency allocations, allotments, and assignments. The entire radio spectrum is divided into blocks, or bands, of frequencies established for a particular type of service by the process of frequency allocation. Further, these general allocations can be subdivided into bands designated for a particular service, or "allotment." Within these subdivided bands, specific channel plans may be implemented. For example, allocations made to the land mobile service are divided into allotments for business users, public safety users, and cellular users, with each group allotted a portion of the band in which to operate. Assignment refers to the final subdivision of the spectrum in which a party gets an assignment, or license, to operate a radio transmitter on a specific channel or group of channels at a particular location under specific conditions. The FCC also issues some licenses on a more general geographic basis.

licensing

U.S. Table of Frequency Allocations

The FCC has listed U.S. allocations in a Table of Frequency Allocations that can be found in Section 2.106 of the Commission's rules. We invite anyone interested in our rules governing spectrum, including the allocation table, to visit the FCC on the World Wide Web at "<http://www.fcc.gov/oet/info/rules/>".

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53 FCLJ 469

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Page 1

53 Fed. Comm. L.J. 469

(Cite as: 53 Fed. Comm. L.J. 469)

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Federal Communications Law Journal
May, 2001

Article

***469 THE FCC'S MAIN STUDIO RULE: ACHIEVING LITTLE FOR LOCALISM AT A GREAT
COST TO BROADCASTERS**

David M. Silverman [FNal]
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David N. Tobenkin

I. Introduction	471
II. History and Purpose of the Main Studio Rule	474
A. Localism and the Communications Act	474
B. Origin of the Rule	479
C. Purpose of the Rule	481
III. The Changing Content, Interpretation, and Enforcement of the Rule	482
A. The Combination of the Television and Radio Rules	483
B. Challenges to the Program Origination Requirements and Questioning of the Geographical Component of the Rule	484

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53 FCLJ 469

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Page 2

53 Fed. Comm. L.J. 469

(Cite as: 53 Fed. Comm. L.J. 469)

C. Elimination of the Programming Origination Requirement and Relaxation of the Main Studio Location Rule	485
D. Enforcement by the FCC	487
E. Further Relaxation of the Geographical Location Requirement for the Main Studio: the 1998 Report and Order	489
IV. Analysis of the Current Version of the Rule	492
A. Reasons Why the Rule Is Highly Problematic	492
1. It Serves no Discernable Purpose	492
2. The Rule Is Vague	494
3. The Rule Allows Gamesmanship by Competitors	494
4. The Rule Is Costly and Burdensome for Broadcasters and the Commission	495
B. What Should Be Done to the Rule	496
1. Leave the Rule in its Existing Form	496
2. Reform the Rule	497
3. Eliminate the Rule	499
a. Marketplace Solutions	502
b. Other Rules	502
V. Conclusion	504
APPENDIX A: A Practical Guide to Compliance with the Commission's Current Main Studio Rule	505
A. Main Studio Location	505
B. Main Studio Staffing	506
1. Full-time Manager:	506

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2. "Full-time" Staff Member:	506
C. Equipment	507
D. Permissible Sharing of Main Studios, Studio Equipment and Personnel ..	507

*471 The old adage, "a moving target is harder to hit," should not apply to government regulation. Unluckily, Jones Eastern has learned the hard way that the vagaries of imprecision apply to many things in life, including in this case the main studio rule. [FN1]

I. Introduction

Localism, the communications law policy that requires spectrum licensees to serve the needs of local communities, represents a bedrock concept in the Communications Act of 1934 [FN2] ("1934 Act") and the Federal Communications Commission's ("FCC" or "Commission") jurisprudence. Realizing vague, if noble, aims through concrete rules is fraught with peril, however, especially when technology and industry practices undergo radical changes over time. The Commission's sixty-year-old main studio rule [FN3] illustrates this point. Five years after Commissioner Quello's 1995 dissent in Jones Eastern, the main studio rule, which requires all television and radio stations to establish vaguely defined "main studios" that are adequately staffed and equipped, remains a regulatory moving target. Broadcasters often find that compliance with the main studio rule requires an absurd elevation of form over substance, raising legitimate questions about the continued need and rationale for the rule.

Versions of the rule date back to at least 1939. [FN4] The rule appears to have been established to advance Congress's goal of preventing concentration of radio licenses in larger markets. [FN5] The Commission's later goals included encouragement of station interaction with, and reflection of, their communities of license, especially through the creation of local programming. [FN6] Changes in public interactions with stations, production of *472 programming, and growing evidence of higher costs imposed upon stations, however, led to criticism of the rule by broadcasters and the Commission itself. [FN7] After granting an increasing number of waivers, in 1987 the Commission significantly revamped the rule by eliminating the program origination element and expanding the area in which the main studio could be located. [FN8]

The 1987 Report and Order and the Clarification Order issued a year later, [FN9] however, failed to clarify staffing and equipment requirements under the rule. [FN10] The Commission subsequently attempted to clarify these issues in a series of enforcement orders, though many questions remained unanswered even after these decisions. [FN11] In light of continued criticism of the rule, the Commission examined the issue anew in a 1997 rulemaking. [FN12] The Commission ignored the urgings of many broadcasters to eliminate the rule. [FN13] Instead, the Commission merely relaxed the geographical limitations on location of the main studio. [FN14]

The current FCC rule requires television and radio broadcasters to *473 maintain main studio facilities within specified geographical areas. [FN15] The main studio must be capable of originating and transmitting local programming, and must be staffed with a full-time manager and at least one other full-time employee or the equivalents. [FN16] In the words of the Commission's Mass Media Bureau Chief, Roy Stewart, the main studio is "[e]ssentially. . . the principal local point of contact between the licensee and the community or communities served by the station." [FN17] While superficially straightforward, the rule's precise requirements remain unclear in numerous respects.

Confusion generated by the rule's lack of clarity has contributed to misunderstandings among broadcasters and Commission staff. The Commission has found at least ten broadcasters to be in violation of the rule since its latest

(Cite as: 53 Fed. Comm. L.J. 469)

reformulation, setting a base fine of \$7,000 for willful or repeated violations of the rule. [FN18] At least one fine in recent years has been as high as \$20,000. [FN19] In addition, compliance with other Commission rules and policies, such as the Suburban Community Policy [FN20] and the public inspection file rule, [FN21] are related to the main studio rule. Enforcement of the rule continues to demand considerable Commission attention, primarily because of the rule's lack of clarity.

This Article examines the rule's evolution and its current problematic state, and analyzes whether its modification or elimination would conserve the resources of both broadcasters and the Commission, without any *474 detrimental impact on the public interest. Specifically, Part II of this Article examines the history and purpose of the rule. Part III examines the changing content, interpretation, and enforcement of the rule, including the Commission's apparent failure to seriously consider widespread calls for the rule's elimination in the most recent rulemaking. Part IV examines whether the rule should be changed or eliminated, and concludes that the rule has become an anachronism that no longer furthers its original aims. The rule exists today primarily as a vague and burdensome bureaucratic technicality that serves as a trap to unwary broadcasters. This Article concludes that the main studio rule should be abolished or, alternatively, recast in a more limited and precise form. As a service to broadcasters attempting to comply with the rule, an Appendix briefly summarizes the current state of the rule [FN22] and what broadcasters must do to comply with it.

II. History and Purpose of the Main Studio Rule

A. Localism and the Communications Act

1934 Act. Localism is a core value of the 1934 Act. The FCC has a duty under the 1934 Act to "make such distribution of licenses, frequencies, hours of operation, and of power among the several States and communities as to provide a fair, efficient, and equitable distribution of radio service to each of the same." [FN23] This language incorporates similar language from section 9 of the Radio Act of 1927, [FN24] which was passed in response to congressional concern regarding the concentration of many radio licensees within small geographic areas around major cities, [FN25] leaving the more remote and less populous communities without radio service.

In order to achieve a more geographically diverse distribution of licenses, the Commission issued its "Table of Allotments," which established formulas for the allocation of local television and commercial FM radio broadcast frequencies throughout the United States. [FN26] The *475 Commission's implementing rules essentially represented:

an assumption by the FCC that the public interest standard could best be met by allocation of television frequencies in a way that provided every community with its own locally oriented and controlled television broadcast station. Early in its history of broadcast regulation, the Commission assumed that local broadcast stations would be the electronic version of the community newspaper. The perception was that[,] like the local newspaper, the local broadcast station would significantly contribute to local participatory democracy and would operate "as a kind of latter-day Mark Twain, who understands the needs and concerns of his community in an imaginative and sensitive way." [FN27]

The Commission has more recently described the need for local stations to "serve their communities by providing programming (e.g., news, weather, and public affairs) to meet the needs and interests of those communities." [FN28]

To achieve these goals, Congress and the Commission passed laws, rules, and policies in a number of areas to further broadcast localism. The rules included: 1) limiting the power of networks over local affiliates, [FN29] 2) limiting ownership of multiple radio or television stations, both within a market and nationwide, [FN30] 3)

(Cite as: 53 Fed. Comm. L.J. 469)

requiring nonduplication protection for locally received network and sports programming, [FN31] 4) requiring non-entertainment programming and barring excessive commercialization, [FN32] 5) requiring formal ascertainment procedures and the keeping of program logs, [FN33] and 6) *476 requiring cable television carriage of local broadcast stations. [FN34]

The Commission's policy of localism has engendered enormous criticism, including from a former Commissioner who claimed that "[l]ocalism is the most sacred cow of communications regulatory policy. More sacrifices have been laid at the alter (sic) of this beast than at that of any other in the history of communications regulation." [FN35] Asserted harms of the policy include "inefficient allocation of television channels and corresponding loss of viewing choices; constraints on competition in video delivery services; and wasted administrative energies." [FN36]

The D.C. Circuit also has challenged the Commission's application of its localism policy. In its 1993 *Bechtel v. FCC* decision, the D.C. Circuit overturned a Commission policy that gave broadcast license applicants a significant comparative advantage through an "integration credit" if they proposed to have an owner-manager working locally at the station. [FN37] The decision was unusually interventionist for the D.C. Circuit, which found that even after granting the Commission substantial expert agency deference, the policy was arbitrary and capricious. [FN38] The D.C. Circuit found the credit unlawful, because the Commission had not imposed an obligation on successful applicants to adhere to integration proposals, had failed to support the claimed public interest advantage of integration, and had emphasized integration to the exclusion of other factors that could affect a station's performance--notably spectrum efficiency, broadcast experience, and local residence. [FN39] The court's ruling noted the difficulty of determining exactly what measures would achieve localism. It observed, for example, that although licensee awareness of and responsiveness to community needs was the stated goal of integration, "[a]n applicant whose proposed owner-manager knows nothing about . . . the community but promises to work a 40-hour week" would prevail over a proposal to employ an experienced life-long resident of the community as station manager. [FN40]

The impetus for reexamining the Commission's localism rules has increased as the assumption of scarcity of programming outlets has *477 attracted increasing skepticism. [FN41] The Commission itself, writing in its 1992 Notice of Proposed Rulemaking regarding television broadcast regulation, recognized the proliferation of new media forms, commenting that the television industry "has experienced an enormous expansion in the number of video outlets available to most viewers and in the alternative sources of video programming." [FN42] Furthermore, the range of viewing media, such as cable, VCRs, satellite dishes, and Multichannel Multipoint Distribution Service ("MMDS") meant that "the sources of video entertainment available to U.S. consumers have greatly proliferated." [FN43] Such developments led the Commission to conclude that "[r]egulations adopted before the advent of such competition may reduce the ability of broadcasters to respond competitively and to continue offering services that advance the public interest." [FN44] These comments, of course, were made before the Internet revolution had even commenced.

Over the years, the Commission and Congress have indeed eased many of the regulations aimed at promoting localism. [FN45] For example, the Commission eliminated requirements that stations engage in formal community needs ascertainment to determine issues of concern to their communities and that they keep logs of all programming; [FN46] and that they present predetermined percentages of news and public affairs programming; [FN47] and that stations in operation be attended by licensed radio *478 operators. [FN48] On the whole, localism is viewed by many observers as a policy in decline. [FN49]

The Commission has repeatedly insisted, however, that localism remains a vital component of its jurisprudence. In April 2000, for example, the Commission adopted new procedures for evaluating competing applicants for

(Cite as: 53 Fed. Comm. L.J. 469)

noncommercial educational broadcast channels that contain a localism component. [FN50] In response to the D.C. Circuit's Bechtel decision, the Commission emphasized the particular history and importance of localism with respect to noncommercial educational broadcasting, rather than to broadcasting as a whole. [FN51] By implication, the Commission appears to acknowledge that rules implementing localism in a commercial context would require greater scrutiny.

In fairness, however, the D.C. Circuit did not reject the Commission's localism policy, but rather the means used to achieve it. The court noted that familiarity with the community may be a valid criterion in awarding licenses. [FN52] At least one later decision has reaffirmed this stance. For example, in its 1997 decision in Orion Communications, Ltd. v. FCC, [FN53] the D.C. Circuit characterized the FCC's Bechtel decision as "failing to advance [the] valid goal of 'picking owners who are aware of and *479 responsive to their communities' special needs." ' [FN54] The court then proceeded to reverse the award of a broadcast license for interim operating authority after concluding, inter alia, that the Commission had failed to explain why the chosen applicant (who had no particular commitment to localism) would better serve the public interest than a losing applicant who had used a programming producer with local experience, demonstrated dedication to the local community, and planned to produce locally oriented programming. [FN55] Although these decisions concern the concept of broadcast localism, the D.C. Circuit has not had occasion to examine the main studio rule in depth. [FN56]

Thus, both the Commission and the D.C. Circuit appear to recognize the continuing validity of localism, but scrutinize the Commission's means of achieving it with particular vigor. This Article does not seek to challenge the Commission's localism policy. Rather, it examines whether the Commission's main studio rule significantly furthers the goals of this policy, especially when balanced against the burdens it imposes.

B. Origin of the Rule

As noted above, the main studio rule found its genesis in the early efforts of Congress to prevent concentration of licensees within a small geographic area around major cities in favor of a diverse geographic distribution of licenses. [FN57] Unlike later and less clear iterations of the rule, an early version of the rule in 1939 clearly defined "main studios" and where radio stations were required to locate them:

§ 3.12. Main studio.

The term "main studio" means, as to any station, the studio from which the majority of its local programs originate, and/or from which a majority of its station announcements are made of programs originating at remote points. [FN58]

...

*480 § 3.30. Station location.

(a) Each standard broadcast station shall be considered located in the state and city where the main studio is located.

(b) The transmitter of each standard broadcast station shall be so located that primary service is delivered to the city in which the main studio is located, in accordance with the "Standards of Good Engineering Practice," prescribed by the Commission. [FN59]

...

§ 3.31. Authority to move main studio.

The licensee of a standard broadcast station shall not move its main studio outside the borders of the city, State, district, Territory, or possession in which it is located without first making written application to the Commission for authority to so move, and securing written permission for such removal. A licensee need not obtain permission to move the main studio from one location to another within a city or town, but shall promptly notify the

53 Fed. Comm. L.J. 469

(Cite as: 53 Fed. Comm. L.J. 469)

Commission of any such change in location. [FN60]

This version of the rule was intended to require stations to locate themselves in the area where they putatively served listeners. The rule also established program origination as the core concept for determining the location of the main studio. A version of the rule aimed at television broadcast stations appears to have originated in 1946 as three rules detailing main studio requirements for different types of stations:

§ 3.603(c). Community stations. The main studio of a community station shall be located in the city or town served and the transmitter shall be located as near the center of the city as practicable.

...

§ 3.604(c). Metropolitan stations.

The main studio for metropolitan stations shall be located in the city or metropolitan district with which the station is associated and the transmitter should be located so as to provide the maximum service to the city or metropolitan district served.

...

§3.605(c). Rural stations.

The main studio of rural stations shall be located within the 500 uv/m contour. [FN61]

As a consequence of changes wrought by the Commission's Sixth Report and Order amending television channel allotments, the FCC later replaced *481 these three rules with a single rule, section 3.613. [FN62] This new rule slightly liberalized the earlier rules by making it possible, upon a showing of hardship, for television stations to locate their main studios outside the principal communities to be served. [FN63]

The Commission soon discovered that the devil was in the details. By 1948, the FCC found that radio stations were circumventing the rule by producing many local announcements. [FN64]

Under the Commission's present rules and regulations defining the term "main studio" it is possible for a broadcast station to originate most of its local programs from a place other than the city in which their [sic] main studio is located by the device of broadcasting a majority of its station announcements from a studio in the city for which the station is licensed. In the Commission's opinion in determining the location of a station consideration should be given to the place where programs originate and not station announcements. [FN65]

A Report and Order amending the radio main studio rule was enacted in 1950 in a form that would largely guide the radio rule (and the later combined radio and television rule) for the next thirty-seven years. [FN66] The changed rule mandated that non-network stations originate a majority of their non-network programs from the main studio, and that network stations originate at least two-thirds of non-network programs or a majority of all programs, whichever was less, from their main studios. [FN67] The Commission also allowed radio stations to maintain main studios in the city or town, or at transmitter locations situated outside the political limits of the city or town that the station was licensed to serve. [FN68]

C. Purpose of the Rule

The 1950 Radio Report and Order marked a dramatic shift in the rule. For the first time, the Commission gave an extended explanation of the purpose of the rule and some indication of how it intended to achieve that purpose. The new rule, as well as comments in the Radio Report and Order, made clear that generating local programming was key to promoting localism and determining whether stations aimed to serve particular communities. [FN69] The rule defined radio transmission service as:

*482 the opportunity which a [broadcast] station provides for the development and expression of local interests,

(Cite as: 53 Fed. Comm. L.J. 469)

ideas, and talents and for the production of [broadcast] programs of special interest to a particular community. . . . A station often provides service to areas at a considerable distance from its transmitter but a station cannot serve as a medium for local self expression unless it provides a reasonably accessible studio for the origination of local programs. [FN70]

The Commission appears to have reasoned that locally originated programming would result in locally oriented programming, thereby serving the public interest. [FN71]

The 1952 Television Memorandum Opinion and Order appeared to provide additional, nonprogramming goals for television main studios that the Commission would later apply to both services. The Order clarified that the requirement of a local main studio facility was to encourage station interaction with the community.

The accessibility of the broadcast station's main studio may well determine in large part the extent to which the station (1) can participate and be an integral part of community activities and (2) can enable members of the public to participate in live programs and present complaints or suggestions to the station. [FN72]

Together, the 1950 radio and 1952 television Orders appear to define five early core objectives for the rule: 1) assurance that stations provide service to everyone, not just to those who live in major metropolitan areas; 2) generation of locally oriented programming; 3) use of local residents in the production of programming; 4) encouragement of station participation in community activities; and 5) facilitation of community residents' complaints or suggestions to station personnel.

III. The Changing Content, Interpretation, and Enforcement of the Rule

In the days when most programming originated in a single physical studio, before the advent of remote equipment and satellite programming, and before relaxation of the multiple ownership rules, the main studio rules for television and radio did not create an unreasonable burden on broadcasters. Yet, even in these early days of the rule, many questions remained. It was still unclear, for example, whether the main studio requirement actually would result in the creation of significant local programming or staff interaction, much less what comprised "local programming." As the rule entered its third decade in the 1970s, cracks in *483 the assumptions underlying the rule and doubts regarding its effectiveness began to surface.

A. The Combination of the Television and Radio Rules

As noted earlier, similar main studio rules had long existed for television and radio. [FN73] The Commission, in a 1971 rulemaking, modified its rules, inter alia, to require Commission approval for the reallocation of FM main studios to or between points outside the communities of license. [FN74] This change conformed the FM main studio standard to that for television stations. [FN75] Confusion remained, however, about what the rules required. The 1952 Television Memorandum Opinion and Order resulted from the petition of a broadcaster claiming that section 3.613 did not define the term "main studio," and provided no method for determining the geographic limits of the "principal community to be served." [FN76] The D.C. Circuit noted: "The rule prescribing the location of the [television] 'main' studio, unlike the analogous rules governing radio stations, contains no definition of 'main' studio and there is little clarifying precedent." [FN77]

In 1979, the television and radio rules were consolidated into the present sections 73.1125 (station main studio location) and 73.1130 (station program origination, subsequently eliminated), [FN78] treating all stations the same. [FN79] The Commission eliminated the requirement that radio stations affiliated with networks either originate two-thirds of their non-network programs or a majority of all programs from the main studio. [FN80] Instead, all stations were required to originate more than fifty percent of their non-network programs from their main studios or other points in their communities. [FN81] A significant, and perhaps unintended, effect of the changed program

(Cite as: 53 Fed. Comm. L.J. 469)

origination requirement, however, was to undermine the definition of the main studio. Whereas the rule had previously defined the main studio as the location where most non-network programming was produced, the new rule left unclear whether a studio where only some local programming *484 was produced could still qualify as a main studio.

B. Challenges to the Program Origination Requirements and Questioning of the Geographical Component of the Rule

Gradually, broadcasters began to push for exemptions to the program origination rule, contending that it unduly constrained their operations. The Commission responded with a series of waivers that provided relief from the rule in certain circumstances. In *Arizona Communications Corp.*, [FN82] for example, the Commission allowed a radio station to exclude recorded music programs from the "majority programming" computation under section 73.1130. [FN83] The FCC extended this policy to television in *Pappas Telecasting of the Carolinas*. [FN84]

Broadcasters also began to chafe under the geographic limitations of the rule, and the Commission faced widespread noncompliance with the main studio location component of the rule. In 1984, for example, the Audio Services Division was forced to issue a general warning to permittees that failure to properly locate main studios could prompt Commission denial of program test authority. [FN85]

In 1986, the Mass Media Bureau provided support for attacks on both the main studio location and programming origination components of the rule in its Report on the Status of the AM Broadcast Rules. [FN86] The report recommended review of the main studio location requirement in light of changes in station production methods and the actual means of contact between stations and their communities. [FN87] The report also recommended elimination of the origination rule as applied to AM stations, and prompted the Arizona Justice Committee to file a petition (later granted by the Commission) for a rulemaking to reexamine the rule. [FN88]

*485 C. Elimination of the Programming Origination Requirement and Relaxation of the Main Studio Location Rule

In the rulemaking that followed, commenters nearly unanimously supported a liberalization of the geographic component of the rule. [FN89] A majority of the station commenters said, "[C]ommunity residents generally contact[ed] the station[s] by letter or telephone, and rarely, if ever, visit [[ed] the main studio." [FN90] Commenters also noted that station management and staff often initiated contact between the station and the public, and that modern transportation facilities allowed residents who wished to visit the station to do so conveniently over longer distances. [FN91]

The Commission suggested that the program origination requirement was highly flawed and should be scrapped:

[T]he development of technical advances in the production and transmission of programming has severely eroded the role of a main studio and, by extension, the non-network program source rule. When the rule requiring that more than 50 percent of all non-network programming originate from the main studio was adopted, most, if not all, of the non-network programming broadcast necessarily originated in the station's main studio. However, radio and television stations now make extensive use of portable recording and transmission equipment, and can in essence bring a "studio" to any location in or out of its [sic] service area. Consequently, programs are originated now at the main studio only in the most technical sense; for example, the Mass Media Bureau points out that in the case of AM radio, origination at the main studio largely consists of playing tapes previously recorded at remote locations. [FN92]

Moreover, the Commission noted that the fundamental premise of the programming origination aspect of the rule

was suspect under the Commission's developing deregulatory jurisprudence for programming content:

Because we have found that prescription of the amounts or types of issue-responsive programming licensees present is contrary to the public interest, it makes little sense as a policy matter to retain rules which mandate where a percentage of that programming must originate. [FN93]

The resulting 1987 Report and Order eliminated the program origination requirement and allowed broadcasters to locate their main studios outside *486 their communities of license, "at any point within the station's principal community contour." [FN94]

The Commission stressed that it was not abolishing the main studio rule, and attempted to explain the rationale for its retention:

Exposure to daily community activities and other local media of communications helps stations identify community needs and interests, which is necessary to operate in today's competitive marketplace and to meet our community service requirements. In addition, the studio will continue to be accessible to community residents participating in those local programs that, at the broadcaster's option, are produced at the studio. [FN95]

The 1987 Report and Order, however, left broadcasters unclear regarding what exactly remained of the rule, and some petitioned for clarification by the Commission. In the 1988 Clarification Order, [FN96] the Commission provided its most elaborate explanation to date of what is required to comply with the main studio rule:

A station must maintain a main studio which has the capability adequately to meet its function, as discussed above, of serving the needs and interests of the residents of the station's community of license. To fulfill this function, a station must equip the main studio with production and transmission facilities that meet applicable standards, maintain continuous program transmission capability, and maintain a meaningful management and staff presence. Maintenance of production and transmission facilities and program transmission capability will allow broadcasters to continue, at their option, and as the marketplace demands, to produce local programs at the studio. A meaningful management and staff presence will help expose stations to community activities, help them identify community needs and interests and thereby meet their community service requirements. The term "main studio" continues to designate a broadcast station's only studio when no auxiliary studio is maintained. If a licensee has two or more studios that meet the applicable criteria, it may select one (within its community contour) to designate as its main studio. [FN97]

Thus, under the 1987 Report and Order and 1988 Clarification Order, main studios had to be capable of originating and transmitting programming even though they were not required to actually originate any programming. The "applicable standards" required for production and transmission facilities, however, were not specified. The 1988 Clarification Order also made clear that the main studio rule included a staffing requirement, although the precise parameters of a "meaningful *487 management and staff presence" likewise were not stated. The Orders also left unclear what interaction with the community, if any, was expected from station management and staff.

D. Enforcement by the FCC

Broadcasters continued to wrestle with the precise obligations of the rule as they attempted to comply. A series of Commission enforcement actions against stations resulted in additional clarification.

In *Jones Eastern of the Outer Banks, Inc.*, the Commission held that the 1988 Clarification Order's staffing requirement included "at a minimum, [a] . . . full-time managerial and full-time staff personnel." [FN98] The Commission found that a single full-time office manager who received calls, and a business manager and a general manager who spent four and two hours per week at the main studio respectively, did not satisfy the managerial

component of the 1987 Report and Order's staffing requirement. [FN99] In a clarification of that decision issued a year later, the Commission further elaborated that qualifying main studio management personnel must report to work at the main studio on a daily basis, spend a substantial amount of time there, and use the studio as a "home base." [FN100] The Commission also shed some light on the types of officers who would constitute "meaningful managerial presence" by listing acceptable categories of employees: "President or other corporate officer, general manager, station manager, program director, sales manager, chief engineer with managerial duties, news director, personnel manager, facilities manager, operations manager, production manager, promotion director, research director, controller, and chief accountant." [FN101] The underlying common criteria of these types of employees appears to be that they are "authorized to make typical managerial decisions pertaining to facilities, equipment, programming, sales and emergency procedures." [FN102]

In subsequent decisions regarding main studio management, the *488 Commission has found situations where a station was "unable to describe its official's management duties or demonstrate that he was authorized to make typical management decisions," [FN103] and where three managers reported to the studio on an "intermittent basis," [FN104] to be inadequate. Also, in subsequent decisions, the Commission has found main studio staffing violations in situations in which there were regular, lengthy periods during which the main studio was without staff (where no staff other than a manager had regular hours at the station), [FN105] and where there were "no licensee personnel at the station's main studio during certain business hours." [FN106]

The question remained whether employees could be shared with other businesses. In the Jones Eastern Clarification Order, the Commission stated that sharing of staff is permissible under some circumstances:

To the extent that the staff person may fully perform its station functions with time to spare, and coverage of the main studio permits, that person may also take on responsibilities for another business, as long as the main studio remains attended during business hours. [FN107]

Equipment requirements and any other defining characteristics of a "main studio" remained sketchy. The 1988 Clarification Order stated that stations had to "equip the main studio with production and transmission facilities that meet applicable standards[and] maintain continuous program transmission capability." [FN108] Beyond that, however, the Commission has never explained what type of programming origination and transmission equipment is required.

When the Commission relaxed the main studio location rule, it simultaneously tightened the standards for waiver of the rule. Under the 1987 Report and Order, stations were required to show that there were no suitable studio locations within their principal communities' contours before the Commission would consider granting waivers of the rule. [FN109] *489 Thus, in *Maines Broadcasting, Inc.*, a radio station licensee with FM and AM stations in two different communities, twenty miles apart, was denied a waiver request to collocate its main studio facilities at a single station's premises, despite a showing of potentially large cost savings. [FN110] The Commission held that enabling stations to realize financial efficiencies is not sufficient for a waiver of the rule. [FN111] Occasionally, the FCC grants such petitions upon a showing of extreme hardship, [FN112] especially when requested by noncommercial educational licensees. [FN113]

E. Further Relaxation of the Geographical Location Requirement for the Main Studio: the 1998 Report and Order

The impetus for the most recent change to the main studio rule came from changes to the local radio station ownership rules in the early and mid-1990s. The Commission's 1992 revision of its radio ownership rules [FN114] and the subsequent Telecommunications Act of 1996 ("1996 Act") [FN115] led to a significant easing of the ownership limitations on radio and television stations, allowing ownership of as many as eight radio stations within a single market. [FN116] These changes transformed the main studio rule into a *490 significant impediment to

(Cite as: 53 Fed. Comm. L.J. 469)

owners of large groups of stations seeking increased station administration efficiency by eliminating redundant facilities. Broadcasters argued that they should be allowed to operate from one centrally located studio/office complex, and petitioned for a rulemaking to ease the rule's geographic component.

In 1996, Apex Associates and four other broadcasters petitioned for a rulemaking to amend the rule. [FN117] The petition noted that maintaining a main studio within the principal community contour does not ensure that the studio will be accessible to the community, especially with stations whose contours have radii that extend thirty to forty miles. [FN118] The Apex petition also contended that the then-current version of the rule discriminated in favor of higher power stations, which enjoyed larger areas than lower power stations in which they could locate their main studios. [FN119]

The Commission commenced a rulemaking limited to the geographic component of the rule. [FN120] The resulting rule combined a signal contour and a mileage standard. [FN121] The new geographic component adopted by the Commission allowed a station to locate its main studio at any location within either: 1) the principal community contour of any station in any service licensed to the community of license or 2) twenty-five miles from the reference coordinates of the center of its community of license, whichever is farther. [FN122] Thus, in comparison with the earlier geographic *491 requirement that forced stations to maintain main studios within their principal community signal contours, the new rule expanded the geographic location of the rule by allowing stations to use the contours formed by the most powerful stations licensed to the communities. [FN123]

Many broadcasters participating in the proceeding pressed for elimination of the main studio rule. [FN124] Many explicitly termed the Commission's proposals inadequate. [FN125] Even Apex noted in its petition that the required main studios served "no useful purpose . . . since they are not used for the origination or production of programming, and they are rarely *492 . . . visited by public officials or the public." [FN126] The Commission's 1998 Report and Order summarily dismissed these comments as beyond the scope of the proceeding, given that the original petitions for rulemaking requested that the rule be modified, not eliminated. [FN127]

IV. Analysis of the Current Version of the Rule

A. Reasons Why the Rule Is Highly Problematic

1. It Serves No Discernable Purpose

The Commission's current main studio rule is illogical. At present, the rule requires the existence of a physical main studio of supposed convenience to community residents that nonetheless may be located dozens of miles away from residents. [FN128] The studio that must be maintained is a barebones (though unspecified) one with no clear purpose; there is no requirement that a station originate programming from it, nor any right of members of the public to do so.

Successive modifications of the rule have reduced it nearly to the point of being a nullity. As the 1997 Notice of Proposed Rulemaking recognized, maintaining a main studio within the principal community contour does not ensure that the studio will be physically accessible to the community of license, especially with stations whose contours have radii that extend thirty to forty miles. The FCC's former rule allowed a television or Class-C FM station to locate its main studio as far as seventy or eighty miles from its community of license. The 1998 Report and Order relaxed the rule even further to theoretically allow all stations to locate their main studios that far from the communities of license. The Commission's only explanation was that "relaxation of the main studio location requirement takes into account the evidence in the record that more people use remote rather than face-to-face means of communication *493 for routine contact with their local stations, and that permitting stations greater flexibility in locating their main studios should not unduly burden the public." [FN129] The end result for many

markets is that the rule no longer serves its intended purpose of making the main studio accessible to local residents. [FN130]

While the rule was originally intended to encourage the production of local programming, it no longer contains any program origination requirement, and many stations no longer use main studios to create local programming. In addition, the notion that a studio is the most efficient manner of encouraging production of local programming has little support. As many commenters noted in the 1997 rulemaking, the proliferation of high-quality portable audio and videocassette recorders, which can be delivered to remote locations, means that main studios may no longer be the most practical way to encourage coverage of local events. [FN131] Main studios are essentially a point of contact no longer relevant given today's production realities.

At its core, the rule is obsolete because it is premised upon two invalid hypotheses: 1) that geographic proximity of main studio facilities to communities of license will result in physical interaction of staffs and communities, and 2) that the existence of main studios will result in the creation of local programming. Comments from the broadcasting industry, the Commission, and the D.C. Circuit suggest that these hypotheses are wrong.

***494 2. The Rule Is Vague**

As highlighted in a series of main studio decisions, it is difficult to understand the precise nature of the employee, managerial, and equipment requirements of the rule. Since elimination of the program origination requirement, the Commission has been unable to clearly articulate the functions of the main studio. More recent policy decisions related to the rule, such as staffing and equipment requirements, are not even part of the rule, and are only summarily described in a few Commission adjudications. Successive Commission decisions have operated to encourage broadcasters to determine the least they can do to comply with the rule, and thereby reduce the cost of compliance with a rule that makes little sense in today's environment of group ownership and satellite programming.

3. The Rule Allows Gamesmanship by Competitors

Under the current version of the rule, a competitor may send an employee to a competing station to inquire about its main studio and build a case of noncompliance against the station. This strategy appears to have spurred several enforcement actions. [FN132] The Commission has recognized that competitors can serve as effective enforcement agents. [FN133] Assistance in rule enforcement is taken to an illogical extreme, however, when it is used by broadcasters solely to trip up one another. The main studio rule provides fertile ground for such gamesmanship. For example, broadcasters must maintain continuous program transmission ability from the main studio to the transmitter. Given the lack of an origination requirement, this is similar to requiring a car to start upon ignition after having been allowed to stand unused for years. Strategic misuse of Commission rules as an offensive weapon by competitors has already served as part of the rationale for the Commission's abolition of one set of localism policies. [FN134]

***495 4. The Rule Is Costly and Burdensome for Broadcasters and the Commission**

The costs of maintaining main studio facilities can be significant. In cases where main studio staff and equipment cannot be collocated with existing facilities, the burden looms especially large. In 1997, ABC estimated that the annual cost of maintaining two main studios would total \$160,000, including rent, salaries, electricity, phone service, and water bills. [FN135] Even in cases where facilities can be collocated, the cost of a full-time manager can be significant. As many commenters have noted, these are funds that might otherwise be used by a broadcaster to sponsor new public services or to "reach out to its community in more productive ways." [FN136]

In cases where compliance is held inadequate, forfeitures are significant, [FN137] the station involved is stigmatized, and there may be additional costs for retaining counsel to combat such assessments. Even in the

absence of enforcement actions and fines, understanding the rule and its related requirements has often forced broadcasters to incur significant legal fees. In many cases, the solution may be overcompliance--guessing where the Commission stands on a given component of the rule and adopting a more conservative approach to ensure compliance. Inevitably, all of these costs impact smaller stations to the greatest degree. [FN138]

*496 The rule also seems to comprise exactly the type of hollow regulation that the Commission itself has recognized [FN139] as contrary to both Congress's intent in passing the 1996 Act [FN140] and recent Commission actions aimed at reducing regulatory burdens and costs upon broadcasters. [FN141] For example, the rule imposes burdens on brokered stations that otherwise have been allowed to consolidate operations with brokering stations to realize cost savings. [FN142] The rule is also burdensome and costly for the Commission to administer. The FCC must use its scarce administrative time to enforce and entertain waivers to the rule. The vague nature of the rule leads to lengthy factfinding, factual analysis, and legal analysis at each level of review, with frequent reversals. [FN143]

B. What Could Be Done to the Rule

Three options exist for dealing with the rule. It can be left as is, modified, or eliminated. These strategies are examined in turn below.

1. Leave the Rule in Its Existing Form

The Commission could maintain the rule in its existing form, but there is little to suggest that the rule will become more clear or more rational with time. Alternatively, the Commission could continue to tinker *497 with enforcement of the rule through adjudications, as it has in cases elaborating upon the staffing and equipment requirements of the rule. [FN144] Like many rules whose underlying rationales have eroded, the main studio rule has become a hodge-podge of convoluted decisions turning on narrow rulings based upon unique facts. Neither leaving the rule as is nor addressing it indirectly through case law appears to be a viable approach to resolving its problems.

2. Reform the Rule

The Commission could streamline the rule to avoid confusion, while adhering to the most defensible objectives of the rule. Possible changes that might allow achievement of its remaining objectives are analyzed below.

A clear, though rarely stated, objective of the rule is to ensure that members of the community can interact in person with a supervisory or influential employee of the station. The problem with the existing rule is that its manner of achieving this objective is inefficient. In particular, the main studio rule's language and contents remain centered around a program origination function that has been abolished. A much more efficient strategy might be to require station executives to hold meetings in the community to address any areas of concern, including local programming issues, on a regular basis, [FN145] with additional meetings available upon request by members of the public. [FN146] Many stations, for example, operate as satellite repeaters of programming that originates from remote locations, and act primarily to fill in coverage holes in the network chain. [FN147] Commission rules have been liberalized to allow the monitoring of these stations by dial-up telephone lines. [FN148] Requiring such stations to establish meaningful contact with their communities through such meetings *498 would likely do far more to serve the interests of the local communities than the present hollow main studio rule (and related decisions') requirements.

Many forms of communication with stations need not be in person. Many members of the public would undoubtedly prefer interacting with station personnel on the telephone, rather than in person. Anecdotal evidence provided in the 1997 Notice of Proposed Rulemaking supports this conclusion. [FN149] Community members are

(Cite as: 53 Fed. Comm. L.J. 469)

becoming far more accustomed to dealing with institutions through electronic means. An example is the growth in popularity of automated teller machines, which perform important and detailed interactions without the intervention of employees. Toward this end, the existing local (or toll-free) telephone line component of the rule could be enhanced by a requirement that a station employee return calls within a reasonable amount of time, and be prepared to answer a set list of key questions about the station. [FN150] For emergencies, there could be an emergency line. The employment status or location of these personnel should be irrelevant. Professionalism, response time, and the ability to respond to questions should be the factors that matter.

A related physical location issue is the ability of the public to view the public inspection file. Ensuring accessibility to the public inspection file is a valid objective. [FN151] The availability of this file at an office within the current main studio rule geographic guidelines would serve this purpose. Those reviewing the file would be able to receive basic information about its contents from a person at this office during regular business hours, and have more detailed questions answered within a reasonable amount of time by telephone or in person. There seems to be no reason, however, why this file must be collocated with a barebones, unused production and transmission facility, as is the case for many studios under the current *499 rule. [FN152] Moreover, the Commission's current consideration of a rule that would require broadcasters to post all public inspection files on Internet sites, and possibly require creation of Web sites by broadcasters that currently have none, should be kept in mind when evaluating whether the public inspection file availability requirement can and should be divorced from the main studio rule. [FN153]

The current informal staffing requirements should be eliminated as wasteful and inefficient. They should be joined in the trash bin by the studio equipment requirements, which serve no function in light of the elimination of local program origination requirements. At the very least, the rule should be amended to describe the minimum staffing requirements effectively adopted in Jones Eastern, as well as the minimum equipment requirements. [FN154] As one commenter has noted, "It is quite likely that a licensee relying upon the plain meaning of the rule could be found in violation of it." [FN155]

Of course, modification would not be without problems. First, additional rules would place additional burdens upon broadcasters already facing substantial regulatory requirements. Moreover, the Commission could find itself again confronting frequent petitions for waivers of the revised rule. Modification of the rule might also extend the current, costly, case-specific nature of evaluating station compliance with the rule. Finally, establishing a minimum goal could actually impede local public service efforts by causing stations to automatically adopt this minimal level, in lieu of more elaborate efforts that might otherwise be appropriate for individual markets. In other words, any rule could serve as a ceiling, as well as a floor, for local public service efforts.

3. Eliminate the Rule

An obvious solution to the problem of an obsolete rule is to eliminate it. There is no statutory provision in the 1934 Act requiring broadcasters to establish main studios. In 1987, the Commission eliminated the most *500 substantive component of the rule--mandating local programming origination.

In its most recent main studio rulemaking, the Commission mentioned, in passing, the widespread call for the rule's abolition:

As an initial matter, some commenters suggest that we delete the main studio requirement altogether. We continue to believe that the main studio requirement is necessary to ensure that broadcast stations are reasonably accessible to the communities they serve, which . . . provides important public interest benefits. [FN156]

This is, at best, a questionable approach to examining a clearly problematic rule. In fact, eleven of sixty commenters suggested deleting the geographic location portion of the rule. [FN157] This is tantamount to

elimination of the rule itself. It is difficult to understand why the Commission did not give more serious consideration to eliminating the rule, particularly given that some commenters noted that rationales for retention of the rule given in the 1987 Report and Order had been eroded by subsequent technological changes. [FN158]

Some analysis should have been given to the continuing validity of the rule. The Administrative Procedure Act requires agency "consideration of the relevant matter presented" by commenters in the course of notice and comment rulemakings, generally interpreted by the D.C. Circuit as a duty to respond to "significant comments." [FN159] While the initial scope of the rulemaking was limited to consideration of the geographic components of the rule, a logical and necessary prerequisite to modification of a rule is a determination that the rule itself continues to be valid. A facile repetition of *501 past justifications is inadequate; a fresh examination of the matter should have been conducted.

Distilling past Commission pronouncements, the current main studio rule is intended to serve five goals: 1) avoiding station concentration in larger communities; 2) permitting community access to station personnel and the public inspection file for the purposes of making suggestions or complaints and to allow review of the station's record; 3) encouraging station involvement in community activities; 4) encouraging station production of programming with local content; and 5) encouraging station use of local community members in local programming. The original rationale of the rule, avoiding concentration of stations seeking to serve larger communities, appears to have diminished over time with the dramatic increase of new broadcasting outlets and media forms, and the liberalization of local station ownership restriction. The programming goals of the rule can be removed from the list of Commission objectives, given the FCC's elimination of program origination requirements and a dearth of evidence that local programming has resulted from, or been influenced by, the continued existence of the main studio rule. [FN160]

The final two objectives, ensuring community access to station personnel and the public inspection file and facilitating station involvement in community activities, are probably the most salient remaining objectives of the rule. As the D.C. Circuit has noted, broad Commission generalizations about predicted effects of informally adopted policies must be supported by evidence. [FN161] As described earlier, there are clearly more narrowly tailored ways of achieving these objectives without the existence of a main studio. In today's world, telephone and the Internet provide more realistic means of communication between a station and its viewers or listeners.

*502 a. Marketplace Solutions

As one commenter noted, the current main studio rule is not in keeping with Commission precedent allowing broadcasters greater freedom in the method of achieving service to their communities of license. [FN162] The Commission in its 1986 Notice of Proposed Rulemaking noted:

market incentives assure generally that licensees will present programming responsive to their communities, and that revision or deletion of these policies would eliminate unnecessary costs and burdens on both licensees and the Commission. We stated that elimination and revision of these policies would provide broadcasters "with increased freedom and flexibility in meeting the changing needs of their communities." [FN163]

Ironically, the community newspaper model, which served as the model for the Commission's broadcasting frequency allocation policies, provides a good illustration of marketplace response to the needs of local community demands in the absence of regulation. [FN164] Newspapers have achieved local community service in the absence of location requirements for their facilities.

Looking at the newspaper industry, no rules require a newspaper to maintain an office in a particular community if they [sic] want circulation in that community. Newspapers often maintain offices in smaller communities to sell advertising and support local reporters. These larger papers then have local editions which are the same as the larger community paper plus a local insert (with appropriate news and advertising). Could such a market approach

achieve adequate (or perhaps better) service to the various communities than the main studio rule? [FN165]

Marketplace solutions represent the general direction of Commission jurisprudence and are preferable to the main studio rule, which does little to achieve its localism goals.

b. Other Rules

Other Commission rules safeguard the main studio rule objectives. The existence and convenient location of the public inspection file is governed by separate Commission rules. [FN166] One rule requires, *inter alia*, *503 that commercial stations place in their public inspection files every quarter a list of programs dealing with community issues. [FN167] In addition, the Commission's license renewal application process includes pre-filing and post-filing announcements and procedures whereby community members who believe that a station has not adequately addressed the needs of the community during its license term can challenge the licensee's right to renewal. [FN168] General service to the community is also a factor considered in station license renewals, [FN169] and, as previously noted, Internet accessibility requirements that may be imposed upon broadcasters can further safeguard such access. [FN170]

If a valid local programming objective for the rule still exists, a better approach to achieving this objective may be a periodic market-by-market analysis of local programming. A lack of significant local programming in any of the markets may trigger a need for further review in that market. In addition, other types of spectrum allocation are clearly aimed at ensuring this objective, such as the Commission's designation of certain frequencies as noncommercial educational broadcast channels. [FN171]

In its retention of the rule, the Commission appears to have ignored one of the criteria of section 307(b) of the 1934 Act, which calls for "fair, efficient, and equitable distribution" of broadcast service among the states and communities. [FN172] A rule that does not advance the aims for which it was passed, and subsumes the resources broadcasters have available to serve the public, is inefficient and contrary to the intent of the 1934 Act. Marketplace *504 factors and other Commission rules designed to foster localism would ensure that elimination of the main studio rule would not preclude achievement of the Commission's legitimate purposes for the rule.

In summary, modification of the rule offers a possible solution to the Commission's goal of encouraging localism. Given the nebulous nature of localism objectives, however, a more fluid balancing approach that combines elimination of the existing rule with reliance on marketplace mechanisms and more global evaluations of a station's local public service record, such as upon renewal, would likely better serve the Commission's localism aims and preserve its finite enforcement resources.

V. Conclusion

Underlying premises for Commission rules must be regularly reexamined. Where they no longer exist, maintaining rules based upon such premises will yield inherently flawed and inconsistent rules. The main studio rule is a good example. A changing marketplace has led to varied Commission interpretations of the rule that have, in turn, rendered it internally inconsistent and incapable of achieving its intended purpose of safeguarding localism. The Commission appears to have paid insufficient attention to calls for elimination of the rule in the most recent main studio rulemaking. As many commenters noted, alternative means for ensuring broadcasting localism exist. Elimination of the main studio rule would conserve scarce enforcement resources, eliminate an obsolete rule, and remove an expensive compliance trap for smaller and less sophisticated broadcasters. A continually moving regulatory target has no place in the Commission's jurisprudence.

*505 APPENDIX A: A Practical Guide to Compliance with the Commission's
Current Main Studio Rule [FN173]

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A broadcaster attempting to navigate the main studio rule may well feel as though he or she is attempting to decipher tea leaves. To provide a minimum standard of conduct that should facilitate compliance with the rule, a brief analysis of the rule's various components is provided below:

A. Main Studio Location

The rule requires that the main studio be located within: 1) the station's community of license; [FN174] 2) the principal community ("city grade") contour (5.0 mV/m for AM, 3.16 mV/m for FM, and city grade for television) of any station, in any service (AM, FM or Television) licensed to the same community; [FN175] or 3) twenty-five miles of the reference coordinates of the center of the community of license (generally, the main post office, but these coordinates are shown in the Index to the National Atlas published by the Department of the Interior). [FN176] The station's local public inspection file must be kept at the main studio, [FN177] and access to this file must be provided at any time during regular business hours. [FN178] One case hinted that the Commission might also require some degree of publicity regarding this facility, such as signage at the location or creation of a general awareness in the community regarding its existence and location. [FN179] Permission must also be sought to relocate the main studio outside of the locations specified in section 73.1125(a) of the rule. [FN180]

*506 B. Main Studio Staffing

1. Full-Time Manager:

The Commission requires that both a full-time management-level officer and a full-time staff member, or the equivalent, be located at the main studio. The managerial employee must be based there (not in two different station locations), and spend a "substantial" amount of time there each day during normal business hours. He or she should also have managerial authority for certain aspects of station operations, such as sales, promotions, operations, news, production, accounting, or research. This function should be one of some importance to the station, and one that the manager is qualified to perform from that location. [FN181] For example, while the Commission has said generally that a facilities manager could qualify as a "meaningful manager" for the purpose of complying with the rule, a station with no such facilities at its main studio location might well have the validity of such a position challenged by the Commission or competitors in the market. The manager should actually perform his or her designated activities on at least a periodic basis, and a record of such activities should be kept through memoranda or the like. While the Commission has said very little regarding the compensation that this individual should receive, it would be advisable to provide compensation in line with his or her duties.

2. "Full-Time" Staff Member:

This individual should be the point of contact for callers and visitors, directing them to the main studio and public file, or to the station manager if necessary. This person must be compensated by, and perform duties for, the station. This individual should be at the main studio location at all times during normal business hours, however, and should not leave the telephone or main studio unattended during those hours, unless the manager or someone else is present and available to communicate with the public. The Commission has also noted with approval other substantive station duties assumed by persons deemed main studio staff people. [FN182] These have *507 included, for example, "dealing with listeners [sic] requests and complaints, distributing the mail and bringing important items to the attention of [supervisors], and seeing to it that PSAs of local interest were broadcast in connection with [[the] preparation of a PSA bulletin board." [FN183] This obligation can be satisfied by an employee shared with another employer or by two or more part-time employees who together staff the main studio during normal business hours.

C. Equipment

(Cite as: 53 Fed. Comm. L.J. 469)

The main studio must have equipment capable of originating broadcast-quality local programming and transmitting it to the broadcast location. At a minimum, the production equipment should include a microphone, as well as some other basic equipment, such as a control board and a tape machine. [FN184] The transmission equipment must allow the manager or staff member person to send programming to the transmitter at will. (While the main studio must be capable of originating and transmitting such programming to the transmitter at any time, there is no requirement that it actually do so.) Finally, a local or toll-free telephone number from the community of license must be provided. [FN185] This number could connect callers to the main studio or to another station location.

D. Permissible Sharing of Main Studios, Studio Equipment and Personnel

The Commission allowed the sharing of a manager and an employee by two stations with main studios in different parts of the same building where duties at one studio left "more than adequate time to perform their duties" for the other station. [FN186] Commission precedent established that the management-level staff member should not also work for another station, [FN187] though a recent Commission decision [FN188] appears to suggest that this might be allowed in some circumstances. In any event, the station's main studio should be the manager's home base.

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[FN1]. See Letter Liability of Jones Eastern of the Outer Banks, Inc., Memorandum Opinion and Order, 10 F.C.C.R. 3759, 3761, 77 Rad. Reg.2d (P & F) 1270 (1995) [hereinafter 1995 Jones Eastern Memorandum Opinion and Order] (Quello, Comm'r, dissenting).

[FN2]. 47 U.S.C. § 151 et seq., amended by Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (codified in scattered sections of 47 U.S.C.).

[FN3]. 47 C.F.R. § 73.1125 (2000).

[FN4]. FCC Rules Governing Standard Broad. Stations, 4 Fed. Reg. 2715 (June 30, 1939) (47 C.F.R. §§ 3.12, 3.30, 3.31 (1939) (repealed)).

[FN5]. See Radio Act of 1927, Pub. L. No. 69-632, ch. 169, § 9, 44 Stat. 1166 (1927).

[FN6]. See Amendment of § 3.613 of the Comm'n's Rules and Regulations, Memorandum Opinion and Order, 43 F.C.C. 888, 890 (1952); Section 3.606 of the Comm'n's Rules and Regulations, Amendment of the Comm'n's Rules, Regulations and Eng'g Standards Concerning the Television Broad. Serv., Utilization of Frequencies in the Band 470-890 mcs for Television Broad., Sixth Report and Order, 41 F.C.C. 148, 167 (1952) [hereinafter Amendment of Section 3.606 Sixth Report and Order]; Promulgation of Rules and Regulations Concerning the Origination Points of Programs of Standard and FM Broad. Stations, Report and Order, 43 F.C.C. 570, 1 Rad. Reg. (P & F) 91:465

(Cite as: 53 Fed. Comm. L.J. 469)

(1950) [hereinafter 1950 Radio Report and Order]; Origination Point of Programs by Standard and FM Broad. Stations, 13 Fed. Reg. 1129 (Mar. 2, 1948); Rules Governing Standard and High-Frequency Broad. Stations, 11 Fed. Reg. 33, 33-34 (Jan. 1, 1946).

[FN7]. See, e.g., Arizona Comms. Corp., Memorandum Opinion and Order, 25 F.C.C.2d 837, 20 Rad. Reg.2d (P & F) 445 (1970), recon. denied, 27 F.C.C.2d 283, 20 Rad. Reg.2d (P & F) 1270 (1971); Report on the Status of the AM Broad. Rules, RM-5532, Mass Media Bureau (Apr. 3, 1986); Amendment of Sections 73.1125 and 73.1130 of the Comm'n's Rules, the Main Studio and Program Orientation Rules for Radio and Television Stations, Report and Order, 2 F.C.C.R. 3215, paras. 8, 10, 62 Rad. Reg.2d (P & F) 1582 (1987) [hereinafter 1987 Report and Order].

[FN8]. 1987 Report and Order, *supra* note 7.

[FN9]. Amendment of Sections 73.1125 and 73.1130 of the Comm'n's Rules, Memorandum Opinion and Order, 3 F.C.C.R. 5024, 65 Rad. Reg.2d (P & F) 119 (1988) [hereinafter 1988 Clarification Order].

[FN10]. See discussion in Application for Review of Jones Eastern of the Outer Banks, Inc., Memorandum Opinion and Order, 6 F.C.C.R. 3615, para. 9, 69 Rad. Reg.2d (P & F) 18 (1991) [hereinafter 1991 Jones Eastern Memorandum Opinion and Order].

[FN11]. *Id.*; Pet. for Recons. and/or Clarification of Jones Eastern of the Outer Banks, Inc., Memorandum Opinion and Order, 7 F.C.C.R. 6800, 71 Rad. Reg.2d (P & F) 912 (1992) [hereinafter Jones Eastern Clarification Order].

[FN12]. Review of the Comm'n's Rules Regarding the Main Studio and Local Pub. Inspection Files of Broad. Television and Radio Stations, Notice of Proposed Rulemaking, 12 F.C.C.R. 6993, 13 Comm. Reg. (P & F) 2005 (1997) [[hereinafter 1997 Notice of Proposed Rulemaking]; FCC Radio Broad. Servs., Rules Applicable to All Broad. Stations, 47 C.F.R. §§ 73.1125, 73.3526-27 (2000).

[FN13]. Review of the Comm'n's Rules Regarding the Main Studio and Local Pub. Inspection Files of Broad. Television and Radio Stations, Report and Order, 13 F.C.C.R. 15,691, para. 14, 13 Comm. Reg. (P & F) 123 (1998) [[hereinafter 1998 Report and Order], revised in part on recons., Memorandum Opinion and Order, 14 F.C.C.R. 11,113, 15 Comm. Reg. (P & F) 1158 (1999).

[FN14]. *Id.* paras. 7-17.

[FN15]. *Id.*

[FN16]. Jones Eastern Clarification Order, *supra* note 11; 1991 Jones Eastern Memorandum Opinion and Order, *supra* note 10.

[FN17]. See Letter from Roy J. Stewart, Mass Media Bureau Chief, FCC, to J. Christopher Williams, President, Queen of Peace Radio, Inc. (Oct. 27, 1999), 14 F.C.C.R. 17,885, 17,887 (1999) (notice of apparent liability for a forfeiture).

[FN18]. See Comm'n's Forfeiture Policy Statement and Amendment of Section 1.80 of the Rules to Incorporate Forfeiture Guidelines, Report and Order, 12 F.C.C.R. 17,087, para. 2, 8 Comm. Reg. (P & F) 1314 (1997). In addition, multiple penalties can be assessed for continuing violations. See, e.g., Liability of Masada, Ltd. Licensee, Station KBAC-FM Las Vegas, New Mexico, for a Forfeiture, Memorandum Opinion and Order, 9 F.C.C.R. 1572,

53 Fed. Comm. L.J. 469

(Cite as: 53 Fed. Comm. L.J. 469)

para. 3 (1994) [hereinafter Masada Order].

[FN19]. Masada Order, *supra* note 18, para. 4.

[FN20]. Under this presumption governing analysis of broadcast license applicants, "the Commission will presume that an applicant intends to serve its designated community of license, where the applicant (1) provides city grade service to the designated community; (2) locates its main studio in compliance with 47 C.F.R. § 73.1125; and (3) proposes programming that will serve the designated community." Application of WBBK Broad., Inc. to Modify Facilities Including Channel Classification and Transmitting Location, Memorandum Opinion and Order, 15 F.C.C.R. 5906, para. 4 (2000) (emphasis added).

[FN21]. See Local Pub. Inspection File of Commercial Stations, 47 C.F.R. § 73.3526 (2000); Local Pub. Inspection File of Noncommercial Educ. Stations, *id.* § 73.3527. Both of these rules require licensees to locate their local public inspection files at the main studios. *Id.* §§ 73.3526(b), 73.3527(b).

[FN22]. This summary was current as of January 2001 and may not reflect subsequent changes to the rule.

[FN23]. 47 U.S.C. § 307(b) (1994).

[FN24]. Pub. L. No. 69-632, ch. 169, § 9, 44 Stat. 1162 (1927).

[FN25]. See Suburban Cmty. Policy, the Berwick Doctrine and the De Facto Reallocation Policy, Report and Order, 93 F.C.C.2d 436, para. 2, 53 Rad. Reg.2d (P & F) 681 (1983) [hereinafter Suburban Cmty. Report and Order] (stating that section 9 was established "[t]o dilute this concentration of radio stations in and around large cities.").

[FN26]. Amendment of Section 3.606 Sixth Report and Order, *supra* note 6, para. 13. "In contrast, AM radio frequencies [were] allocated on a demand basis, with an applicant requesting the desired community and providing engineering exhibits to show the absence of harmful interference to existing stations." Suburban Cmty. Report and Order, *supra* note 25, para. 5.

[FN27]. Robert F. Copple, Cable Television and the Allocation of Regulatory Power: A Study of Governmental Demarcation and Roles, 44 Fed. Comm. L.J. 1, 11-12 (1991) (internal citations omitted).

[FN28]. Satellite Delivery of Network Signals to Unserved Households for Purposes of the Satellite Home Viewer Act, Report and Order, 14 F.C.C.R. 2654, para. 11, 14 Comm. Reg. (P & F) 1193 (1999).

[FN29]. See 47 C.F.R. § 73.658(g) (2000).

[FN30]. *Id.* § 73.3555(a)(3). The overlap "duopoly" rule prohibited ownership of cognizable interests in television stations with overlapping Grade-B contours. *Id.* The radio-television cross ownership rule prohibited a party from holding cognizable ownership interests in a radio station and a television station located in the same market. See *id.* § 73.3555(c). The Commission first imposed a national ownership limit for television broadcast stations in the 1940s by imposing numerical caps on the number of stations that could be commonly owned to no more than three stations nationwide. See Rules and Regulations Governing Commercial Broad. Stations, 6 Fed. Reg. 2284, 2284-85 (May 6, 1941).

[FN31]. Network Nonduplication Rule, 47 C.F.R. § 76.92 (providing that, upon the request of a local station that

53 FCLJ 469

FOR EDUCATIONAL USE ONLY

Page 22

53 Fed. Comm. L.J. 469

(Cite as: 53 Fed. Comm. L.J. 469)

has the exclusive right to distribute a network program, a cable operator generally may not carry a duplicating network program broadcast by a distant station). See also Syndicated Program Exclusivity Rule, 47 C.F.R. § 76.151 (providing a similar right for syndicated programming).

[FN32]. See Rep. and Statement of Policy Res: Comm'n en banc Programing [[sic] Inquiry, 44 F.C.C. 2303 (1960) (describing policy against excessive commercialization).

[FN33]. See Primer on Ascertainment of Cmty. Problems by Broad. Applicants, Report and Order, 27 F.C.C.2d 650, 21 Rad. Reg.2d (P & F) 1507 (1971), overruled by Revision of Programming and Commercialization Policies, Ascertainment Requirements, and Program Log Requirements for Commercial Television Stations, 98 F.C.C.2d 1076, 56 Rad. Reg.2d (P & F) 1005 (1984).

[FN34]. See 47 C.F.R. § 76.55 et. seq. (describing cable operators' signal carriage obligations).

[FN35]. Glen O. Robinson, The Electronic First Amendment: An Essay for the New Age, 47 Duke L.J. 899, 938 (1998).

[FN36]. Id. at 938-39 (citations omitted).

[FN37]. 10 F.3d 875 (D.C. Cir. 1993).

[FN38]. Id. at 887.

[FN39]. Id. at 882-85.

[FN40]. Id. at 882.

[FN41]. Robinson, *supra* note 35, at 909-10 ("Whatever credibility the scarcity rationale may once have enjoyed, it no longer enjoys it. Today, the scarcity argument for broadcast regulation is widely scorned.") (citing Jonathan Weinberg, Broadcasting and Speech, 81 Cal. L. Rev. 1103, 1106 (1993) (discussing the general disparagement of the scarcity rationale by economists, political scientists, and lawyers)).

[FN42]. Review of the Comm'n's Regulations Governing Television Broad., Notice of Proposed Rulemaking, 7 F.C.C.R. 4111, para. 3, 77 Rad. Reg.2d (P & F) 460 (1992).

[FN43]. Id. para. 4.

[FN44]. Id. para. 7.

[FN45]. The Commission has, for example, eased national ownership caps and local market multiple ownership restrictions. See *infra* notes 114-16 and accompanying text. It has also eliminated formal ascertainment proceedings. See Revision of Programming and Commercialization Policies, Ascertainment Requirements, and Program Log Requirements for Commercial Television Stations, Report and Order, 98 F.C.C.2d 1076, para. 2, 56 Rad. Reg.2d (P & F) 1005 (1984) [hereinafter 1984 Television Deregulation Order], recons. denied, 104 F.C.C.2d 358, 60 Rad. Reg.2d (P & F) 526 (1986), rev'd in part, ACT v. FCC, 821 F.2d 741 (D.C. Cir. 1987). The Commission has eased the dual network rule to allow a television broadcast station to affiliate with a person or entity that maintains two or more networks of television broadcast stations unless such networks are composed of:
 □ two or more persons or entities that were "networks" on the date the Telecommunications Act of 1996 ("1996

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53 Fed. Comm. L.J. 469

(Cite as: 53 Fed. Comm. L.J. 469)

Act") was enacted. 47 C.F.R. § 73.658(g) (2000).

[FN46]. 1984 Television Deregulation Order, *supra* note 45, paras. 15-29.

[FN47]. See Comments of ABC, Inc. on 1997 Notice of Proposed Rulemaking, MM Docket No. 97-138, at 2 (Aug. 8, 1997), available at http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=1892000001 (citing Deregulation of Radio, Report and Order, 84 F.C.C.2d 968, 49 Rad. Reg.2d (P & F) 1 (1981)).

[FN48]. See Amendment of Pts. 73 and 74 of the Comm'n's Rules to Permit Unattended Operation of Broad. Stations and to Update Broad. Stations Transmitter Control and Monitoring Requirements, Report and Order, 10 F.C.C.R. 11,479, 78 Rad. Reg.2d (P & F) 1737 (1995). This Report and Order led to the curious result that a personal, physical presence at a station's main studio is required, even though no engineering presence is required. *Id.* para. 12. Similarly, the Commission requires compliance with the rule by stations operating pursuant to local marketing agreements that otherwise permit broadcast licensees to delegate aspects of station operations to other stations. See Siete Grande Television, Inc., Letter, 11 F.C.C.R. 21,154, 5 Comm. Reg. (P & F) 938 (1996).

[FN49]. See Ronald J. Krotoszynski, Jr., *The Inevitable Wasteland: Why the Public Trustee Model of Broadcast Television Regulation Must Fail*, 95 Mich. L. Rev. 2101, 2118 (1997) (book review) (stating that "[t]he Commission has not undertaken any major review or attempt to enforce its 'localism' policy during the 1990s; communications lawyers who represent broadcasters in license renewal proceedings know that a perfunctory effort at meeting the Commission's localism requirement will be satisfactory.").

[FN50]. Reexamination of the Comparative Standards for Noncommercial Educational Applicants, Report and Order, 15 F.C.C.R. 7386, 31 Comm. Reg. (P & F) 301 (2000) [hereinafter NEA Report and Order]. See also Paul J. Feldman, *The FCC and Regulation of Broadcast Indecency: Is There a National Broadcast Standard in the Audience?*, 41 Fed. Comm. L.J. 369, 396-97 (1989) (noting the resiliency of the Commission's dedication to localism as a whole, "at least on paper," despite the trend toward deregulating broadcasting).

[FN51]. NEA Report and Order, *supra* note 50, paras. 43-48. See *id.* para. 48 ("Given the special, long-recognized, significance of localism to noncommercial educational broadcasting, we will award points for localism.").

[FN52]. *Bechtel v. FCC*, 10 F.3d 875, 885 (D.C. Cir. 1993).

[FN53]. *Orion Comms., Ltd. v. FCC*, 131 F.3d 176 (D.C. Cir. 1997).

[FN54]. *Id.* at 180 (emphasis added) (quoting *Bechtel*, 10 F.3d at 882).

[FN55]. *Id.*

[FN56]. It appears that only three D.C. Circuit (or any court) decisions have substantively involved the rule at all, and none have involved direct challenges to its underlying validity. *Cent. Fla. Enters., Inc. v. FCC*, 683 F.2d 503 (D.C. Cir. 1982) (affirming the Commission's renewal of a television broadcaster's license despite its finding that the licensee had violated the main studio rule); *Cent. Fla. Enters., Inc. v. FCC*, 598 F.2d 37 (D.C. Cir. 1978) (an earlier decision involving the same facts); *Brown Telecasters, Inc. v. FCC*, 289 F.2d 868 (D.C. Cir. 1961) (rejecting a television construction permit applicant's contention that the Commission's waiver of the main studio rule's location component was unsupported because it was premised upon erroneous facts).

53 FCLJ 469

FOR EDUCATIONAL USE ONLY

Page 24

53 Fed. Comm. L.J. 469

(Cite as: 53 Fed. Comm. L.J. 469)

[FN57]. Suburban Cmty. Report and Order, *supra* note 25, para 2.

[FN58]. 4 Fed. Reg. 2715 (June 30, 1939) (formerly 47 C.F.R. § 312 (repealed)).

[FN59]. *Id.* at 2716 (formerly 47 C.F.R. § 330 (repealed)).

[FN60]. *Id.* (formerly 47 C.F.R. § 331 (repealed)).

[FN61]. See Rules Governing Standard High-Frequency Broad. Stations, 11 Fed. Reg. 33, 34 (Jan. 1, 1946); see also Amendment of § 3.613 of the Comm'n's Rules and Regulations, Memorandum Opinion and Order, 43 F.C.C. 888, 890 (1952) [hereinafter 1952 Television Memorandum Opinion and Order].

[FN62]. Amendment of Section 3.606 Sixth Report and Order, *supra* note 6.

[FN63]. 1952 Television Memorandum Opinion and Order, *supra* note 61, at 890.

[FN64]. Origination Point of Programs by Standard and FM Broad. Stations, Notice of Proposed Rulemaking, 13 Fed. Reg. 1129 (Mar. 2, 1948).

[FN65]. *Id.*

[FN66]. 1950 Radio Report and Order, *supra* note 6.

[FN67]. *Id.* at 572.

[FN68]. *Id.*

[FN69]. *Id.*

[FN70]. *Id.* at 571.

[FN71]. Congress ordered the Commission to exercise its spectrum licensing (and derivative powers) if the "public interest, convenience, and necessity would be served thereby." 47 U.S.C. § 307(c) (Supp. V 1999).

[FN72]. 1952 Television Memorandum Opinion and Order, *supra* note 61, at 890.

[FN73]. See *supra* notes 57-68 and accompanying text.

[FN74]. Amendment of Pts. 1 and 73 of the Comm'n's Rules and Regs. Pertaining to the Main Studio, Report and Order, 27 F.C.C.2d 851, para. 2, 21 Rad. Reg.2d. (P & F) 1501 (1971).

[FN75]. *Id.*

[FN76]. 1952 Television Memorandum Opinion and Order, *supra* note 61, at 888.

[FN77]. *Cent. Fla. Enters., Inc. v. FCC*, 598 F.2d 37, 45 (D.C. Cir. 1978) (internal citation omitted).

[FN78]. See discussion *supra* notes 68-74; see also 47 C.F.R. § 73.1125 (2000).

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53 FCLJ 469

FOR EDUCATIONAL USE ONLY

Page 25

53 Fed. Comm. L.J. 469

(Cite as: 53 Fed. Comm. L.J. 469)

[FN79]. Regulations and Rules Oversight of the AM, FM, and TV Broad. Rules, 44 Fed. Reg. 69,933 (Dec. 5, 1979).

[FN80]. Id.

[FN81]. See 1987 Report and Order, *supra* note 7, app. C.

[FN82]. Application of Arizona Comms. Corp., Radio Station KXTC (FM), Memorandum Opinion and Order, 25 F.C.C.2d 837, 20 Rad. Reg.2d (P & F) 445 (1970).

[FN83]. See 1987 Report and Order, *supra* note 7, para. 8.

[FN84]. Memorandum Opinion and Order, 104 F.C.C.2d 865, para. 11, 60 Rad. Reg.2d (P & F) 1394 (1986).

[FN85]. Reiteration of Policy Regarding Enforcement of Main Studio Rule, Public Notice, 55 Rad. Reg.2d (P & F) 1178 (1984).

[FN86]. Report on the Status of AM Broad. Rules, RM 5532, Mass Media Bureau (Apr. 3, 1986); Review of Technical Assignment Criteria for the AM Broad. Serv., Notice of Inquiry, 2 F.C.C.R. 5014, para. 2, 67 Rad. Reg.2d (P & F) 1618 (1987).

[FN87]. See 1987 Report and Order, *supra* note 7, para. 10.

[FN88]. Amendment of Sections 73.1125 and 73.1130 of the Comm'n's Rules, the Main Studio and Program Origination Rules for Radio and Television Broad., Notice of Proposed Rulemaking, 1 F.C.C.R. 536, para. 1 (1986) [hereinafter 1986 Notice of Proposed Rulemaking].

[FN89]. 1987 Report and Order, *supra* note 7, para. 14.

[FN90]. Id. para. 17.

[FN91]. Id.

[FN92]. 1986 Notice of Proposed Rulemaking, *supra* note 88, para. 8 (internal citation omitted).

[FN93]. Id. para. 11.

[FN94]. 1987 Report and Order, *supra* note 7, para. 4.

[FN95]. Id. para. 36.

[FN96]. 1988 Clarification Order, *supra* note 9.

[FN97]. Id. para. 24 (internal citations omitted).

[FN98]. 1991 Jones Eastern Memorandum Opinion and Order, *supra* note 10, para. 9. The Commission clarified, however, "This is not to say that the same staff person and manager must be assigned full-time to the main studio. Rather, there must be management and staff presence on a full-time basis during normal business hours to be

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53 Fed. Comm. L.J. 469

(Cite as: 53 Fed. Comm. L.J. 469)

considered 'meaningful.' ' Id. para. 9 n.2.

[FN99]. Id. para. 9. "[W]e believe that a meaningful presence means more than one full-time clerical person, together with occasional oversight from two management personnel who apparently have no specific work schedule in Columbia but instead, work at the studio at irregular intervals, aggregating six hours per week." Id.

[FN100]. Jones Eastern Clarification Order, *supra* note 11, para. 11.

[FN101]. Id.

[FN102]. Id. para. 10.

[FN103]. Application of Gerard A. Turro for Renewal of License for FM Translator Stations, Decision, 15 F.C.C.R. 14,649, para. 62 n.12 (2000) [[hereinafter Turro Decision] (citing KQQK, Inc., Letter, 10 F.C.C.R. 132 (1994)).

[FN104]. Am. Broad. Educ. Found., Forfeiture Order, 15 F.C.C.R. 8630, para. 2 (2000).

[FN105]. Id.

[FN106]. Queen of Peace Radio, Inc., Forfeiture Order, 15 F.C.C.R. 1934 (2000).

[FN107]. Jones Eastern Clarification Order, *supra* note 11, para. 11. See also Liability of W-Air, Inc., Memorandum Opinion and Order, 11 F.C.C.R. 9434, para. 5 (1996) (holding that a licensee complied with the full-time staff presence requirement of the main studio rule where it had employed a book store owner who shared a common entrance with the station, greeted visitors, and attended to the business of the main studio during normal business hours).

[FN108]. 1988 Clarification Order, *supra* note 9, para. 24.

[FN109]. Maines Broad., Inc. WMRX (FM), Memorandum Opinion and Order, 8 F.C.C.R. 5501, para. 8, 73 Rad. Reg.2d (P & F) 895 (1993).

[FN110]. Id. paras. 2-3.

[FN111]. Id. para. 9.

[FN112]. See S'holders of CBS Corp., and Viacom, Memorandum Opinion and Order, 15 F.C.C.R. 8230, para. 40, 20 Comm. Reg.2d (P & F) 451 (2000) ("[A] pplicants have demonstrated that the Escanaba market is extremely limited in size, that no other television station is licensed to that community and that maintenance of a main studio in Escanaba is not economically viable.").

[FN113]. See, e.g., Letter from Roy J. Stewart, Mass Media Bureau, FCC, to Amelia L. Brown, Haley, Bader & Potts Regarding WMKV (FM) (Feb. 9, 1996) (on file with Authors). The 1998 Memorandum Opinion and Order also recognized and formalized the practice of granting "satellite" waivers to noncommercial educational FM stations that were part of state or regional broadcasting networks. See 1988 Clarification Order, *supra* note 9, para. 30; Letter from Linda Blair, Mass Media Bureau, FCC, to Todd M. Stansbury, Wiley, Rein & Fielding Regarding KJAC (FM) (Oct. 16, 1998) (on file with Authors); Letter from Linda Blair, Mass Media Bureau, FCC, to James

53 Fed. Comm. L.J. 469

(Cite as: 53 Fed. Comm. L.J. 469)

McDermott, President, Lake Area Educ. Broad. Found. (Nov. 13, 2000) (on file with Authors).

[FN114]. Revision of Radio Rules and Policies, Second Memorandum Opinion and Order, 7 F.C.C.R. 2755, 70 Rad. Reg.2d (P & F) 903 (1992), recons. granted in part, Report and Order, 7 F.C.C.R. 6387, 71 Rad. Reg.2d (P & F) 227 (1992), further recons., First Reconsideration Order, 9 F.C.C.R. 7183, 76 Rad. Reg.2d (P & F) 698 (1994).

[FN115]. Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56. (codified at scattered sections of 47 U.S.C.).

[FN116]. Implementation of Sections 202(c)(1) and 202(e) of the Telecomms. Act of 1996 (Nat'l Broad. Television Ownership and Dual Network Operations), Order, 11 F.C.C.R. 12,374 (1996) (eliminating the numerical limit on the number of broadcast television stations a person or entity could own nationwide, and increasing the audience reach cap on such ownership from twenty-five percent to thirty-five percent of television households); see also 47 C.F.R. §73.3555(a)(1) (2000); Implementation of Sections 202(a) and 202(b)(1) of the Telecommunications Act of 1996 (Broadcast Radio Ownership), 61 Fed. Reg. 10,689 (Mar. 15, 1996); (implementing new radio ownership limits in 1996 Act by eliminating all restrictions on the number of AM and FM radio stations that can be owned nationally by any one entity, and allowing common ownership of greater numbers of stations within a single market). The Commission has subsequently eased its television duopoly rule limiting ownership of two stations in the same local market. Review of the Comm'n's Regulations Governing Television Broad.; Television Satellite Stations Review of Policy and Rules, Report and Order, 14 F.C.C.R. 12,903, paras. 2-8, 17 Comm. Reg. (P & F) 1 (1999).

[FN117]. Pet. for Rulemaking of Apex Assoc. et al., Review of the Comm'n's Rules Regarding the Main Studio and Local Pub. Inspection Files of Broad. Television and Radio Stations, MM Docket No. 97-138 (1996) [hereinafter Apex Petition] (on file with the Federal Communications Law Journal).

[FN118]. Id. at 3.

[FN119]. Id. at 7.

[FN120]. See 1997 Notice of Proposed Rulemaking, *supra* note 12.

[FN121]. See 47 C.F.R. § 73.1125(a); 1998 Report and Order, *supra* note 13.

[FN122]. A third prong of the rule allows location of the main studio within the community of license. This does not expand the permitted location of the main studio, however, given that the geographic community of license area always lies within a station's principal community contour. The rule differs somewhat for Class-A television station applicants and licensees. They are required to locate main studios within the station's Grade-B contour. 47 C.F.R. § 73.1125(c) ("Each Class A television station shall maintain a main studio at the site used by the station as of November 29, 1999[,] or a location within the station's Grade B contour."); Establishment of a Class A Television Serv., Report and Order, 15 F.C.C.R. 6355, para. 25, 20 Comm. Reg. (P & F) 154 (2000).

[FN123]. 1998 Report and Order, *supra* note 13, para. 7 (expressing the hope that the new rule would establish a "clear, bright line" test that would reduce the number of waiver requests).

[FN124]. Comments of KHWY, Inc. on 1997 Notice of Proposed Rulemaking, MM Docket No. 97-138, at 1 (Aug. 8, 1997), available at http://gulfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=1891570001 ("The Commission should rescind the [main studio] rule."); Comments of Harold

(Cite as: 53 Fed. Comm. L.J. 469)

Hallikainen on 1997 Notice of Proposed Rulemaking, MM Docket No. 97-138, at 1 (Aug. 5, 1997), available at http://gulfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=1890300001 ("Should the Commission decide that the changes in the broadcasting industry and FCC policies ... make relaxation of the main studio rule desirable, I would suggest elimination of the rule instead of establishing some arbitrary limit on main studio location."); Comments of Albritton Comm. Co. on 1997 Notice of Proposed Rulemaking, MM Docket No. 97-138, at 2 (Aug. 8, 1997), available at http://gulfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=1892610001 ("The Commission should eliminate the useless Main Studio Rule."); Comments of ABC, Inc. on 1997 Notice of Proposed Rulemaking, MM Docket No. 97-138, at 3 (Aug. 8, 1997), *supra* note 47 ("The Main Studio Rule Should Be Repealed."); Comments of Capstar Broad. Partners, Inc. on 1997 Notice of Proposed Rulemaking, MM Docket No. 97-138, at 2 (Aug. 7, 1997), available at http://gulfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=1889050001 ("Repeal of the Main Studio Rule is the Wisest Course"); Comments of Jacor Comm., Inc. on 1997 Notice of Proposed Rulemaking, MM Docket No. 97-138, at 2 (Aug. 8, 1997), available at http://gulfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=1892120001 ("The Commission should thus eliminate the main studio rule."); Comments of InterMart Broad. Corp. on 1997 Notice of Proposed Rulemaking, MM Docket No. 97-138, at 2 (Aug. 8, 1997), available at http://gulfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=1889660001 ("As an alternative to its proposals in the NPRM, InterMart suggests the Commission consider the total elimination of the main studio rule."); Comments of Odyssey Comms., Inc. on 1997 Notice of Proposed Rulemaking, MM Docket No. 97-138, at 2 (Aug. 8, 1997), available at http://gulfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=1891670001 ("The Commission should eliminate the obsolete main studio rule."). The Commission may have been swayed in part by the recommendation of the National Association of Broadcasters ("NAB") that the rule should be modified rather than eliminated. See Comments of NAB on 1997 Notice of Proposed Rulemaking, MM Docket No. 97-138, at 2 (Aug. 8, 1997), available at http://gulfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=1892000001.

[FN125]. See Comments of ABC, Inc., *supra* note 47, at 2 ("In our view, however, none of the proposals for further relaxing the main studio rule will satisfy the Commission's goals. The proposed alternative formulations are either too restrictive or so vague that they will be difficult to interpret and enforce.").

[FN126]. Apex Petition, *supra* note 117, at 18. Later commenters expressed similar sentiments. Comments of InterMart Broad. Corp. on 1997 Notice of Proposed Rulemaking, MM Docket No. 97-138, at 4 (Aug. 8, 1997), available at http://gulfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=1889660001 ("[In fourteen years of broadcast station construction and operation, radio station principals] cannot remember ever having a member of the public visit their stations with a demand for 'access.'"); Comments of Dick Broad. Co., Inc. on 1997 Notice of Proposed Rulemaking, MM Docket No. 97-138, at 3 (Aug. 6, 1997), available at http://gulfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=1888790001 ("As far as we know, neither [of commenter's] 'main studio[s]' has any visitors.").

[FN127]. 1998 Report and Order, *supra* note 13, para. 14.

[FN128]. High-power stations have principal community contours with as much as a forty-four-mile radius. 1998 Report and Order, *supra* note 13, para. 10.

[FN129]. *Id.* para. 8.

[FN130]. Ironically, the solution Apex proposed at least attempted to remedy this problem by requiring the main studio to be "reasonably accessible to residents of the station's community of license," and either leaving it to the discretion of the licensee to determine "reasonably accessible" or, in the alternative, to define "reasonably

(Cite as: 53 Fed. Comm. L.J. 469)

accessible" as "within 30 minutes normal driving time" from the community of license. 1997 Notice of Proposed Rulemaking, *supra* note 12, para. 12. (internal quotations omitted) The Commission (and many commenting broadcasters) rejected this suggestion as "lack [[ing in] clarity ... While relaxing the rule, they would appear to create a significant amount of uncertainty for the public and licensees regarding the appropriate location of a station's main studio." *Id.*

[FN131]. See Comments of Odyssey Comms., Inc., *supra* note 124, at 4; Comments of KHWY, Inc., *supra* note 124, at 7 ("By using modern mobile equipment, KHWY is even more attuned to the communities it serves and better able to originate local programming than if it had a main studio in each of its licensed communities."); Comments of Sinclair Telecable, Inc. on 1997 Notice of Proposed Rulemaking, MM Docket No. 97-138, at 5 (July 30, 1997), available at http://gulfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=1883270001 ("[I]n many instances a station's main studio is not used to originate programming. Instead, the programming for the commonly owned stations is either originated or received via satellite at the central studio location, and then delivered to each station's transmitter from that location.").

[FN132]. See, e.g., Pappas Telecasting of the Carolinas, Memorandum Opinion and Order, 104 F.C.C.2d 865, paras. 1, 3, 60 Rad. Reg.2d (P & F) 1394 (1986), (dismissing a rival broadcaster's allegations of main studio violation by Pappas as "without merit").

[FN133]. See, e.g., Qwest Comms. Int'l, Inc. and U S West, Inc., Memorandum Opinion and Order, 15 F.C.C.R. 5376, para. 29, 19 Comm. Reg. (P & F) 1010 (2000) (asking competitors to bring misconduct by the applicants to the attention of the Commission's Enforcement Bureau).

[FN134]. Suburban Cmty. Report and Order, *supra* note 25, para. 30 ("We believe the [Suburban Community] policies may be used to stem the establishment of competing stations. In practice, the policies are frequently invoked by stations in large communities against the establishment of new or improved service in smaller communities.").

[FN135]. Comments of ABC, Inc., *supra* note 47, at 5. Odyssey Communications estimated the cost of maintaining a single main studio at \$75,000 per year. Comments of Odyssey Communications, Inc., *supra* note 124, at 5; Comments of Hardy & Carey on the 1997 Notice of Proposed Rulemaking, MM Docket No. 97-138, at 2 (Aug. 8, 1997), available at http://gulfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=1889290001 (estimating costs of maintaining a single main studio total up to \$100,000 per year).

[FN136]. Comments of KHWY, Inc., *supra* note 124, at 3.

[FN137]. Forfeiture amounts for main studio violations in the 1970s and 1980s generally ranged from \$5,000 to \$10,000. 1995 Jones Eastern Memorandum Opinion and Order, *supra* note 1, para. 7. In 1989, Congress amended section 503(b) of the 1934 Act to increase the dollar amounts of the Commission's forfeiture authority. As a result, the Commission assessed greater amounts, including \$12,000 to Jones Eastern of the Outer Banks. *Id.* para. 9. The FCC also assessed \$20,000 in Masada Order, *supra* note 18, para. 4. In 1997, the Commission adopted a set standard of \$7,000 per violation. Comm'n's Forfeiture Policy Statement and Amendment of Section 1.80 of the Rules to Incorporate the Forfeiture Guidelines, Report and Order, 12 F.C.C.R. 17,087, app. A, sec. I, 8 Comm. Reg. (P & F) 1314 (1997). A \$12,000 forfeiture recently was assessed against KXOJ, Inc., for willful and repeated violation of the rule. Liability of KXOJ, Inc., Memorandum Opinion and Order and Forfeiture Order, 15 F.C.C.R. 21,812, para. 9 (1999).

[FN138]. The Commission noted a similar effect in the case of the repealed Suburban Community policy. See

(Cite as: 53 Fed. Comm. L.J. 469)

Suburban Cmty. Report and Order, *supra* note 25, para. 30. "The test for overcoming these policies is a rugged one involving high expenditures for lawyers and engineers who participate in hearings with a resulting delay in the authorization of new service in the smaller community. This tends, ironically, to benefit stations in the larger, metropolitan markets by delaying or frustrating the establishment or improvement of competing stations in nearby smaller markets." *Id.* (internal citations omitted).

[FN139]. See 1998 Report and Order, *supra* note 13, para. 8. ("There is longstanding congressional and Commission policy in favor of reducing regulatory burdens consistent with the public interest wherever appropriate.")

[FN140]. S. Conf. Rep. 104-230, at 1 (1996) (purpose of the 1996 Act is "to provide for a pro-competitive, de-regulatory national policy framework"); see also S. Conf. Rep. 96-878, at 1 (1980) (purpose of Regulatory Flexibility Act is "to encourage Federal agencies to utilize innovative administrative procedures in dealing with individuals, small businesses, small organizations, and small governmental bodies that would otherwise be unnecessarily adversely affected by Federal regulations").

[FN141]. See, e.g., Implementation of Section 203 of the Telecommunications Act of 1996 (Broadcast License Terms), Report and Order, 12 F.C.C.R. 1720, 6 Comm. Reg. (P & F) 23 (1997) (extending broadcast terms to eight years, consistent with policy of reducing regulatory burdens).

[FN142]. See *Siete Grande Television, Inc.*, Letter, 11 F.C.C.R. 21,154, 21,159, 5 Comm. Reg. (P & F) 938 (1996). "The Commission has repeatedly approved time brokerage arrangements where the brokered station retains only the minimum amount of required staff, two full-time employees, one of whom must be a manager." *Id.*

[FN143]. In addition to the procedural difficulties in the *Jones Eastern* case, at least two main studio decisions have subsequently been reversed on appeal. See *Queen of Peace Radio, Inc.*, Forfeiture Order, 15 F.C.C.R. 1934 (2000) (in which a full Commission dismissed forfeiture assessment against station, reversing an enforcement bureau order denying reconsideration of the forfeiture assessment); *Turro Decision*, *supra* note 103 (upholding an administrative law judge's reversal of a Mass Media Bureau finding of a serious main studio violation and dismissing Mass Media Bureau calls for impositions of forfeitures).

[FN144]. See *supra* notes 98-108 and accompanying text.

[FN145]. Some commenters in the 1997 Notice of Proposed Rulemaking noted that this was already occurring. Comments of ABC, Inc., *supra* note 47, at 6. "Stations with studios outside their communities of license already have executive, programming, news and/or community affairs personnel out in the communities virtually every day." *Id.*

[FN146]. *Id.* at 18.

[FN147]. Comments of Thomas G. Osenkowsky on 1997 Notice of Proposed Rulemaking, MM Docket No. 97-138, at 1 (June 30, 1997), available at http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=1861380001.

[FN148]. The Commission has already exempted low-power radio service providers from the rule. Creation of Low Power Radio Serv., Report and Order, 15 F.C.C.R. 2205, para. 185, 19 Comm. Reg. (P & F) 597 (2000). "We believe these requirements would place an undue burden on such small noncommercial educational stations. In addition, we believe that the nature of this service will ensure that LPFM stations are responsive to their

(Cite as: 53 Fed. Comm. L.J. 469)

communities." Id. On the other hand, the rule was recently imposed upon Class-A television licensees . Establishment of a Class A Television Service, Report and Order, 15 F.C.C.R. 6355, para. 20, 20 Comm. Reg. (P & F) 154 (2000).

[FN149]. See Comments of ABC, Inc., *supra* note 47, at 6 ("[L]isteners and community representatives rarely stop by at the stations to voice their views."); Comments of Sinclair Telecable, Inc., *supra* note 131, at 3 ("[I]t has been Sinclair's experience that requests to review a station's public file are very infrequent.").

[FN150]. See Comments of KHWY, Inc., *supra* note 124, at 5 (noting that one of the commenter's stations with a permanent waiver from the main studio rule nonetheless maintained an official "station representative" and a toll-free number for the convenience of residents in interacting with the station).

[FN151]. Though even here the burden imposed upon broadcasters balanced with the generally sparse usage by the public. See Joint Comments of Noncommercial Educ. Licensees on the 1997 Notice of Proposed Rulemaking, MM Docket No. 97-138, at 3 (Aug. 8, 1997), available at http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=1889560001 ("In all, the [twenty-one] NCE Licensees (cumulatively) recall less than a dozen instances where a member of the general public inspected any station public inspection files in the last decade.").

[FN152]. See Comments of Odyssey Comms., Inc., *supra* note 124, at 3.

[FN153]. Standardized and Enhanced Disclosure Requirements for Television Broad. Licensee Pub. Interest Obligations, Notice of Proposed Rulemaking, 15 F.C.C.R. 19,816, para. 31 (2000).

[FN154]. The local public inspection file rule, for example, is better drafted and more detailed in its provisions. It explains the required contents of the file, 47 C.F.R. § 73.3526(e) (2000), the location of the file, *id.* § 73.3526(b), and the manner in which the file is to be made accessible to the public for viewing and duplication, *id.* § 73.3526(c). Its provisions are reasonable, for example, allowing stations seven days to fulfill file viewers' copy requests. *Id.* § 73.3526(c).

[FN155]. Comments of Harold Hallikainen, *supra* note 124, at 2.

[FN156]. 1998 Report and Order, *supra* note 13, para. 14 (internal citations omitted); "Some commenters also argue that we should repeal the requirement that stations maintain program origination capability in their main studios.... This too is an issue that was not raised in the [Notice of Proposed Rulemaking] and is therefore beyond the scope of this proceeding." *Id.* para. 14 n.38.

[FN157]. *Id.* para. 6.

[FN158]. See, e.g., Comments of Jacor Comms., Inc., *supra* note 124, at 5 ("During the past ten years [since the 1987 Report and Order], advancing technology, such as electronic mail and increasingly accessible facsimile machines, has only made it easier for a broadcast station to maintain a dialogue with the many communities it serves without requiring individual members of those communities to travel to some station-operated facility.") In addition, commenters in another Commission proceeding had suggested abolition of the rule. See Amendment of Pts. 73 and 74 of the Comm'n's Rules to Permit Unattended Operation of Broad. Stations and to Update Broad. Stations Transmitter Control and Monitoring Requirements, Report and Order, 10 F.C.C.R. 11,479, para. 44, 78 Rad. Reg.2d (P & F) 1737 (1995).

[FN159]. 5 U.S.C. § 553(c) (1994). See *ACLU v. FCC*, 823 F.2d 1554, 1581 (D.C. Cir. 1987) ("Notice and

(Cite as: 53 Fed. Comm. L.J. 469)

comment rulemaking procedures obligate the FCC to respond to all significant comments, for 'the opportunity to comment is meaningless unless the agency responds to significant points raised by the public.' (quoting *Alabama Power Co. v. Costle*, 636 F.2d 323, 384 (D.C. Cir. 1979) (quoting *Home Box Office, Inc. v. FCC*, 567 F.2d 9, 35-36 (D.C. Cir. 1977))).

[FN160]. See 1987 Report and Order, *supra* note 7. Furthermore, to the extent that providing local information is still a goal of the Commission, there are more efficient means for stations to do so than through main studios (where such studios differ from principal production facilities or where production facilities do not otherwise exist). Information may, for example, be supplied to existing television broadcasts produced elsewhere.

[FN161]. See, e.g., *Bechtel v. FCC*, 10 F.3d 875, 880 (D.C. Cir. 1993).

The Commission's uncertainty about the practical effects of its integration policy is not limited to the question of how long integration persists. Despite its twenty-eight years of experience with the policy, the Commission has accumulated no evidence to indicate that it achieves even one of the benefits that the Commission attributes to it. As a result, the Commission ultimately rests its defense of the integration criterion on the deference that we owe to its 'predictive judgments'... There comes a time when reliance on unverified predictions begins to look a bit threadbare.

Id.

[FN162]. See Comments of ABC, Inc., *supra* note 47, at 8-9.

[FN163]. See 1986 Notice of Proposed Rulemaking, *supra* note 88, para. 10 (1986) (quoting The Revision of Programming and Commercialization Policies, Ascertainment Requirements, and Program Log Requirements for Commercial Television Stations, Report and Order, 104 F.C.C.2d 357, para. 2, 60 Rad. Reg.2d (P & F) 526 (1986).

[FN164]. See discussion *supra* note 27.

[FN165]. Harold Hallikainen, Main Studio Rule-The History, *Radio World*, Oct. 15, 1997, available at <http://www.broadcast.net/~hhallika/insite/insite95.html>.

[FN166]. 47 C.F.R. §§ 73.3526(b), 73.3527(b) (2000). A reform of the main studio rule will also necessitate a reform of these rules, given that this file must be maintained in the main studio location. See *supra* notes 151-53. As some commenters in the 1997 Rulemaking noted, however, where main studios differ from primary business location and/or production centers, duplicate public inspection files are often created at the latter because this is the primary point of contact of most listeners or viewers with the station. See, e.g., Comments of Albritton Comm. Co., *supra* note 124, at 5.

[FN167]. 47 C.F.R. §§ 73.3526(e)(11)(i), 73.3526(e)(12).

[FN168]. *Id.* §§ 73.3580(d)(4), 73.3584, 73.3587.

[FN169]. See NBC [Renewal of License of Station WNBC (TV)], Memorandum Opinion and Order and Notice of Apparent Liability, 14 F.C.C.R. 9026, para. 19 (1999) ("The basic renewal standard consists of an obligation that a licensee address community issues with responsive programming."); *Advanced Television Sys. and Their Impact upon the Existing Television Broad. Serv.*, Fourth Further Notice of Proposed Rulemaking and Third Notice of Inquiry, 10 F.C.C.R. 10,540, para. 33 n.36, 7 Comm. Reg. (P & F) 2065 (1995).

[FN170]. See *supra* note 153 and accompanying text.

(Cite as: 53 Fed. Comm. L.J. 469)

[FN171]. See 47 U.S.C. § 396(a)(5) (1994); see also Reexamination of the Comparative Standards for Noncommercial Educ. Applicants, Report and Order, 15 F.C.C.R. 7386, para. 15, 31 Comm. Reg. (P & F) 301 (2000) ("Public broadcasting holds a special place in meeting the informational, cultural, and educational needs of the nation. Neither a lottery nor a first to file approach is the optimal way to select applicants who will provide 'diversity and excellence' in educational broadcasting to the public.").

[FN172]. 47 U.S.C. § 307(b) (1994) (emphasis added).

[FN173]. Please note that this summary was current as of January 2001 and may not reflect subsequent changes to the rule.

[FN174]. 47 C.F.R. § 73.1125(a)(1) (2000). An exception to this three-pronged requirement is the treatment of Class-A television applicants and licensees. They are required to locate main studios within the stations' Grade-B contours. Id. § 73.1125(c) ("Each Class A television station shall maintain a main studio at the site used by the station as of November 29, 1999 or a location within the station's Grade B contour.").

[FN175]. Id. § 73.1125(a)(2).

[FN176]. Id. § 73.1125(a)(3).

[FN177]. Id. § 73.3526(b).

[FN178]. Id. § 73.3526(c).

[FN179]. Turro Decision, *supra* note 103, para. 57 (rejecting allegations by a competitor that a station's main studio was "not readily accessible to the public.").

[FN180]. Id. § 73.1125(d).

[FN181]. Turro Decision, *supra* note 103, para. 61 (noting, with approval, the main studio manager's actions of placing the station back on the air if its service had been interrupted, recruiting employees hired by others, supervising the staff member, arranging for public affairs programming and emergency announcements to be broadcast over the station, and representing the station in the community through membership in civic organizations).

[FN182]. Id. (noting duties such as handling listener requests and complaints, distributing mail, bringing important matters to the attention of the main studio manager, and ensuring that public service announcements of local interest were broadcast in connection with preparation of a public service announcement bulletin board).

[FN183]. Id.

[FN184]. Id. para. 41.

[FN185]. See 47 C.F.R. § 73.1125(e) ("Each AM, FM, TV and Class A TV broadcast station shall maintain a local telephone number in its community of license or a toll-free number.").

[FN186]. Turro Decision, *supra* note 103, para. 43.

53 FCLJ 469

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Page 34

53 Fed. Comm. L.J. 469

(Cite as: 53 Fed. Comm. L.J. 469)

[FN187]. See Letter from Edythe Wise, Mass Media Bureau, FCC, to Michael R. Birdsill, Letter, 7 F.C.C.R. 7891 (1992).

[FN188]. Turro Decision, *supra* note 103, para. 62.

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TV.

LookSmart[FindArticles](#) > [Journal of Popular Film and Television](#) > [Fall, 2001](#) > [Article](#) > [Print friendly](#)**Finding TV's Pioneering Audiences**

Douglas Gomery

Audiences, reception studies, and fan culture have properly begun to claim an increasingly prominent place in film and television studies. Specifically, we presently know a great deal about the audiences for early cinema, but who were the audiences for early television in the United States? Before one can approach effects, reception, and cultivation theories, one needs to know who early TV audiences were.

Sadly, most scholars have followed Erik Barnouw's lead and start television history sometime in the 1950s. William Boddy treats FCC station allocation and color controversies, but for audiences he starts this portion of his history in the mid-1950s when critics began to attack TV. Two classic sociological studies of television audiences, first by Gary Steiner and later by his successor William Bower, start in the late 1950s when television had saturated the United States. These studies were based on the assumption that, because Nielsen did not start issuing TV ratings until 1950, only sketchy data existed on which to base any earlier analysis (Barnouw 5-11, Boddy 28-64, Bower, Steiner).

The most sophisticated study of TV's audiences in the late 1940s can be found in Richard Butsch's *The Making of American Audiences*. Still, frustrated by a seeming lack of data, Butsch labels his chapter "Fifties Television," as if no one owned a set before 1950. Only in a note do we find a hint that "[t]elevision broadcasting blossomed in 1948, much like radio in 1922" (Butsch 373). Butsch then, from a smattering of magazine articles, finds that early television set buyers were rich because sets were expensive; the working class thus turned to communal sites in what Leo Bogart and Anna McCarthy call the "tavern era" (Bogart 65-93, McCarthy 31-49). The bulk of Butsch's fascinating chapter then concentrates on early TV programming practices inherited from radio and TV's effect on other media (Butsch 235-51).

Yet good macrodata do exist for the years before 1950 (Sterling 18-19, 212):

- * 1946--Six stations telecasting to approximately 20,000 sets,
- * 1947--Twelve stations telecasting to approximately 190,000 sets,
- * 1948--Sixteen stations telecasting to approximately 1,000,000 sets,
- * 1949--Fifty-one stations telecasting to approximately 3,000,000 sets,
- * 1950--Ninety-eight stations telecasting to approximately 7,000,000 sets.

With 9 percent of U.S. households having TV sets by 1950, we need to try to learn who made up the pioneering TV audiences of the 1940s. I argue that by 1950 the socioeconomic characteristics of the TV audience can be established because of data found in the Library of Congress's NBC collection and the Library of American Broadcasting's pamphlet collection. The pioneering audience characteristics are quite similar to TV audiences in the broadcast era.

Stations, Sets, and Ratings

Before we can locate and describe a pioneering audience, three conditions must have been in place: (1) stations had to go on the air, (2) people must have acquired sets, and (3) agencies had to gather information about audiences.

In September 1945, a month after the bombing of Japan, the FCC proposed a plan for allocation of TV stations throughout the United States. As seen in the data above, this plan led to about only 100 stations because of a FCC freeze during the period 1948-52. Finally, on July 1, 1952--with the FCC's Sixth Report and Order--did hundreds more stations finally go on the air.

Early stations were centered in big cities. In 1946, for example, six stations existed--three in New York City and one each in

Philadelphia, Chicago, and Schenectady, New York, the latter sponsored by General Electric, which was located there. Thereafter, stations came on line in major cities in the Northeast, upper Midwest, and along the West Coast. By 1950 stations were reaching one of five homes in the largest twenty-five cities.

Looking back, an article in the spring 1954 issue of *Sponsor* noted that "[e]stablishing a commercial television station in 1947, 1948, or 1949 wasn't so easy." The red ink was continuous, and with the FCC seemingly always changing course, a well-funded, risk-loving entrepreneur was required. Many businesses were allocated station construction permits; 10 percent turned them back in and never went on the air (*Television Digest* 1946, "TV Pioneers" 43-108).

From the beginning all stations looked to network connections. The first network broadcast aimed to capture the public's fancy came with the Army versus Navy football game held December 1, 1945, from Philadelphia. The game was broadcast live to viewers in New York City, Schenectady, and Washington, D.C. The audience saw the entire game--from the time President Truman entered the stands until the game's final whistle--from a camera at the 50-yard line. Two other cameras offered occasional close-ups (*Broadcasting* Nov. 19, 1945: 22; "Army-Navy Classic" 21).

Evidence shows that sports broadcasting sparked early viewership. Great interest was generated by the first World Series baseball network telecasts of the New York Yankees versus the Brooklyn Dodgers in 1947. The June 25, 1948, Joe Louis versus "Jersey Joe" Walcott heavyweight fight held at Yankee Stadium was telecast on a seven-station East Coast network to an estimated audience of six million. By October 1950 the World Series was televised live as far west as Omaha to an audience estimated in the tens of millions (NBC, Library of Congress, Folder 12).

A key event that proved that audiences existed for early television was when Joe Louis fought Billy Conn in New York City's Yankee Stadium on June 19, 1946. With Washington, D.C., connected to Philadelphia, New York City, and Schenectady, an estimated audience of 100,000 to 300,000 watched on the existing 10,000 or so television sets as Louis defeated Conn in eight rounds. Gillette hawked razors and blades, and male viewers surrounded sets in homes and public places. Gillette paid \$125,000 to "target" male sports fans (NBC, Library of Congress, Folder 604; NBC, Library of Congress, Folder 498; Katz and Dichter).

The audience grew as the network coaxial cable spread north to Boston and south to Richmond. In 1948, AT&T began building a Midwestern network in Chicago, stretching from Buffalo to St. Louis. A key moment for national audience development came on January 11, 1949, as Northeastern and Midwestern nets were linked in what was headlined as the equivalent of railroad's "Golden Spike." Suddenly viewers in New York, Boston, Philadelphia, Washington, D.C., Baltimore, Richmond, Pittsburgh, and Schenectady could see the same programs as set owners in Chicago, St. Louis, Milwaukee, Toledo, Cleveland, Detroit, and Buffalo. *Daily Variety* noted, "New hookup tonight was hailed by John Balaban, director of Paramount's station WBKB [in Chicago], as meaning to television what the advent of sound meant [a generation earlier] to motion pictures" (NBC, Library of Congress, Folder 12; *Daily Variety* Jan. 12, 1949: 1).

Still, coast-to-coast TV networking did not come until two-and-half years later, on September 4, 1951, when President Truman addressed the opening of the Japanese Peace Treaty Conference in San Francisco. Later that month NBC initiated the first true national TV season with variety shows starring Red Skelton and Eddie Cantor. Audiences were small in the 1940s, but they were constantly growing as the FCC allocated more stations and AT&T's wires reached them (Siepmann 326, Gomery 5-11).

At first those who wanted to see what all the fuss was about either paid dearly for their own set or streamed into bars, department and appliance stores, and even movie theater lobbies for a communal view. Because of lingering war restrictions and labor strikes for higher wages, manufacturers really did not get started turning out a substantial number of sets until early in 1947. With average \$400 price tags, about a tenth of the average household's income, early purchases were few. But manufacturers saw a pent-up demand, and looked for ways to lower prices. So, in 1947, they made cheaper sets by installing circular screens; this brought the price down \$100 on average (Bretz 545-53; NBC, Library of Congress, Folder 521; NBC, Library of Congress, Folder 612).

Manufacturers began to reap economies of scale and began producing rectangular screen sets that dealers could sell for \$200.

By 1948, sets sold as fast as they could be made--despite a recession that lasted from December 1948 through September 1949. Overnight, television was not the sole province of the well-off, but also of the middle class. Upper middle-class and working-class viewers alike embraced television. In city after city, they bought sets faster than the rich folks who lived across town. Because of a rapid price decline, only in a few cases--the ethnic cities of the Northeast and Midwest, in particular--was there a short-lived "tavern era." When prices dropped below \$200 in 1948, sales shifted almost exclusively to homeowners and renters. Indeed, during the late 1940s the electronics industry represented one of the fastest growing industries in the United States (Hughes 540-53, Walker 33).

The impetus for such an expensive purchase by a working-class family came at first because males of all ages demanded to see telecast sports. They easily calculated the relative value of paying for live admission versus paying once up-front for a TV set. An early 1948 DuMont survey of New Yorkers found that two-thirds of "dads" purchased their first television set to see the World Series. The other third of the demand came from the females of the New York City area, who told surveyors they liked to watch TV's live dramas instead of paying to go to a Broadway show (Walker 51-52).

Although RCA has been labeled the most famous of this early lot of set manufacturers because of its long-time ownership of NBC, it had dozens of challengers. DuMont pioneered the first full line of sets, from expensive consoles to cheap table-top models. RCA, Zenith, GE, Motorola, Philco, and Admiral quickly followed. For example, Admiral sold more sets than RCA--one million alone in 1950. Moreover, buyers began to get more for their dollars. For example, the average screen size increased. By 1950, the ten-inch set had grown to twelve inches for table models and sixteen inches for consoles. In June 1949, Philco introduced the first built-in antenna. Motorola countered with easier to use volume and channel dials for its Christmas models in 1949.

In addition to income, the most important reason for growth in TV set sales was a willingness to spend savings bonds. During World War II, the personal savings rate had been a fifth of domestic personal income, an all-time high for the twentieth century. In 1946, the savings rate plunged, and Americans went on a buying spree with a TV set atop most "wish lists" (Gomery 5-11, Hughes 540-53, "Obituary" B10, Walker 47-48, 55-65).

TV stations--most often owned by radio stations and newspapers--spurred set sales through barrages of "free" publicity. For example, all of Chicago noticed in early April 1948 when the Chicago Tribune and its WGN-AM radio station devoted space and time to the opening of Tribune's new television station, WGN-TV. This second station in America's second city set off a buying frenzy and, as in nearly every city, was called "T-Day." Although much has been written about TV's effect on radio and newspapers, little notice has been made of the fact that the emerging medium conglomerates were making more profits from television than they lost through declining radio and newspaper circulation ("Television Moving" 10, Murray).

Still, skeptics of the new medium remained. They stressed relative prices and noted that, although a decent TV set could be acquired for \$200, a "functional" radio cost less than \$10 and a good one no more than \$25. Indeed, only in September 1948 do NBC's internal records mention for the first time the actual monies coming in from advertisers. In late 1949 NBC's Pat Weaver warned his boss Charles Denny that NBC's five owned and operated stations were "mostly losing their shirts" (NBC, Library of Congress, Folder 603; NBC, Library of Congress, Folder 662; Rosen 145-46; Southwell 11-12).

But the mass media of the day were not ignorant of their new competitor. Signs arose as set sales took off in 1948 as best exemplified by Fortune's May article "Television Boom!" The first real East Coast and Midwestern network season began in September 1948; with the "Golden Spike" of January 1949, TV was as hot as the VCR was in the mid-1980s and the Internet was in the late 1990s. This is usually best symbolized by the Milton Berle phenomenon, which started in the summer of 1948 on NBC's nine-station network (FCC Annual Report 1948 37-39, Gardiner 30-51).

But audiences were found only in selected cities because station allocations proceeded slowly and networks were limited. In 1949 households around New York City led the way, owning more than 525,000 sets, a third of all sets in the United States! Citizens of metropolitan Philadelphia, Chicago, Los Angeles, Baltimore, Boston, Detroit, and Washington, D.C., bought sets in smaller numbers, but all measured in the tens or hundreds of thousands. The audience for TV was there, not nationally, but concentrated in urban America (Seehafer 102-04).

There were scores of stations on the air, three networks, and millions of owners of TV sets in the late 1940s, but why does it seem to so many historians that no research on audiences was gathered? We have come to expect A. C. Nielsen to flood us with a wealth of audience data as a byproduct of services sold to advertisers and television companies. But the TV ratings industry has a history as well, and the era of the late 1940s proved one of flux as the radio rating companies, principally Hooper and Nielsen, sought to translate methods that worked for radio into ratings for television. Hooper, which dominated radio ratings, could not make the transition; Hooper's main competitor, A. C. Nielsen, did--with a meter attached to the TV set to record automatically when the set was on and to which channel it was tuned. The key turning point came in February 1950 when Hooper sold out to Nielsen. Only then did Nielsen begin streaming out continuous audience data that seem so common today (Beville 11-83; "Hooper Plan" 24; "Methods Sound" 28; "National Hooperatings" 27; NBC, Library of Congress, Folder 798; Nye 84-110; "Research Firms" 28, 41).

In the 1940s other companies entered the new market for TV ratings. Some, like Arbitron, had people keep diaries of what they watched; others, like Pulse, concentrated interviews only in the New York City market. Pulse did well for a short time because New York constituted more than half the TV market, but like a dozen more new competitors, only Arbitron survived. Mark Banks correctly concluded his comprehensive history of the ratings business, "For television in its early years, there was no [single] rating service." But that did not mean that no surveys were taken. Networks did their own. As early as 1945, NBC and CBS began seeking data to predict TV's effect on radio listening. Stations surveyed their local communities. Leading advertising agencies completed studies, as did a handful of academics. It is from these early surveys, I argue, that we can piece together a history of the changing audiences for television in the United States prior to 1950 (Banks 78, 89; Beville 11-23; "TV Hooper" 48, 69; Summers 147-60; "TV Diary" 50).

TV's Early Audiences

We can identify six fundamental characteristics of the pioneering TV audience from many studies and the 1950 census, which was the first to count television.

First, television's viewers were city dwellers and suburbanites. During the late 1940s, the approximately 100 stations sent out their signals in a 50-mile radius, spilling across city boundaries into the growing suburbs. Radio may have flowed by clear channels to those still on the farm, but TV started as an urban/suburban mass medium. The FCC underscored that by allocating the first stations to the largest cities in the United States, with a few notable exceptions (Smythe 256-57, 259).

This urbanization and suburbanization was not complete or continuous, however. Metropolitan areas like Denver, Tampa, and Portland, Oregon, had no TV because no entrepreneurs had applied for an FCC license before October 1948 or construction permit holders chose not to build a station. Mid-sized communities got TV before 1950, but only if they were within range of a big city station. Other rural and small-town Americans waited until July 1952 (U.S. Bureau of the Census).

Second, family size and extent of television coverage are the two best variables to explain set ownership. At that moment in history, the suburbs were growing as middle-class families fled city life in record numbers. New suburbanites, finding it costly and time consuming to drive to the city for entertainment, used television as a substitute for going to the movies, sporting events, and theater. Suburbanites with baby boom families embraced TV as soon as stations went on the air and dealers offered sets for sale at \$200 or less. The great advantage of buying a TV set was obvious to all. Once the initial cost was met, the marginal cost of operation for many who wished to crowd around the set was zero (Dernberg 19-32, U.S. Bureau of the Census).

Income from both wages and savings proved a third defining variable in two ways. Although it seems that the very earliest adopters came from the upper range of the income distribution, by 1948 and 1949 the upper middle class and working class took the lead in purchasing sets. In May 1949, for example, CBS researchers, under network president Frank Stanton, found an inverse relationship between purchase of a set and income. As networks offered greater and greater entertainment value and set prices fell, only the very rich and poor did not acquire sets. The rich developed a snob reaction; the poor simply needed their resources for basic necessities. This middle-class takeover occurred well before 1950. New York City metropolitan residents reached this "tip point" during Christmas 1947, and TV's other pioneering cities thereafter. It was during the late

1950s, as a used TV set market developed, that the inner city poor embraced TV in the same numbers as the broad middle class who had moved to the suburbs.

Fourth, because education is highly correlated with income and wealth, those with advanced university degrees and those with only grade school educations were not a part of TV's pioneering audiences. With the broad middle class embracing television, it was the most educated and the least educated Americans who did not have sets (Bogart 13-14, Demberg 9-12, Siepmann 336-40, U.S. Bureau of the Census).

Fifth, the first TV audiences were largely younger than the population as a whole. Study after study indicated that those over age 50 stuck to radio far longer than early TV adopters. But those young early adopters of TV did not substitute TV for other cultural pursuits. They still went to the movies and purchased magazines, books, and newspapers--but at lower rates than had been the case prior to the innovation of television (Bogart 15, 65-66; NBC, Library of Congress, Pamphlet 404; Siepmann 336-40; Sagoe 143-54).

Finally, it seems everyone embraced TV: male and female, white collar and blue collar, black and white, married and single. All members of the potential audience took TV into their lives, and told surveyor after surveyor that they loved the new medium. With little to watch during the day prior to 1950, viewing began after the evening meal, and continued uninterrupted until the audience went to bed. Men loved the sports; women embraced live dramas. Within months of a station going on the air (enough time to learn about TV and buy a set), researchers found that during the late 1940s early adopters had their new sets on for more than four hours per day on average. John Balaban, owner of Chicago's pioneering station, was correct: The pioneering TV audience embraced no new medium change so rapidly, so passionately, and so completely since the coming of sound a generation earlier (Bogart 68-70, Siepmann 336-40).

Case Studies: Large and Small

New York City and New Brunswick, New Jersey

New York City led the United States into the TV era. What its audiences liked provided network executives with feedback to fashion early network programming. The New York audience before 1949 was vast compared to TV's second city--Philadelphia. In 1948, there were more households with televisions in the New York City metropolitan area than in Philadelphia, Los Angeles, and Chicago combined. As the 1950s began, CBS's research estimated that nearly three million New York City area households, fully two-thirds, had anted up for a TV set, still representing nearly one in five of all viewers ("The New York Television Picture," "Television Reaches Stage" 31-33).

A decade of "Videotown" surveys-- conducted in the suburban community of New Brunswick, New Jersey--provides a vivid and continuous portrait of the creation of this vast TV audience. Advertising agency Newell-Emmett started the "Videotown" study in April 1948; later another ad agency--Cunningham & Walsh--took it over. New Brunswick, with 40,000 people, provided a manageable laboratory 35-40 miles from Manhattan. At first "Videotown" surveyors questioned every TV set owner in the community, about 800 in number. Later they went to sampling as the number of set owners grew into the thousands (Library of American Broadcasting, Pamphlet 5705).

In 1948, researchers found such a tiny "out of home" audience that they discounted it. A "tavern era" may have occurred in New York City, but not in suburban New Brunswick. By 1949, when every ninth home had a set, only the rich, poor, and professors connected to Rutgers University were not rushing out to an appliance or department store. Like the rest of the country in 1949, the middle class (broadly defined) owned the bulk of sets (Library of American Broadcasting, Pamphlet 5705; "Television Reaches Stage" 31-33).

New Brunswick was typical in many other ways. Surveyors found the prices of sets ever falling. Ten-inch models were giving way to sets with larger screens. Family size of these early New Brunswick owners was 10 percent higher than the New York metropolitan average. The highest ratings came for college football games, with live drama next. The average set owner had graduated from high school, and in many cases attended college on the GI bill. And, like suburbanites everywhere, it was easy to tell where they lived because all had an outdoor antenna (Library of American Broadcasting, Pamphlet 158; Library of

American Broadcasting, Pamphlet 5705; "Television as a Sales Medium"; "Television Reaches Stage" 31-33).

A New York City survey conducted in July 1948 by Harper's magazine provided a rare glimpse into the attitudes of well-educated, well-off early viewers. As income and wealth status would predict, they bought top-of-the-line sets from RCA, DuMont, GE, and Philco. But they indicated that they used their set selectively, tuning in for only a couple of hours per night and not every night. While men still preferred sports, all family members raved about TV's pioneering live drama. Since Harper's was subscribed to by network executives, one understands why David Sarnoff and William Paley invested so much in staging live drama on television. A Pulse study done that same month indicated the area's top-rated show was Kraft TV Theatre (Library of American Broadcasting, Pamphlet 3390; "Survey").

In 1948 NBC contracted with Hofstra College psychology professor Thomas Coffin to study attitudes of set owners in the New York television market. Coffin was surprised to learn how passionately the new audiences loved their TVs, with a remarkable 91 percent even praising TV's advertising! At the end of 1948, Sponsor labeled "Metropolitan New York, the bellwether for what's going to happen when 'everyone' has TV." In this case, Sponsor was right on the mark (Library of American Broadcasting, Pamphlet 3390; Library of American Broadcasting, Pamphlet 2983; Library of American Broadcasting, Pamphlet 3212; Library of American Broadcasting, Pamphlet 940).

By the middle of 1950, as prices fell to the \$150-\$200 range and the United States was emerging from a recession, "Videotown" interviewers first found that the poor began buying TV sets on the installment plan. Soon, as Butsch and others have found, 1950s family life was properly characterized as having the TV on every night of the week, embraced by a growing number of youngsters in baby boom families. As early as 1950, "Videotown" surveyors found that children were TV's most frequent viewers. Parents agreed to keep sets on for more than five hours per day in response to their children's demands. Metropolitan New Yorkers surely led the country into audience patterns that would within less than a decade alarm psychologists and policy makers to replace the movies with TV as mass media's top social menace (Library of American Broadcasting, Pamphlet 5706; Library of American Broadcasting, Pamphlet 5707).

Philadelphia

Philadelphia was the nation's third largest city, but first in the rate of TV sets sold per capita. From the beginning those living in the Philadelphia metropolitan area were connected to network programming, forming the "belt buckle" of the Eastern network in 1947. (This key location provided the motivation for both the Republicans and Democrats to hold their 1948 nominating conventions in the "City of Brotherly Love.") Surveys always noted that city dwellers and suburbanites within the Philadelphia metro market led the U.S. in TV set ownership per household, but could never explain why. Perhaps Philadelphia's lack of alternative entertainment, as compared with New York City, offers the explanation of why Philadelphia led the nation in TV set sales.

As 1949 turned into 1950 it was in Philadelphia where the relative size of TV's share of the broadening audience first passed radio. But in all other measures Philadelphians mirrored their northern neighbors in the New York City area. TV viewing started after supper, and peaked at 9 P.M. each evening. The average TV buyer earned from \$40 to \$100 per week, wages that placed the household firmly within the middle class. Most sets were on four to five hours per day. Homes in the viewing range of the three Philadelphia stations--from Allentown to the north to Newark, Delaware, south of Philadelphia, from Reading on the west to southern New Jersey in the east--seemed to have led the way out of primetime viewing, boasting top ratings for new afternoon and morning shows. Network fare, such as Today, and even locally created shows, such as American Bandstand, taught the TV industry that a properly targeted TV audience could expand beyond primetime.

Philadelphia, with only three stations, proved that more programs did not bring larger audience shares. Many at the time argued that New York and Los Angeles, with seven stations, and Chicago and Washington, D.C., with four, would lead the way. But Philadelphia's three stations, an affiliate for NBC, CBS, and ABC, offered a true portrait of the future of the TV nation within its three-network confines (Library of American Broadcasting, Facts in Focus; "A Survey of Philadelphia TV Families").

Milwaukee

Milwaukee was unlike New York or Philadelphia because until 1954 it had only one station. Many mid-sized metropolitan areas--for example, Albuquerque, Phoenix, Indianapolis, and Jacksonville--were similar to Milwaukee. Milwaukee's WTMJ-TV began in December 1947 and still had no competition in September 1953. WTMJ-TV was nominally an NBC affiliate, but in reality executives picked any network feed they desired.

Still alone and in a Midwestern industrial, working-class factory community, surveyors found that the Milwaukee audience mirrored those in New York and Philadelphia. As soon Milwaukee families bought a set, it glowed every evening of the week, with programs on Sunday nights topping the ratings. Sports programs also spiked afternoon ratings on Saturdays and Sundays. There seems to have been no "tavern era," as the typical audience consisted of three or four family members sitting in front of the set after supper and watching from about 6 P.M. until 10 P.M. Women in Milwaukee embraced live drama, while men chose sports. Variety shows seemed to unite family viewing. By 1950 sets were on an average of five hours a day. Early adopters loved their new TV sets at a level equal to their more "sophisticated" fellow viewers in New York and Philadelphia (Library of American Broadcasting, "What the WTMJ-TV Area Viewers"; Library of American Broadcasting, "Viewing Habits").

WTMJ-TV was also typical in its close ties to earlier local media, it had been underwritten by the city's leading newspaper, the Milwaukee Journal, with staff and space sharing the Journal's pioneering radio station, WTMJ-AM. Long-time radio president Waiter Damm had experimented with television in the 1930s, and pressed management to open WTMJ-TV making Milwaukee the seventh city in the U.S. with television. Few realized then that WTMJ-TV would become the first non-network-owned station to make a profit. In retrospect, once the "Golden Spike" opened Milwaukee to live network feeds, Milwaukee households embraced TV so that an astonishing 90 percent of families had a set by the early 1950s. Milwaukee showed the rest of the nation how powerful an influence a TV station could be in a community when it was linked with the leading newspaper and radio station. The Journal Company demonstrated how the early TV audience could be turned into the core of a local media conglomerate, and that newspaper sales and radio ad time would not have to fall if coordinated with TV advertising and programming ("WTMJ-TV" 74-75, 129-33).

Ames and Des Moines

Ames, Iowa, represents one of the rare exceptions to pioneering audiences living in and around major cities. The 100th station put on in the nation, WOI-TV was owned and operated by Iowa State College. In 1944 the president of Iowa State appointed a committee to study prospects for acquiring a station; in 1947 a license was granted. In 1950 the college obtained funding and went on the air on February 21. For four years, WOI-TV operated as the sole commercial station in the Des Moines market, and like WTMJ-TV picked the top-rated programs all four networks offered, particularly during primetime and sports weekend afternoons. WOI-TV used afternoons to telecast daily educational shows.

Set sales in Ames exploded during the spring of 1950, a couple hundred thousand sold within two years after WOI-TV signed on the air. Iowans living in and around Des Moines embraced TV with the same passion as their big city brethren. Rural Iowans proved harder to wean from radio, but by the middle 1950s, when WOI-TV celebrated its fifth anniversary, the TV set had clearly replaced the radio as the main portion of the mass entertainment. Typically the educated elite of Ames and the poor in small towns and on farms hesitated buying a typical sixteen-inch set, principally from an Admiral, Crosley, GE, Motorola, and RCA dealers, until Christmas 1950. Then they signed up almost as fast as dealers could stock sets (Murray and Godfrey 195-209).

In November 1951, after twenty months on the air, WOI-TV, with the cooperation of the college's statistical laboratory, conducted a massive survey of its audience in Ames, Des Moines, and the surrounding rural areas. The survey team found the average TV home turned to WOI-TV at 6 P.M. and turned off at 10 P.M. All ages, genders, educational levels, and occupations watched.

Ames also showed that not being directly hooked to the network did not matter. Kinescopes did not impede consistent viewing. Rural Americans, it seemed, embraced television faster and with more fervor than any other mass medium of the twentieth century--even radio. Iowa State statisticians ended their comprehensive report by noting with astonishment, "More than likely,

adults in TV homes [served by WOI-TV] spent more time [in 1950] viewing TV than in any other daily activity except working and sleeping" ("WOI-TV," Whan).

Conclusions and Future Research

By the middle of 1949, Sponsor could properly declare, "A year ago [in the summer of 1948 TV] was too important in the future. The future is now" ("Who Is Sponsoring TV?" 84).

By late 1949 pioneering TV set owners lived principally in cities or their suburbs, were more likely to buy if neither very rich nor very poor, were relatively well educated, young, had two or three children in the household, and were quick to praise the new technology. That audience would change only marginally as the 1950s unfolded. It was in the late 1940s that the TV audience was established, not the 1950s as earlier researchers have led us to believe. This changes the way we must look at the history of the coming of television to the United States.

In the 1950s advertisers, who funded the programming, looked to manipulate the audience. They pushed live TV drama to reach more women, whom they reasoned made the key buying decisions in middle-class and working-class households. Corporate advertising dollars flooded into the new medium, and programming costs soared. Soon Hollywood's best was producing fare voted superior by its 1950s audiences. By the late 1950s the three-network Hollywood studio oligopoly was established. But all this was based on a TV audience already in place by 1950 ("Social Characteristics"; NBC, Library of Congress, Folder 498, Annual Report 1949, 15; NBC, Library of Congress, Pamphlet 404; NBC, Library of Congress, Pamphlet 506).

Nothing would change this pattern established in the late 1940s--not the Korean War, not the Cold War, not Joe McCarthy, not even the recurring recessions of the 1950s. The end of the FCC's freeze in July 1952 opened 400 more stations over the following three years, and altered the TV landscape by enabling all but isolated rural households to become part of the TV audience. Metropolitan areas with more than 500,000 people had nearly two-thirds of homes with sets, while towns with fewer than 2,500 had but 13 percent. Still the TV audience was what it had been in 1950, only larger ("Radio vs. TV" 126, "Report to Sponsors" 2, "What's New" 52).

The duration (and importance) of the communal "tavern phase" has been far exaggerated. It surely existed in 1947 in cities like Chicago, but what Business Week on September 13, 1947, called "Television's Audience Problem" quickly disappeared as set prices fell, networks were constructed, and more stations went on the air. NBC's founder David Sarnoff correctly predicted the end of "tavern phase" in an address to the NBC Convention in Atlantic City on September 13, 1947, when he told his audience, "Television is no longer around the corner. It is beyond the doorstep; it has pushed its way through the door into the home!" (McCarthy 31-49; "Models and Prices" 12-13; "Planning Guide" 11-15; "Television's Audience Problem" 70-72; NBC, Library of Congress, Pamphlet 19; "TV-A Market" 49).

I have argued in this article that we need to shift our research on TV's pioneering audience back to 1946, and accept that broad audience characteristics were established before the 1950s. But with that new conclusion accepted, many new questions arise. We now need reception studies, analysis of fan culture, and a deeper analysis of how early TV audiences came to understand what they saw on the screen. What was the appeal of sports and live drama? How did network and station owners seek to shape this audience?

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allocation tables

- FCC reading room?
- Congressional localism debate
- technology not there for TV - national coverage
 - but regional was there.

1934 - 1946

~~6th Report + Order~~

rationale for freeze — 6th Report + Order

~~IANA~~

pre-settled market to — pre-1950's
3 dominant channels

FCC Engineering

% of population for each station & affiliates

SSRN —

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microwave deal — see if it's out there — deal lower cost # but
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microwave deal

regional
networks

1930's - 40's

end date —

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AT&T had microwave network - only one. 1930's / 1940's

~~to create TV network, had to rent space~~

for ~~a~~ broadcaster to go to multiple stations.

- microwave costs were high.

- AT&T deal w/ NBC/CBS - preferential pricing as to microwave transmissions
roots: 1926-27

↳ deal w/ RCA, AT&T got out of radio broadcasting biz.

↳ RCA agreed to use AT&T lines to transmit.
(?)

↳ AT&T gave at-rate deal - continued for decades (why so long?)

- national networks had to pay big \$ for microwave transmissions.

regional networks?

4th network had higher network costs
& lower revenues

CPT - cost per thousand people

1 st	NBC	X%.
2 nd	CBS	Y%.
3 rd	ABC	Z%.
4 th	Dumont	A%.

- lower rev b/c can't deliver enough people to advertisers.

eventually dropped out

ABC was marginal until late 50's

document how/why it happened.

"What's New in Research?" Sponsor Aug. 11, 1952: 52.

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WOI-TV. The WOI-TV Audience. Ames: Iowa State College, 1952.

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Time spent viewing television

AT HOME-23% OF TOTAL SAMPLE

AVERAGE VIEWER	3:24
HOUSEWIFE	3:34
MALE HEAD OF FAMILY.	3:14
"OTHER" MEMBER	3:22

Expressed in hours and minutes of listening. For example, 3:24 means 3 hours and 24 minutes.

Families with TV sets were watching entire evenings of TV shows before 1950. Chart is from a major advertising agency, BBDO, report, "What's Happening to Leisure Time in Television Homes?" (pamphlet found at Library of American Broadcasting, University of Maryland).

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allocation of channels (table) -

assignment -



step between: (1934) allocation + allocation + channel plan (1938)

discussing tech

competing standards & FCC not satisfied

broadcasters overlapped w/ manufacturing

- so FCC abstained

- plus, FCC thought they were not good enough.

channel plan

MAP - cities

AT&T (1) Microwave cost

(2) deal w/ NBC + CBS

every increase to
power + height expands
the reach of the channel.

frequency
power, antenna
~~transmit~~ height

local range/
service area/
interference zone

created regional advertising markets (political impact)
how much was anticipated?

NY allocation -

b/c of local talent

FCC/Industry - 1938 ~~plan~~ channel plan

impact of allocations

- area of dominant influence (ADI)

- ~~the dominant channel sets the~~

- area where tv station reaches X% of the tv audience

FCC release?

Congressional Hearings

1938 - did they do the map/logic puzzle?



SIXTH REPORT ON TELEVISION ALLOCATIONS

In the Matters of)	
Amendment of Section 3.606 of the Commission's Rules and Regulations.)	Docket Nos. 8736 and 8975
Amendment of the Commission's Rules, Regulations and Engineering Standards Concerning the Television Broadcast Service.)	Docket No. 9175
Utilization of Frequencies in the Band 470 to 890 mcs for Television Broadcasting.)	Docket No. 8976

SIXTH REPORT AND ORDER

By the Commission: (Commissioner Bartley not participating; Commissioner Webster concurring; Commissioner Hennock concurring in part and dissenting in part; and Commissioner Jones dissenting):

Adopted: April 11, 1952

Released: April 14, 1952

The Proceedings

NPRM:

[J91:45] 1. These proceedings were instituted on May 6, 1948, by a "Notice of Proposed Rule Making" (FCC 48-1569) designed to amend the Table of television channel assignments for the United States, set out in §3.606 of the Rules and Regulations of this Commission. During the hearing held by the Commission pursuant to this Notice, evidence was introduced which indicated the necessity for a revision of the Commission's Rules, Regulations and Standards with respect to the technical phases of the television broadcast service.

2. On September 30, 1948, the Commission issued a Report and Order (FCC 48-2182), commonly referred to as the "freeze order". In general, this Order provided that no new or pending applications for the construction of new television broadcast stations would be acted upon by the Commission; and that new and pending applications for modification of existing authorizations would be considered on a case-to-case basis with action thereon depending on the extent to which the requested modification affected the issues in the television proceeding. In adopting the "freeze order", the Commission pointed out that a national television assignment plan and the Commission's Rules, Regulations and Standards must be based upon, and must reflect, the best available engineering information. It was noted that the Commission could not continue to make assignments under the existing Table since the

evidence presented at the hearing raised serious questions concerning the validity of the basis upon which the Table was constructed. The Commission noted that the granting of additional television authorizations would make more difficult any revisions in the Table made necessary by subsequent changes in the Rules and Standards.

3. The current phase of the television proceeding was initiated on July 11, 1949, by the issuance of the Commission's "Notice of Further Proposed Rule Making" (FCC 49-948). Attached to this Notice were four appendices: Appendix A set forth the Commission's proposals to amend its television Rules, Regulations and Engineering Standards; Appendix B set forth the methods and assumptions upon which the Commission's figures and values specified in Appendix A were based; Appendix C contained the Commission's proposed revision of its Table of television channel assignments throughout the United States and the Territories; and Appendix D contained illustrative assignments for Canada, Mexico and Cuba indicating the manner in which it might be necessary to take into account the use of channels by these countries.

how
did
they
change?

4. In September 1949, the Commission began its hearings on the color television issues in this proceeding and its First and Second Color Reports were issued on September 1, 1950 and October 11, 1950, respectively (FCC 50-1064 and FCC 50-1224).

5. Subsequently, on October 16, 1950, the Commission began hearing the testimony of interested parties who had filed comments concerning the general issues set forth in Appendices A and B of the Notice of July 11, 1949. These extensive hearings continued until January 31, 1951, when the Commission recessed in order to study the record and determine whether it should proceed with the hearings on Appendices C and D in the light of the evidence adduced on the general issues.

6. On March 22, 1951, the Commission issued its "Third Notice of Further Proposed Rule Making" (FCC 51-244). ^{1/} In Appendices A and B of the Third Notice, the Commission set forth its conclusions based on the hearing record developed with respect to the general issues. The Commission at the same time afforded interested parties the opportunity to object to the conclusions in Appendices A and B by filing statements of objections.

7. Appendices C and D of the Third Notice contained a new proposed Table of television channel assignments for the United States and the Territories and new illustrative assignments for Canada and Mexico. Pursuant to paragraph 12 of this Notice, parties were permitted to file comments and oppositions to such comments as might be filed by other persons with respect to the proposals of Appendices C and D.

8. On June 21, 1951, the Commission issued its "Third Report" (FCC 51-640) in the above entitled proceedings. In this Report, the Commission decided that it could not, at that time, take action to effect a partial lifting of the "freeze". On July 12, 1951, the Commission issued its "Fourth Report and Order" (FCC 51-693) which allocated to television broadcasting the frequency band 470-500 mcs. On July 25, 1951, the Commission adopted its "Fifth

^{1/} Hereinafter referred to as the "Third Notice".



Report and Order" (FCC 51-752) amending its "freeze order" to permit consideration on a case-to-case basis of applications by existing licensees and permittees for special temporary authority to increase power within certain defined limits.

9. On July 25, 1951, the Commission issued an Order (FCC 51-739) canceling the oral hearings which were scheduled to take place pursuant to the Third Notice. 2/ This Order provided all parties with an opportunity to file sworn statements or exhibits fully setting out their position in support of the pleadings they had filed. In addition, parties were permitted to submit sworn statements or exhibits directed against statements or exhibits offered by other parties and to file briefs with respect to any matter of fact or law raised by the evidence. The Commission also provided for oral presentations in addition to the submission of sworn statements or exhibits with respect to any issue which in the Commission's judgment could not be satisfactorily considered and disposed of without oral presentation.

10. The Order of July 25, 1951, also provided:

"In view of the fact that the issues raised by Appendices A and B of the Third Notice of Further Proposed Rule Making (FCC 51-244) are interrelated with those raised by the issues to be determined in the remaining portion of these proceedings, and in order to permit parties to make a full presentation of their cases, the Commission has decided not to finalize Appendices A and B at this time. However, sworn statements or exhibits filed pursuant to paragraph 5 above must be consistent with Appendices A and B, with the following express exception: If a comment or opposition with respect to Appendices C and D of the Third Notice deviates from Appendices A and B, a sworn statement or exhibit inconsistent with Appendices A and B may be filed pursuant to paragraph 5 above if such statement or exhibit is inconsistent with Appendices A and B only to the extent that the comment or opposition is inconsistent with Appendices A and B."

11. Upon consideration of the entire record in this proceeding, the Commission is now in a position to issue a final Report with respect to the matters covered by Appendices A, B, C, and D of the Third Notice.

General Considerations Supporting the Adoption of a Table of Assignments for the Television Service

12. Toward the close of the War in 1945, when it appeared that the emergence of television as a regular broadcasting service was imminent, the Commission conducted a rule making proceeding (Docket 6780) resulting in the adoption of the existing television rules and standards, including the present Table of Assignments. 3/ This earlier Table which employs VHF

2/ The procedural steps leading to the cancellation of the oral hearings are described in the Order of July 25, 1951 (FCC 51-739).

3/ In FM also the Commission decided that the optimum distribution of stations could best be accomplished by a Table of Assignments.

* frequencies only, has served as a framework for the growth thus far of the television service. It has been urged in this proceeding that as a matter of policy 4/ we should abandon the concept of a nationwide table of channel assignments and permit applicants from any community to apply for the use of any channels provided certain general engineering criteria were met. Upon careful consideration of the record in this proceeding we are convinced that the public interest requires our continued adherence to the concept of a table of channel assignments as the most effective method for assuring a fair distribution of television service throughout this country.

13. The Communications Act of 1934, among other things, establishes as a responsibility of the Commission the "making available to all people of the United States, an efficient, nationwide, radio service", (Section 1), and the effectuation of the distribution of radio facilities in such a manner that the result is fair, efficient and equitable and otherwise in the public interest from the standpoint of the listening and viewing public of the United States (Sections 303 and 307b). Our conclusion that these standards can best be achieved by the adoption of a Table of Assignments is based upon three compelling considerations: A Table of Assignments makes for the most efficient technical use of the relatively limited number of channels available for the television service. (1) It protects the interests of the public residing in smaller cities and rural areas more adequately than any other system for distribution of service (2) and affords the most effective mechanism for providing for non-commercial educational television. (3) It permits the elimination of certain procedural disadvantages in connection with the processing of applications which would otherwise unduly delay the overall availability of television to the people. Each of these factors is discussed below.

EFFICIENT 14. One of the principal reasons for an engineered Table of Assignments incorporated into our Rules is that it permits a substantially more efficient use of the available spectrum. It is clear that, mathematically, once a fixed station separation has been agreed upon, the maximum number of stations which can be accommodated on any given channel becomes fixed. In practice this theoretical maximum cannot be achieved since the location of cities capable of supporting such stations will not follow any such regular pattern of location. But an Assignment Table drawn upon an examination of the country as a whole can confidently be expected to more closely approximate the mathematical optimum, than would assignments of stations based upon the fortuitous determinations of individual applicants interested solely in the coverage possibilities in a particular community irrespective of the effect of such assignments on the possibility of making assignments in other communities. We are convinced that only through an engineered Table of Assignments can areas receiving no service or inadequate service be kept to a minimum.

LOCAL STATIONS 15. In our opinion there is an equally significant reason why a Table of Assignments should be established in our Rules. For while the record in this proceeding demonstrates that the desire for broadcasting service from local stations, reflecting local needs and interests is widespread, experience has shown that many of the communities which cannot now support television stations but

4/ The Commission has already determined in its Memorandum Opinion of July 13, 1951 (FCC 51-709) [7 RR 371] that it has legal authority to prescribe such a Table of Assignments as part of its Rules.



would eventually be able to do so, will in the absence of a fixed reservation of channels for their use, find that available frequencies have been preempted. The same is true with respect to the establishment of any significant number of non-commercial educational stations. It might, of course, be possible to achieve these results by allocating a large block of frequencies for these smaller cities and non-commercial educational television without specifying the assignment location of particular channels. But we are convinced that this could only be done at the expense of unnecessarily reducing the total number of channels available to meet other television needs.

PENT - VP
DEMAND

16. A further consideration compels us to adopt the Table. When we resume the processing of applications for television stations, we expect to have on file an exceedingly large number of applications. We find that in the absence of a fixed Assignment Table it would be unduly complex - and perhaps impossible - to decide all conflicting demands among communities in individual licensing proceedings. Once it is recognized that these conflicting demands are interrelated, it becomes apparent that they can most satisfactorily be decided in one hearing. Moreover, a question is raised in view of the decision of the Supreme Court in *Ashbacker Radio Corp. v. Federal Communications Commission*, 326 U.S. 327, whether it would not be necessary as a matter of law to decide all these cases in one or several very large proceedings. Accordingly, we find that the determination of the questions relating to the equitable distribution of facilities among the cities and states in one rule making proceeding such as we have here conducted was conducive to the best dispatch of our business, satisfied the ends of justice and was required in the public interest.

17. It is contended that the establishment of a Table of Assignments such as has been adopted herein does not provide sufficient flexibility in the assignment of channels as to enable us to recognize economic, geographic, population and other pertinent differences between communities and areas. This is in effect an argument that a Table of Assignments cannot possibly achieve results which are as much in the public interest, convenience and necessity, or as "fair, efficient and equitable" as the "application" or "demand" method of assigning channels. But it has not been in any wise demonstrated by anyone making this contention that the end result of the claimed "flexibility" for the "application" or "demand" method of assigning television channels throughout the country will be a more fair, or more equitable, or a more efficient assignment of television facilities throughout the country. Indeed, it is almost self evident that assignments made upon the "application" or "demand" method necessarily leads to results which do not adequately reflect on a nationwide basis significant comparative needs as well as differences among communities throughout the country. We find no merit in the contention that by the adoption of a Table we have generally or specifically disregarded any pertinent public interest factors. We have given parties a full opportunity to present comments and evidence with respect both to the basic principles and standards underlying the Table and with respect to proposed assignments for specific communities. Particularly, where parties did not think our proposed assignments were fair or equitable, or where they felt that we have improperly assigned channels to individual communities, they have been afforded an opportunity to establish their contentions in this hearing. All these objections and the relevant comments and evidence have been most carefully considered in connection with our decision herein.

18. In view of the foregoing, we find that the public interest requires the establishment of a Table of Assignments such as we have adopted herein.

The Channels

Use of the VHF

19. Since the deletion of Channel 1 in 1948 the Commission has allocated 12 channels, Channels 2-13 in the 54-216 mc band, for use by the television broadcast service. The Commission's Third Notice proposed to continue this allocation.

20. Two parties filed comments pursuant to Paragraph 11 of the Third Notice objecting to the fact that the Commission has not provided additional VHF channels. Allen B. DuMont Laboratories, Inc., 5/ objects that no finding was made on the feasibility of allocating 1 or more additional VHF channels. A. Earl Cullum, Jr., objects that an additional television channel was not allocated in the frequency range from 72 to 78 mcs.

ARG. FOR
MORE
CHANNELS

21. In order to allocate additional VHF channels to the television service, it would be necessary to delete frequencies from one or more of the other radio services which have been allocated frequencies in this portion of the radio spectrum. While there is testimony in the record as to the possibility and alleged desirability of such a reallocation of frequencies, this proceeding has included no issue or proposal by the Commission or the parties for the reallocation of specific frequencies nor any evidence evaluating the comparative needs of the various radio services for the pertinent VHF frequencies. Accordingly, this proceeding affords no basis for a decision withdrawing frequencies from other services (both government and non-government) for the purpose of creating additional VHF television channels.

Utilization of the Entire UHF Television Allocation

22. In the Third Notice, the Commission stated with respect to the utilization of the UHF bands: 6/

B. Utilization of entire UHF band.— In its Notice of Further Proposed Rule Making issued on July 11, 1949, the Commission proposed to assign forty-two 6-megacycle channels (14 through 55) in the lower portion of the UHF band for commercial television broadcasting. The Commission proposed to assign 32 of the above UHF channels for use

5/ In 1948 during the first part of these proceedings DuMont suggested a means of obtaining additional VHF channels by the use of government frequencies. Since DuMont did not refer to this proposal in the comment filed pursuant to the Third Notice, no further consideration is being given to that proposal. See also Paragraph 4 of the Notice of Further Proposed Rule Making issued July 11, 1949, in this proceeding (FCC 49-948).

6/ The UHF band is defined to include the frequency range 300 mc-3000 mc. Television is allocated that portion of the UHF band between 470 and 890 mcs.



by metropolitan stations and the remaining 10 channels for use by community stations. During the hearings conducted by the Commission with respect to the general issues in the pending television proceedings, testimony was presented which favored the allocation of the entire UHF band for commercial television broadcasting.

Although some testimony was presented which favored the allocation of a portion of the UHF band at this time pending the acquisition of additional data, greater support was given to the proposal to assign television channels in the entire UHF band for immediate use. It was urged that a need existed for additional commercial television channels; that such an allocation would encourage developments in UHF equipment; and that due to problems not previously considered, i.e., oscillator radiation, intermodulation, image interference, etc., more channels were necessary to provide an adequate number of usable channels. Some testimony was presented to the effect that the allocation of the lower portion of the UHF band was preferable because better coverage and equipment performance could be expected there. On the other hand, there was testimony to the effect that differences would not be appreciable throughout the entire UHF band. In any event, the effect of such differences on the optimum utilization of the band are likely to be small. Accordingly, the Commission has concluded that allocation of the entire UHF band for television broadcasting on a regular basis would result in the maximum utilization of television channels in the United States and would be in the public interest.

23. Comments in support of the above proposal have been filed by the American Broadcasting Company, and RCA-NBC. The great demand for television service both by commercial and non-commercial educational interests evidenced in the portion of the proceeding dealing with Appendices C and D of the Third Notice clearly supports the use at this time of the entire UHF television allocation for regular television operations. No objection to the proposal was filed. Accordingly, the Commission is herewith finalizing the allocation of the entire UHF television band for use at this time by television on a regular basis.

24. The Commission's Third Notice left undecided the manner in which the band 470 to 500 mcs would be allocated. At that time the Commission had not yet determined whether that band should be allocated to multi-channel, broadband common carrier mobile radio service or to television broadcasting. In the Fourth Report and Order in these proceedings (FCC 51-693) the Commission allocated the 470-500 mc band for television broadcasting. The grounds for its decision are set forth fully in the Fourth Report and Order. Accordingly, the Commission is now in a position to make available for the television broadcast service 70 UHF channels (Channels 14 through 83), located between 470-890 mc.

25. Statements were filed by Mercer Broadcasting Company, Trenton, New Jersey; Lehigh Valley Television, Inc., Allentown, Pennsylvania; Radio Wisconsin, Inc., Madison, Wisconsin; and Presque Isle Broadcasting Co., Erie, Pennsylvania, contending, among other things, that all commercial television stations should be assigned to the UHF band. The statements allege

that many of the economic and competitive problems which would arise because television broadcasting will be expanded into the UHF portion of the spectrum would be obviated if no commercial television broadcasting were permitted in the VHF. These objections, however, do not point out any specific testimony or evidence to support the large scale reallocations and reassignments which would thereby be required nor do they make any concrete proposal. We are not, moreover, convinced that an adequate showing has been made that sufficient spectrum space would be provided for an adequate nationwide television service if only the UHF portion of the spectrum is allocated for commercial television broadcasting. Accordingly, we have decided that commercial television operations should be provided for in both bands of the spectrum allocated for television broadcasting.

The Use of Channels 66-83 (782-890 mc) "FLEXIBILITY CHANNELS"

26. In making up the Table of Assignments proposed in the Third Notice the Commission made specific assignments to particular cities and communities only on Channels 2 through 65. Channels 66 to 78 or 83 7/ were designated as flexibility channels and no specific assignments to individual cities or communities were made on these channels. It was provided in the Third Notice that persons desiring to file an application for a station in a community which (1) is not listed in the Table of Assignments and (2) is not eligible for an assignment, without the necessity of rule making proceedings, might file an application for a station on one of the flexibility channels without further rule making. It was provided, however, that stations on flexibility channels could not be applied for, in this manner, in any community assigned a channel in the Table or which was otherwise eligible for such an assignment without further rule making under the 15 mile rule. 8/

27. In addition to the use of flexibility channels as set forth above, the Third Notice provided for the use of flexibility channels for experimentation in strato-vision and polycasting. As has been pointed out in another portion of this Report no comments have been filed pursuant to Paragraph 11 of the Third Notice with further reference to strato-vision or polycasting. Several of the parties, 9/

7/ The use of the 470-500 mc band was still under consideration at the time of the issuance of the Third Notice.

8/ The Third Notice, as amended by FCC 51-410, provided:

15-MILE
RULE
??
"A channel assigned to a community in the Commission's Table of Television Assignments shall be available, without the necessity of rule making proceedings, to any other community which is located within 15 miles of the assigned community and which has no assignment of its own provided the minimum separations set forth in Paragraphs E and G herein are maintained."

9/ Communications Measurements Laboratories, Inc., New York; Radio Kentucky, Inc., Louisville, Kentucky; Radio Virginia, Inc., Richmond, Virginia, and Kingston Broadcasting Corporation, Kingston, New York, all have filed objections which request that the Commission assign all of the UHF band allocated to television and leave no channels for use as flexibility channels. DuMont proposed that channels in the 782-890 mc band be made available for use by any applicant.



however, have made proposals for the use of Channels 66-83 in a manner other than that provided for in the Third Notice. Objection has been made to the proposal of the Commission to set aside some of the UHF for use as flexibility channels and parties have requested that the Commission at this time assign all of the channels in the UHF to specific communities. Two arguments are made. First, that certain specific communities have present need of an assignment that only can be established if use is made of Channels 66-83 for specific assignments. The other contention is that if all of the 782-890 mc band is not fully assigned at this time an inefficient use will be made of the channels available in this band.

28. At the outset it should be pointed out that the provision for flexibility channels (Channels 66-83) in the Third Notice was itself a reservation, although not a specific reservation for particular cities or communities, made to assure that channels will be available for cities and communities not otherwise provided for on Channels 2-65 of the Table of Assignments, particularly the smaller cities and communities of the country. Clearly, the Commission should leave some of the spectrum allocated to television unassigned. For while the Commission may, upon the basis of the evidence, viewed in the light of its experience with broadcasting, make reasonable provision for television facilities in the various communities of the country, it cannot predict with complete accuracy every community in which there may eventually develop demand for television. Accordingly, it is desirable to leave a portion of the spectrum allocated to television unassigned.

29. We therefore adhere to our proposal in the Third Notice that the whole of the spectrum allocated to television should not be assigned at this time to specific cities or communities. As a matter of fact, it is clear from inspection of the Table adopted herein that possible assignments have not been made on Channels 2-65 as well as on Channels 66-83. We recognize, however, that need may exist at this time for the assignment of additional channels to individual cities and communities even though they have already been assigned channels in the Table. Therefore, where a request has been made for the assignment of a channel to an individual community, we have on a case-to-case basis considered whether such an assignment should be made in the Table of Assignments. We wish to point out, however, that the Commission must act carefully in considering assignments to communities that already have assignments, particularly on Channels 66-83. The number of assignments that can physically be made on Channels 66-83, particularly in areas where cities are located close together, is indeed limited. Accordingly, it must be clearly and affirmatively demonstrated that a channel from the group 66-83 should be assigned at this time to a community which has assignments in the Table before we will make an additional assignment to the community. The portion of this spectrum left unassigned is intended to be used primarily in cities and communities without any assignments in the Table and in situations where either non-commercial educational or commercial assignments are not included in communities listed in the Table.

30. In view of the comments that have been filed and upon consideration of the whole record, we believe, however, we should not permit channels 66-83 to be used solely on the basis of the filing of an application but should rather require applicants to secure an assignment in the Table by rule making before the application for a station will be considered. By doing so we are in a position to minimize any inefficiency involved in the proposal made in the

Third Notice. 10/ Accordingly, in the Rules we have adopted herein, no application for a television station will be considered by the Commission if the channel requested is not listed as an assignment to the community involved in the Table of Assignments.

31. The Joint Committee on Educational Television suggested in a comment that the proposal with respect to flexibility channels be modified so as to permit an educational institution to make application for a non-commercial educational television station on Channels 66-83 in any community in which no channel has been reserved for such a station. The same proposal has been made for similar reasons by the Board of Regents of the University of the State of New York, the Public Schools, Springfield, Massachusetts, Gary Public Schools, Gary, Indiana, Utah State Agricultural College, Logan, Utah, the State of New Jersey, and the Connecticut State Board of Education. The effect of this proposal would be to permit Channels 66-83 to be used on an application basis for non-commercial educational purposes not only in cities which are not assigned a television channel under the Table, but also in cities with commercial assignments but which do not have an educational reservation. No one has objected to these proposals.

32. We recognize that cities which do not have educational reservations or a non-commercial educational station in operation should have an opportunity to use any portion of the spectrum unassigned for such purpose. Accordingly, where an appropriate showing is made in a rule making proceeding, as indicated above, assignments in the Table will be made for non-commercial educational stations where the community involved does not have an educational reservation and no non-commercial educational station is in operation. 11/

10/ The manner in which Channels 66-83 may be assigned is already determined and limited to a substantial degree by the assignments in the Table together with the minimum assignment spacing requirements adopted herein. Whatever the inefficiency that may remain, we believe that the flexibility retained by leaving some of the television spectrum unassigned is necessary and desirable in order that adequate provision can be made for smaller cities without assignments in the Table and to provide for some future adjustment of the Table.

11/ In recognition of the fact that the unassigned portions of the spectrum are being reserved primarily for cities and communities without assignments or without any non-commercial educational or commercial assignments, we have below provided an exception to the general one year ban on amendment of the Table of Assignments, so that petitions to amend the Table will be considered and acted on in this one year period upon petition (1) for assignment of a channel where no assignment has been made in the Table to a community, and the community is not eligible for an assignment under the 15 mile rule (2) for assignment of a non-commercial educational channel where no such assignment under the Table of Assignments is available in the community involved or (3) for assignment of a commercial channel to any community listed in the Table to which no commercial assignment has been made.



The Educational Reservation

NON-COMMERCIAL
= EDUCATIONAL
??

33. Section VI of Appendix A of the Third Notice contained a statement that as a matter of policy certain assignments in the VHF and UHF would be reserved for the exclusive use of non-commercial television stations. Careful consideration has been given to the exceptions taken to this policy proposal in comments filed by several parties 12/ pursuant to Paragraph 11 of the Third Notice. For the reasons set forth below, the Commission has concluded that the record does support its proposal 13/ and it is hereby adopted in the public interest as the decision of the Commission.

34. The only comments directed against the proposal which fulfill the requirements of Paragraph 11 of the Third Notice are those filed by NARTB-TV and Allen B. DuMont Laboratories, Inc. The others do not specify their objections nor do they cite the evidence on which their objections are based. It is difficult to ascertain in some cases whether the objection is in fact based upon the view that there is a failure of the record to support the proposal or upon some other general disagreement with the proposal. Since, however, the comments filed by NARTB-TV and DuMont clearly cover all the objections to the proposal made by any of the other parties, a discussion of their exceptions will cover those of the other parties, and it will not be necessary to determine whether the latter comments must be rejected for failure to comply with the provisions of Paragraph 11 of the Third Notice.

35. In view of the rather comprehensive and detailed exceptions taken to Section VI of Appendix A it is necessary to review the nature and extent of the Commission's proposal in the Third Notice. An extensive hearing was held by the Commission on the issue: whether television channels should be reserved for the exclusive use of non-commercial educational stations. A total of 76 witnesses testified on this issue. 14/ Among the subjects upon

12/ These parties are: NARTB-TV, Allen B. DuMont Laboratories, Inc., Radio Kentucky, Inc., Capitol Broadcasting Co., and The Tribune Co. Some comments were filed which challenged the power of the Commission under the Communications Act to reserve channels for this purpose. Such contentions have been disposed of by the Commission's Memorandum Opinion of July 13, 1951 (FCC 51-709). Other comments objected to the reservation of a channel in a given community. These objections have been considered in another portion of this Report. The Joint Committee on Educational Television filed comments in support of the educational reservation, as did many individual educational institutions, and other civic non-profit organizations.

13/ Communications Measurements Laboratories, Inc. has taken issue with the use of the word "nationwide" in describing the reservation of channels for this purpose. The proposal is self-explanatory in this respect. Although channels have been reserved throughout the nation, the reservation does not set apart any single channel or group of channels on a nationwide basis.

14/ Of this number, all but five were called by educational organizations or testified in their own behalf in support of the position taken by such organizations in favor of an affirmative resolution of the question. Two other witnesses were in favor of the principle of reservations but differed with witnesses presented on behalf of educational groups with respect to the manner and extent of reservation.

which the proponents of reservation presented evidence were: the potential of educational television both for in-school and adult education, and as an alternative to commercial programming; the history of education's use of other broadcast media and of visual aids to education; the possibility of immediate or future utilization of television channels by public and private educational organizations and the methods whereby such utilization could be effectuated; the type of program material which could be presented over non-commercial television stations; the history of and prospects for educational organizations' securing broadcast opportunities from commercial broadcasters; and the number of channels, both UHF and VHF, which would be required to satisfy the needs of education throughout the country. The witnesses who opposed the principle of reservation, contending that it was unlikely that educators would make sufficient use of the reserved channels to warrant withholding them from commercial applicants, and that the best results could be achieved by cooperation between educational groups and commercial broadcasters, testified principally about the past record of educators in broadcasting, the cost of a television station, and cooperation between commercial broadcasters and educational institutions.

36. On the basis of the record thus compiled, the Commission concluded, as set forth in the Third Notice, that there is a need for non-commercial educational television stations; that because educational institutions require more time to prepare for television than commercial interests, a reservation of channels is necessary to insure that such stations come into existence; that such reservations should not be for an excessively long period and should be surveyed from time to time; and that channels in both the VHF and UHF bands should be reserved in accordance with the method there set forth.

37. It has been contended that the record in this proceeding fails to support the Commission's proposal in three basic respects: that it has not been shown that educational organizations will, in fact, require a longer period of time to prepare to apply for television stations than commercial broadcasters; that it should have been found that the reservation of channels for this purpose will result in a waste of valuable frequency space because of non-usage and because of the limited audience appeal that educational stations will have; and that no feasible plan for stable utilization of channels by educational institutions has been advanced, particularly with respect to the problem of licensee responsibility.

38. None of the commenting parties have contended that the record has failed to support the findings of the Commission in the Third Notice that, based on the important contributions such stations can make in the education of the in-school and adult public, there is a need for non-commercial educational stations. The objections to the Commission's proposal must, therefore, refer to the desire and the ability, as evidenced in the record, of the educational community to construct and operate such stations. ^{15/} We conclude that the

^{15/} DuMont, in its Comments in Opposition to Comments and Proposals of Other Parties, has submitted the results of a survey which bear upon this question. Insofar as the survey bears upon any specific reservation, DuMont had the opportunity to present it in the portion of the hearing dealing with Appendix C. The Third Notice was not intended to permit the filing of new material on the matters which were already the subject of hearing. DuMont had an opportunity to present this type of evidence in the general phase of the proceeding.



record shows the desire and ability of education to make a substantial contribution to the use of television. There is much evidence in the record concerning the activities of educational organizations in AM and FM broadcasting. It is true and was to be expected that education has not utilized these media to the full extent that commercial broadcasters have, in terms of number of stations and number of hours of operation. However, it has also been shown that many of the educational institutions which are engaged in aural broadcasting are doing an outstanding job in the presentation of high quality programming, and have been getting excellent public response. And most important in this connection, it is agreed that the potential of television for education is much greater and more readily apparent than that of aural broadcasting, and that the interest of the educational community in the field is much greater than it was in aural broadcasting. Further, the justification for an educational station should not, in our view, turn simply on account of audience size. The public interest will clearly be served if these stations are used to contribute significantly to the educational process of the nation. The type of programs which have been broadcast by educational organizations, and those which the record indicates can and would be televised by educators, will provide a valuable complement to commercial programming.

39. We do not think there is merit in the contention that the record, with respect to the general phase of the hearing, does not support the general principle of a reservation of channels for educational purposes as set out in the Third Notice because it does not contain detailed information with regard to the desire, ability and qualifications of the educational organizations to construct a non-commercial educational station, or the competing commercial interests which desire to bring television service to the public. In preparing a proposed Assignment Table for the entire nation which would provide the framework for the growth of television for many years to come, we could not limit our perspective to immediate demand for educational stations under circumstances where all communities did not have an opportunity to give full consideration to the possibilities of television for educational purposes and to mobilize their resources. Moreover, evidence of specific demand for educational television was submitted for several communities in the general phase of the hearing, and in addition there was presented an estimate of the number of channels required for this purpose for one section of the country based upon the size of the various communities and their general educational requirements. We do not think it unreasonable to believe that general principles of assignment may be derived from such evidence, and that such principles may validly be applied to comparable communities, for the purposes of drawing up a nationwide assignment plan. See, e.g., The New England Divisions Case, 261 U.S. 184, 197-199 (1923).

40. Moreover, the Third Notice provided for the contesting of specific reservations in any community. The Assignment Table adopted below has been prepared after consideration of the specific evidence in support of, as well as in objection to, specific proposed reservations and after consideration of the overall needs of all communities for television service.

41. The great preponderance of evidence presented to the Commission has been to the effect that the actual process of formulating plans and of enacting necessary legislation or of making adequate financing available is one which will generally require more time for educational organizations than for commercial interests. The record does, of course, show that there are some

educational institutions which are now ready to apply for television broadcasting licenses, but this in no wise detracts from the unavoidable conclusion that the great mass of educational institutions must move more slowly and overcome hurdles not present for commercial broadcasters, and to insure an extensive, rather than a sparse and haphazard development of educational television, channels must be reserved by the Commission at this time. There is moreover, abundant testimony in the record that the very fact of reserving channels would speed the development of educational television. It was pointed out that it is much easier for those seeking to construct educational television stations to raise funds and get other necessary support if the channels are definitely available, than if it is problematical whether a channel may be procured at all.

42. With regard to possible waste of the reserved channels by non-use, it is contended that evidence offered in the general portion of the hearing, concerning the record of performance of non-commercial educational agencies in aural broadcasting, and their plans and abilities to meet the installation and programming costs of television, can lead only to the conclusion that waste of limited spectrum space through non-usage will result from the reservation of channels for non-commercial educational stations. To whatever extent the position taken in these exceptions is that any immediate non-use of channel space available for television constitutes a waste of channels, the Commission cannot agree. The basic nature of a reservation in itself implies some non-use; to attribute waste of spectrum to the Commission's proposal concerning the use of certain channels by non-commercial educational stations without attributing it to those assignments in the Table for smaller cities, which may not be used for some time, is misleading. The very purpose of the Assignment Table is to reserve channels for the communities there listed to forestall a haphazard, inefficient or inequitable distribution of television service in the United States throughout the many years to come. Moreover, as pointed out in another portion of this Report, the whole of the Table of Assignments including the reservations of channels for use by non-commercial educational stations is subject to alteration in appropriate rule making proceedings in the future, and any assignment, whether an educational reservation or not, may be modified if it appears in the public interest to do so.

43. We do not believe that in order to support our decision to reserve channels for non-commercial educational stations it is necessary that we be able to find on the basis of the record before us, in the general phase of the hearing, that the educational community of the United States has demonstrated either collectively or individually that it is financially qualified at this time to operate television stations. One of the reasons for having the reservation is that the Commission recognizes that it is of the utmost importance to this nation that a reasonable opportunity be afforded educational institutions to use television as a non-commercial educational medium, and that at the same time it will generally take the educational community longer to prepare for the operation of its own television stations than it would for some commercial broadcasters. This approach is exactly the same as that underlying the Assignment Table as a whole, since reservations of commercial channels have been made in many smaller communities to insure that they not be foreclosed from ever having television stations.

44. Although the record in the general phase of the proceedings does not contain any detailed showing on a community-by-community basis that the



educational organizations have made detailed investigation of the costs incident to the construction and operation of television stations and of the exact sources from which such funds could be derived in the near future, nevertheless, the record, as a whole, does indicate that educational organizations in most communities where reservation has finally been made will actually seek the necessary funds. Furthermore, interested persons have had an opportunity to present evidence in the city-by-city portion of the hearings as to whether such funds will be sought or will become available in specific communities. It will admittedly be a difficult and time consuming process in most instances, but the likelihood of ultimate success, and the importance to the public of the objective sought, warrants the action taken. Several educational institutions, it was indicated on the record as early as the general portion of the hearing, had applied for television stations. The amounts of money spent by other public and private educational groups in aural broadcasting indicates that the acquisition of sufficient funds for television would not be an insurmountable obstacle. It has been shown, for example, that considerable sums have already been spent on visual aids to education. Television is clearly a fertile field for endowment, and it seems probable that sufficient funds can be raised both through this method and through the usual sources of funds for public and private education to enable the construction and operation of many non-commercial educational stations. As concerns the costs of operation there is the possibility of cooperative programming and financing among several educational organizations in large communities. The record indicates that educational institutions will unite in the construction and operation of non-commercial educational television stations. Such cooperative effort will, of course, help to make such stations economically feasible. The fact that somewhat novel problems may arise with respect to the selection and designation of licensees in this field does not - as some have contended - constitute a valid argument against the concept of educational reservations.

45. Several alternative methods for utilizing television in education have been presented to the Commission, but we do not think that any of them is satisfactory. One proposal is to utilize a microwave relay or wired circuit system of television for in-school educational programs. It appears that the cost of a wired circuit for the schools in larger cities might be prohibitive; but the determinative objection to such a proposal is that it would ignore very significant aspects of educational television. It is clear from the record that an important part of the educator's effort in television will be in the field of adult education in the home, as well as the provision of after school programs for children.

46. The NARTB-TV contended that the solution lay in the voluntary cooperation of educators and commercial broadcasters in the presentation of educational programs on commercial facilities. We conclude, however, that this sort of voluntary cooperation cannot be expected to accomplish all the important objectives of educational television. In order for an educational program to achieve its purpose it is necessary that broadcast time be available for educators on a regular basis. An audience cannot be built up if educators are forced to shift their broadcast period from time to time. Moreover, the presentation of a comprehensive schedule of programs comprising a number of courses and subjects which are designed for various age and interest groups may require large periods of the broadcast day which would be difficult if not impossible to obtain on commercial stations.

47. Another alternative was proposed by Senator Edwin C. Johnson of Colorado. This proposal is elaborated in the Senator's statement:

"It is my belief as I have repeatedly said that the Commission could and should impose a condition on all television licenses that a certain amount of time be made available for educational purposes in the public interest as a sustaining feature. In this manner, television can become available for educational work now without saddling schools with the enormous burden and expense of constructing and operating a non-commercial educational station. . . . It is my considered opinion that the Commission can best serve the public interest and at the same time extend extremely profitable assistance to the educational processes of this country by imposing a condition in each television license issued which would require the availability of appropriate time for educational purposes."

48. It must be remembered that the provision for non-commercial educational television stations does not relieve commercial licensees from their duty to carry programs which fulfill the educational needs and serve the educational interests of the community in which they operate. This obligation applies with equal force to all commercial licensees whether or not a non-commercial educational channel has been reserved in their community, and similarly will obtain in communities where non-commercial educational stations will be in operation.

49. Aside from the question of the legal basis of a rule which would accomplish Senator Johnson's proposal, the Commission feels it would be impracticable to promulgate a rule requiring that each commercial television licensee devote a specified amount of time to educational programs. A proper determination as to the appropriate amount of time to be set aside is subject to so many different and complex factors, difficult to determine in advance, that the possibility of such a rule is most questionable. Thus, the number of stations in the community, the total hours operated by each station, the number of educational institutions in the community, the size of the community, and countless other factors, each of which will vary from community to community, would make any uniform rule applicable to all TV stations unrealistic. All things considered, it appears to us that the reservation of channels for non-commercial educational stations, together with continued adherence by commercial stations to the mandate of serving the educational needs of the community, is the best method of achieving the aims of educational television.

Who May be Licensed to Operate Non-Commercial Educational Stations

50. While the Third Notice did not specify who would be eligible to own and operate a non-commercial educational station, the Commission has in the past restricted the ownership and operation of such stations to non-profit educational organizations.

51. The United States Conference of Mayors and the Municipal Broadcasting System, City of New York, have in appropriate comments proposed that eligibility be extended to any municipality operating educational institutions. The Municipal Broadcasting System states that a "more expeditious management of educational television in the City of New York from an administration



standpoint" would result if it were permitted to operate a television station. It further stated that "if the Municipal Broadcasting System is eligible to operate television facilities, the station can be utilized by all of the educational institutions over which it has jurisdiction, rather than having responsibility for the operation placed in a particular school".

52. The Commission is of the opinion that in any community where an independent educational agency is constituted, and is eligible under the Commission's Rules to apply for a non-commercial educational television station, there are no compelling reasons for extending eligibility to municipal authorities. The continued operation by the Board of Education of the City of New York since 1939 of non-commercial educational Station WNYE indicates that no insurmountable administrative barriers exist which would preclude the Board of Education as a potential licensee in the television field. Similarly, there is no evidence to indicate that the Board of Education of the City of New York, now eligible under the present rules, would give less access to other educational institutions were it the licensee of a television station than would the Municipal Broadcasting System were it eligible and granted a license. It should be noted that in any community the municipal authorities, or any other group, can take the initiative in constituting a consolidated television authority which would represent municipal educational institutions, private universities and other organizations concerned with education.

53. The Commission has, however, established in its Rules an exception providing that where a municipality has no independently constituted educational entity which would be eligible under the rules, the municipality in such case will be eligible to apply for a non-commercial educational station. This exception is designed solely to meet those situations where the municipal authorities do not delegate educational authority but reserve to themselves the management of the municipal educational system.

Partial Commercial Operation by Educational Stations

54. In its comments the University of Missouri ^{16/} requests that the Commission authorize "... commercial operation on the channels reserved for educational institutions to an amount equal to 50% of the broadcast day". It appears from the evidence that funds in the amount of \$350,000 are presently available to the University for the construction of a television station, but that no funds are available for the operation of such a station. Accordingly, the University requests that the Commission permit educational institutions to use the reserved assignments to operate stations on a limited commercial non-profit basis. It is urged that if its request is granted the following objectives will be attained:

A. More educational institutions will be in a position to construct and operate television stations throughout the country to the benefit of the public at large without materially affecting the strictly commercial stations;

B. Educational television stations will be able, through income received from commercial programs to better program their stations; and

^{16/} See the discussion, elsewhere in this Report, of the assignments in Columbia, Missouri.

C. That the commercial programs televised will break the monotony of continuous educational subjects so as to permit the stations to attract and hold audiences.

55. A similar proposal, that the Commission extend the reservation to include all educational institutions which are operated on a non-profit basis, is made by the Bob Jones University (WMUU), Greenville, South Carolina. The Bob Jones University argues that ". . . the reservation of the privilege of a commercial income commensurate with the operating expense of the educational station . . ." will result in the encouragement and aid to television broadcasting by educational institutions.

56. KFRU, Inc., Columbia, Missouri, opposed the request of the University of Missouri. In its reply to the University, KFRU states that it has no objection to the proposed reservation of Channel 8 for non-commercial educational purposes in Columbia, Missouri. However, it opposes the request of the University for partial commercial operation on the grounds that such an operation would give the educational institution unfair competitive advantages over a commercial licensee.

57. It is our view that the request of the University of Missouri and the Bob Jones University must be denied. In the Third Notice we stated:

In general, the need for non-commercial educational television stations was based upon the important contributions which non-commercial educational television stations can make in educating the people both in school - at all levels - and also the adult public. The need for such stations was justified upon the high quality type of programming which would be available on such stations - programming of an entirely different character from that available on most commercial stations.

A grant of the requests of the University of Missouri and Bob Jones University for partial commercial operation by educational institutions would tend to vitiate the differences between commercial operation and non-commercial educational operation. It is recognized that the type of operation proposed by these Universities may be accomplished by the licensing of educational institutions in the commercial television broadcast service. But in our view achievement of the objective for which special educational reservations have been established - i.e., the establishment of a genuinely educational type of service - would not be furthered by permitting educational institutions to operate in substantially the same manner as commercial applicants though they may choose to call it limited commercial non-profit operation.

58. The Joint Committee on Educational Television suggests in its final brief that, in communities where only one VHF channel is assigned, and that channel is reserved for use by a non-commercial educational station, the non-commercial educational station should be allowed to broadcast programs which at present are available only from commercial network services. This exception would apply until such time as a commercial Grade A service is available in the area.

59. On January 10, 1952, a Reply and Motion to Strike was filed by Peoria Broadcasting Company, Rock Island Broadcasting Company and Champaign



News-Gazette, Inc., with respect to the above described proposal of the Joint Committee. On January 25, 1952, a response to the Joint Motions was filed by the JCET. In view of the fact that the proposal made by the Joint Committee was not previously raised in any of its prior pleadings, the Motion to Strike is granted and the proposal is being given no further consideration.

The Use of the VHF for Non-Commercial Educational Television

60. The Commission's Third Notice proposed to reserve one of the assigned channels for non-commercial educational television use in all communities having a total of three or more assignments (whether VHF or UHF). Where a community had fewer than three assignments no reservation was proposed except in those communities which were designated as primarily educational centers, where reservations were made although only one or two channels were assigned. Except for educational centers, a UHF channel was proposed in those communities where there were fewer than three VHF assignments. In 26 of the 46 educational centers, the Commission proposed to reserve a VHF channel for educational use. In 23 of these 26 centers a VHF educational reservation was proposed where only one VHF channel was assigned to the community. Where three or more VHF channels were assigned to a community, a VHF channel was proposed to be reserved except in those communities where all VHF assignments had been previously licensed. In those cases, the reservation of a UHF channel was proposed.

61. The Joint Committee on Educational Television in its comment has proposed that a VHF reservation for non-commercial educational institutions in place of a UHF reservation be considered in communities with less than three VHF assignments. On the other hand, some parties have argued that no assignments in the VHF be set aside as educational reservations. The Commission's Third Notice stated that the proposed reservations were not final and that consideration would be given to any specific proposal looking toward additions or deletions. After examining the comments and evidence filed pursuant to the Third Notice, the Commission remains of the view that the bases upon which it determined the apportionment of non-commercial educational assignments by communities are generally sound and should be continued. However, in particular cases the Commission concludes that the evidence warrants deviations from the proposals in the Third Notice, for the reasons stated in the city-by-city portion of this Report.

62. The Joint Committee on Educational Television also proposes that the Commission should specifically state that an educational interest is not to be foreclosed from applying for a VHF channel in the so-called "closed cities" where all VHF assignments have already been made. No properly qualified applicant is ever precluded from applying for any channel in the broadcast field on the expiration of the existing license. Thus, whether educational interests seek a commercial or non-commercial television operation, they are, just as other applicants, eligible to apply for licensed channels upon expiration of the license term of the stations involved.

Assignment Principles

The Basis of the Table of Assignments

63. In proposing the Table of Assignments set out in the Third Notice the Commission said that it had

. . . endeavored to meet the twofold objective set forth in Sections 1 and 307(b) of the Communications Act of 1934, to provide television service, as far as possible to all people of the United States and to provide a fair, efficient and equitable distribution of television broadcast stations to the several states and communities.

In attempting to carry out these objectives, the Commission set forth certain principles, in terms of priorities, underlying the Table of Assignments. 17/ These principles were:

Priority No. 1: To provide at least one television service to all parts of the United States.

Priority No. 2: To provide each community with at least one television broadcast station.

Priority No. 3: To provide a choice of at least two television services to all parts of the United States.

Priority No. 4: To provide each community with at least two television broadcast stations.

Priority No. 5: Any channels which remain unassigned under the foregoing priorities will be assigned to the various communities depending on the size of the population of each community, the geographical location of such community, and the number of television services available to such community from television stations located in other communities.

64. The Commission has reviewed the above described principles in the light of the comments and evidence received in this proceeding. We believe it desirable to state in somewhat comprehensive form the various factors underlying the establishment of the television Assignment Table.

65. At the outset it should be clearly understood that no single mechanical formula was utilized in the construction of the Table of Assignments. With the above priorities in mind it was necessary to recognize that geographic, economic, and population conditions vary from area to area and even within the boundary of a single state; the possibility of assigning channels, for example, may differ as between the northern and southern segments or between the eastern and western parts of the same state. It must be emphasized, therefore, that in establishing the Table of Assignments it is not possible to

17/ For a discussion of the legal power of the Commission to establish a Table of Assignments such as we are adopting here, see the Memorandum Opinion issued in this proceeding on July 13, 1951 (FCC 51-709) [7 RR 371].



follow a mechanical and rigid application of the basic principles or what was termed the "priorities" in the Third Notice.

66. In establishing a Table of Assignments we were faced at the outset with the significant fact that we could not make all assignments in the Table within the VHF. The intermixture problem resulting from this situation is discussed below. Secondly, propagation characteristics in the VHF are different in some respects from those in the UHF. Primary consideration was given to the fact that the VHF can effectively cover large areas, and VHF was used wherever possible in larger cities since such cities have broad areas of common interest. To achieve the benefits of VHF the 12 VHF channels were distributed as broadly as possible. However, conflicting interests had to be adjusted. Thus, the Commission concluded that in order to achieve an equitable distribution of facilities, metropolitan centers with their large aggregations of people should be assigned more VHF channels than communities comprising fewer people. At the same time - and this is a basic element in the Commission's assignment plan - the Commission did not believe that large cities should receive an undue share of the relatively scarce VHF channels; the Table we have adopted herein reflects a substantial distribution of VHF assignments among smaller communities and sparsely settled areas.

67. The Assignment Plan for UHF channels was coordinated with and made complementary to the VHF assignment plan. The Commission has always recognized that even with an extensive scattering of VHF assignments, the 12 channels available are not sufficient to meet the objective of providing television service to all the people. With the additional UHF channels, however, the Commission was able to formulate an assignment plan that has the potentiality of fulfilling the objective of Section 1 of the Communications Act. If all the VHF and UHF channels are utilized, there should be few, if any, people of the United States residing beyond the areas of television service. (See priorities 1 and 3.) Moreover, the Table has gone far in fulfilling the needs of individual communities to obtain local television outlets. It has provided at least one assignment to over 1250 communities (see priority 2). And it has attempted where possible to provide each community with at least two assignments. (See priority 4.)

68. Examination of the Table of Assignments makes clear, that in seeking to arrive at an equitable distribution of assignments throughout the country, the Commission has given consideration to population as one of the important criteria for distribution of assignments. Thus, it will be seen that for the most part, the following table reflects generally the number of assignments made to cities falling within the indicated population groupings:

<u>1950 Population of Cities</u> (Central City)	<u>Number of Channels</u> (Total VHF and UHF)
1,000,000 and above	6 to 10
250,000 - 1,000,000	4 to 6
50,000 - 250,000	2 to 4
Under 50,000	1 to 2

There are of course variations from this pattern because of the many factors and circumstances that had to be considered in connection with making a final judgment as to the exact number of assignments that should be made for any

particular community. For example, consideration was given to the advantages of VHF channels for obtaining wide coverage. Also, it was considered more important for each of the several cities in an area to have at least one channel than for the largest of the cities to have the maximum number of channels indicated. And as a further example, cutting across the criterion of population size as a basis for the number of channels assigned to a particular city was the criterion of insuring an equitable distribution of facilities to the several states. Thus, the Commission has attempted to provide at least some VHF channels to all states even though in some cases an assignment might otherwise have been made to a large metropolitan center in an adjacent highly urbanized state.

69. The Commission also concluded that as a further assignment factor it should provide channels for non-commercial educational television service in 46 communities outside of metropolitan areas designated as "primarily educational centers". Certain of these communities were assigned one channel for non-commercial educational use, whereas they would otherwise not have been assigned any channel; others received an additional channel over and above the number of channels they would have otherwise received. Moreover, an attempt was made insofar as possible to assign a VHF channel to each of these educational centers for educational use. In all cases, however, the assignments have been made on the basis of the evidence in the record relating to the issues presented.

70. Allen B. DuMont Laboratories, Inc., was the only party in the proceedings to submit a national television assignment plan as an alternative to that contained in the Commission's Third Notice. In many respects the DuMont plan is similar to that of the Commission. With very few exceptions, both DuMont and the Commission make at least one television assignment to the same communities. Moreover, both DuMont and the Commission provide for intermixture of VHF and UHF channels in numerous communities. A detailed comparison of the proposed assignments community-by-community reveals the important fact that under both the DuMont and the Commission plan the great majority of communities would receive the identical number of VHF, UHF, or VHF and UHF assignments.

71. On the other hand, the DuMont assignment plan differs from that of the Commission in several important respects. The present section deals with these differences in the two plans insofar as they concern the basis for assignments. Elsewhere in the Report are discussed other differences between the DuMont plan and the Assignment Table adopted herein.

72. DuMont's major criticism of the Commission's proposed Table of Assignments was that it allegedly failed to provide adequately for the commercial television needs of large cities. In its comment of May 7, 1951, DuMont stated its agreement with Priority No. 1 but objected to Priorities Nos. 2, 3 and 4. DuMont alleged that these priorities were unrealistic in that they failed to take adequate account of the need and demand for services in large cities; that they failed to recognize present and long-range differences as between VHF and UHF; and that they were harmful to the future of networking. As an alternative to the Commission's priorities, DuMont recommended the following two priorities:



(a) Provide channels which will permit one service without regard to population.

(b) Encourage fair economic and equitable operation of television service through assignment to major metropolitan service areas of not less than four VHF channels when technically feasible under the proposed standards and with further distribution in allocation in relationship to population of communities in the service areas; provision being made for transfer of unused frequencies and adjustment by subsequent assignment of specific "flexibility channels".

73. A basic objective of the DuMont assignment plan is to provide major metropolitan centers with multiple VHF stations. In particular, DuMont seeks the assignment of four VHF channels to such communities - an objective directly related to DuMont's contention that this is necessary to promote network competition. By the assignment of four VHF channels in the largest markets, DuMont assumes that it would thereby obtain an outlet for its network operations in the most important centers. Contrariwise, DuMont fears that if only one or two VHF channels are assigned in these markets, it would be unable to obtain affiliates in such centers and would be in the position of dependence on UHF outlets. Because of the time required to develop UHF stations, DuMont contends that it would be placed at a severe competitive handicap in relation to other networks.

74. In its sworn statement of August 17, 1951, DuMont does not specifically repeat the recommendation in its original comments with respect to a revision of the Commission's priorities. Rather, DuMont attempts to show that both its own assignment plan and the FCC plan seek the same dual objective. DuMont describes this objective, as follows:

(1) To provide television service, as far as possible, to all people of the United States; and

(2) To provide the most services to the most people.

75. After allegedly showing that the two plans are alike in objective, DuMont attempts to prove that its plan is superior to that of the Commission in more nearly realizing the common objective. DuMont states that both plans meet DuMont Principle 1 in that they provide for service to all people of the United States. However, DuMont emphasizes that its own plan is superior in providing more VHF service to the larger centers, and that it is therefore more efficient in producing a highly competitive network situation than the FCC plan.

76. Columbia Broadcasting System, Inc., in its comment of May 1951, and later in its evidence presents views generally similar to those of DuMont in respect to the need for providing additional commercial VHF stations in key economic areas. It calls attention to the need for an additional assignment policy of insuring to the maximum extent possible a competitive commercial television service. However, CBS does not suggest any specific system of priorities but rather recommends that the Commission's priorities be applied in a "flexible" manner. Specifically, CBS urges that an additional commercial VHF channel should be assigned to Boston, Chicago, and San Francisco.

77. As set forth above, the Commission has concluded that larger cities should be assigned more VHF channels than communities comprising fewer people. However, the Commission cannot agree with the DuMont principle that an overriding and paramount objective of a national television assignment plan should be the assignment of four commercial VHF stations to as many of the major markets as possible. The Commission is of the view that healthy economic competition in the television field will exist within the framework of the Assignment Table adopted herein. Moreover, in the assignment plan adopted, the Commission has taken into account other significant factors. For example, the Commission in fulfilling what it considers the mandate of the Communications Act to provide an equitable distribution of facilities has attempted to provide at least some VHF channels to each of the states, although in some cases this was done where an assignment might otherwise have been made to a large metropolitan center in an adjacent state.

78. A second policy difference between the DuMont and Commission assignment plans lies in their contrasting views with respect to the importance of individual communities having television assignments. The DuMont view is that emphasis should be placed on locating the assignments, particularly VHF channels, so that the largest number of people will have television service but not necessarily that the largest number of communities should have one or more television stations of their own. ^{18/} This view derives from DuMont's premise that the major cities with their large populations are certain to be able to support expensive television facilities, and that smaller communities which are within appropriate range of these cities should obtain service from stations in the large cities, rather than attempt to support stations with their own less substantial economic resources.

79. The Commission, on the other hand, believes that on the basis of the Communications Act it must recognize the importance of making it possible with any table of assignments for a large number of communities to obtain television assignments of their own. In the Commission's view as many communities as possible should have the opportunity of enjoying the advantages that derive from having local outlets that will be responsive to local needs. We believe with respect to the economic ability of the smaller communities to support television stations that it is not unreasonable to assume that enterprising individuals will come forward in such communities who will find the means of financing a television operation. The television art is relatively new and opportunity undoubtedly exists for initiating various methods of reducing television costs.

80. Another difference in assignment principle as between the DuMont and FCC plan lies in respect to the assignments made to the "primarily educational centers". DuMont opposes any reservation for non-commercial educational television stations and under the DuMont plan all of its channel

^{18/} While DuMont as a matter of general principle takes this position in its own assignment plan, DuMont makes at least one assignment to practically every community listed in the Commission's Table of Assignments contained in the Third Notice.



assignments would be available for commercial use. ^{19/} With reference to the educational centers, DuMont does not follow the Commission's assignment principle of providing insofar as possible a VHF channel to these communities, which would be reserved for use by non-commercial educational television stations. Thus in 10 of the educational centers to which the Commission has assigned a VHF channel DuMont proposes to assign a UHF channel.

81. The Commission finds that the principles of assignment which DuMont advocates are inadequate in that these principles do not recognize specifically the need to provide an equitable apportionment of channels among the separate states and communities and they do not provide adequately for the educational needs of the primarily educational centers.

82. With respect to the recommendation of CBS that the Commission apply its priorities in a flexible manner, the Commission, as previously indicated, formulated its Table of Assignments on the basis of taking into account numerous factors and objectives and did not apply the priorities in a rigid, mechanical way. With respect to the needs of larger communities for additional VHF assignments as set forth by CBS, the Commission believes that in its final Table of Assignments it has provided for these needs to the extent possible, consistent with its other objectives and criteria viewed in the light of the record. With respect specifically to the CBS request for additional commercial VHF assignments in Chicago, Boston, and San Francisco, these requests are dealt with in the section of the Report which discusses assignments to individual cities.

83. Whereas both DuMont and CBS contend that the Commission's priorities do not make adequate provision for the competitive and commercial aspects of television, the Joint Committee on Educational Television alleges that the Commission's priorities were deficient in not specifically recognizing non-commercial educational television. The Joint Committee urges that an additional priority should be established between Priority No. 3 and Priority No. 4 reading as follows:

To provide a non-commercial educational television service to all parts of the United States by the reservation of frequencies for this purpose.

THE NEXT PAGE IS PAGE 91:627

^{19/} Contrariwise, the number of commercial VHF channels in the Commission plan is reduced because of the Commission's policy of reserving one VHF channel for non-commercial educational television use in every community having at least three VHF assignments, unless all of these assignments had been previously licensed. While this principle does not determine in which community an assignment should be made, it is an important factor to be considered in any comparison of the number of commercial VHF channels in the DuMont and the FCC Assignment Tables.



84. It is not clear from the above statement as to whether or not the Joint Committee actually is proposing an additional assignment principle. An assignment principle refers to: (a) the number of television channels that individual communities should receive, and (b) whether the channels should be in the VHF or the UHF band. The Commission has reserved channels for non-commercial educational television use on an extensive basis throughout the United States, but not as a principle of assignment. That is to say, the Commission decided first that a particular community should have three channels on the basis of various criteria, and only subsequently did it decide that one channel should be reserved for educational use. As discussed previously, in one main exception the Commission treated the educational need as a principle of assignment: in the special case of the 46 "primarily educational centers." In this case, the fact of being an educational center influenced the Commission's decision as to the total assignments to these communities, and also influenced its determination as between the assignment of VHF and UHF channels. Moreover, upon request in this proceeding and a proper showing, the Commission has added an assignment as an educational reservation in various communities even though these assignments had not been made to the community in the Third Notice. At any event, in view of our decision discussed elsewhere in this Report to avoid any reference to priorities as such in the Commission's Rules, no further action is necessary with respect to the request of JCET for an additional priority.

Prediction of Service Areas and Interference

85. In the Third Notice the Commission stated with respect to prediction of service areas and interference:

Methods for describing service areas and interference are set forth in Appendix B. The methods therein described include the propagation of radio waves through the lower atmosphere only. These propagation charts are based on an extensive number of measurements made at various locations over a long period of time. It is recognized that these charts may have to be reviewed from time to time as more measurements are made, and interested persons are encouraged to make as many measurements as possible and submit them to the Commission. The Commission is satisfied that on the basis of the data presently available to it the data underlying the propagation charts are sufficient to afford an adequate statistical basis for describing field intensities under average conditions, but it is expected that there may be substantial variations in individual areas.

Long distance skywave interference. - It is also realized that propagation to distances of the order of 500 to 1,500 miles via the sporadic E layer and to distances beyond via the F2 layer may occur in certain of the channels. However, since such interference may occur over extremely large distances, it is not possible to protect stations against such interference unless operation on such channels is limited to one or at the best a few stations. In order to provide stations for the various communities, the Commission has determined that the overall public interest is better served by not protecting television broadcast stations against this type of interference.

86. No objections were filed with respect to the proposal concerning long distance skywave interference. Accordingly, the decision of the Commission not

to protect television broadcast stations against this type of interference is made final. In this connection it should be pointed out that in setting engineering standards, we have considered all known propagation effects. If in the future, any person is of the opinion that the Commission's Rules do not properly reflect any given types of propagation effect, consideration will be given in an appropriate rule making proceeding only to amendment of the Rules.

87. Several comments have been received which, in general, state that the propagation curves in Appendix B of the Third Notice are not supported by the record when used for UHF propagation. These comments are especially directed to the use of these curves in rough terrain. Comments of this nature have been received from the Greylock Broadcasting Company, Pittsfield, Mass.; Fort Industry Company; Enterprise Publishing Company, Brockton, Mass.; WTAG, Inc., Worcester, Mass.; and James C. McNary.

88. These comments must be viewed in light of the nature of the propagation curves used in the prediction of service areas and interference. The Ad Hoc Committee Report establishes that the received field intensities of television signals vary so greatly from location to location, and with time, that any prediction of service from these average curves for a specific station is expected to deviate appreciably from the actual service. In addition, it is clear that a very large number of measurements from both desired and interfering stations, many of which will not be in existence for several years, would be necessary to make an accurate prediction of service for any specific station. However, the Ad Hoc Report indicates that the overall estimate of service for a large number of stations will be fairly good. In view of the foregoing, it is apparent that the Assignment Table must be made on a large area basis for which the overall estimated service is reasonably accurate. The assignment Rules and standards, however, cannot be construed as guarantees of service but rather as yardsticks based upon the best available data. As the quantity of available data increases, the assignment Rules and standards may be revised at a later date in the light of the scientific findings.

89. The Commission, after review of the whole record and the comments filed in this proceeding, has decided that the 63 mc. F(50,50) curves present a more accurate picture of expected service in the UHF than do the 195 mc. curves. The UHF data in the record indicates that for 50% of the locations the field strengths are approximately 4 db below the 195 mc. F(50,50) curves for distances in the order of 10-20 miles for which data are available. The 63 mc. curves are approximately 4 db below the 195 mc. curves at distances of this order and appear to generally provide a reasonable match with the data for UHF within service distances (as contrasted with interfering distances). In addition, the Commission has reconsidered the curves with respect to the prediction of interference in the UHF and based on T.R.R. Report No. 2.4.10 (Exhibit 565), in the record in this proceeding, a new family of curves for the prediction of interfering UHF signals has been prepared and has been substituted for the F(50,10) curve for Channels 14-83 proposed in the Third Notice.

90. With these changes in mind the Commission is confident that the curves it is establishing are of sufficient accuracy to achieve the purposes of its assignment plan. The use of such curves is indispensable to the inauguration of a nationwide television service. If we were to await more extensive data before establishing the Assignment Table, it would be necessary to withhold the inauguration of a nationwide service which will operate on both the UHF and VHF.



The objections to the use of the 195 mc curves for UHF in rough terrain are in part mitigated by the use of the 63 mc curves for prediction of service ranges. It is nevertheless true that the same curves are used for smooth as for rough terrain. However, no one either in the record or the comments filed pursuant to the Third Notice has proposed a system of prediction of coverage which while recognizing the differences between rough and smooth terrain meets the criterion of reasonable simplicity or in lieu thereof is reasonably accurate in the light of available scientific data. Actually, no one has offered adequate data upon which curves may be adopted which would recognize the differences between smooth and rough terrain or has established criteria for determining various degrees of terrain roughness. As a result no further changes in the curves adopted are justified on the basis of the record. In the future, when measurements are made which will add to the store of knowledge in the field of propagation, these will be considered in appropriate rule making proceedings looking toward the amendment of existing curves. In the absence of such data, objections to the UHF propagation curves must be rejected. 20/

91. For purposes of establishing a Table of Assignments and developing Rules and standards for the television broadcast service, the service areas are described in terms of iso-service contours based upon the proposed propagation charts. It should be stressed again that the service and interference computed by the use of these charts are not expected to prevail for any specific station but rather describe the service and interference which would prevail if the stations involved were all typical ones producing the average field intensities described by the charts. In other words, the proposed methods for describing service areas and interference are only assignment tools which are expected to give a fairly good service description on a large area basis but not necessarily on an individual station basis.

92. It has been found that radio signals in the frequency range pertinent to the television allocation vary both with time and location, in a statistically normal distribution. In order to adequately describe these variable field intensities, the Commission has adopted the statistical approach advocated by the Ad Hoc Committee. Thus, if a T per cent field intensity is defined as that level of field intensity exceeded for T per cent of the time, then $F(L,T)$ is the T per cent field intensity exceeded at L per cent of the locations. Stated in another way, $F(L,T)$ is the field intensity exceeded for at least T per cent of the time at the best L per cent of receiving locations. In establishing the Table of Assignments and in developing the Rules and Standards for the television broadcast service, it has been found necessary to use primarily the $F(50,50)$ and $F(50,10)$ values of field intensity and the charts indicating the variation of field intensity with the percentage of receiver locations. However, we have considered in this connection the efficiency studies developed by the Ad Hoc Committee utilizing the concept of integrating the service available at all receiver locations.

20/ It is to be noted that the Commission's decision with respect to the Enterprise, Greylock and WTAG counterproposals with respect to the cities of Brockton, Pittsfield and Worcester does not rest on the nature of the UHF propagation curves.

93. The above charts are based upon the results of the Ad Hoc Committee Report with two exceptions. First, the field intensity versus distance curves were extrapolated for transmitting antenna heights of more than 2000 feet. Secondly, the Ad Hoc Committee did not study UHF propagation.

94. The concept of iso-service contours has been introduced for the purpose of describing service. It is recognized that there exists no sharp line of demarcation between service and interference but that the service available may be more satisfactory or less satisfactory in varying degrees. However, for the purpose of obtaining practical comparisons of the service to be expected under the assignment plan, it has been found desirable in this proceeding to set up a standard criterion of service, based upon a standard instantaneous acceptance ratio of desired to undesired signals being exceeded for 90 per cent of the time at any given receiver location, as outlined in Volume II of the Ad Hoc Committee Report. The iso-service contour is defined as that contour along which every location has the same probability of exceeding the standard criterion of service, described above. The farther away a location is from the transmitter, the smaller is the probability that the received service will exceed the standard criterion. The grades of service are determined by selecting particular location probabilities, namely 70% and 50% for Grades A and B service, respectively.

95. In determining service and interference, the receiving antenna is assumed to be non-directional. This assumption has been recommended by the Ad Hoc Committee. It is believed that the receiving antenna directivity gain should be used as a safety factor to permit adjustment of the antenna to minimize multipath distortion and local oscillator radiation, to permit a compromise orientation for the reception on the same antenna from several desired stations in different directions, and to minimize the effects of multiple interference.

96. In view of the foregoing, the Commission's proposal, as modified herein, with respect to prediction of service areas and interference has been followed in this proceeding and appropriate portions thereof have been incorporated in the Commission's Rules and Standards. The F(50,10) curves are attached hereto as Appendix B.

Grades of Service

97. The Third Notice provided:

C. Grades of service. 5/ In its Notice of Further Proposed Rule Making issued on July 11, 1949, the Commission proposed to classify television broadcast service into three grades of service. In the Commission's opinion, there is no need for more than two grades of service. Grade A service is so specified that a quality acceptable to the median observer is expected to be available for at least 90 per cent of the time at the best 70 per cent of receiver locations at the outer limits of this service. In the case of Grade B service the figures are 90 per cent of the time and 50 per cent of the locations 6/. The field strengths and interference ratios are as follows:

1. Required median field strengths in db above 1 uv/m.



Grade of Service	Channels 2 - 6	Channels 7 - 13	Channels 14 - 83
A	68 db	71db	74db
B	47 db	56db	64db

5/ The Commission proposes the use of iso-service contours which express service in terms of the ratio between desired and undesired signal in decibels, or the minimum required signal levels in decibels above one microvolt per meter. This has been done in order to facilitate computation of service and interference field strengths. Likewise, the same terms may be carried over to the output of the transmitter, transmission line loss and antenna gain. This has the advantage of using the same unit throughout the service whether in the transmitting equipment or in the field and has the additional advantage that a decibel of power added at the transmitter results in a decibel of increased field strength. In order to place these matters on a related basis, the decibels with respect to transmitter power and antenna gain as well as field strength must be expressed as decibels with reference to some given level. Field strength is expressed either in decibels above an undesired signal or decibels above a reference level which has been chosen as one microvolt per meter. A convenient reference level is 1 kilowatt. The propagation charts attached to Appendix B and identified as "Appendix V, figures 1-4" are based upon the radiation in the equatorial plane of a half wave dipole antenna having an effective radiated power of one kilowatt. Antenna gain is expressed as the ratio in db of the maximum radiation from the antenna to the radiation in the equatorial plane of a half wave dipole with equal power input.

6/ For the specialized case that exists in the case of adjacent channel interference, see par. II E (2) below.

2. Permissible co-channel ratios in db of median desired field strengths to 10 percent undesired field strength:

Grade of Service	Channels 2 - 13		Channels 14 - 83	
	Non-Offset	Offset	Non-Offset	Offset
A	51 db	34 db	53 db	36 db
B	45 db	28 db	45 db	28 db

3. Permissible adjacent channel ratios in db of median desired and undesired field strengths:

Grade of Service	Channels 2 - 83
A	0 db
B	0 db

98. No objections were filed to the proposal described above with the exception of comments concerning adjacent channel interference ratios which are treated elsewhere in this Report. Accordingly, the proposal in the Third Notice has been followed in this proceeding and appropriate portions thereof have been incorporated in the Commission's Rules and Standards. In view of our decision herein with respect to station separations, powers and antenna heights, there is no need to include in our Rules and Standards co-channel and adjacent channel interference ratios.

99. The Third Notice provided that:

Transmitter locations shall be so chosen that the following median field intensities as calculated in accordance with the methods and procedure described in Appendix B are provided over the entire principal city to be served:

<u>Channels 2-6</u>	<u>Channels 7-13</u>	<u>Channels 14-83</u>
74 db	77 db	80db

100. No one has objected to this proposal with respect to median field intensities and accordingly it is being finalized.

101. It should be noted that the values selected for these grades of service assume a number of conditions with respect to a typical home receiver installation such as the sensitivity of the receiver, the type of antenna, the installation of the antenna, and the transmission line used. In VHF, considerable information concerning a typical home installation is available as a result of actual experience; in UHF a typical installation had to be predicated to a large extent on the basis of technical feasibility. Thus, the extent to which the grades of service for the UHF, herein adopted are actually realized in practice will depend on the ability of the industry economically to produce and install high performance receiving equipment as well as upon the propagation characteristics of these frequencies.

102. DuMont and Radio Kentucky, Inc., Louisville, Kentucky, have both recommended that the Commission impose requirements with respect to the joint use of antennas to make coverage more equal, reduce construction costs and aid the public in the installation and use of receiving antennas. In this connection, §3.639 of the Commission's present rules provides:

Use of common antenna site. - No television license or renewal of a television license will be granted to any person who owns, leases, or controls a particular site which is peculiarly suitable for television broadcasting in a particular area and (a) which is not available for use by other television licensees, and (b) no other comparable site is available in the area; and (c) where the exclusive use of such site by the applicant or licensee would unduly limit the number of television stations that can be authorized in a particular area or would unduly restrict competition among television stations.

While we encourage licensees to use common antennas where possible, we believe that we should not impose such a requirement without further exploration of the problems which might arise from such a rule. We have, however, retained the provisions of §3.639 in the Rules adopted herein.



Station Separations

103. The Commission in seeking to establish a nationwide television assignment plan which will provide service to the people of the United States for years to come is basing the Assignment Table in large part on a system of minimum station separations. These station separations, together with the station powers and antenna heights permitted by the Rules, will establish the nature and extent of the protection from interference to be accorded to television stations. The use of this system of station separations, we believe, will more easily and more likely bring about a truly efficient and equitable distribution of television service than would a system based upon "protected contours."

The Measurement of Station Separations 21/

104. We are dealing in this Report with two types of separations or mileage spacing requirements. There are in the first place assignment spacing requirements which we are following herein and which will be followed in future rule making proceedings dealing with additions or amendments to the Table of Assignments. These separations are to be distinguished from facilities spacing requirements that must be complied with in determining spacings between stations in licensing proceedings involving individual applications for facilities. The Third Notice implicitly recognized the difference between these two types of separations by referring to assignment spacing requirements as city-to-city spacings and by referring to facilities spacing requirements as transmitter-to-transmitter spacings.

105. A number of parties 22/ have filed comments pursuant to the Third Notice taking issue with the requirement that minimum co-channel separations be determined exclusively on a city-to-city basis. These parties state

21/ Station separations include co-channel separations, adjacent channel separations and those separations provided for herein to protect against interference caused by oscillator radiation, I.F. beat, intermodulation and to protect against image interference.

22/ Southern Minnesota Supply Co., Mankato, Minn.; Pennsylvania Broadcasting Co., Philadelphia, Pa.; The Brockway Co., Watertown, N.Y.; Hampton Roads Broadcasting Corp., Norfolk, Va.; Loyola University of the South, New Orleans, La.; The Gazette Company, Cedar Rapids, Iowa; Telegraph Herald, Dubuque, Iowa; Kingsport Broadcasting Co., Kingsport, Tenn.; Hartford Times, Inc., Hartford, Conn.; Buffalo Courier Express, Inc., Buffalo, N.Y.; Bay Broadcasting Co., Bay City, Mich.; WJR, The Goodwill Station, Inc., Detroit, Mich.; Wm. H. Block Company, Indianapolis, Ind.; The Travelers Broadcasting Service Corp., Hartford, Conn.; McClatchy Broadcasting Co., Sacramento and Fresno, Calif.; WIBC, Inc., Indianapolis, Ind.; Peoria Broadcasting Co., Peoria, Ill.; Independent Broadcasting Company, Des Moines, Iowa, and Jacksonville Broadcasting Co., Jacksonville, Fla., among others.

that the evidence in the record of the hearing, supplied by Edward Allen, a Commission witness, pertaining to the determination of interference, distance to service contours, and associated studies related to the locations of the transmitting antennas irrespective of the distance between cities. These parties further maintain that the determination of interference, distance to contours, and grade of service are functions of the transmitting antennas together with the propagation characteristics of the frequencies concerned, and power and effective antenna height. Accordingly, they request that the Third Notice be modified so that minimum co-channel separations be stated either on a transmitter-to-transmitter basis or that the alternative of transmitter-to-transmitter or city-to-city spacings be permitted.

106. In providing that assignment spacings were to be measured from city-to-city, the Third Notice did not expressly specify what reference point in a city should be chosen in measuring the city-to-city separation. However, where a transmitter is in existence by reason of a Commission authorization, that transmitter site is obviously the appropriate reference point. Accordingly, insofar as the comments described above constitute a request that, in measuring assignment spacings an authorized television transmitter shall be used as one of the two necessary reference points, they are granted, and we have in this proceeding measured ^{23/} assignment spacings from authorized transmitter sites where such sites were available. The location of the site is derived from the co-ordinates of the transmitter as indicated on the official Commission instrument of authorization. Where television transmitters are authorized in both cities, each site should be used as a point of reference, and in such case the assignment spacing is measured transmitter-to-transmitter.

107. The Third Notice did not state specifically how an assignment spacing should be measured where no authorized transmitter site is available as a reference point. We have decided that where an authorized transmitter site is available for use as a reference point in one city but not in the other, the latter is the point described by the city co-ordinates as set forth in the publication of the United States Department of Commerce entitled "Air Line Distances Between Cities in the United States," ^{24/} or if this publication does not specify such co-ordinates, the reference point used is the point described by the co-ordinates of the main post office of the city involved. Where no authorized transmitter sites are available for use as a reference point in both cities, the mileage distance between the two cities listed in the publication described above has been used

^{23/} The manner of measurement of mileage spacings between two reference points is set out in the Rules adopted herein.

^{24/} The Third Notice provided that in determining separations between cities for the purpose of application of the 15 mile rule (See footnote 8 above) "the city mileage separations set forth in the publication of the United States Department of Commerce entitled 'Air Line Distances' shall be utilized. Where cities are not listed in the above publication, separations shall be computed on the basis of the distance between the main post office in the respective cities."



where available. In the absence of such information, the reference points are determined by ascertaining the city co-ordinates as set forth in the publication listed above and where the city co-ordinates are not listed, by ascertaining the co-ordinates of the main post office in the city involved.

108. The measurement of facilities separations in licensing proceedings is simplified by reason of the fact that in each case one reference point is established by the applicant by his selection of a proposed transmitter site. The other reference point is determined by ascertaining (1) the co-ordinates of an authorized transmitter site in the other city or (2) where such a transmitter site is not available the city co-ordinates as set forth in the publication of the United States Department of Commerce entitled "Air Line Distances Between Cities in the United States" or if said publication does not specify such co-ordinates the co-ordinates of the main post office of the other city involved. In addition where there are pending applications in the other city, which, if granted, would have to be considered in determining facilities separations, the co-ordinates of the transmitter sites proposed in such applications must be used to determine whether minimum facilities spacing between the two proposals have been met.

The Minimum Co-Channel Assignment Spacings

109. In the Third Notice, the Commission said with respect to co-channel assignment spacings:

The Table of Assignments contained in the Commission's Notice of Further Proposed Rule Making, issued July 11, 1949, has as its objective co-channel separation of 220 miles in the VHF band and 200 miles in the UHF band. At the hearing on the general issues, testimony was offered that these separations could be reduced considerably by utilizing offset carrier operation. Evidence was also offered that more television service could be made available to the country if the separation objective were reduced to 150 miles for VHF channels .

The Commission has carefully considered the above evidence and has concluded that some reduction in co-channel separation is possible because of the improvements which result from offset carrier operation. It is not deemed advisable to effectuate a reduction to 150 mile VHF separation as suggested at the hearing. In the first place, the evidence upon which the 150 mile separation is based is the theoretical computations of what coverage can be achieved. On the basis of the evidence in the record, it is clear that considerations of terrain and other propagation factors will materially affect many of the theoretical computations. In the second place, much of the propagation data—although the best available—upon which the Commission relies is necessarily quite meager. Postponing a decision in these proceedings would not materially aid this problem since it has been the Commission's experience that substantial amounts of propagation data do not become available until stations are authorized on a regular basis. Hence, the Commission is faced with the practical problem that if it postpones assigning stations until sufficient propagation data are available, such data may never become available, while on the other hand if stations are assigned before sufficient propagation data are assembled,

more interference may result in actual operation than was anticipated. In the Commission's view, the best method of handling this problem is to assign stations as soon as a reasonable sufficient amount of data is accumulated but in doing so assignments should not be made on the barest minimum separation which exact calculations would indicate. Instead, a safety factor should be included. In this way, if as a result of actual experience more interference results than was indicated by the earlier calculations, the safety factor will prevent extensive damage to overall service. If actual experience shows that the amount of interference is approximately that predicted by the calculations, then the rules and standards can be amended to reflect the new data. In the Commission's experience, it is much easier as a practical matter to reduce station separations which are somewhat larger than were originally thought to be necessary than it is to increase separations which are smaller than were originally thought to be necessary.

110. In determining minimum co-channel separations we must consider a number of factors. The geographical distribution of the people and cities of the United States does not lend itself to a simple rule for the spacing of stations. The northeastern portion of the United States is generally characterized by higher population density and closer spacing of cities than the other portions of the country. See Appendix A.

111. Recognition must also be given to the fact that the mileages set for co-channel spacings determine the size of the interference-free service area of nearby co-channel stations. It is important to note that we are referring here not to Grade A service but to the more extensive Grade B service. As spacings in the order of 140-250 miles are reduced by 10 miles the interference free service area is reduced by 2-3 miles in the direction in which stations face each other. Accordingly, reductions in Grade B service resulting from reduced separations deprive the rural areas and the less sparsely settled areas of television service. To the extent we do this in the VHF, we lose one of the benefits of that portion of the spectrum, the wide area coverage possible.

112. We have also considered the import of minimum spacings on the policy we have adopted herein with respect to the use of greater heights and higher powers. As greater antenna heights and higher powers are used, the greater is the need for wider separations; with smaller separations, in the direction of the co-channel station, the potential gain from greater heights and higher powers would be lost. We do not wish to negate the policy of trying to obtain wide coverage by the use of high antenna heights; neither do we wish to create excessive interference by permitting operation with high power at small spacings.

113. Finally we have given consideration to the need for a safety factor in view of the incomplete nature of available propagation data. Where the pros and cons hang in even balance we deem it highly desirable if not imperative to tip the scales in favor of wider separations.

114. The Commission in the Third Notice provided the following minimum co-channel assignment spacings between cities:

VHF	-	180 miles
UHF	-	165 miles



Actually, however, it was not intended that all requests for additional assignments should be granted solely because they met the minima provided for in the Third Notice. The Third Notice stated:

In each case, the above figures are minimum separations. Greater separations are utilized in the sparsely settled areas of the country in order to secure a maximum amount of service. In addition, greater separations are also utilized in Gulf Coast areas and in other areas where high levels of tropospheric propagation may be expected. This should be kept in mind by persons desiring to suggest changes in the Table of Assignments. (Emphasis added)

115. Moreover, examination of the Table of Assignments proposed in the Third Notice makes it clear that the 180 mile VHF co-channel separation and 165 mile UHF co-channel separation were not intended to be the minimum assignment spacing throughout the country. These minimum spacings were intended to be used and were used only in those portions of the country where narrower spacings are appropriate, particularly in the northeastern part of the United States. Upon review of the whole record we adhere to the concept that in the less densely settled areas of the country wide separations must be maintained. The minimum VHF co-channel spacing utilized in the Third Notice in such areas of the country was 190 miles. We adopt this spacing as the appropriate minimum VHF spacing in areas which have a relatively lower population density or where large cities are more widely separated. See Appendix A. For if we were to permit stations at close separations in such areas, we would deprive persons residing in the interference areas between such stations of television service since there generally do not exist other cities of sufficient magnitude in this interference area capable of supporting stations on other channels which could serve the area.

116. A different situation, however, exists where there is a higher density of population and concentration of cities. Because of the concentration of cities, the provision for lower minimum spacings in such an area will not have the tendency of depriving residents of the area of television service, since there would be an overlapping of service contours of stations on different channels located in the interference areas.

117. Analysis of population density and distribution of cities establishes the existence of one large contiguous area where there is a substantially higher density of population and concentration of cities compared to all other contiguous areas of comparable size. See Appendix A. We believe the record in the general portion of the hearing supports the conclusion that lower separations in this area are warranted.

118. We have called this area Zone I. It consists of that portion of the United States located within the confines of the following lines drawn on the United States Albers Equal Area Projection Map, (based on standard parallels $29-1/2^{\circ}$ and $45-1/2^{\circ}$ North American datum). Beginning at the most easterly point on the state boundary line between North Carolina and Virginia; thence in a straight line to a point at the junction of the Ohio, Kentucky, West Virginia State boundary lines, thence westerly along the southern boundary lines of the States of Ohio, Indiana and Illinois to a point of junction of the Illinois, Kentucky and Missouri State boundary lines; thence northerly along the west boundary line of the State of Illinois to a point at the junction of the Illinois, Iowa and Wisconsin State boundary lines; thence easterly along the northern state boundary lines of Illinois to the 90th meridian; thence north along this meridian to the

43.50° parallel; thence east along this parallel to the 71st meridian; thence in a straight line to the intersection of the 69th meridian and the 45th parallel; thence east along the 45th parallel to the Atlantic Ocean. When any of the above lines pass through a city, the city shall be considered to be located in Zone I. A map of Zone I is included in the Rules adopted herein.

119. In establishing the boundaries of Zone I we have included within the Zone portions of some states that, as a whole, have relatively low population densities and relatively few large cities. The portions we have included, are, however, relatively more populous and have a greater number of large cities than the other portions of the same states and they are all contiguous to the general area with a higher density of population and concentrated cities. For these reasons we believe their inclusion in Zone I is warranted.

120. Upon consideration of the whole record, we have determined that the minimum co-channel assignment spacing in Zone I shall be 170 miles in the VHF and 155 miles in the UHF. 25/ This constitutes a reduction of 10 miles in the minimum assignment separation proposed in the Third Notice, but is the same as the minimum facilities separations provided for in the Third Notice. We find no basis for going below the 170 and 155 mile figures proposed as the minima in the Third Notice.

121. As we have pointed out in the Third Notice, in certain areas of the country, particularly the Gulf Coast area, high levels of tropospheric propagation may be expected. In such areas greater separations are necessary to compensate for the reduction in service areas that is caused by the interference resulting from the high level of tropospheric propagation. We have carefully re-examined the record and the comments that have been filed pursuant to the Third Notice and we have determined that only the Gulf Coast area should, by rule, be treated differently from other areas which may be affected by a high level of tropospheric propagation. In reaching this conclusion we are aware that wide separations will have to be maintained in other areas as well to protect against the effects of high levels of tropospheric propagation. We believe, however, that these situations can be considered on a case-to-case basis, and we have attempted to take care of this problem on such a basis in establishing the Table of Assignments in this proceeding.

122. We have designated the Gulf Coast area as Zone III. Zone III consists of that portion of the United States located south of a line, drawn on the United States Albers Equal Area Projection Map, (based on standard parallels 29-1/2° and 45-1/2° North American datum), beginning at a point on the east coast of Georgia and the 31st parallel and ending at the United States-Mexico border, consisting of arcs drawn with a 150 mile radius from the following specified points:

25/ We recognize that a few existing operations do not comply with the minimum separations set forth above. It has not been possible to remove these cases without unwarranted dislocation.



	North Latitude		West Latitude	
a)	29°	40'	83°	24'
b)	30°	07'	84°	12'
c)	30°	31'	86°	30'
d)	30°	48'	87°	58' 30"
e)	30°	23'	90°	12'
f)	30°	04' 30"	93°	19'
g)	29°	46'	95°	05'
h)	28°	43'	96°	39' 30"
i)	27°	52' 30"	97°	32'

When any of the above lines pass through a city, the city shall be considered to be located in Zone II. A map of Zone III is included in the Rules adopted herein.

123. All of the United States (including the Territories) not included in Zones I and III is designated as Zone II. In measuring separations between cities in different Zones, the lower separation applicable will govern.

124. The area designated as Zone II is more sparsely settled than the area designated Zone I and has a lower concentration of cities than does Zone I. See Appendix A. As shown in Appendix A, the population density per square mile in Zone I is 222.1 people per square mile; in Zone II the population density is 27.4 per square mile. For the reasons set out above, we believe the minimum VHF co-channel assignment separation of 190 miles maintained in this area in the Table proposed in the Third Notice, should be adhered to without change. In the case of the UHF, the minimum co-channel separation, in Zone II, maintaining the relationship used in Zone I, shall be 175 miles. There are very few UHF assignments proposed in the Third Notice in violation of this minimum; these assignments have, however, been deleted from the Table adopted herein.

125. There remains for consideration the minimum co-channel separations to be maintained in Zone III, the Gulf Coast area. This area would on the basis of density of population and concentration of cities fall within Zone II. The population density per square mile in Zone III is 47.8 people per square mile. See Appendix A. On the basis of the record, it appears necessary, however, to add a factor of about 33 miles spacing between co-channel stations to obtain the same service area as would exist in Zone II. We believe it to be reasonable in light of the foregoing to add 30 miles in the Gulf Coast area to the 190 mile minimum VHF co-channel assignment spacing provided in Zone II. This will substantially equalize the service contours of stations in the Gulf area with stations in Zone II. On this basis the minimum assignment spacing in Zone III will be 220 miles in the VHF band and 205 miles in the UHF. Several VHF assignments in Zone III proposed in the Third Notice involved spacings below this minimum. However, as set forth above, it was clearly contemplated in the Third Notice and the Commission so indicated that spacings in the Gulf Coast area would have to be much wider than spacings in other portions of the country 26/. Accordingly, necessary changes have been made in the Table to insure that all assignments meet the minimum required herein.

26/ For example, The Houston Post Company, in its comments, expressly supported the principle that in the Gulf area minimum spacings substantially above the minima in other areas are required. The Houston Post Company advanced the proposal that a specific limitation be made on assignments in this area so that stations operating on the same channel should be separated by 240 miles on Channels 2-6 and by 200 miles on Channels 7-13.



126. In establishing Zone III we are taking into account the fact that we do not have sufficient data at this time to determine exactly at what point the effects of the high level of propagation in the Gulf need no longer be considered in establishing minimum assignment spacings. We believe, however, that the figure we have chosen provides an adequate margin of safety and yet does not prevent assignments that could appropriately be made at this time.

127. DuMont Laboratories, Inc. has submitted an alternative nationwide assignment plan which it claims is superior to that of the Commission. DuMont makes this claim on the grounds that its assignment plan allegedly makes a more efficient use of the available television spectrum, especially the VHF band. DuMont points out that it has made more assignments on each VHF channel than the Commission and that it has provided more communities with VHF multiple service. At the same time DuMont proposes to assign at least one channel to practically every community listed in the Commission's Table of Assignments. In substantiation of its claim that its plan would provide more persons with more service, DuMont had a population count made of the number of persons living within 50 miles of television service centers. It defined a "television service center" as a community to which more than one television channel had been assigned under either the Commission or the DuMont assignment plans. For example, DuMont states that under the proposed FCC plan 98 television centers have been tentatively assigned four or more VHF and UHF channels and a population of 95,115,203 live within 50 miles of these centers, whereas under the DuMont plan 149 centers would have four or more channels and a population of 113,814,387 live within 50 miles of these centers.

128. DuMont contends that it achieved this greater efficiency "within the FCC framework of engineering standards." As a matter of fact, however, there is a highly significant difference between the two plans with respect to the minimum co-channel assignment separations employed and this difference is necessarily reflected in the total number of assignments under the two plans. In order to increase the number of VHF assignments in large cities, DuMont would make many assignments below the minimum separations employed in the Table of Assignments proposed in the Commission's Third Notice and as adopted in this Report. For example, in the area comprising Zone II, the Commission's proposed Table and final Table have no assignment separations below 190 miles. By contrast DuMont proposes 79 spacings below this minimum. These would be distributed as follows: 6 below 170 miles; 21 between 170 and 180 miles; and 52 between 180 and 190 miles. In the area defined as Zone III, the Commission had proposed 9 spacings below 220 miles (minimum established herein), but in the Table adopted herein all VHF spacings below 220 miles have been deleted. DuMont, however, proposes 30 assignments below this minimum. Two separations would fall below 180 miles, 18 between 180 and 200 miles, and 10 between 200 and 220 miles.

129. By reducing the spacings below the minimum at numerous points, the DuMont plan achieves a greater number of VHF assignments than does the FCC Table. It is apparent, however, that DuMont's alleged superior assignment efficiency in fact results from utilizing station separation standards at variance with those of the Commission. For the reasons detailed previously, the Commission does not believe it is in the public interest to utilize such lower assignment separations.

130. Furthermore, the DuMont Assignment Table is inconsistent, in part, with the assignments that have been made along the Mexican and Canadian borders. This aspect of the DuMont assignment plan is discussed elsewhere in this Report.



In addition, the DuMont proposal for UHF assignments does not follow a basic principle provided for in this Report and followed in the Commission's Table, namely, that UHF stations separated by less than 6 channels should be separated by at least 20 miles. This aspect of the DuMont assignment plan is also discussed in detail elsewhere in this Report.

131. The Commission has already examined and rejected certain of the underlying principles of the DuMont plan. ^{27/} We must, for the reasons indicated above, similarly reject the proposed DuMont Table of Assignments.

132. DuMont requested an opportunity to make an oral presentation in this proceeding. This request was based on the view that the Commission would not adequately understand the DuMont nationwide assignment plan. We have very carefully considered the DuMont proposal. The Commission recognizes the contributions made by DuMont to these proceedings. We do not believe that an oral presentation is necessary for the Commission to satisfactorily consider and dispose of the issues raised by DuMont. In our view the detailed written evidence submitted by DuMont adequately presents the facts with respect to the nature of DuMont's proposal and has enabled us fully to consider the merits of its proposal. The DuMont request for an oral presentation is, therefore, herewith denied.

133. A request has been made ^{28/} that the Commission permit assignments of co-channel stations at less than the minimum spacings where advantage can be taken of mountain ranges to form a natural protection between stations. The parties referred to testimony on this point presented in the record by Messrs. Goldsmith, Poole, Gillett, Inglis, O'Brien and Harmon. While there is some evidence that intervening mountain ranges may normally reduce television signals, the propagation data available at this time is insufficient to determine the extent to which there may be significant deviations from the normal pattern in such situations. The Commission is, therefore, denying in this proceeding the requests for co-channel separations lower than the minimum between stations separated by mountain ranges. ^{29/}

134. Some of the parties ^{30/} have requested that co-channel assignment spacings be calculated on the basis of proposed transmitter sites as well as on the basis of existing transmitter sites. Such a request confuses assignment spacings with facilities spacings. The purpose of assignment spacings is to determine what channels shall be assigned to individual communities for use by applicants who may seek authorizations for stations in such communities

^{27/} See Paragraphs 70-81 above.

^{28/} Southern Minnesota Supply Company, Mankato, Minn.; Erie Television Corporation, Erie, Pa.; Airfan Radio Corp., Ltd., San Diego, Calif.; California Inland Broadcasting Co., Fresno, Calif.; Tribune Building Co., Oakland, Calif.; KUGN, Inc., Eugene, Oregon; and Kingsport Broadcasting Co., Kingsport, Tenn.

^{29/} For the same reasons we have rejected similar proposals for assignments in violation of the minimum separations where other than co-channel spacings are involved.

^{30/} See footnote 22 above.

after an assignment has been established. After an assignment has been made it must be capable of being used by any applicant who may succeed in the licensing proceeding. To use the specific transmitter site proposed by an individual petitioner in a rule making proceeding as a reference point in calculating assignment spacings would be to use a site that might in fact never be available to the successful applicant in the licensing proceeding.

135. Further, to permit parties to use specific proposed sites or possible transmitter sites in order to establish that they meet minimum assignment spacing requirements would in effect reduce the minimum assignment spacing requirements. Several parties have, however, attempted to demonstrate that proposed co-channel assignments meet the minimum requirements by offering evidence that they can select a transmitter site that will meet the minimum assignment separation requirements even though the distance between the proper reference point in the community of the proposed assignment and the other city involved is less than the minimum. We cannot permit separations to be reduced by allowing proponents of new assignments to demonstrate in rule making proceedings that they can meet the minimum assignment spacing requirements only by being able to erect a transmitter at a specific site. The manner in which the assignment spacings are measured is important in determining the spacings between stations and the measurements will vary significantly depending on the reference points used. To permit assignments to be made in rule making proceedings on the basis of the measurement of spacings from particular transmitter sites other than the appropriate reference point would result in a reduction of the required assignment spacings. Accordingly, we are denying all requests for the establishment of assignments where the minimum spacings would be measured not from the proper reference point but from possible transmitter sites. 31/

136. The Table of Assignments contained in the Commission's Third Notice permits the use of maximum power at all locations where an assignment is proposed. A number of parties 32/ contend that it would be possible to provide additional assignments in many locations if the stations at such localities were limited to power less than the maximum. For example, it is stated that if two stations serving small communities operate with minimum power they could be located as close as 73 miles co-channel and 19 and 25 miles adjacent channel for Channels 2-6 and 7-13, respectively, while at the same time receiving the same grade of

31/ For the same reasons we have rejected similar proposals for assignments in violation of the minimum separations where other than co-channel spacings are involved.

32/ Pennsylvania Broadcasting Company, Philadelphia, Pa.; Southeastern Broadcasting Company, Macon, Ga.; Middle Georgia Broadcasting Company, Macon, Ga.; The Brockway Company, Watertown, N.Y.; Hampton Roads Broadcasting Corp., Norfolk, Va.; Jacksonville Broadcasting Company, Jacksonville, Fla.; Loyola University of the South, New Orleans, La.; The Gazette Company, Cedar Rapids, Iowa; Telegraph Herald, Dubuque, Iowa; Kingsport Broadcasting Company, Kingsport, Tenn.; Michigan State College, East Lansing, Mich.; Hartford Times, Inc., Hartford, Conn.; Travelers Broadcasting Service Corp., Hartford, Conn.; Southern Minnesota Supply Company, Mankato, Minn.; and Indiana Technical College, Fort Wayne, Indiana.



protection offered by a separation of 180 miles shown in the Commission's standards. The parties accordingly have requested that the Commission provide for additional assignments at reduced power where such assignments will not cause interference greater than would exist under the prescribed minimum spacings.

137. The Commission does not believe that limited power stations should be provided for in the Table of Assignments at this time in order to squeeze in additional assignments. The effect of low power combined with close spacing is to reduce the interference-free coverage area of such stations, thus providing a sharply limited service. In the example cited above of two stations operating with minimum power (1 kw effective radiated power) and separated 73 miles co-channel, the interference-free Grade A service would be confined to 11 miles and the Grade B service to 14 miles. Further, the proposals for low power stations are all based upon operation of the co-channel stations with an antenna height of 500 feet. As the antenna heights of co-channel stations increase, the service area of the lower powered stations would decrease.

138. Further, these proposals rest on the implicit assumption that where interference is not caused to the Grade A service of a station, the minimum separations may be reduced below the standards adopted by the Commission. The television Assignment Table and the Rules with respect to television, however, recognize no protected contours. Rather they are based on the concept of affording each station the widest coverage possible consistent with an efficient utilization of the spectrum and the satisfaction of the needs of the various cities and communities in the United States. The Commission in considering grades of service in this proceeding has utilized the principle of iso-service contours. Basic to this principle is a recognition of the fact that, even though "objectionable interference" may not be caused in any contour, an inevitable degradation of service occurs. We have above discussed at length the basis for the separation we have established. The proposals here cannot be accepted because they are contrary to the basis upon which the co-channel separation requirements have been established.

139. Also to be considered is the safety factor we have previously mentioned. If we should find at a later date the interference which stations may suffer is greater than we have predicted upon the basis of available data, generally only Grade B service will suffer whereas the impact on Grade A service will be little, if any. Moreover, power could then be reduced if it were decided that the interference should be reduced. But in the case of stations operating with lower power at reduced separations it would be more difficult to further reduce power and the service that would generally suffer would be Grade A service.

140. Accordingly, the Commission finds that it must deny the requests of the parties seeking additional assignments where such assignments would require operation at less than the maximum powers specified in this Report.

141. In establishing the co-channel assignment spacing requirements set out above, we have considered carefully the comments and evidence of all the parties who have requested assignments at spacings below the minima adopted herein. Insofar as we have reduced the minimum assignment spacing in Zone I from that proposed in the Third Notice, the requests of certain of the parties for reduced minimum assignment spacings have been granted. We find, however, no adequate basis on the record for granting any of the other requests

for reduced minimum spacings and we have found no convincing reason to deviate from our minimum assignment spacings in acting on any specific counterproposal in this proceeding.

142. The following is a summary of the minimum co-channel assignment spacings provided for herein:

	VHF	UHF
Zone I	170 miles	155 miles
Zone II	190 miles	175 miles
Zone III	220 miles	205 miles

Classes of Stations: Powers and Antenna Height

143. In the Third Notice, the Commission stated:

The Commission's Notice of Further Proposed Rule Making issued July 11, 1949, provided for three classes of stations, i.e. community, metropolitan and rural stations. During the hearings on the General Issues relatively little comment was offered concerning the proposed classifications. In reviewing this proposal, the Commission has concluded that it is desirable to reduce station classifications to a minimum and that more than one class of station is unnecessary if provision is made for appropriate power ranges for the various sizes of cities and rural areas. Accordingly, only one class of television broadcast station is proposed, with provision for minimum and maximum effective radiated powers in accordance with the respective tables set forth below:

(1) Minimum Power

Population of city (excludes adjacent metropolitan areas):	Minimum effective radiated power 1/ (in db above 1 kw)
1,000,000 and above	17 db/500 ft. Ant.
250,000 - 1,000,000	10 db/500 ft. Ant.
50,000 - 250,000	3 db/500 ft. Ant.
Under 50,000	0 db/300 ft. Ant.

1/ Or equivalent, based on the same Grade A service radius as with these values of effective radiated power and antenna height above average terrain. A chart showing this relationship is attached to Appendix B and identified as Appendix IV. No minimum antenna height is specified. However, wherever feasible, high antennae should be used to provide improved service.

(2) Maximum Power. The maximum effective radiated power to be authorized on the respective channels is set forth in the following table:

Channels	Maximum effective radiated power (in db above 1 kw)
2-6	20 db/500 ft. Ant.
7-13	23 db/500 ft. Ant.
14-83	23 db/500 ft. Ant.



144. No one has objected to the Commission's proposal to establish only one class of station and to permit any station to operate on any channel, consistent with the Rules and Standards. Some comments have been received with respect to operation with lower powers where the minimum mileage separations provided for in the Rules cannot be met. These comments have been considered above in another portion of this Report and the requests have been denied for the reasons set forth. The Commission is, therefore, finalizing its proposal to have only one class of station.

145. No comments were received with respect to the Commission's proposal concerning minimum power. Generally, we believe we should adhere to the proposal made in the Third Notice. It is a fact, however, that with very low effective radiated powers the service areas of television stations are extremely limited. Accordingly, we have provided in our Rules that no television station shall in any case operate with less than 1 kw effective radiated power. As so modified the proposal in the Third Notice with respect to minimum power is adopted.

146. Several comments have been received relating to the Commission's proposal with respect to maximum power for television stations. Radio Kentucky, Inc., and Radio Virginia, Inc., both oppose the granting of further power in the VHF above the maximum presently provided for in the Rules. The reason for this position appears to be a desire not to increase the disparity of coverage between the VHF and UHF. Havens and Martin opposes this proposal to limit power and subscribes to the Commission's proposal for an increase in existing power limits in the VHF. A. Earl Cullum's comment refers to his testimony relating power to frequencies in order to obtain comparable coverage. The frequencies involved on Channels 7 through 13 are approximately three times the frequencies involved on Channels 2 through 6, and the UHF channels allocated to television are approximately three times the frequencies on Channels 7 through 13. Cullum contends that in both of these cases the maximum power for the higher channels should be three times that of the lower channels and that putting a limit of 200 kw (23 dbk) ^{33/} on the power to be used on Channels 7 through 13, and 14 through 83 is unfair to those who wish to use these channels in competition with assignments made on Channels 2 through 6. James C. McNary filed a comment in which he stated that an amplifier tube with 25 kw was feasible on the UHF. Such a tube it was stated would provide a radiated power of 400 kw (26 dbk). McNary, therefore, recommends that provision be made for the use, on an individual basis, of power in excess of 23 dbk on Channels 14 through 83. Pacific Video Pioneers also proposes that the maximum power limitation of 23 dbk (200 kw) on Channels 14-83 be liberalized to permit single stations to increase to 26 dbk (400 kw) on a showing that objectionable interference will not be caused to other assignments using 23 dbk (200 kw) at 500 feet and to permit horizontal increases in power by two or more stations. On the other hand, RCA-NBC, and Communications Measurements Laboratories, Inc., support the Commission's proposal.

147. On the basis of the record it appears that the Grade B coverage of the television channels decreases as the frequency involved increases. Considering first the power relationship between Channels 2-6 and Channels 7-13 the propagation charts in the record establish that, assuming operation at 500 feet and the maximum powers proposed in the Third Notice, the Grade A

^{33/} As used herein "dbk" signifies power in decibels above one kilowatt.

service extends to 33 miles on Channels 7-13 as compared to 27 miles on Channels 2-6. 34/ However, in the case of Grade B service and where the only limiting factor is noise the service on Channels 2-6 extends 57 miles compared to 50 miles on Channels 7-13, based on the same powers and antenna heights. In view of this disparity with respect to Grade B service there was considerable testimony in the record favoring a three-fold differential in power between Channels 2-6 and Channels 7-13 rather than the powers proposed by the Commission.

148. The arguments described above are somewhat misleading since the prediction of service areas is made in all cases on the basis of noise limitations only. Co-channel operation is, however, a substantial factor in the determination of the effects of permitting an increase in power such as is requested here by the parties. For example, at 170 mile station spacing, with maximum power as specified under the Third Notice and 500 feet antenna height, the Grade B service of a station operating on Channels 2-6 or 7-13 would extend 41 miles and 47.5 miles, respectively, in the direction of a co-channel station. These coverages are related to the station separation and would be unchanged by the same increase in power of all stations on the same channel. However, in other directions, assuming noise as the only limiting factor such stations would furnish Grade B service as far as 57 miles and 50 miles, respectively, for the channels stated. Similarly, at 200 mile spacing with stations on the same channel operating with the same power and antenna height, the Grade B service of a station would extend 47 miles and 50 miles for Channels 2-6 and Channels 7-13, respectively, in the direction of a co-channel station, and 57 miles and 50 miles, respectively, in other directions. The latter distances for both examples could be increased by an increase in power of all stations on the same channel. Thus, although co-channel operation will be determinative of Grade B coverage in some areas, in many other areas an increase in power for stations operating on Channels 7-13 can effectively increase the Grade B service range and more nearly equalize the potential coverage of such stations with those operating on Channels 2-6. Even in those areas where the specified grades of service are determined by mutual station interference, the use of higher power will improve the service by helping to overcome other types of interference, such as receiver noise. This results in increased coverage efficiency and a more effective utilization of the spectrum space involved. In reviewing the comments that have been filed and the whole record in this proceeding, the Commission has, therefore, concluded that an additional 2 db should be permitted on Channels 7-13 providing for a total maximum power of 25 dbk (316 kw). Where noise is the only limiting factor, this increase will add approximately 3 miles to both the Grade A and Grade B service areas of Channels 7-13. 35/

149. Similar considerations are involved in establishing maximum power limitations in the UHF. According to the median field strength requirements, Channels

34/ See in this connection our discussion above of the manner of prediction of service areas and interference.

35/ We believe that the Radio Kentucky and Radio Virginia requests must be denied. The record clearly requires us to raise the existing limits on power in the VHF in order to achieve an efficient use of the spectrum.



2-6 require 68 dbu 36/ for Grade A service and the UHF channels require 74 dbu. Since both the low VHF and UHF areas are, pursuant to this Report to be computed from the same 63 megacycle curves and considering noise to be the only limiting factor, it is obvious that the UHF must have an additional 6 db to obtain the same Grade A service area. Likewise the median field strength required for Grade B service is 47 dbu and 64 dbu for Channels 2-6 and the UHF respectively. Hence an increase of 17 db would be necessary in the UHF to equalize the Grade B service areas where noise is the only limiting factor. The same considerations which impelled the increase in the maximum power on Channels 7-13 to 25 dbk (316 kw) impel an increase in the maximum UHF power to 30 dbk (1000 kw). This increase will extend the Grade A and Grade B service areas of stations operating with 500 feet antennas to 32 miles and 47 miles, respectively, where noise is the only limiting factor. In establishing this maximum power for the UHF, we recognize that these powers may not be immediately attainable, but we believe, on the basis of the record, that provision should be made for such an increase since we are confident that developments in the art will achieve such powers.

150. The maximum radiated power permitted under the Rules adopted herein is tabulated below:

<u>Channels</u>	<u>Effective Radiated Power</u>
2-6	20 dbk (100 kw)
7-13	25 dbk (316 kw)
14-83	30 dbk (1000 kw)

151. In making these increases in power we recognize that not all stations in all communities will operate with such maximum power. Where stations operate with such maximum power the resulting added coverage of the stations will almost always more than offset the decreased service areas of other stations affected. We have, further, by reason of the mileage separations which we have required in the Rules, provided that where such powers are used the service area involved will not be unduly reduced. Accordingly, we believe that the provisions with respect to increased power made herein are required in the public interest in order to provide a more effective use of the portion of the spectrum devoted to television broadcasting.

152. In the Third Notice the Commission stated with respect to antenna heights:

Any station may be authorized on appropriate application to increase its power to the maximum set forth above without the necessity of a hearing so far as interference to other stations is concerned. The use of antenna heights greater than 500 feet above average terrain is encouraged as a means for improving the quality of service. If an antenna height greater than 500 feet is used, the effective radiated power shall be limited to that value which will avoid interference within the Grade A service radius of any other station, either existing or provided for in the Table of assignments, on the basis of the operation of such station with the maximum power and antenna height of 500

36/ As used herein "dbu" signifies field strengths in decibels above one micro-volt per meter.



feet as set forth above. Where antenna heights of less than 500 feet are utilized, the effective radiated power shall not exceed that listed above.

153. Several comments have been filed with respect to the application of the proposal in the Third Notice to limit increases in antenna height because of adjacent channel interference. These comments contend that the Commission should not prevent the use of heights above 500 feet because of interference that might be caused to stations operating on adjacent channels. The American Broadcasting Company^{37/} points out that in the case of WJZ-TV located on the Empire State Building, the power would be restricted under the Third Notice to 15.4 dbk because of the assignments of the adjacent channel to New Haven. ABC proposes that when antenna heights above 500 feet are utilized the limitation on power shall only apply where the Grade A service is invaded by the co-channel interference. ABC also points out what appears to be the discontinuity existing in the Commission's proposal between antenna heights of 500 feet and those above 500 feet. ABC cites the case of two adjacent channel stations in the Channel 7-13 range with transmitters separated by 60 miles. Under the proposal in the Third Notice, both stations would be permitted to use powers of 23 dbk at 500 feet antenna height even though both stations would suffer a reduction in area of 31 square miles within their Grade A contours. If, however, one of the stations used, for example, an antenna height of 505 feet through choice or necessity, application of the proposed rule would result in reduction of the power of this station to approximately 19.5 dbk and the service area would be reduced from 3220 to 2465 square miles, a loss of 23%. ABC contends further that the proposal is inconsistent with other Commission proposals which encourage high antennas wherever feasible both to increase service and reduce interference. It also contends that the gain in service area by increasing the antenna height of one of the stations is much greater than the loss of service area to the adjacent channel station which has not changed its height. General Teleradio, Inc., took a position similar to that of ABC.

154. The Allen B. DuMont Laboratories, Inc., also notes the alleged discontinuity in the power/height proposal and suggests that the rule might be amended to permit both the affected stations to agree to increase power simultaneously. A. Earl Cullum comments that the proposed power/height rule is a good general allocation principle provided it is tested by co-channel conditions. If the proposed rule is adopted, he claims, it would discourage rather than encourage the use of taller antennas. Cullum further states that the rule would place an arbitrary requirement in the Rules and prevent a station from providing additional service. James C. McNary requests that the adjacent channel interference considerations for antennas above 500 feet on certain channels should be clarified.

^{37/} The situation involving KECA-TV, the ABC station in Los Angeles, and KFMB-TV, San Diego is discussed separately below.



Earle C. Anthony, Inc., recommends that -6 db 38/ rather than 0 db be used as the permissible adjacent channel ratio. 39/ He cites testimony of Thomas Goldsmith and William Lodge to substantiate a -6 db ratio.

155. Although several parties subscribed to the Commission's Third Notice in toto and thus by implication were on record as favoring the adjacent channel ratio and power-height relationship, none of these parties singled this item out for specific comment. Elm City Broadcasting Corporation (WNHC-TV), New Haven, Connecticut, filed comments opposing the comments of ABC, Inc., and General Teleradio, Inc. The comments of WNHC-TV are based on its particular situation with regard to possible adjacent channel interference from WJZ-TV and WOR-TV, with WNHC-TV operating on Channel 8. It is contended that it would be unfair to limit the service areas of stations receiving adjacent channel interference from other stations utilizing particularly high antennas beyond the extent contemplated in the Third Notice.

156. The record clearly supports the use of greater antenna heights where possible to achieve maximum channel utilization. However, the existence in some cases of a small amount of adjacent channel interference would, if the proposal in the Third Notice is adhered to, prevent the accomplishment of the very objective which is sought. In fact the parties point out a discontinuity in the heights and power, which would exist under the Third Notice proposal. The parties, therefore, proposed to remove this limitation and would provide for the acceptance of a small amount of adjacent channel interference over and above that originally contemplated. The record shows that this small amount of interference is minor when compared with the accompanying gain in service and consequently should not prevent acceptance of the parties' proposal, particularly since adjacent channel interference is susceptible to treatment by technical expedients and at the most results in a substitution of one service for another in so far as the listener is concerned.

157. Adjacent channel interference has not been a severe problem in the past and it appears that it is not costly to provide additional adjacent channel selectivity in receivers if necessary. We believe the record supports a 0 db adjacent channel interference ratio. On this basis the rules with respect to adjacent channel mileage separations will not unduly reduce service areas of individual stations. Accordingly, we have deleted from the Rules adopted herein any provisions which would prevent the use of higher antennas because of adjacent channel interference that would be caused to other stations.

38/ As used herein adjacent channel interference ratio signifies the ratio of median desired and undesired field strengths.

39/ Lynchburg Broadcasting Corp., Lynchburg, Virginia; KTTV, Inc., Los Angeles, California, and KMTR Radio Corp., Los Angeles, California, all propose an adjacent channel interference ratio of -6 db.

158. The Commission has also given further consideration to the use of antenna heights above 500 feet. As we have pointed out the record clearly supports a policy of the encouragement of increased antenna heights. The record contains detailed engineering studies showing that increased antenna heights are much more advantageous than increased power. It is shown that the ratio of service area gained to service area lost by other stations increases with antenna height. It has also been shown that a given increase in radiated power is more effective with higher antenna heights than it is with an antenna height of 200-500 feet. When two stations are operating co-channel and one station is allowed to increase its antenna height greatly in excess of the other, the increase in area covered by the first station will greatly exceed the loss in service to the second station. If the two stations do not change antenna heights, but the first station increases power, the area gained by that station is still greater than that lost by the second station but the effect is not as pronounced as is the case where the antenna height is increased. Again it should be emphasized that in all cases the service areas are not unduly reduced when the minimum spacings are maintained.

159. Accordingly, in order to achieve a more efficient utilization of each television channel we are modifying the provisions with respect to the use of antennas over 500 feet to specify that in Zones II and III where wider station separations have been maintained in the Table 40/, antennas will be authorized in the VHF up to heights of 2000 feet, with maximum power, without regard to co-channel interference that will be caused by such operation with the greater antenna height. In Zone I 41/ we have provided that VHF stations may use antennas up to a height of 1000 feet, with maximum power. In view of the fact that station separations in this Zone are lower than Zones II and III, and in view of the fact that cities in Zone I are more closely located than cities in Zones II and III, until a larger body of data is available with respect to operation with antenna heights over 1000 feet with higher powers, we are unable to permit operation with such powers at heights over 1000 feet. The rules we have adopted with respect to antenna heights in the VHF constitute no substantive modification of the proposal in the Third Notice. Stations in the VHF, under the Third Notice proposal, would have been entitled to operate with antenna heights of 2000 feet since at those heights there would be no interference to Grade A service to co-channel stations, assuming co-channel operation at maximum power and an antenna height of 500 feet (as was done in the Third Notice).

40/ For a description of Zones II and III, see Paragraphs 117-126 above.

41/ For a description of Zone I see Paragraphs 117-126 above.



160. In the UHF we have provided in our Rules that stations may operate at full power in all Zones, with antennas up to a height of 2000 feet, without regard to co-channel interference that will be caused by such operation with the greater antenna height. We have provided no special rule with respect to Zone I in view of the fact that UHF stations will not be able to operate with maximum effective radiated power for some time to come. We recognize that in the UHF, loss of Grade A service of a co-channel station operating with maximum power (30 dbk) and an antenna height of 500 feet would be caused by another station operating on the same channel with 2000 feet and one megawatt power where the co-channel separation was less than 183 miles. We feel, however, that any loss of Grade A service that is caused by operation with such greater antenna heights and maximum power should be permitted in view of the added service gained.

161. Our choice of a 2000 foot antenna height limit is based, mainly, on the fact that the propagation data in the record at heights over 2000 feet is extrapolated from data obtained under 2000 feet. Moreover, relatively few stations are now or will in the near future be operating at heights over 2000 feet, and these are primarily in areas where greater co-channel separation has been maintained. Where the height is above the 2000 foot maximum we have provided a chart in the Rules which permits operation with less than maximum power but which nevertheless gains some of the benefits afforded by sites over 2000 feet. We encourage interested individuals and licensees to conduct propagation tests to determine the effect of operation with high powers and antenna heights over 2000 feet. When such data becomes available the Commission will consider appropriate changes in the chart established for the determination of power where antenna heights over 2000 feet are used.

162. In Zone I where the greatest permissible VHF antenna height with maximum power is 1000 feet, higher antenna heights will be permitted but only with appropriate reductions in power. A chart has been included in the Rules to make possible the determination of the power that will be permitted at any antenna height over 1000 feet. It will be noted that we have maintained the power ratio of 3.16 to 1 between powers to be employed on Channels 2-6 and 7-13.

163. There remains for consideration the comment of the American Broadcasting Company which requests that KECA-TV, owned and operated by ABC on Channel 7 in Los Angeles, be permitted to operate with maximum power on top of Mount Wilson. ABC requests that the Commission's Rules authorize operation with maximum power even at heights such as that on top of Mount Wilson. If such operation is not permitted as a matter of general rule, ABC requests that an exception be made in the case of KECA-TV. Opposition to this request has been filed by the Kennedy Broadcasting Company which owns and operates KFMB-TV on Channel 8 in San Diego, California. KFMB-TV is located 106 miles from KECA-TV. KECA-TV has an antenna height of 3040 feet above average terrain and an antenna height of 4987 feet in the direction of KFMB-TV. The basis of Kennedy's opposition is that operation at maximum power on top of Mount Wilson will cause excessive interference to operation of KFMB-TV, especially in view of what is alleged to be unusual propagation characteristics prevalent in that area by way of the troposphere.

164. We have above decided that VHF stations in Zones II and III will have a right to operate with maximum power with antenna heights up to 2000 feet above average terrain and that at heights above 2000 feet, a special chart shall

be used to determine maximum power. It is to be noted that KECA-TV would be permitted to operate with the maximum power of 21.9 dbk (155 kw) at its present location on Mount Wilson. No special circumstances are presented which would warrant a special rule in the case of KECA-TV. Nor do we believe that the Commission should adopt any special rules at this time to afford protection against adjacent channel interference when one of the stations is operating with an antenna height over 2000 feet at the maximum powers provided for in the special chart. With particular reference to the KECA-TV - KFMB-TV situation, we do not believe that KECA-TV operating with the maximum power permitted will cause excessive interference to the operation of KFMB-TV in San Diego. At a later time when more extensive propagation data is available with respect to operation with higher powers at antenna heights over 2000 feet, we will be in a position to re-examine problems of a general nature or relating solely to specific communities, that are created by adjacent channel interference. Such examination will be made in the light of further data which will then be available with respect to receiver selectivity characteristics.

165. In establishing Rules with respect to power and antenna height we have considered the effect of our action on the development of the UHF. We are unable to conclude that the Rules adopted herein will prevent the fullest development of this new and valuable portion of the spectrum. We believe that under these circumstances it is clearly in the public interest to make the most efficient use of both the VHF and the UHF by providing for the use of antennas and powers that will permit the listening public to receive the most and the best service possible.

Adjacent Channel Separations

166. The Third Notice of Further Proposed Rule Making stated with respect to adjacent channel separations:

Adjacent Channel Separation. Under the present television standards, objectionable adjacent channel interference results when the ratio of the desired to the undesired signal falls below 6 db. The Commission's proposals of July 11, 1949 did not recommend any change in this ratio. Considerable data presented to the Commission indicate that this ratio is too conservative and that it could be 0 db or -6 db. In general, adjacent channel interference has not been of a serious nature and such problems as do exist can be solved to a very considerable extent by improvements in receiver design which are neither difficult nor costly. Experience has shown that many receivers are giving satisfactory adjacent channel performance in areas where interference is predicted under the present standards.

The Commission's proposals of July 11, 1949, provided for a normal adjacent channel separation of 110 miles in the VHF band and 100 miles in the UHF band — one-half the distance provided for the normal co-channel separations. Since adjacent channel interference is so readily subject to being controlled by adequate design and production methods by manufacturers, the Commission believes that adjacent channel separations should be reduced, thus making possible a greater number of assignments. The Commission is of the opinion that these separations should be based upon receiver performance



which may reasonably be expected of manufacturers and not on the characteristics of the poorer receivers. Separations have been based on the assumption of receivers having an adjacent channel rejection ratio of -6 db. Thus, a median field strength ratio of 0 db should provide service from one station or the other at each receiver location for at least 90 percent of the time, irrespective of signal fading. The Table of Assignments has been based upon an adjacent channel separation between cities of 70 miles for Channels 2-13 and 65 miles for Channels 14-83. The separations between transmitters are 60 miles for Channels 2-13 and 55 miles for Channels 14-83.

167. For the reasons stated above, we have deleted from the Rules adopted herein any limitation on the use of antenna heights based upon adjacent channel interference. Under these circumstances we are of the opinion that we have no need of specifying in our Rules a definite ratio of desired to undesired field strengths on adjacent channels. The adjacent channel separations provided for herein will not unduly reduce the service area of individual stations. We have, therefore, eliminated all reference to adjacent channel ratios and we have provided that the minimum mileage separation requirements should alone govern spacing of adjacent channel stations.

168. The Commission's Third Notice stated that the proposed Table of Assignments was based on minimum adjacent channel separations between cities of 70 miles for Channels 2-13 and 65 miles for Channels 14-83. We have lowered the minimum co-channel assignment spacing requirements in Zone I to 170 miles in the VHF and to 155 miles in the UHF. We, therefore, believe that the minimum adjacent channel assignment spacing requirements should be reduced proportionately to 60 miles in the VHF and 55 miles in the UHF. Moreover, we do not believe it necessary to impose higher minimum assignment spacings for adjacent channel operation in the other Zones. Excessive tropospheric propagation has no relation to adjacent channel spacings since the effects of such propagation are felt at long distances from the transmitter rather than at relatively close distances. Accordingly, the reasons for treating Zone III differently from the rest of the country do not obtain in the case of adjacent channel spacings. Further, we do not believe we should have higher adjacent channel spacings in Zone II than we have provided for in Zone I. As we have pointed out, high minimum assignment spacings tend to decrease the number of assignments that may be made. In the case of co-channel spacings it is necessary to establish higher minima since in Zones II and III people in the rural areas tend to rely on service from stations relatively far away. But in the case of adjacent channel interference the listener does not suffer unduly. He will continue to receive one of the two potential services. In view of this fact, the minimum adjacent separations may be the same for the whole country and the following minima have been established:

VHF	60 miles
UHF	55 miles

Oscillator Radiation

169. The Third Notice of Further Proposed Rule Making stated:

Oscillator Radiation - (a) VHF. The Commission's proposed Table of television channel assignments set forth in its Notice

of Further Proposed Rule Making, issued on July 11, 1949, did not take into account the effects of receiver oscillator radiation on assignments in the VHF or UHF band. Evidence has been presented to the Commission concerning interference caused to receivers as a result of the use of a 21 mc. I.F. by manufacturers of receiving sets. In order to avoid such interference, Radio-Television Manufacturers Association has adopted as standard an I.F. of 41.25 mc in the VHF and UHF bands. No oscillator radiation problems are involved for these VHF receivers so far as television stations operating in the VHF is concerned. Because of the large number of television receivers now in use employing the 21 mc I.F., efforts have been made to minimize such interference without reducing the number of VHF assignments in the proposed table.

(b) UHF. There was general agreement at the above hearings that oscillator radiation is likely to be more severe in the UHF band than in the VHF band, due to the difficulty in suppressing such radiation in the higher frequencies. Further, because of the wide span of the UHF band it is not possible to place the oscillator outside the band and still employ an I.F. which is practical in the present state of the art.

Evidence was offered concerning a method of dealing with the oscillator radiation problem based on the "fold in" principle. It was proposed to divide the UHF band into four equal parts; to employ the lower and upper quarters for most assignments; to confine all oscillator radiation within the two center quarters; and to employ an I.F. of 111 mc. The Commission believes that the use of an I.F. of 111 mc. in television receivers is not feasible at this time. Existing tubes and those available in the foreseeable future will not permit adequate amplification with a reasonable number of I.F. stages. The use of the proposed I.F. will reduce adjacent channel selectivity. Further, setting up one-half of the UHF band as a repository for oscillator radiation would provide little incentive for receiver manufacturers to reduce such radiation. Accordingly, the "fold in" principle has not been adopted in preparing the proposed Table.

Although the Commission expects that continued improvements may eliminate the problem of oscillator radiation in the future, it does not appear practicable to expect such receivers in the near future. ^{10/} Hence, the UHF table has taken into account the standard I.F. of 41.25 mc adopted by the RTMA. Thus, stations in the UHF which are 7 channels apart are required to have their transmitters separated by a minimum of 60 miles. This separation affords substantially the same protection as does the co-channel separation provided for above.

^{10/} This same observation is also applicable to intermodulation, image interference and I.F. beat problems discussed below.

170. Communications Measurements Laboratories, Inc., proponent of the fold-in principle described above, objected to the proposal made in the Third



Notice. In its objection, CML reiterates its position with regard to the "fold-in" principle. Upon full consideration of the record and the objections of CML, the Commission is still of the opinion that the views of CML are not sufficiently substantiated, either theoretically or by test, to provide assurance that an intermediate frequency in the 111 mc range is currently practical. For this reason and for the reasons set out in the Third Notice, it is concluded that the Table of UHF Assignments should not be based on the "fold-in" principle. It is concluded further that there is inadequate evidence to support the establishment of an assignment Table on the basis of an intermediate frequency other than 41.25 mc. Accordingly, the proposals with respect to oscillator radiation made in the Third Notice are now finalized and stations in the UHF which are 7 channels apart are required to be separated by 60 miles. In view of the nature of the interference, different spacings are not necessary in the different Zones which have been established in connection with co-channel assignment spacings. A similar observation pertains to intermodulation, image interference and I.F. beat problems discussed below. 42/

171. The separations established herein to protect against oscillator radiation are based on the principle of non-overlapping Grade A service areas of stations 7 channels apart, so that receivers within the Grade A service area of one such station would not normally be tuned to receive service from the other station which would not be as good in quality. This arrangement reduces the probability of local oscillator interference within the Grade A areas of the respective stations. Since this protection is not absolute and is confined primarily to the Grade A service areas, it remains of utmost importance that continuing efforts be made to reduce the magnitude of local oscillator radiation in UHF receivers. It should also be emphasized that the success of separation requirements which recognize oscillator radiation and spurious responses depends on general industry adherence to the basic premises i.e. use of the standard I.F. of 41.25 mc and fundamental oscillator operation. It would appear that the manufacturing industry has a direct responsibility to the set-purchasing public to avoid the harmful consequences of deviation from this protective standard. It would be unfortunate if the manufacturing industry or an appreciable portion thereof were to use different standards without adequate suppression measures. In this event, the Commission will of necessity be faced with the need for a reexamination of the problem to determine what more effective measures may be necessary to avoid the harmful consequences to the public.

Image Interference

172. The Third Notice of Further Proposed Rule Making stated:

Image interference (picture and sound). Image interference has raised no problems in the VHF band since a signal from another television station removed from the desired channel by twice the I.F. does not normally fall in another television channel. In the

42/ It should be pointed out that the separation requirements imposed to protect against oscillator radiation, intermodulation, images and I.F. beats do not provide for protection against interference of the above character which is caused by radio services operating outside the television band.

UHF band, however, where there is a large number of contiguous channels, image interference is expected to present interference problems. No allowance was made for this factor in the Commission's proposed table of July 11, 1949. The record indicates that image rejection of 30 to 40 db can be provided by UHF receivers of reasonably good design which employ a 41.25 I.F. There was general agreement that image interference should be avoided in making channel assignments. Accordingly, a minimum separation of 75 miles is provided between transmitters where UHF stations are separated by 15 channels to provide against picture image interference, and a minimum separation of 60 miles between transmitters where UHF stations are separated by 14 channels to provide protection against sound image interference. This separation provides substantially the same protection to the picture of a desired station as does the co-channel separation provided for above. A slightly smaller separation is provided for in the case of the sound image than the picture image because of the lesser interfering effect of the former.

173. There were no oppositions to the Commission's proposal in this regard, with the exception of Communications Measurements Laboratories, whose counterproposal has been previously discussed and rejected. Since the separation to minimize image interference is based on the intermediate frequency of 41.25 mc and since the CML comments on image interference are based on a 111 mc I.F., which has previously been rejected, the CML comment with respect to image interference need not be given further consideration. For the reasons set out above the proposal with respect to image interference is adopted and a minimum spacing of 75 miles is maintained between UHF stations separated by 15 channels to provide against picture image interference and a minimum separation of 60 miles is maintained between UHF stations separated by 14 channels to provide against sound image interference.

I.F. Beat

174. The Third Notice of Further Proposed Rule Making stated:

I.F. Beat. It is recognized that when two stations in a city are separated by an I.F. it is possible that the two signals will combine to provide a beat signal which will be picked up by the I.F. Amplifier. Where a 41.25 mc I.F. is in use, such signals may exist in channels which are separated by seven or eight channels from the desired station. The effect is similar to that of intermodulation. As indicated above the seven channel separation is taken care of by the separation which is used to avoid oscillator interference. Accordingly, stations in the UHF band which are separated by eight channels are required to have a minimum separation of 20 miles between transmitters.

There were no oppositions to this proposal. For the reasons set out above, the proposal with respect to I.F. beat is adopted, and UHF stations separated by 8 channels are required to be separated by 20 miles.



Intermodulation

175. The Third Notice of Further Proposed Rule Making stated:

Intermodulation. The Commission's proposed table of July 11, 1949, did not take into consideration the effects of intermodulation. Although interference resulting from intermodulation has not been a problem in the VHF band, it is generally agreed that intermodulation is likely to be a more serious problem in the UHF band. Various arrangements have been proposed for reducing intermodulation such as a staggered arrangement of channels, or by wide frequency separation. Testimony in the record indicates that a three or four channel separation would serve an adequate protection against intermodulation. The Commission has concluded that the best method of avoiding problems of intermodulation is to use a normal minimum separation of six channels in a city, thus allowing for a desirable safety factor. There is general agreement that a distance separation of 15 to 20 miles is sufficient to provide protection against intermodulation since sufficiently high field intensities from two to more stations would not normally exist at any point between stations so separated. Accordingly, in preparing the UHF assignments in the attached Table, stations closer than 20 miles have not been assigned channels less than six channels apart.

176. With regard to intermodulation, DuMont filed a comment which stated:

The Commission's finding that "the best method of avoiding problems of intermodulation is to use a normal separation of six channels in a city, thus allowing for a desirable safety factor" applicable to UHF allocation would appear to be incorrect. Intermodulation results from the assignment of three stations to a city with an even two-channel jump between stations (Tr. 13449-13451). For example, the assignment of Channels 14, 16 and 18 to the same city would cause intermodulation, but 14, 16 and 19 would not result in interference (Tr. 13449).

Recommendation. A separation of 20 miles between channels which cause intermodulation interference is recommended. The restriction of assignment of frequencies less than six channels apart which do not cause interference should be eliminated as wasteful of spectrum.

177. DuMont is in error in confining its consideration of intermodulation to three stations. It is easily shown, from the testimony in the record, that third order intermodulation produced by the combination of only two signals can occur in the UHF TV band. This type of intermodulation produces spurious signals on frequencies (f_x) which can be computed as follows:

$$f_x = 2f_a - f_b$$

where f_a is the frequency of one station and f_b is the frequency of the other station. This formula produces two values of f_x , as each station is represented by f_a and f_b , respectively. These spurious signals could cause harmful interference to reception of stations even outside the 20 miles protection separation.

178. DuMont erroneously confines its consideration of intermodulation to stations assigned with a "two-channel jump". Although, other factors being equal, the intensity of the spurious signals produced by intermodulation tends to decrease as the frequency separation between stations is increased, intermodulation does not abruptly disappear at any particular value of frequency separation. DuMont therefore errs in stating that Channels 14, 16 and 19, assigned in the same city, would not result in interference. As is shown in the following example, the sound carrier of Channel 16 and the picture carrier of Channel 14 can produce a spurious signal due to intermodulation which falls within Channel 19 and causes interference. Similarly, the picture carrier of Channel 19 and the sound carrier of Channel 16 can combine to produce a spurious signal due to intermodulation which can cause interference to Channel 14.

Example:

Channel 14: 470-476 mc.; Channel 16: 482-488 mc.; Channel 19: 500-506 mc. Let the sound carrier of Channel 16, 487.75 mc., be f_a and the picture carrier of Channel 14, 471.25 be f_b . Then from the formula above ($f_x = 2f_a - f_b$):

$$f_x = 2(487.75) - 471.25 = 504.25 \text{ mc,}$$

which falls within and can cause interference to Channel 19.

Similarly, if f_a be the sound carrier of Channel 16, 487.75 mc, and f_b be the picture carrier of Channel 19, 501.25 mc,

$$f_x = 2(487.75) - 501.25 = 474.25 \text{ mc,}$$

which falls within and can cause interference to Channel 14.

It is also apparent from the foregoing example that it is necessary to take into account the channel spread of each spurious signal due to intermodulation. Each third order intermodulation combination produced by television signals having a 6 mc channel width results in a potential spurious signal covering a channel width three times as great, or 18 mc. Thus, when stations are assigned Channels 14 and 16, intermodulation produces spurious signals on Channels 17, 18 and 19 — not merely on Channel 18 as assumed by DuMont.

179. Except for the DuMont comments, there was no opposition to the Commission's proposal with regard to intermodulation. In view of the foregoing, it is concluded that the Commission's proposal concerning intermodulation should not be changed and that UHF stations separated by less than six channels should be separated by at least 20 miles.

Multiple Interference

180. The Third Notice stated with respect to multiple interference:

In preparing the Table of Assignments, a study was made of several cases of multiple interference involving relatively uniform co-channel station separations in congested areas. This study based on information and data presently available, indicates that the grade A service areas obtained with the maximum powers as specified above



are not infringed by combined interference from more than one signal when non-directional receiving antennas are assumed to be used. Moreover, if receiving antennas are assumed to have 6 db rejection in the directions of the undesired stations, the multiple interference under these conditions is not expected to exceed the single station case where no receiving antenna directivity is assumed. Thus, it appears that interference from more than one station may be accounted for satisfactorily by plotting a composite interference-limited contour on the basis of the most severe limitation in each direction due to any single interfering station. This approximation appears to be sufficiently accurate for the purpose of determining station separations and power limitations. Accordingly, it is proposed that interference from each station will be determined on an individual basis and that calculation of the effects of multiple interference will not be required.

181. No objections to this proposal have been received. Accordingly, the proposal has been followed in this proceeding.

Facilities Spacing

182. We have above discussed the difference between assignment spacing requirements and facilities spacing requirements and have also described the manner in which such spacings will be measured. In the Third Notice it was provided that minimum facilities spacings would be 10 miles less than minimum assignment spacings. A number of parties 43/ have objected to the fact that the minimum assignment requirements proposed in the Third Notice were higher than the minimum facilities spacings requirements.

We believe upon consideration of the whole record and comments in this proceeding that minimum facilities spacing requirements should be the same as minimum assignment spacing requirements. The reason stated in the Third Notice for lower minimum facilities spacings was to provide flexibility in the location of transmitters and in order to give communities within 15 miles of a city an opportunity to take advantage of the 15 mile rule. Upon reconsideration of this matter we believe that the advantages of such flexibility are more than counter-balanced by the inconsistencies which would arise from having rules under which minimum facilities spacing requirements would be lower than minimum assignment spacing requirements. For under such rules, a petitioner seeking an assignment, in a rule making proceeding, could not secure an assignment where by proper measurement to an existing transmitter the proposal satisfied the lower facilities spacing requirements but did not satisfy the higher assignment spacing requirements. Accordingly, in the Rules adopted herein we have made all minimum facilities spacing requirements identical with minimum assignment spacing requirements.

Offset Carrier

183. In the Third Notice the Commission stated with respect to offset carrier:

43/ See footnote 22 above.

The Commission's proposals of July 11, 1949, did not provide for the use of offset carrier operation either in the VHF or UHF band. Testimony presented at the hearing on the General Issues in the proceedings herein substantially favored offset operation and tests have indicated that such operation resulted in an improvement of approximately 17 db over non-offset carrier operation. A survey conducted by the Joint Technical Advisory Committee of stations engaged in offset carrier operations indicates practically unanimous support therefor. Although a question has been raised concerning possible frequency stability of transmitters used in these operations, it appears that this problem is not serious and that frequency stability can be provided which will insure adequate and proper offset carrier operations. Accordingly, the Commission has concluded that separations should be based upon stations employing offset carrier operation. When these rules are adopted as final, the Commission will specify the exact frequency to be utilized by each station for offset carrier operation. In the VHF band, stations will be offset from each other by plus or minus 10 kc and 1 kc tolerance will be specified. Similar requirements will be applied to UHF stations, but the specific values will be determined at a later date.

184. James C. McNary has filed a comment which states the following:

The operation of offset carrier transmitters in the UHF portion of the spectrum, in particular, will require development of new frequency control apparatus, and will probably require continual monitoring of this apparatus from a central frequency standard, such as WWV, to maintain satisfactory operation. The continual monitoring believed to be required may be facilitated by appropriate choice of channel frequencies. For example, specifying the video carrier frequency to be an integral multiple of 1 megacycle may assist materially in simplifying the frequency control equipment. If the video carrier frequency is so specified, the sound carrier frequency and the frequencies defining the limits of the channel would have to be shifted from what would otherwise be their normal operation, if the established channel characteristics are to be maintained. The recommendation is therefore respectfully made that the specification of UHF channel frequencies be deferred until after an informal engineering conference to determine best system procedure. No specific page or exhibit in the transcript relates to this item.

185. We recognize that the adoption at this time of the Table of Assignments on the basis that all channels start on frequencies with integral numbers creates a situation whereby the video carrier of each UHF, as well as each VHF channel, is placed on a fractional number. We feel, however, that there is no evidence in the record to support Mr. McNary's position that it is more difficult to achieve satisfactory stability of monitoring equipment when operating with video carriers whose frequencies are fractional numbers than when the frequencies are integral numbers. No evidence was received in the record on this point from either Mr. McNary or any other person. Further, exact integral frequency operation could not be conducted in the majority of cases in any event since two of every three stations operating with offset carrier



would have to operate on frequencies with fractional numbers. Despite the fact that many manufacturers were parties to this proceeding, Mr. McNary's problem was not raised at all. In addition it would appear that little, if any, additional equipment is required to maintain satisfactory stability of monitoring equipment when operating with quarter megacycle as compared with integral megacycle steps. Further, the evidence expressly established that equipment will be available for operation with offset carrier in the UHF. For this reason we are finalizing our proposal for the use of offset carrier in the UHF without further proceedings.

186. With the exception of James C. McNary's comments, no objections were filed to the use of offset carrier as proposed. RCA-NBC in its comment has supported the Commission's proposal.

187. In the Third Notice the Commission set specific tolerances for the use of offset carrier in the VHF and stated that similar requirements will be applied to UHF stations. The Third Notice, however, did not provide specific values in the case of UHF stations. Upon examination of the record we have determined that the tolerances with respect to the use of offset carrier should be the same both in the UHF and VHF. Accordingly, in the UHF band stations will be offset from each other by plus or minus 10 kc and 1 kc tolerance will be specified. With this addition the Commission's proposal with respect to offset carrier operation is being finalized.

188. Inasmuch as a considerable period of time will be required to work out offset frequencies for the assignment plan, such designations are not being made at this time but will be forthcoming at an early date. The licenses of existing stations will be modified in accordance with the designations that will be made and a transition period will be provided for in which existing stations may commence operation with offset carrier. A delay with respect to the establishment of specifications should have no effect on applications that may be filed by licensees or new applicants since the exact carrier frequencies for any particular channel do not become important until shortly before commencement of operation with offset carrier.

Intermixture of VHF and UHF Channels

189. In the Third Notice, the Commission said with respect to the intermixture of VHF and UHF Channels:

The Commission's proposed table of July 11, 1949, was based to a considerable degree on the assignment of VHF and UHF channels in the same city. During the hearing on the General Issues, it was urged by some witnesses that the elimination of intermixture would simplify receiver problems and would minimize the broadcasters' competitive problems. It was argued that intermixture would tend to deter the construction of UHF stations and that until a large number of VHF-UHF receivers were distributed, such UHF stations as were constructed would have difficulty in surviving. On the other hand, many witnesses favored intermixture on the ground that it was impracticable to avoid it; that UHF stations would be constructed in cities located within the service areas of VHF stations and television viewers would expect their sets to receive both signals; and that receiver manufacturers would be obliged to build combination VHF-UHF receivers for such areas.

It is reasonable to assume that economic problems will be faced by UHF broadcasters in areas where VHF broadcasting exists. Similar problems confronted the VHF broadcasters prior to increased receiver distribution in their respective areas. It is reasonable to assume that if the entire UHF band is allocated for regular television broadcasting, television receivers will be built to receive VHF and UHF signals. If intermixture were avoided, it would be necessary to limit many areas to one or two VHF stations even though UHF assignments were available for those areas and additional stations could be supported financially. Moreover, VHF stations are capable of providing a greater coverage than UHF stations. Hence, a more extensive television service is made available where some VHF assignments are made in as many communities as possible than where only VHF assignments are made in some communities and only UHF assignments are made in other communities. The Commission has concluded that the adoption of an assignment table based on non-intermixture constitutes a short-term view of the problem and is inadvisable. Accordingly, the proposed table attached herein has been prepared on the basis of intermixture of VHF and UHF channels.

190. Pursuant to Paragraph 12 of the Third Notice several of the parties object to or raise questions with respect to the intermixture of VHF and UHF channels in individual cities. These objections and questions are treated in the city-by-city portion of this Report. Mercer Broadcasting Company, Trenton, New Jersey, Lehigh Valley Television, Inc., Allentown, Pennsylvania, Radio Wisconsin, Inc., Madison, Wisconsin and Presque Isle Broadcasting Company, Erie, Pennsylvania, filed comments in which they contend that the intermixture of UHF and VHF is contrary to the public interest because they are not and may never be truly competitive services. Based on this allegation, these parties propose that all commercial television stations should be assigned to the UHF. This proposal has been considered in another portion of this Report. In so far as the comments of Mercer and Lehigh Valley relate to the application of §307(b) of the Communications Act they are treated below in further detail.

191. DuMont Laboratories, Inc., filed a comment which objects to the manner in which the Commission has applied the intermixture principle in its Assignment Table. It is to be noted in this regard that DuMont's own alternative assignment plan went very far in accepting intermixture in practice. The basis of DuMont's objection to the use of the intermixture principle in the Commission's Assignment Table is the effect that wide dispersal of VHF channels has on the number of VHF channels available to the large cities. Accordingly, DuMont's objection to the application of the intermixture principle in the Commission's assignment plan relates basically to matters that have been considered above in connection with the discussion of the DuMont nationwide assignment plan.

192. On the basis of the comments that have been received pursuant to Paragraphs 11 and 12 of the Third Notice, the Commission is not persuaded that its decision with respect to intermixture of VHF and UHF channels set out in the Third Notice was in error. With particular reference to the comments of DuMont, the Commission cannot subscribe to an assignment plan which in order to assign 4 VHF channels to as many large cities as possible disregards other important objectives. We have above considered the merits of DuMont's



objections to the basic principles underlying the Commission's assignment plan. Our dismissal of these objections foreclose the adoption of DuMont's approach to the intermixture problem.

193. Related to the intermixture problem are objections to the Commission's proposed Table, on the ground that it did not provide for a separate and distinct assignment of VHF and UHF channels. These parties 44/ contend that because of distinctions which exist between channels in the VHF and UHF band, the Commission is required to assign VHF and UHF channels separately, in order to satisfy the requirements of §307(b) of the Communications Act, which provides:

In considering applications for licenses, and modifications and renewals thereof, when and in so far as there is demand for the same, the Commission shall make such distribution of licenses, frequencies, hours of operation, and of power among the several States and communities as to provide a fair, efficient and equitable distribution of radio service to each of the same.

194. At the outset it should be stated that we agree with the contention of the parties in so far as they claim that the Commission should disperse both VHF and UHF widely among states and communities. The Assignment Table proposed in the Third Notice and the Assignment Table adopted herein make a wide dispersal of both VHF and UHF channels among the states and communities. We must, however, reject the contention of the parties that §307(b) requires the Commission to treat VHF channels as completely different from UHF channels in making an Assignment Table. We think it clear that the fair, efficient and equitable distribution required by the Communications Act has reference to over-all distribution within any given radio service and not with respect to every type of station within a service. Federal Radio Commission v. Nelson Brothers Bond and Mortgage Company, 289 U.S. 266, at 281. In the case of television, stations operating in the UHF and VHF bands, although marked by distinguishing characteristics, will together constitute an integrated television service. We have concluded, therefore, that the requirements of the Act can best be met by an over-all Table of Assignments, which includes within its scope all channels which will be utilized in the television service. 45/

44/ These parties are: Easton Publishing Co., licensee of FM Station WBBX, Easton, Pennsylvania, and, on a share-time basis with Lehigh Valley Television Inc., applicant for Channel 8 to serve the Allentown-Bethlehem-Easton metropolitan area; Travelers Broadcasting Service Corp., licensee of Stations WTIC and WTIC-FM, Hartford, Conn.; and Mercer Broadcasting Co., licensee of FM Station WTCA, Trenton, N.J. Other contentions with respect to the illegality of this Table made by these parties have been discussed in the Commission's Opinion of July 13, 1951 and the contentions made by the parties are rejected for the reasons set out in that Opinion (FCC 51-709) [7 RR 371].

45/ It is to be noted that some of these parties have not made any specific proposal as to how the channel assignments proposed in the Third Notice should be modified. These same parties have not appeared in the city-by-city portion of the hearing or offered evidence in that portion of the proceeding. In the absence of a specific proposal and evidence relating thereto the Commission is not able to afford them any specific relief.

195. In arguing that §307(b) of the Communications Act required the Commission to make separate and distinct assignments of VHF and UHF channels, the parties lay particular stress on the decision of the Court of Appeals in *Easton Publishing Company v. Federal Communications Commission*, 85 U.S. App.D.C. 33, 175 F(2d) 344. They contend that since there are admitted differences between VHF and UHF television facilities, as in the case of FM and AM, the holding in the *Easton* case must be construed as requiring the Commission to assign the VHF and UHF facilities independently.

196. The parties' reliance on the *Easton* decision is misplaced. The *Easton* decision clearly confirms that the Commission is not bound by a hard and fast rule in achieving the "fair, efficient and equitable distribution of radio service" required by §307(b). And the *Easton* case emphasized that the Commission must decide, in the light of the situation before it, what principles of allocation and assignment will achieve the prescribed statutory goal, and that Congress has conferred broad discretion on the Commission to reach that goal, so long as its discretion is exercised within the standards imposed by the statute. See *Federal Communications Commission v. Pottsville Broadcasting Co.*, 309 U.S. 134; *Ward v. Federal Communications Commission*, 108 F(2d) 486, 491. Cf. *National Broadcasting Company v. United States*, 319 U.S. 190, 224; *Radio Corporation of America v. United States*, 341 U.S. 412.

197. Because television is in a stage of early development and the additional consideration that the limited number of VHF channels will prevent a nationwide competitive television service from developing wholly within the VHF band, we are convinced that the UHF band will be fully utilized and that UHF stations will eventually compete on a favorable basis with stations in the VHF. The UHF is not faced, as was FM, with a fully matured competing service. In many cases UHF will carry the complete burden of providing television service, while in other areas it will be essential for providing competitive service. In view of these circumstances, we are convinced that stations in the UHF band will constitute an integral part of a single, nationwide television service.

198. With respect to the propagation characteristics of the UHF band, as compared to the VHF, we believe that such differences as exist will prove analogous to those formerly existing between the higher and lower portions of the VHF television band. ^{46/} We are persuaded that the differences in propagation characteristics will not prevent UHF stations from becoming an integral part of a single service.

199. It is alleged that equipment for employing higher power in the UHF band is not available and that it is not known when such equipment will be available. This contention is not supported by the record. There is evidence that it will be possible to operate stations in the UHF band with 400 kw radiated power by the time that authorizations are issued for such stations. Further, there is no reason to believe that American science will not produce the equipment necessary for the fullest development of the UHF.

^{46/} See the Commission's decision in the *Washington television case*, *Bamberger Broadcasting Service, Inc.*, 11 FCC 211 [3RR 914].



200. In any event, it is clear that in formulating an assignment table which will be the basis for the over-all development of television broadcasting in this country, the public interest requires the Commission to take a long-range view of the future of television. Present equipment 47/ and economic problems may temporarily handicap operations in the new UHF band and place certain communities at a disadvantage. Such immediate considerations, however, cannot be allowed to obscure the long-range goal of a nationwide competitive television service, in which stations in both the UHF and VHF bands will constitute integral parts. We find that one over-all table of assignments for the television service is best calculated to achieve that goal.

Changes in the Assignment Table

201. In the Third Notice the Commission provided that with certain described exceptions no application for a television station in a community specified in the Commission's Table would be accepted for filing if said application requested a channel which was not contained in the Table. Persons desiring to apply for a channel not specified in the Table would first be required to secure an amendment thereof through appropriate rule making proceedings. Upon consideration of the comments and evidence before it the Commission has decided that it is in the public interest to adhere to this principle. 48/ See Yankee Network, Inc. 12 FCC 751, 1043 [4 RR 164, 412a].

202. We find that the rule we have adopted is necessary to the proper conduct of our business. With the backlog of applications which will be on file for a period of time to come, the joinder of petitions to amend the Table with individual applications inconsistent with the Table would make unduly complex, if not impossible, the determination of issues presented with respect to the distribution of facilities among the states and cities. As we have described above, the current demand for television facilities which would present conflicting applications in different cities and communities in a multitude of cases can only be decided efficiently and appropriately in a rule making proceeding such as the instant one.

203. Moreover, it should be pointed out that similar procedural rules are in effect not only in the AM radio service but also in many other radio services. For example, the Commission does not permit persons to join a

47/ The record before us contains abundant evidence as to the feasibility of adapting existing receivers or building new ones which will be capable of receiving signals on all television channels.

48/ The exceptions referred to in the Third Notice deal first with respect to applications which may be made for Channels 66-83. The principles which will govern the use of these channels have been discussed above. The other exception provided that a channel assigned to a community in the Table of Assignments shall be available, without the necessity of rule making proceedings, to any other community located within 15 miles of the assigned community provided minimum separations are maintained and there is no assignment in the Table for the community concerned. We have finalized this proposal.

petition to change the AM rules with respect to maximum power or the classification of a channel with an application for facilities with more than the maximum permitted power or for facilities on channels on which such facilities are not permitted to operate pursuant to the Rules or Standards. See *FCC v. WJR, The Goodwill Station, Inc.*, 337 U.S. 265, 272; *Pittsburgh Radio Supply House v. Federal Communications Commission*, 98 F (2d) 303.

204. In view of the foregoing, we find the public interest requires the establishment of a Rule providing that the Commission will not accept applications for television stations if the channel requested is not specifically provided for in the Table of Assignments. 49/

205. The Third Notice provided that petitioners proposing changes in the Table would be required to show the extent to which the changes conformed to the priorities listed in the Third Notice. We have above discussed the basic principles which have been adhered to in establishing the Table of Assignments. Upon reconsideration, we have decided to omit any requirement that petitions for changes in the Table show the extent to which the changes conform to specific priorities. Each request for a change in the Rules or Table will merely be required to set out with clarity the reasons for the proposed change.

206. Earle C. Anthony, Inc., has requested that petitions requesting changes in the Table be required to establish that such changes comply with minimum separations and other requirements and that the proposed assignment would protect the Grade A service of assignments in the Table based either on the maximum power at 500 feet for such assignments or the actual power and antenna height employed whichever is greater. Clearly, petitions for changes in the Table would have to indicate whether or not they have met the minimum assignment spacing requirements set out in the Rules and if they do not they would have to indicate the reasons for a change in these requirements. We do not, however, believe that the Commission should impose any requirement that persons seeking changes in the Table of Assignments shall have to establish that the proposed change would protect the Grade A service of assignments already made. We have above made clear that the Commission is not basing the Table of Assignments on any theory of protected contours. 50/ In establishing the Table we have not provided for any protection to specific contours of existing stations in connection with the grant of individual

49/ WTAG, Inc., Worcester, Mass. has proposed that amendments to the Table be permitted without rule making to make a channel assigned in the Table for a community available to another community which has no comparable assignment provided the minimum separations are maintained. The proposal is made apparently to make it possible for Worcester to receive a VHF assignment. The counterproposal of WTAG, Inc., seeking such an assignment for Worcester in this proceeding has been considered in another part of the Report. The instant proposal must be denied since it is inconsistent with the basic functions and purpose of the Assignment Table.

50/ The Third Notice did propose to limit the antenna heights of stations based on protection of Grade A service of other stations operating at 500 feet with maximum power. We have, however, herein deleted this limitation on the use of high antenna heights.



applications. We have determined that the service areas of television stations and the degree of protection from interference will be determined by the minimum spacing requirements established herein.

207. The Houston Post Company has suggested that "in proposing changes in the Commission's Table of Assignments those areas which receive adjacent channel interference should be given the same consideration with respect to protection from co-channel interference as though the adjacent channel interference did not exist." This proposal must be rejected for the same reason set out above in connection with the disposition of the Earle C. Anthony proposal. Since the Commission has recognized no protected contours, it cannot include in its Rules the provisions proposed by the Houston Post Company.

208. The Tribune Company of Tampa, Florida, and Capital Broadcasting Company of Nashville, Tennessee, have both objected to the requirement that changes in the Table be preceded by rule making. Both of these parties based their objection on the allegation that the Assignment Table is based upon fragmentary propagation data and therefore ought to be as flexible as possible. We have in another part of this Report considered the nature of the propagation data upon which the Assignment Table is established. We recognize the extent to which additional propagation data is desirable. We cannot agree, however, that persons should be permitted to join petitions for rule making, which would propose in effect to change the propagation curves, as a result of propagation theory or data relating to specific areas, with applications for television stations in those areas. We believe the public interest requires that in such cases the parties be required to seek to amend the Rules in appropriate rule making proceedings before the Commission accepts for filing applications for channels.

Time Limitations on Changes in the Assignment Table

209. The Third Notice of Further Proposed Rule Making provided that:

Upon adoption in the instant proceedings of the Table of Assignments, said Table shall not be subject to amendment on petition for a period of one year from the effective date of the Commission's final order amending said Table. Upon the expiration of said one year period the Commission will consider petitions filed during said period requesting changes in the Table.

210. The provisions that the Table of Assignments shall not be subject to amendment on petition for a period of one year from the effective date of the final order serves a two-fold purpose. First, it will permit the utilization of the Commission's limited personnel for the consideration and processing of the hundreds of applications for television stations which will be on file when processing of such applications commences. Prompt action upon these applications is clearly necessary and desirable in view of the duration of this proceeding since 1948 and the consequent freeze on the establishment of new stations. The second end to be served by this provision is that the experience gained in the ensuing year in the consideration and processing of applications for new stations will be extremely valuable in the re-evaluation and reconsideration of the Table of Assignments adopted herein and in the disposition of such petitions requesting an amendment of the

Table as will be considered after this period.

211. We believe, however, that some exceptions to this rule are appropriate. We will, during the one year period, accept petitions to amend the Table where they request the assignment of a channel to a community without any assignment in the Table and not eligible for an assignment under the 15 mile rule, the assignment of a non-commercial educational channel in any community to which no such assignment is available under the Table or where they request the assignment of a commercial channel to any community listed in the Table to which no commercial assignment has been made. No petition will, however, be entertained within the one year period where the petition proposes a change of any channel, whether by deletion, addition or substitution or where the minimum assignment separations provided in the Rules would not be met by the proposed assignment. We find that no further rules concerning time limitations with respect to amendment of the Table need be established at this time.

212. Various objections have been made to time limitations on the filing of petitions for amendment of the Table of Assignments. We believe, however, that the time limitations herein adopted are reasonable exercise of the authority given to the Commission by §4(j) of the Communications Act to "conduct its proceedings in such manner as will best conduce to the proper dispatch of business and to the ends of justice." *WJR v. Federal Communications Commission*, 337 U.S. 265; *Pulitzer Pub. Co. v. Federal Communications Commission*, 94 F(2d) 249; *Ward v. Federal Communications Commission*, 108 F(2d) 486; *United Detroit Theatres Corp. v. Federal Communications Commission*, 178 F(2d) 700. Compare also §§1.363(a) and 1.387(b)(3) of the Commission's Rules and Regulations.

213. The Fort Industry Company in its comments has requested that the Commission review any educational reservations made in the Table of Assignments at intervals not in excess of six months and that the Commission require the filing by interested educational organizations of information concerning their progress in establishing non-commercial educational stations in the respective communities in which reservations have been made. As we pointed out earlier, the need for reservation of channels for educational purposes is predicated upon the fact that educational institutions require more time than commercial interests to formulate and implement plans and proposals for the establishment of television stations. Accordingly, a requirement that educational institutions within six months of the final decision and at six month intervals thereafter report their progress in attempting to establish a station is neither desirable nor necessary.

214. The setting aside of channels for non-commercial educational use is precisely the same type of reservation of channels as that provided by the Assignment Table for commercial stations in the various communities, and the two should be governed by the same rules. With respect to changes in the Table the Commission has provided for amendment of the Assignment Table by appropriate rule making proceedings in the Rules herein adopted. Such proceedings will be required for changing the assignment of a channel from one community to another and for changing the status of a channel reserved for non-commercial educational stations to a channel available



for commercial applicants. 51/

Directional Antennas

215. In the Third Notice the Commission said with respect to Directional Antennas: 52/

There are two aspects to the questions which have been raised concerning the use of directional antennas. In the first place the Commission's rules, regulations and standards do not prohibit the use of directional antennas as such. If a channel is available in any particular community in the Commission's table, a directional antenna may be authorized upon an appropriate showing. Such authorizations have been granted in the past. It should be pointed out, however, that at the time of such grant, a channel was available in the existing Assignment Table. The second aspect to the problem concerning directional antennas arises when a request is made that another channel be added in a community by means of a directional antenna. This situation differs from the first one because in this instance no channel assignment is possible unless a directional antenna is employed, that is the use of a directional antenna is compulsory as a matter of channel assignment. This question was considered by the Commission in 1945 when the first Assignment Table was adopted. At that time the use of directional antennas as a basis for making assignments in the table was rejected by the Commission when a proposal to that effect was offered by the Television Broadcasters Association. In its report of November 21, 1945, the Commission stated, among other things:

"An examination of the T.B.A. proposal reveals that there are several disadvantages in attempting to accomplish this objective by the use of directional antennas. In the first place, the Commission desires to avoid as much as possible the resort to directional antennas for television. With the great increase in

51/ Before a non-commercial educational station operating on a channel reserved for non-commercial use may apply for a license to permit it to operate commercially, it would by appropriate rule making proceedings be required to petition for a change in the character of the channel assignment involved. It will then have to file an application for a new license, in competition with any others who may seek the channel.

52/ In the Third Notice a directional antenna was defined as one having 3 db or more difference in effective radiated power in the azimuthal directional of minimum and maximum radiation. Upon further consideration of the matter the Commission has determined that, pending the acquisition of additional data on the subject, the Commission will consider television antennas designed to have a nominally circular azimuthal radiation pattern to be non-directional unless the pattern is deliberately altered to produce a non-circular radiation pattern. Antennas designed or altered to have a non-circular radiation pattern will be considered directional antennas.

civil aviation as a result of the war, it is going to be increasingly difficult to find suitable antenna sites that do not constitute a hazard to air navigation. If directional antennas are used, there is much less flexibility in choosing antenna sites, thus increasing the possibility of conflict with air navigation requirements. Moreover, directional antennas will have to be located away from cities with the result that problems of shadows and multi-path distortion in rendering service to cities will be much greater than where the antenna is located in the city itself — in most instances antennas can be located in the city itself where no directional antenna is required.

"In the second place, the directional antenna patterns proposed by T.B.A. result in many instances in highly artificial service areas with a good part of the station's signal strength being directed out to sea. Moreover, the service area of the stations using directional antennas would be no larger than that of a community station but such stations would be as expensive to construct and operate as metropolitan stations."

The Commission's proposed table of July 11, 1949, made no provision for the use of directional antennas except with respect to two existing stations. It was pointed out, however, that directional transmitting antennas may be useful in certain situations in order that a particular site may be utilized or over-all service improved. It was then concluded that directional transmitting antennas would be permitted in appropriate cases for use on channels contained in the Assignment Table, provided that this did not excuse compliance with the service area requirements or permit reduction of basic service areas. It was also indicated that nulls greater than -10 db (compared to the maximum value of radiation) may not be practicable because of reflections. During the hearings on the general issues, limited testimony was presented generally favoring the use of directional antennas principally for the purpose of improving service rather than reducing station separations. Some testimony was offered in favor of the use of directional antennas with nulls greater than -15 db.

The Commission is not satisfied that in the present state of the art, directional antennas are practicable with nulls greater than -10 db; the policy set forth in the Notice of July 11, 1949, is adhered to. If future available data indicate that the performance of directional transmitting antennas can be properly predicted, particularly in areas where reflections occur, their use of interference protection can be given further consideration.

As indicated, directional antennas may be employed for improving service or for the purpose of using a particular site; they may not be used for the purpose of reducing the minimum station separations set forth in paragraphs II E and G. Where a directional antenna is proposed, the effective radiated power in any direction shall be contained in the range permitted in paragraphs II D (1) and (2), provided that the difference between maximum and minimum radiation shall not exceed 10 db.



216. The Pennsylvania Broadcasting Company objects to the above proposal because it prevents the assignment of Channel 12 to Philadelphia. They request that an exception be made in this one instance to permit the utilization of a directional antenna at Lancaster with a maximum suppression in excess of 10 db, thus providing protection to New York and Washington on Channel 4 and releasing Channel 12 for assignment to Philadelphia. In support of the Philadelphia Broadcasting Company's proposal, E.C. Page filed an engineering statement proposing that in general directional antennas should be allowed in congested areas where by their use additional VHF channels could be assigned. The Easton Publishing Company also objects to the proposal. They cite previous testimony in the record to support a conclusion that a maximum suppression in excess of 10 db was feasible and that directional antennas were practical for interference protection. Radio Kentucky Inc. objects to the restrictions imposed on the use of VHF directional antennas because it restricts the use of the VHF. A. Earl Cullum, Jr., states that previous testimony has proved that a 10 db suppression limitation is unrealistic and will stifle development of directional antennas. He contends that there is no reason why basic antenna patterns should be prohibited regardless of maximum-to-minimum suppression ratio. The Travelers Broadcasting Company advocates changing the Commission's proposal to authorize the assignment of television channels based upon the use of directional antennas in cities where the public interest, convenience and necessity will be served by the utilization of directional antennas. In a supporting engineering statement A.D. Ring & Company showed how a VHF channel could be assigned to Hartford utilizing a suppression ratio of only 2 db at Montpelier which is 172 miles from Hartford.

217. These comments to the Commission's proposal and the evidence in these proceedings raise the following questions: (1) Can directional antennas be constructed with suppression ratios greater than 10 db? (2) Are directional antennas with greater than 10 db suppression impractical in the field due to reflections? (3) Should directional antennas be used for assignment purposes to increase the number of VHF channels? (4) Should directional antennas be used to improve service only where an assignment has already been made in the Table?

218. On the basis of the testimony and the comments outlined above it appears that the record clearly supports the use of directional antennas where such use would result in improved coverage by a station whose assignment was not based upon the use of a directional antenna. But with regard to the use of directional antennas for decreasing mileage spacing to permit assignment of additional channels in the Table of Assignments there were mixed opinions.

219. On the question of the suppression ratio of directionals there seemed to be no doubt that directionals with greater than 10 db suppression could and had been designed and tested. But a main problem centered around the question of whether reflections would destroy the pattern of the directional antenna. All of the testimony relative to reflections was based upon scale model experiments or upon theoretical designs. Two witnesses indicated the possibility of the horizontal pattern being affected by tropospheric propagation which would be a function in part of the vertical directivity pattern. The scale model measurements took no account of this tropospheric reflection. It might appear from Mr. Alford's and Mr. Godley's testimony that in any

particular situation a particular type of antenna could be erected at a particular location to provide a given protection to a given area. There remained unanswered on the basis of the whole record the question of what would happen to the pattern with a given set of tropospheric conditions or by the erection of additional reflecting structures in the vicinity of the antenna. Testimony from expert witnesses recommended caution in establishing standards for directional antennas.

220. In view of the testimony in the whole record the Commission is unable to conclude that even under the most favorable circumstances where reflection tests were made in the field at the proposed antenna site, there would not still remain the problem of reflections from buildings and mountainous terrain. Furthermore such tests would necessarily have to be conducted over a long period of time to determine the tropospheric propagation under all conditions. Where directionals are proposed on the basis of theoretical design or field tests of scale models only, both the horizontal and vertical plane reflections remain unpredictable and in the opinion of the Commission render such proposals too uncertain for decreasing mileage separations so as to permit the assignment of additional channels based upon operation with a directional antenna.

221. Where the use of a directional antenna is solely to increase service the Commission is willing at this time to accept the 10 db ratio as a basis for such a directional antenna. It is clear that reducing the radiation below minus 10 db in the directions of minimum radiation would not appreciably increase the field strength or service range in the directions of maximum radiation. If a directional antenna is not able to operate as proposed, service to the city or community can continue on the basis of non-directional operation. As for suppression ratios in excess of 10 db it is clear that as the nulls become deeper the direct signal in the null direction becomes weaker with reference to ghost signals from reflecting sources which are not exactly in the null direction. Consequently if excessively deep nulls are used, the quality of service may be degraded due to those images in addition to the accompanying reduction of service range in the null direction. Until we are assured that these problems will not exist, the Commission is of the opinion that directional antennas with more than 10 db ratio should not be permitted even for the purpose of improving service in a community where an assignment has been made in the Table of Assignments, based on non-directional operation.

222. The Federal Broadcasting System Inc. proposed that the Commission provide for the assignment of "satellite" or "booster" stations by means of the use of directional antennas. The purpose of the proposal would be to allow parties not financially interested in the dominant station to erect and operate a low power television rebroadcast station at a high point above communities situated in valleys otherwise out of range of the dominant station.

223. The assignment plan contemplates the use of stations so removed from each other as to serve the greatest number of areas and persons and to keep the areas of interference between stations to a minimum. The indiscriminate use of "booster" or "satellite" stations in cities other than shown in the Assignment Table would defeat the aims of the plan. The Commission is of the opinion, however, that there may exist special cases where the carefully controlled utilization of such stations may be beneficial to the plan. However,



in view of the absence of adequate data in this record, the Federal Broadcasting System proposal must be denied.

224. In view of the foregoing considerations and the considerations discussed in the Third Notice, it is our conclusion that:

(1) Directional antennas may not be used for the purpose of reducing the minimum mileage separation requirements.

(2) Directional antennas with a ratio of minimum to maximum radiation in the horizontal plane of more than 10 decibels will not be permitted.

(3) The minimum effective radiated power in any horizontal direction shall meet the minimum power requirements of the Commission's Rules.

(4) The effective radiated power in any horizontal or vertical direction may not exceed the maximum values permitted by the Commission's Rules.

(5) The maximum effective radiated power in any direction above the horizon shall be as low as the state of the art permits and may not exceed the effective radiated power in the horizontal direction in the same vertical plane.

Stratovision or Polycasting

225. The Third Notice stated with respect to stratovision:

The Commission's proposed table of July 11, 1949, did not provide channels for stations operating in accordance with the stratovision method of television broadcasting utilizing air-borne transmitters. The Commission afforded interested persons an opportunity of presenting evidence on this point. Only one party presented evidence in support of stratovision. From the evidence offered, it appears that five UHF channels would supply about 81 percent of the area of the United States with one signal. Two of the five channels would be used as guard bands. Consequently, in order to supply all areas of the United States with 4 services about 20 channels would be required. This figure does not include the channels which would have to be added in order to provide proper protection between stratovision stations and ground stations in the light of the separations required to avoid oscillator radiation, image interference, or I.F. beats. The studies presented at the hearing did not include these factors.

The Commission appreciates that stratovision, if feasible, would be a most useful instrument in providing service to the sparsely settled areas of the country. Indeed, many areas of the country can undoubtedly receive service only from wide area coverage stations, such as stratovision would provide. The Commission, however, does not believe that channels should be assigned to stratovision at this time. As can be seen from an examination of Appendix C, it is not possible to assign television channels to many important communities and other communities have an inadequate number of assignments. This situation occurs when

relatively close separations are utilized based upon ground-located transmitters. With the much wider separations that air-borne transmitters would require, the problem of providing a fair, efficient, and equitable allocation of television facilities to the various communities would be aggravated. The demands for television service require that all available channels be assigned for proven ground-station operations, particularly when no substantial demand was shown for air-borne transmitters. However, as indicated above, proposed Channels 66 through 83 have not been assigned to particular communities but are flexibility channels, which may be used for various purposes, including further stratovision experimentation. The door remains open for further consideration of this proposal by the Commission if it can be shown that stratovision can operate successfully within the above flexibility channels, without causing interference to ground-based stations operating on Channels 14 through 65.

226. The Third Notice stated with respect to Polycasting:

Evidence in support of this proposal was presented by one witness who advocated the principle of using a number of low-power transmitters on one or more channels in the UHF band instead of attempting to cover a large area with a centrally located high-power transmitter. He expressed the belief that his proposed system would result in improved service at lower cost and was the only feasible method whereby stations in the UHF band could serve large areas. It was contemplated, for example, that four transmitters could be located in as many directions to give service to a large city with the north and south transmitters operating on one frequency and east and west transmitters operating on another frequency; by using directional receiving antennas and taking advantage of the wide variations in signal intensity over a small area there would be adequate rejection of the undesired co-channel signal. The use of FM was favored for polycasting to improve the ability to reject the undesired signal.

No evidence was presented concerning previous or existing operations carried on in accordance with the above proposals and the Commission has no information that such operations have been conducted. It appears that the proposed system has never been field tested and hence an adequate determination as to its feasibility cannot be reached at the present time. To devise an assignment table at this time which would provide for polycasting in many areas would be impractical and unwarranted since such an undertaking would require prior knowledge of the number, location and power of the various stations in a city. Further, it would involve consideration of possible interference such as oscillator radiation, image interference and intermodulation not only between stations in a city but between stations in adjacent areas. Accordingly, the attached proposed table does not contain assignments of channels for stations to operate under the polycasting system on a commercial basis. Further experimentation concerning polycasting can be carried on in the flexibility channels.



227. No specific comments directed to the subject of polycasting or stratovision were received in response to the Third Notice. Accordingly, the Commission's proposal not to make an allocation or assignment for stratovision or polycasting is now made final.

228. The Commission stated in the Third Notice that experimentation could be carried on with respect to stratovision and polycasting in the 782-890 mc band. We have in another portion of this Report considered the use of the channels in this band. It appears that the demand for these channels will be very great and that the extent to which they may be used in any one area is severely limited considering the demand that probably will exist. The Commission will consider requests for experimentation with respect to stratovision or polycasting in the 782-890 mc band. It seems clear, however, that in certain areas of the country, for example, the New England area, it will be impossible to establish a regular stratovision or polycasting service in this band. Accordingly, all persons interested in stratovision or polycasting are urged to give consideration to the demand for these television channels in making plans for further experimentation with these forms of broadcasting.

International Considerations

229. In establishing a Table of Assignments for the United States, consideration must be given to the patent fact that television signals do not respect international boundaries. Accordingly, neither the United States, Canada, nor Mexico can assign television channels as if these countries are isolated entities. If each country were to exercise its sovereign authority to assign television channels from the radio spectrum without regard to the interests of its neighboring countries, all the countries would suffer. For, while viewers in certain sectors of each country would not be directly affected by such action, those residing in the border areas might, as a consequence of the unrestricted interference that would doubtless ensue, be totally deprived of television service. The urgent necessity for an understanding between the United States and Canada, and the United States and Mexico, relating to the employment of television channels along our mutual borders is therefore manifest. Such agreements provide the only means for the effectuation of a fair, efficient and equitable distribution of television channels among the United States, Canada and Mexico.

230. In recognition of the foregoing, the Commission set forth in Appendix D of the Third Notice certain assignments for Canada and Mexico which might be made on the same basis as the overall Table if the borders between the countries did not exist. ^{53/} It was pointed out that a series of conferences had been held with representatives of the Canadian and Mexican Governments, but that formal agreements had not at that time been entered into. It was noted, however, that views were being exchanged and that it was expected

^{53/} Appendix D contained both VHF and UHF assignments for Canada but only VHF assignments for Mexico. Since Mexico does not in the foreseeable future contemplate employing channels in the UHF portion of the spectrum for television, rapport with respect to the assignment of UHF channels along the Mexican-United States border is not necessary at this time.

satisfactory understandings would be reached. 54/

231. In assigning television channels, Canada, Mexico and the United States, all employ somewhat different assignment policies in order to satisfy the viewpoints and interests of the respective countries. It is apparent, therefore, that in effectuating international agreements, the assignment policies employed in relation to domestic assignments could not be utilized in all instances. For example, Mexico, as a matter of allocation policy, is not employing channels in the UHF portion of the spectrum for television. Similarly, assignment separations must be maintained between some cities in the United States and Canada, and the United States and Mexico, above the minimum separation requirements for the pertinent zones in the United States. However, these across the border separations are necessary in order to comply with the internal requirements of Canada and Mexico and in light of the necessity for reaching an understanding with Canada and Mexico. Accordingly, while in some instances assignments proposed by the parties could have been accomplished in conformity with minimum separations for the appropriate United States zone, such proposals have not been adopted herein where they were deemed insufficient by Canada and Mexico and an agreement with respect to the proposed assignments could not therefore be reached. It should be pointed out that Canada, as a matter of domestic policy, desires service created by large station separations and desires to protect fringe area service to achieve maximum service from each operating station.

232. Comments filed in this proceeding with respect to specific city-by-city channel assignments were submitted in light of the international considerations described in the Third Notice. After the filing of such comments, further conferences and negotiations were conducted with Canada and Mexico. Each comment affected by international considerations 55/ has been carefully considered by the Commission. Furthermore, each comment which in the judgment of the Commission should not be denied for purely domestic reasons has

54/ The Third Notice also proposed to change the frequency assignments of the following existing stations in an effort to arrive at an equitable distribution of television channels between the United States and Canada:

<u>Station</u>	<u>City</u>	<u>Present Channel</u>	<u>Proposed Channel</u>
WXEL	Cleveland, Ohio	9	8
WHAM-TV	Rochester, N.Y.	6	5
WSYR-TV	Syracuse, N.Y.	5	3

As is explained more fully elsewhere in this Report, no objections to these proposed channel shifts have been raised by the stations involved.

55/ Domestic assignments are considered to be affected by Mexican or Canadian assignments when they are 250 miles from the border. Similarly, Mexican and Canadian assignments are deemed to be affected by United States assignments when they are 250 miles from the United States.



been taken into account in the conferences and negotiations with Canada and Mexico held since the issuance of the Third Notice. As a result of such further conferences and negotiations, an Agreement has been entered into with Mexico concerning, among other things, the channel assignments for communities in the border areas of the respective countries. ^{56/} With Canada, complete agreement has been arrived at between the administrative authorities concerned though formal confirmation by governments has not yet been given.

233. The channel assignments worked out in negotiations with Canada and Mexico with respect to communities in the border areas have been reflected in the Assignment Table adopted herein. The conferences and negotiations with Canada and Mexico have been carried on over a period of years. Such conferences and negotiations were conducted under the auspices of the State Department with the continued technical advice and assistance of this Commission. Moreover, as noted above, the comments filed in this proceeding have been taken into account in the course of these conferences and negotiations. We believe that the channel assignments prescribed in the Mexican Agreement and those which will be prescribed in the proposed agreement with Canada reflect the best assignments for the border areas that may be established in light of the problems presented. Accordingly, we believe that the distribution of assignments made thereunder should be followed pursuant to our duty to distribute service to the people of the United States in accordance with the public interest.

Canadian-United States Television Assignments

234. As pointed out above, the administrative authorities of the United States and Canada have agreed on the channel assignments to be prescribed for communities within 250 miles of the Canadian-United States border.

235. In the conferences and negotiations conducted with Canada, agreement for the assignment of all channels requested by counterproposals filed in this proceeding could not be reached for the reasons set forth above. We have made no assignments herein requested in any counterproposal where such assignments would be inconsistent with and in violation of the terms which have been agreed upon for inclusion in the proposed agreement with Canada. Following is a list of those counterproposals which are denied in light of the proposed agreement. Certain of these counterproposals, as is noted elsewhere in this Report, must also be denied for domestic reasons:

^{56/} An exchange of diplomatic notes between Mexico and the United States was announced by the State Department on Oct. 26, 1951. On November 7, 1951, the Commission issued a Notice in this proceeding (FCC 51-1009) pointing out that it would accept new comments and evidence from parties who had theretofore filed comments if such new proposals were made solely as a result of the changes brought about by the Agreement with Mexico and if such new counterproposals were consistent with the Agreement. In light of such further comments and evidence together with all the other comments and evidence in the record, further negotiations were conducted with Mexico resulting in certain additions and modifications to the Agreement, but not inconsistent with the basic provisions of the Agreement. These additions and modifications were agreed to on Feb. 4, 1952, and will be formalized by an exchange of diplomatic notes.



<u>Party</u>	<u>Counterproposals</u>	<u>Separations and assignments concerning which agreement with Canada could not be reached</u>
The Brockway Co., Watertown, N.Y. (1)	Add Channel 11 to Watertown, N.Y. by substituting Channel 5 for Channel 11 in Ottawa-Hull, Ont., Canada.	Channel 11 at Watertown would be 174 miles from the co-channel assignment at Toronto; and Channel 5 at Ottawa-Hull would be 179 miles from the co-channel assignment at Rochester.
The Brockway Co., Watertown, N.Y. (2)	Add Channel 11 to Watertown, N.Y. by substituting Channel 7 for Channel 11 in Ottawa-Hull, Ont., Canada; Channel 8 for Channel 7 in Montreal-Verdun, Que., Canada; Channel 11 for Channel 13 in Hamilton, Ont., Canada; and Channel 13 for Channel 11 in Toronto, Ont., Canada.	Channel 8 in Montreal-Verdun would be 195 miles from the co-channel assignment in Lewiston, Maine. Channel 8 in Montreal-Verdun would also create an oscillator radiation problem since Channel 12 is assigned to that community. Channel 13 at Toronto would be 187 miles from the co-channel assignment at Pembroke, Ont. Channel 13 at Toronto would also create an oscillator radiation problem since Channel 9 is assigned to that community. Channel 11 at Hamilton would be 72 miles from the adjacent channel assignment (10) in London, Ont.
WAGE, Inc., Syracuse, N.Y.	Add Channel 11 to Syracuse, N.Y. and Channel 11 to Pembroke, Ont., Canada, by substituting Channel 11 for Channel 13 in Hamilton, Ont., Canada; Channel 13 for Channel 11 in Toronto, Ont., Canada; and Channel 5 for Channel 11 in Ottawa-Hull, Ont., Canada.	Channel 11 at Syracuse would be 188 miles from the co-channel assignment suggested for Hamilton, Ont., Canada. Channel 11 at Hamilton, as suggested, would be 72 miles from the adjacent channel assignment (10) at London, Ont., Canada. Channel 13 at Toronto would be 187 miles from the co-channel assignment at Pembroke, Ont., Canada. Channel 13 at Toronto would also create an oscillator radiation problem since Channel 9 is assigned to that community. Channel 5 in Ottawa-Hull as suggested, would be 183 miles from the co-channel assignment in Rochester, N.Y. Channel 11 at Pembroke would be 187 miles from the co-channel assignment in Toronto.
Corning Leader, Inc. Corning, N.Y.	Assign Channel 9 to Corning, N.Y.	Channel 9 at Corning would be 159 miles from the co-channel assignment at Toronto.



Party	Counterproposals	Separations and assignments concerning which agreement with Canada could not be reached
Buffalo Courier Express, Inc., WGR Broadcasting Corp., and WKBW, Inc., Buffalo, N.Y.	Add Channel 9 to Buffalo, N.Y. by substituting Channel 8 for Channel 9 in Toronto, Ont., Canada; Channel 3 for Channel 8 in Owen Sound, Ont., Canada; and Channel 12 for Channel 3 in Orillia, Ont., Canada.	Channel 8 in Toronto would be 169 miles from the co-channel assignment at Syracuse, N.Y. Channel 8 in Toronto would be 59 miles from the adjacent channel assignment (9) as suggested for Buffalo. Channel 12 in Orillia would be 177 miles from that assignment listed in the Third Notice for Erie, Pa. Channel 12 in Orillia would be 65 miles from the adjacent channel assignment (11) in Toronto.
WBVP., Inc. Beaver Falls, Pa.	Add Channel 16 to Beaver Falls, Pa.	Channel 16 at Beaver Falls would be 168 miles from the co-channel assignment at Brantford, Ont., Canada.
The Trebit Corporation, Flint, Mich.	Add Channel 10 to Flint, Mich. by substituting UHF Channels 43 and 65 for VHF Channel 10 in London, Ont., Canada.	Deletion of VHF Channel 10 from London, Channel 10 at Flint would be 61 miles from the adjacent channel assignment (Channel 9) in Windsor, Ont. Channel 43 at New London would be 163 miles from the co-channel assignment at Butler, Pa.
Michigan State College, East Lansing, Mich.	Add Channel 10 to East Lansing, Mich.	Channel 10 at East Lansing would be 164 miles from the co-channel assignment listed in the Third Notice for London, Ont., Canada.
Booth Radio and Television Stations, Inc., Detroit, Mich.	(In part) Add Channel 9 to Detroit, Mich. by substituting UHF Channel 50 for VHF Channel 9 in Windsor, Ont., Canada, and deleting Channel 50 from Detroit.	Deletion of VHF Channel 9 from Windsor, Ont., Canada.
WJR, Inc., Detroit, Mich. (1)	Add Channel 6 to Detroit, Mich., by substituting Channel 10 in Lansing, Mich., for Channel 6.	Channel 10 in Lansing would be 169 miles from the co-channel assignment in London, Ont., Canada, Channel 6 at Detroit would be 205 miles from the co-channel assignment at Toronto, Ont., Canada.

Party	Counterproposal	Separations and assignments concerning which agreement with Canada could not be reached
WJR, Inc., Detroit, Mich. (2)	Add Channel 22 to Detroit, Mich., by substituting Channel 18 for Channel 60 in East Lansing, Mich.; Channel 46 for Channel 22 in Flint, Mich.; Channel 60 for Channel 18 in Ludington, Mich.; and Channel 37 for Channel 45 in Cadillac, Mich.	Channel 18 in East Lansing, Mich., would be 164 miles from the co-channel assignment in London, Ont., Canada. Channel 46 at Flint would be 61 miles from the assignment of Channel 32 at Windsor, Ont., Canada.
Central Willamette Broadcasting Co., Albany, Oregon	Add Channel 4 to Albany, Ore.; Channel 11 to Eugene, Ore.; Channel 3 to Longview, Wash.; Channel 12 to Bellingham, Wash.; and Channels 2 and 6 to Seattle, Wash., by deleting Channel 5 from Seattle and Channel 12 from Chilliwack, B.C., Canada, and by substituting Channel 8 for Channel 4 in Medford, Ore., Channel 10 for Channel 11 in Yreka, Calif.; Channel 2 for Channel 3 in Salem, Ore., Channel 5 for Channel 6 in Portland, Ore.; Channel 5 for Channel 2 in Victoria, B.C., Canada; and Channel 3 for Channel 6 in Vancouver, B.C., Canada. Central Willamette suggested that Channel 12 could be replaced in Chilliwack by assigning Channel 3 to that community in place of Vancouver, or by assigning an additional UHF channel to Chilliwack.	Channel 5 in Victoria would be 200 miles from the suggested co-channel assignment in Portland. Channel 3 at Vancouver would be 212 miles from the co-channel assignment suggested for Longview. Channel 5 at Victoria would be 75 miles from the suggested adjacent channel assignment (6) at Seattle. Deletion of Channel 12 from Chilliwack.



Party	Counterproposal	Separations and assignments concerning which agreement with Canada could not be reached
Twin City Broadcasting Corp., Longview, Wash. (1)	Add Channel 2 to Longview, Wash.	Channel 2 at Longview would be 158 miles from the co-channel assignment at Victoria, B.C., Canada.
(2)	Add Channel 2 to Longview, Wash., by substituting Channel 6, 8 or 10 in Victoria, B.C., Canada, for Channel 2; and Channel 2 in Vancouver-New Westminster, B.C., Canada, for Channel 6, 8 or 10.	The conflicting counterproposal of KVOS, Inc., assigning Channel 12 to Bellingham, Wash., is being granted. This counterproposal assigns Channel 3 to Chilliwack, B.C., in place of Channel 12. Channel 3 in Chilliwack would be 47 miles from New Westminster and 58 miles from Vancouver where adjacent Channel 2 is proposed by Twin City.
Fisher's Blend Stations, Inc. Seattle, Wash. (1) and Totem Broadcasters, Inc., Seattle, Wash.	Add Channel 2 to Seattle, Wash., by substituting Channel 3 for Channel 2 in Victoria, B.C., Canada.	The conflicting counterproposal of KVOS, Inc., assigning Channel 12 to Bellingham, Wash., is being granted. This counterproposal assigns Channel 3 to Chilliwack, B.C., in place of Channel 12. Channel 3 in Chilliwack would be 81 miles from Victoria, B.C., where Fisher's Blend Stations, Inc., and Totem Broadcasters, Inc., would assign Channel 3.
Fisher's Blend Stations, Inc. (2)	Add Channel 2 to Seattle, Wash., by substituting Channel 12 for Channel 2 in Victoria, B.C., Can.; and Channel 3 for Channel 12 in Chilliwack, B.C. Canada.	The conflicting counterproposal of KVOS, Inc., assigning Channel 12 to Bellingham, Wash., is being granted. Channel 12 at Bellingham would be 48 miles from Channel 12 in Victoria as proposed by Fisher's Blend.
Allen B. DuMont Laboratories, Inc.	Nationwide Allocation Plan.	The DuMont plan differs in numerous aspects from the assignments prescribed in the tentative agreement.

236. The following list sets forth those counterproposals requesting changes in channel assignments for cities within 250 miles of Canada which, pursuant to the negotiations with Canada, were tentatively agreed upon by Canada and are being granted herein. The channel assignments sought in these counterproposals are reflected in the proposed agreement:



<u>Party</u>	<u>City</u>	<u>Counterproposal</u>
Dartmouth College	Hanover, N.H.	Add Channel 21 to Hanover, N.H., to be reserved for non-commercial educational use, by substituting Channel 51 in Rochester, N.H.
Hartford Times, Inc. and Travelers Broadcasting Service Corp.	Hartford, Conn.	(As modified) Add Channel 3 to Hartford, by substituting Channel 81 in New London for Channel 3.
Connecticut State Board of Education	Norwich, Storrs, Bridgeport and New London, Conn.	(As modified) Add Channel 63 to Norwich and Channel 71 to Bridgeport, both to be reserved for non-commercial educational use, by deleting Channel 26 from Storrs, deleting Channel 63 from New London, and assigning Channel 26 to New London.
Troy Broadcasting Co. Inc., and Meredith Champlain Television Corp.	Troy, N.Y. Schenectady, N.Y.	(As modified) Add Channel 41 to Albany-Schenectady-Troy, N.Y.; add Channel 35 to Schenectady; substitute Channel 48 for Channel 35 in Watertown, N.Y.; and substitute Channel 62 for Channel 48 in Oneonta, New York.
Kingston Broadcasting Corporation	Kingston, N.Y.	Add Channel 66 to Kingston.
Board of Regents of the University of the State of New York	Malone, N.Y. Poughkeepsie, N.Y.	Add Channel 66 to Malone, and Channel 83 to Poughkeepsie, N.Y., both to be reserved for non-commercial educational use.
Gable Broadcasting Company	Altoona, Pa.	(As modified) Add Channel 10 to Altoona, Pa.
Lock Haven Broadcasting Corporation	Lock Haven, Pa.	Add Channel 32 to Lock Haven, Pa.
Vindicator Printing Company	Youngstown, Ohio	Add Channel 73 to Youngstown, Ohio.
Cleveland Broadcasting Co., Inc., et al.	Cleveland, Ohio	(In part) Add Channel 65 to Cleveland, Ohio, by substituting Channel 42 for Channel 59 in Sandusky, Ohio.
WSTV, Inc.	Steubenville, Ohio	(As modified) Assign Channels 7, 9 and 51 to Wheeling, West Virginia-Steubenville, Ohio, instead of Channel 51 to Steubenville and Channels 7 and 9 to Wheeling. (Channel *57 remains assigned to Wheeling.)



Party	City	Counterproposal
WSAZ, Inc.	Huntington, W. Va.	Substitute Channel 3 for Channel 8 in Huntington and Channel 8 for Channel 3 in Charleston, W. Va.
Shenandoah Valley Broadcasting Corp.	Harrisonburg, Va.	Add Channel 3 to Harrisonburg, Va., by substituting Channel 12 for Channel 3 in Richmond, Va.; Channel 3 for Channel 12 in Norfolk-Portsmouth-Newport News, Va.; Channel 8 for Channel 3 in Charleston, W. Va.; and Channel 3 for Channel 8 in Huntington, W. Va.
Copper Broadcast Company	Butte, Montana	Add Channel 15 to Butte, Montana.
Green Bay Newspaper Co.	Green Bay, Wisc.	Add Channel 2 to Green Bay, Wisconsin.
Radio Indianapolis, Inc.	Indianapolis, Ind.	Add Channel 67 to Indianapolis, Indiana.
Ball State Teachers College	Muncie, Ind.	Add Channel 71 in Muncie, Ind. to be reserved for non-commercial educational use.
Board of School Trustees of Gary, Indiana	Gary, Ind.	Add Channel 66 in Gary, Ind., to be reserved for non-commercial educational use.
Twin Valley Broadcasters, Inc.	Coldwater, Mich.	(In part) Add Channel 24 to Coldwater, Michigan.
Bay Broadcasting Company	Bay City, Mich.	Add Channel 5 to Bay City, Mich., by substituting Channel 7 for Channel 5 in Traverse City, Mich.
Board of Education of Bay City, Mich.	Bay City, Mich.	Add Channel 73 to Bay City, Mich., to be reserved for non-commercial educational use.
Delta Broadcasting Company	Escanaba, Mich.	(As Modified) Substitute Channel 3 for Channel 13 in Escanaba, Mich.; add Channel 13 to both Calumet and Cadillac, Mich.; add Channel 2 to Green Bay, Wisc.; substitute Channel 10 for Channel 5 in Hancock, Mich.; Channel 5 for Channel 3 in Marquette, Mich.; and Channel 7 for Channel 5 in Traverse City.



Party	City	Counterproposal
Wisconsin State Radio Council	(Wisconsin)	Add Channel 30 to Shell Lake, Wisc.; Channel 18 to Park Falls, Wisc.; Channel 46 to Wausau, Wisc.; Channel 58 to Adams, Wisc.; Channel 24 to Chilton, Wisc.; and Channel 66 to Richland Center, Wisc.; all to be reserved for non-commercial educational use.
Buffalo Courier Express, Inc., WGR Broadcasting Corp. and WKBW, Inc.	Buffalo, N.Y.	(As modified) Assign Channels 2, 4, 7 and 59 to Buffalo-Niagara Falls, instead of Channel 2 to Niagara Falls and Channels 4 and 7 to Buffalo. (Channels 17 and *23 remain assigned to Buffalo).
New Jersey Board of Education	Montclair, N.J. Andover, N.J.	Add Channel 77 to Montclair, N.J. and Channel 69 to Andover, N.J., to be reserved for non-commercial use.
State Superintendent of Public Instruction for the State of Wash.	(Washington State)	Add Channel 65 to Ellensburg, Wash.; Channel 41 to Kennewick-Richland-Pasco, Wash.; Channel 35 to Omak-Okanogan, Wash.; Channel 22 to Walla Walla, Wash.; Channel 45 to Wenatchee, Wash.; and Channel 47 to Yakima, Wash., all to be reserved for non-commercial educational use.
KVOS, Inc.	Bellingham, Wash.	Add Channel 12 to Bellingham, Wash., by substituting Channel 3 for Channel 12 in Chilliwack, B.C., Canada.
Presque Isle Broadcasting Company	Erie, Pa.	(In part) Add Channel 66.
Patriot News Company	Harrisburg, Pa.	Add Channel 71.
The Scranton Times	Scranton, Pa.	Add Channel 73.
The following additional assignments to cities within 250 miles of the Canadian-United States border have been made:	Cincinnati, Ohio	Add Channel 74.
	Pittsburgh, Pa.	Add Channel 16.
	Bad Axe, Mich.	Substitute Channel 15 for Channel 46.



Mexican-United States Television Assignments

237. As pointed out above, an Agreement has been entered into with Mexico prescribing the channel assignments for communities within 250 miles of the Mexican-United States border.

238. The following list sets forth those counterproposals originally filed in this proceeding requesting changes in VHF channel assignments within 250 miles of the Mexican border and therefore affected by the Mexican-United States Television Agreement, announced October 26, 1951.

Party	City	VHF Counterproposals Affecting Mexico
Bell Broadcasting Co.	Temple, Texas	Add Channel 6 to Temple, Texas.
Harbenito Broadcasting Co., Inc.	Harlingen, Texas	Move Channel 4 from Brownsville, to Harlingen, Texas.
McAllen Television Corporation	McAllen, Texas	Move Channel 5 from Brownsville to McAllen, Tex. and substitute Channel 12 in Brownsville.
Taylor Radio & Television Corporation	Weslaco, Texas	Move Channel 4 and 5 from Brownsville to Weslaco-Harlingen, Texas.
Plains Radio Corp.	Lubbock, Texas	Move Channel 5 from Amarillo, Texas to Lubbock, Texas and substitute Channel 9 in Monahans, Tex. for Channel 5.
Lack's Stores, Inc.	Victoria, Texas	Move Channel 12 from San Antonio, to Victoria, Texas.
New Mexico State Dept. of Education	Silver City, New Mexico	(As modified) Add Channel 10.
Airfan Radio Corp., Ltd.	San Diego, Calif.	Add either Channel 6 or 12 to San Diego, California by deleting Channel 6 or 12 from Tijuana, Mexico.
Charles E. Salik	San Diego, Calif.	Add Channel 6 or 12 to San Diego, California by deleting Channel 6 or 12 from Tijuana.
Radio KIST, Inc.	San Diego, Calif.	Add Channel 8 to Santa Barbara, Calif.
Paul R. Bartlett and Gene DeYoung	Bakersfield, Calif.	Add Channel 8 to Bakersfield, Calif.
McClatchy Broadcasting Co.	Bakersfield, Calif.	Add Channel 8 to Bakersfield, Calif.



Party	City	VHF Counterproposals Affecting Mexico
McClatchy Broadcast- ing Co.	Fresno, Calif.	Add Channels 5, 7 and 9 to Fresno by substituting Channel 12 for 13 in Las Vegas, Nevada, and other changes.
American Broad- casting Co., Inc.	Yuma, Arizona	Substitute Channel 12 in Mexicali, Mexico for Channels 7 and 9 and substitute Channels 9 and 47 in Yuma, Arizona for Channels 11 and 13.
Allen B. DuMont Laboratories, Inc.		Nationwide Plan.

239. Subsequent to the filing of the above counterproposals, further conferences and negotiations were conducted with Mexico. Each of the above counterproposals which did not require denial for purely domestic reasons was taken into account in these discussions with Mexico. Thereafter, the Department of State announced on October 26, 1951, that an Agreement had been concluded by an exchange of diplomatic notes between Mexico and the United States formalizing the assignment of VHF channels to communities within 250 miles of the Mexican-United States border. The assignments prescribed by that Agreement were identical with those listed in Appendices C and D of the Third Notice with several express exceptions set out below. The total number of VHF channels assigned to each community involved remained the same with the exception that an additional channel was provided for Tucson, Ariz. and one less channel for San Diego, California ^{57/} in the United States, and an additional channel was provided for Reynosa and Hermosillo and one less channel for Mexicali and Monterrey, in Mexico. The changes in VHF assignments from those expressed in the Third Notice were as follows:

^{57/} It should be understood that the number of VHF channels available for assignment in the San Diego area is governed to a considerable degree by the number of assignments in Los Angeles. Since there are only 12 VHF channels, the assignment of 7 VHF channels to Los Angeles, where 7 stations are now operating, leaves only 5 remaining channels for the border area in southern California, which includes San Diego in the United States, and Tijuana and Mexicali in Mexico. The 7 VHF channels employed in Los Angeles cannot also be assigned to San Diego, Mexicali, or Tijuana without undesirably limiting the coverage of United States as well as Mexican stations. The Los Angeles assignments must, therefore, be considered in connection with the United States assignments in the border area. Seven VHF channels are assigned to Los Angeles, 2 VHF channels to San Diego, 2 VHF channels to Tijuana, and 1 VHF channel to Mexicali. Thus, it will be seen that of the 12 VHF channels available for assignment in the border area, 9 are assigned to communities in the United States and 3 to Mexican cities.



City	Third Notice	Mexican Agreement Announced Oct. 26, 1951
Flagstaff, Arizona	9, 11	9, 13
Phoenix, Arizona	4, 5, 8, 10	3, 5, 8, 10
Tucson, Arizona	2, 6, 7	4, 6, 9, 13
San Diego, California	3, 8, 10	8, 10
El Paso, Texas	2, 4, 5, 7	4, 7, 9, 13
Laredo, Texas	3, 8	8, 13
Mexicali, Mexico	7, 9	3
Nogales, Mexico	9, 11, 13	2, 7, 11
Hermosillo, Mexico	2, 4, 6	6, 8, 10, 12
Ciudad Juarez, Mexico	9, 11, 13	2, 5, 11
Monterrey, Mexico	2, 6, 10, 12	2, 6, 10
Nuevo Laredo, Mexico	11, 13	3, 11
Reynosa, Mexico	9	9, 12

240. Since the channel assignments prescribed in the Mexican Agreement announced October 26, 1951, differed in some instances from the Third Notice, the Commission, on November 7, 1951, issued a Notice (FCC 51-1109) stating that it would accept new comments and evidence from parties who had theretofore filed proper comments in the proceedings if such new comments and evidence were submitted solely as a result of the changes brought about by the Mexican Agreement and were consistent with the Agreement.

241. Pursuant to the above Notice, Plains Radio Broadcasting Company, Lubbock, Texas; Lack's Stores, Inc., Victoria, Texas; Taylor Radio and Television Corporation, Weslaco, Texas; and McClatchy Broadcasting Company, Bakersfield and Fresno, California, filed statements contending that their counterproposals filed in this proceeding seeking additional VHF channels for their respective communities were consistent with the Mexican Agreement. Charles E. Salik and Airfan Radio Corporation, Ltd., both of San Diego, California, filed statements advising that further pleadings in light of the Mexican Agreement would not be submitted. Finally, Allen B. DuMont Laboratories, Inc., filed a modification to its nationwide assignment plan suggesting, among other things, that Channels 2 and 5 be assigned to Mexicali, Mexico in place of Channel 3, and that Channel 3 be assigned as an additional channel to San Diego.

242. On December 11, 1951, Radio KIST, Inc., Santa Barbara, California, filed a petition for leave to file further comments and evidence in the proceeding requesting, as an alternative to its previous counterproposal, that Channel 3 be assigned to Santa Barbara. The Commission granted this petition by Order (FCC 52-28) of January 9, 1952, and accepted the new Radio KIST, Inc. counterproposal in this proceeding. This new counterproposal requested the following:

City	Third Notice		Proposed Changes	
	VHF Chan- nel No.	UHF Chan- nel No.	VHF Chan- nel No.	UHF Chan- nel No.
Santa Barbara, Calif.		20, 26	3 58/	20, 26
Visalia, Calif.	3		—	43, 49

58/ A proposal for the deletion, substitution, or addition of a channel is indicated in the Report by ().

243. The following list sets forth those counterproposals which, although affected by the Mexican Agreement, must be denied for purely domestic reasons, as is set out elsewhere in this Report:

Bell Broadcasting Company, Temple, Texas
 Lack's Stores, Inc., Victoria, Texas
 Radio KIST, Inc., Santa Barbara, California (Channel 8)
 McClatchy Broadcasting Company, Bakersfield and Fresno, Calif.
 Paul R. Bartlett and Gene DeYoung, Bakersfield, California
 Harbenito Broadcasting Co. Inc., Harlingen, Texas) counterproposals
 Taylor Radio & Television Corp., Weslaco, Texas) granted in part
 only.

244. All of the counterproposals affected by the Mexican-United States Agreement which in the Commission's judgment should not be denied for domestic reasons alone, including those counterproposals filed pursuant to the Notice of November 7, 1951, were taken into consideration in connection with further negotiations with Mexico. As a result of such negotiations, certain additions and modifications in the Mexican-United States Television Agreement were agreed to on February 4, 1952. These additions and changes made possible the granting of several counterproposals.

245. The following list sets forth those counterproposals affected by the Mexican Agreement which are being granted herein, and the channel assignments requested thereby are reflected in the Agreement, as modified:

Plains Radio & Television Corporation, Lubbock, Texas
 Radio KIST, Inc., Santa Barbara, Calif. (Channel 3)
 Harbenito Broadcasting Co., Inc., Harlingen, Texas) Granted in
 Taylor Radio & Television Corporation, Weslaco, Texas) Part
 New Mexico State Dept. of Education, Silver City, N. Mexico (As modified)

246. The following list sets forth those counterproposals which must be denied in light of the Mexican-United States Agreement and subsequent conferences and negotiations conducted with Mexico. The assignment of channels requested in these counterproposals would be inconsistent with and in violation of the Mexican Agreement as modified. As is pointed out elsewhere in this Report, two of the counterproposals discussed below must also be denied for domestic reasons:

Airfan Radio Corporation, Ltd., San Diego, Calif.
 Charles E. Salik, San Diego, Calif.
 American Broadcasting Company, Inc., Yuma, Arizona
 McAllen Television Corporation, McAllen, Texas
 Allen B. DuMont Laboratories, Inc., Nationwide plan

247. Discussion of counterproposals denied on the basis of the Mexican Agreement. — (a) Charles E. Salik and Airfan Radio Corporation, Ltd. Charles E. Salik and Airfan Radio Corporation, Ltd. filed counterproposals requesting that Channel 6 or 12 be added to San Diego, California. This assignment would necessitate the deletion of Channel 6 or 12 from Tijuana, Mexico, as listed in the Third Notice. It was suggested that UHF channels could replace the VHF channel in Tijuana. However, in the negotiations on this matter conducted with Mexico, agreement could not be reached on any



assignment necessitating the deletion of Channel 6 or 12 from Tijuana. Furthermore, Mexico would not accept the suggestion that UHF channels are available to replace Channel 6 or 12 in Tijuana. Accordingly, the Mexican Agreement assigns Channels 6 and 12 to Tijuana. Since the Charles E. Salik and Airfan Radio Corporation, Ltd. counterproposals are inconsistent with this Agreement, they must be denied.

(b) McAllen Television Corporation. McAllen Television Corporation filed a counterproposal requesting that Channel 5 be deleted from Brownsville, Texas and assigned to McAllen, Texas. Channel 12 was suggested as a substitute in Brownsville. As a result of our negotiations with Mexico, Channel 12 is assigned by the Mexican Agreement to Reynosa, Tamaulipas, Mexico, at a distance of only 52 miles from Brownsville. Mexico would not agree to any assignment precluding the use of Channel 12 in Reynosa. Accordingly, the McAllen Television Corporation counterproposal must be denied. As noted elsewhere in this Report, this counterproposal must also be denied for domestic reasons.

(c) American Broadcasting Company, Inc. The Third Notice proposed Channels 7 and 9 for Mexicali, Baja California, Mexico, duplicating channels proposed for Los Angeles, California. The American Broadcasting Company, Inc., licensee of Station KECA-TV operating on Channel 7 in Los Angeles, filed a counterproposal requesting that VHF Channels 7 and 9 be deleted from Mexicali. In order to accomplish its request, ABC suggested, among other things, that Channels 9 and 47 be substituted in Yuma, Arizona for Channels 11 and 13. However, subsequent to the filing of the ABC counterproposal, the Mexican Agreement assigned Channel 3 to Mexicali in place of Channels 7 and 9. ABC filed a statement supporting the Mexican Agreement in so far as it makes the above changes from the Third Notice. The ABC counterproposal for Yuma is therefore moot.

(d) Allen B. DuMont Laboratories, Inc. Allen B. DuMont Laboratories, Inc. filed a proposed "National Television Allocation Plan." After the Notice of November 7, 1951, issued pursuant to the Mexican Television Agreement, DuMont amended its plan suggesting several changes in the assignments prescribed by the Mexican Agreement. The DuMont plan thus modified would assign Channels 2 and 5 to Mexicali, Baja California, Mexico, in place of Channel 3 assigned by the Mexican Agreement, and would thereby add Channel 3 to San Diego, California. The assignment of Channels 2 and 5 in Mexicali would duplicate assignments proposed for Los Angeles, California. In further negotiations with Mexico, agreement for any assignment utilizing co-channel assignments for Mexicali and Los Angeles could not be reached. Accordingly, the DuMont plan is inconsistent with the Mexican Agreement. As noted elsewhere in this Report, however, the DuMont plan must also be denied for other reasons.

THE NEXT PAGE IS PAGE 91:691



The Table of Assignments

248. In the Third Notice, the Commission, in addition to proposing revised Rules and standards for the television broadcasting service, also proposed a Table of Assignments indicating the specific cities and communities in which it proposed to assign particular channels. Further, the proposed Table indicated the specific cities and communities in which it was proposed to reserve particular assignments for use by non-commercial educational stations. Parties were afforded an opportunity to support or to object to these proposed assignments and educational reservations. Further, they were afforded an opportunity to make counterproposals of their own. The following portion of this Report deals with the individual filings in this proceeding in support of or in opposition to the assignments and reservations proposed in the Third Notice; further, it deals with the individual counterproposals that have been made. No comments have been received with respect to the large majority of the assignments proposed. Except where we have found reason to re-examine proposed assignments, such assignments have not been discussed herein.

Portland and Bangor, Maine: Educational Reservations

249. (a) Proposed Reservations. -- In the Third Notice the Commission proposed the reservation of UHF Channel 16 in Bangor and UHF Channel 47 in Portland for non-commercial educational use.

(b) The Joint Committee on Educational Television 59/ supported the reservation of Channel 47 in Portland and Channel 16 in Bangor for non-commercial educational use. No oppositions to these reservations were filed.

Conclusions

250. In view of the foregoing, the reservation of UHF Channel 47 in Portland and UHF Channel 16 in Bangor for non-commercial educational use are finalized.

Orono, Maine and Burlington, Vermont: Educational Reservations

251. (a) Proposed Reservations. -- In the Third Notice the Commission proposed the reservation of VHF Channel 12 in Orono and UHF Channel 16 in Burlington for non-commercial educational use.

(b) The Orono Educational Reservation. -- The University of Maine supported the reservation of VHF Channel 12 for non-commercial educational use in Orono. The University stated that its long-range plans included the use of television; and that it anticipated that the Department of Education of the State of Maine would use the Orono channel for its television programs. No oppositions to this reservation were filed.

(c) The Burlington Educational Reservation. -- The University of Vermont and State Agricultural College supported the reservation of Channel 16 in Burlington for non-commercial educational use. The University stated

59/ Referred to hereinafter as JCET.

that its President had been instructed to consider means for making facilities available for non-commercial educational television. The University submitted a copy of a resolution adopted by the Board of Trustees supporting the reservation. No oppositions to this reservation were filed.

Conclusions

252. On the basis of the foregoing, the proposed reservations of Channel 12 in Orono and Channel 16 in Burlington for non-commercial educational use are finalized.

Durham, New Hampshire
Boston, Brockton, Springfield-Holyoke,
Pittsfield, Worcester, Massachusetts
Providence, Rhode Island
Bridgeport, Hartford, New London,
Norwich, New Haven, Storrs, Waterbury,
Connecticut

253. (a) Proposed Assignments and Reservations

<u>City</u>	<u>VHF Channel No.</u>	<u>UHF Channel No.</u>
Durham	* 11 60/	
Boston	* 2, 4, 5, 7	44, 50, 56
Brockton		62
Pittsfield		64
Springfield-Holyoke		55, 61
Worcester		14, 20
Hartford		18, 24
Storrs		* 26
Providence	10, 12	16, *22
Bridgeport		43, 49
New London	3	63
Norwich		57
Waterbury		53
New Haven	8	59

(b) Counterproposals. -- Various parties in this proceeding filed counterproposals seeking (1) the additional assignment of a VHF channel to Boston, Brockton, Springfield-Holyoke, Worcester and Hartford; (2) the additional assignment of 2 UHF channels to Hartford; (3) the assignment of UHF channels to Bridgeport, Hartford, Norwich and Waterbury to be reserved for non-commercial educational use; and (4) the assignment of a UHF channel to Hanover, New Hampshire, to be reserved for non-commercial educational use.

Durham

254. The Durham Educational Reservation. -- The University of New Hampshire supported the reservation of Channel 11 in Durham for non-commercial

60/ An asterisk is used in this Report to designate channels reserved for non-commercial educational use.



educational use. The University stated that it considered the reservation necessary and that it is exploring sources of financial assistance which it will require to establish and maintain a non-commercial educational television station. The exploration was expected to take time and the reservation was supported so that the channel would be available for educational use whenever it becomes feasible for the University to erect and maintain such a station. 61/

New London

255. (a) Census Data. -- The City of New London has a population of 31,000.

(b) Statement of Thames Broadcasting Company Supporting Proposed Assignment. -- Thames Broadcasting Company supported the proposed assignment of Channels 3 and 63 to New London and opposed all requests seeking the deletion of VHF Channel 3 from New London. Thames Broadcasting Company stated that the utilization of Channel 3 in New London would better serve the Commission's priorities set forth in the Third Notice than any of the counterproposals seeking the assignment of that channel to another community; that New London is saturated with VHF receivers; and that the assignments in the State of Connecticut should not be reduced.

Boston

256. (a) Census Data. -- The standard metropolitan area of Boston has a population of 2,370,000 and the City of Boston has a population of 801,000. 62/

(b) Existing Stations. -- Westinghouse Radio Stations, Inc., has a construction permit for Station WBZ-TV on Channel 4. Thomas S. Lee Enterprises, Inc., is licensed for the operation of Station WNAC-TV on Channel 7.

(c) Counterproposal of Columbia Broadcasting System, Inc. -- Columbia Broadcasting System, Inc., proposed 3 alternative plans for the additional assignment of Channel 9 to Boston. 63/ Plan 1 would delete Channel 10 from Providence, and Plans 2 and 3 would delete Channel 11 from Durham by making the following changes in the assignments proposed in the Third Notice:

61/ Columbia Broadcasting System, Inc. filed a counterproposal containing 3 alternative plans for the additional assignment of a VHF channel to Boston; Plans 2 and 3 would substitute a UHF channel in Durham for Channel 11. This counterproposal is set forth in detail below.

62/ Census data in this Report is based on 1950 U. S. Census of population and is reported to the nearest thousand.

63/ In addition, CBS opposed the reservation of VHF Channel 2 in Boston for non-commercial educational use. The educational reservation in Boston is considered below.



City	Third Notice		Plan # 1	
	VHF Chan- nel No.	UHF Chan- nel No.	VHF Chan- nel No.	UHF Chan- nel No.
Augusta, Maine	10	29	<u>12</u>	29
Calais, Maine	7	20	<u>3</u>	<u>20</u>
Lewiston, Maine	8	17	<u>10</u>	17
Orono, Maine	*12		* <u>4</u>	
Portland, Maine	6, 13	*47, 53	<u>6</u> , <u>8</u>	*47, 53
Boston, Mass.	*2, 4, 5, 7	44, 50, 56	2, 4, 5, 7, <u>9</u>	*44, 50, 56
Durham, N. H.	*11		* <u>13</u>	
Manchester, N. H.	9	48	<u>11</u>	48
Providence, R. I.	10, <u>12</u>	16, *22	<u>1</u> , 12	16, *22
Albany-Schenectady- Troy, N. Y.	6	*17, 23	6, <u>10</u>	*17, 23
St. John, Canada	4, 6	17, 23	6, <u>7</u>	17, 23

City	Plan #2		Plan #3	
	VHF Chan- nel No.	UHF Chan- nel No.	VHF Chan- nel No.	UHF Chan- nel No.
Augusta, Maine	<u>13</u>	29	<u>13</u>	29
Calais, Maine				
Lewiston, Maine				
Orono, Maine	*11		*11	
Portland, Maine	<u>6</u> , <u>10</u>	*47, 53	<u>6</u> , <u>10</u>	*47, 53
Boston, Mass.	2, 4, 5, 7, <u>9</u>	*44, 50, <u>56</u>	2, 4, 5, 7, <u>9</u>	*44, 30, 56
Durham, N. H.	<u>12</u>	* <u>56</u>	<u>12</u>	* <u>Flex. Ch.</u>
Manchester, N. H.	<u>11</u> , <u>13</u>	48	<u>11</u> , <u>13</u>	48
Providence, R. I.	<u>11</u> , <u>13</u>	16, *22	<u>11</u> , <u>13</u>	16, *22
Albany-Schenectady- Troy, N. Y.	6, <u>10</u>	*17, 23	6, <u>10</u>	*17, 23

NOTE: A proposal for the deletion, addition, or substitution of a channel is indicated in the Report by (); a blank space opposite a city indicates that under that plan no changes in channel assignments were requested for that city.



(d) Statement in Support of CBS Counterproposals. — CBS stated that "... a major objective of the Commission is the reasonable assurance of the possibility of a nationwide competitive television service" and that CBS is genuinely concerned that very real dangers of monopoly inhere in the Commission's proposed allocation. CBS stated that "the Commission itself has recognized that for a considerable period perhaps 5 years, perhaps more, a commercial UHF station cannot compete on anything like an equal basis with a commercial VHF station in the same community. . .". CBS urged that "it must be obvious that during the not inconsiderable growth period of UHF, network A with UHF outlets in Chicago, San Francisco and Boston would be under a crippling competitive disadvantage vis a vis network B with VHF outlets in these three cities." Thus CBS argued "It is quite possible that the Commission's allocation plan will as a matter of practical necessity permit the development during the critical formative years of only 2 full nation-wide competing television networks," and that this situation "... accentuates the danger of the proposed allocations for. . . Boston — although the danger is clearly present even if we assume the continued existence of 4 such networks. The need for additional VHF channels in these cities in order to assure network competition is readily demonstrable even if four television networks are assumed." CBS stated that Boston is of vital importance to nationwide television networking and that a network which owns no station in Boston or comparable city is at an enormous or fatal competitive disadvantage. CBS pointed out that with only one Boston VHF commercial channel unassigned under the Commission's plan "... there is no assurance that a network could acquire a construction permit via the application route in these cities." CBS stated further "... it is a fact of television network economics and operations that a full complement of network owned stations is a condition precedent to successful networking on a fully competitive basis." Were a network not to own stations in key markets such as Boston, it was claimed the problem of clearance could become a major factor in obtaining or losing a network advertiser. It was also asserted that "... another factor which makes it advantageous competitively for a network to own a station [in a city such as Boston] is that which relates to the problem of origination...because the cost of television facilities and of the operating organizations are high it is far more efficient and economical to integrate network and local operation rather than to have only network facilities in a city."

(e) Counterproposal of Matheson Radio Company, Inc. — Matheson Radio Company, Inc. requested the additional assignment of Channel 9 to Boston by substituting UHF channels for VHF channels in both Providence, Rhode Island and Manchester, New Hampshire, and by making the following changes in the assignments proposed in the Third Notice:

City	Third Notice		Proposed Changes	
	VHF Chan- nel No.	UHF Chan- nel No.	VHF Chan- nel No.	UHF Chan- nel No.
Hartford, Conn.		18, 24		24, <u>55</u>
Storrs, Conn.		*26		* <u>18</u>
Barnstable, Mass		52		<u>62</u>
Boston, Mass	*2, 4, 5, 7	44, 50, 56	*2, 4, 5, 7, <u>9</u>	<u>—</u> , 50, 56
Brockton, Mass		62		<u>44</u>
Fall River, Mass		40, 46		46, <u>52</u>
New Bedford, Mass		28, 34		34, <u>40</u>
Springfield-Holyoke, Mass.		55, 61	<u>10</u>	<u>—</u> , 61
Worcester, Mass.		14, 20		20, <u>26</u>
Berlin, N.H.		26		<u>64</u>
Manchester, N.H.	9	48	<u>—</u>	<u>14</u> , 48
Rochester, N.H.		21		<u>51</u>
Providence, R.I.	10, 12	16, *22	<u>—</u> , 12	16, *22, <u>28</u>

(f) Statement in Support of Matheson Radio Company, Inc., Counterproposal: Matheson stated that its proposal would make possible a first VHF channel for Springfield, and that Boston is now saturated with VHF receivers and, accordingly, UHF assignments will not be used there in the foreseeable future. It was urged that the assignments proposed by the Commission would deprive Boston of some network programs, and that even if UHF assignments were utilized in Boston, the coverage of any such UHF station would be inadequate for the Boston trading area. Since Manchester and Providence have smaller trading areas than Boston, Matheson argued that UHF assignments in these cities would be satisfactory.

(g) Opposition and Conflicting Counterproposals to the CBS and Matheson Radio Company, Inc. Counterproposals.— Grandview, Inc. and Radio Voice of New Hampshire, both of Manchester, opposed the Matheson Radio Company, Inc. counterproposal in so far as it would delete a VHF channel from Manchester. Cherry & Webb Broadcasting Company and the Outlet Company, both of Providence, opposed the CBS and the Matheson Radio Company, Inc. counterproposals. Regional TV Corp., Hampden-Hampshire Corp., Travelers Broadcasting Service Corp. ^{64/} and WTAG, Inc., opposed the counterproposals of CBS and Matheson Radio Company, Inc., in so far as these counterproposals were mutually exclusive with counterproposals for additional VHF channels in Springfield-Holyoke, Hartford and Worcester, respectively. In addition, an opposition to CBS Plans 2 and 3 was filed by WPIX, Inc., presently operating Station WPIX on Channel 11 at New York. WPIX alleged that interference would result to the Grade B service areas of WPIX and WJAR-TV at Providence due to the 154 mile spacing of these assignments under CBS proposals 2 and 3. In a similar manner it was alleged there would be mutual interference on Channel 13 between a Providence station and WATV at Newark, New Jersey. The CBS proposal, WPIX asserted, would add a fifth VHF channel to Boston and a second VHF channel to Albany, and in each case these new

^{64/} In rebuttal to these oppositions CBS pointed out that Channel 10 which would under its counterproposal be assigned to Albany could alternatively be assigned to Springfield or Hartford.



assignments would substantially duplicate the VHF coverage of other stations. Finally, Radio Voice of New Hampshire opposed the CBS Plans in so far as they would assign Channels 11 or 12 to Manchester in lieu of Channel 9 proposed in the Third Notice.

(h) The Boston Educational Reservation.— The members of the Lowell Institute Cooperative Broadcasting Council of Boston, consisting of Boston College, Boston University, Harvard University, Lowell Institute, Massachusetts Institute of Technology, Northeastern University, Tufts College, and Boston Symphony Orchestra, supported the proposed reservation of VHF Channel 2 in Boston for non-commercial educational use. The members of the Council and other parties, including the City of Boston, the Commonwealth of Massachusetts, Senators Henry Cabot Lodge, Jr., and Leverett Saltonstall, Congressman Christian A. Herter and Richard B. Wigglesworth, various private and parochial schools, the American Academy of Arts and Sciences and various museums, all indicated their belief that the Lowell Institute Cooperative Broadcasting Council, licensee of educational FM Station WGBH, is the proper agency for coordinating the joint effort to secure the funds necessary to construct and operate a non-commercial educational television station in Boston. The Council stated that it has had extensive experience in the fields of radio and television and is prepared to meet the responsibilities of television broadcasting; that it is seeking the funds for constructing and operating the station; and that it "is more than reasonably confident that they can be secured if VHF Channel 2 is reserved in Boston for non-commercial educational broadcasting." Emerson College in a separate statement also supported the reservation of VHF Channel 2 in Boston.

(i) Opposition to the Boston Educational Reservation.— CBS opposed the reservation of VHF Channel 2 for non-commercial educational use in Boston urging the same grounds advanced by it in support of its counterproposal for an additional VHF assignment in Boston. CBS contended that while ultimately UHF and VHF would be competitive, during a considerable interim period of perhaps 5 years or more, a commercial UHF station cannot compete successfully with a commercial VHF station in the same community; but that the short-run competitive disadvantages of a UHF assignment are much less significant for non-commercial educational broadcasters since (1) educational broadcasters are not as critically affected by the anticipated reduced coverage of UHF, (2) the educational interests generally are not ready to proceed with construction of a television facility immediately, and (3) the educators will be seeking a minority audience rather than "mass circulation" and therefore the loss of circulation involved in UHF, as against VHF, is comparatively insignificant. CBS further alleged that the comments of the Lowell Institute "provide no basis whatever for a finding by the Commission that there is any assurance that the Lowell Institute will in fact utilize Channel 2 in Boston in the ascertainable future or that a UHF channel will not serve equally as well." In reply to CBS, the JCET asserted that shifting the reservation to a UHF channel would greatly handicap educators in obtaining funds if mass distribution of UHF receivers is as far distant as indicated by CBS. The JCET further contended that CBS, in light of its financial resources, is in a much better position to shoulder the burden of developing UHF in Boston than are the educators.

Brockton

257. (a) Census Data.— The standard metropolitan area of Brockton has a population of 130,000, and the City of Brockton has a population of 63,000.

(b) Counterproposal of Enterprise Publishing Company.— Enterprise Publishing Company requested the deletion of VHF Channel 5 from Boston and the assignment of this channel to Brockton.

(c) Statement in Support of Enterprise Publishing Company Counterproposal.— Enterprise Publishing Company stated that Brockton is one of the few large population centers for which only one assignment has been proposed. It was urged that a first VHF channel for Brockton should receive preference over a fourth VHF channel for Boston.

(d) Opposition to Counterproposal of Enterprise Publishing Company.— Oppositions to the Enterprise Publishing Company counterproposal were filed by Matheson Radio Co. Inc., CBS, and Cowles Broadcasting Co. In the oppositions it was asserted that Brockton is situated less than 20 miles from Boston and would receive Grade A service from the operation of a VHF station in Boston.

Springfield-Holyoke

258. (a) Census Data.— The standard metropolitan area of Springfield-Holyoke has a population of 407,000; the City of Springfield has a population of 162,000 and the City of Holyoke has a population of 55,000.

(b) Counterproposals of Hampden-Hampshire Corporation and Regional TV Corporation.— Hampden-Hampshire Corporation, Holyoke, Massachusetts, requested the assignment to Springfield of either Channel 3 or Channel 10 by deleting from New London or Providence, respectively, and by making the following changes in the assignments proposed in the Third Notice:

City	Third Notice		Proposal 1	
	VHF Chan- nel No.	UHF Chan- nel No.	VHF Chan- nel No.	UHF Chan- nel No.
New London, Conn.	3	63	—	63 plus <u>UHF</u>
Lewiston, Maine	8	17	<u>3</u>	17
Springfield-Holyoke, Mass.		55, 61	<u>3</u>	55, 61
Montpelier, Vermont	3	40	<u>8</u>	40
			Proposal 2	
Springfield-Holyoke, Mass.		55, 61	<u>10</u>	55, 61
Providence, R.I.	10, 12	16, *22	—, 12	16, *22 plus <u>UHF</u>

Assignment of the Providence Channel 10 to Springfield would require WJAR-TV in Providence to operate on Channel 12 rather than Channel 10 as proposed in the Third Notice. Regional TV Corporation requested the assignment of Channel 3 to Springfield-Holyoke by deleting that channel from New London.

(c) Statements in Support of Hampden-Hampshire and Regional TV Corporation Counterproposals.— It was stated that Springfield should receive



a VHF assignment because it is the third largest city in New England; that UHF is not desirable for the area because of the rough terrain; and that 14 of the 20 VHF assignments in the New England area are proposed for cities of lesser importance than Springfield.

(d) Oppositions to the Hampden-Hampshire and Regional TV Corporation Counterproposals.— Travelers Broadcasting Service Corp., The Hartford Times, Inc., Greylock Broadcasting Service Corp., CBS, Inc. and WTAG, Inc., opposed the foregoing counterproposals since they were mutually exclusive with the counterproposals for additional VHF channels in Hartford, Pittsfield, Boston and Worcester. The Thames Broadcasting Corporation opposed the foregoing counterproposals in so far as they would delete VHF Channel 3 from New London. The Outlet Co., and Cherry & Webb Broadcasting Company opposed the counterproposal of Hampden-Hampshire in so far as it would delete VHF Channel 10 from Providence. Lewiston-Auburn Broadcasting Corp. opposed the counterproposal of Regional TV Corporation in so far as it would change the assignment of Lewiston, Maine, from Channel 8 to Channel 3.

Worcester

259. (a) Census Data.— The standard metropolitan area of Worcester has a population of 274,000 and the City of Worcester has a population of 203,000.

(b) Counterproposal of WTAG, Inc.— WTAG, Inc. requested the assignment of Channel 12 to Worcester by deleting that channel from Providence.

(c) Statement in Support of WTAG, Inc. Counterproposal.— WTAG asserted that Worcester ranks 29th among the nation's markets on the basis of the area's economic potential; that it ranks second only to Boston in the State of Massachusetts; and that it is the third most important market in New England.

(d) Oppositions to WTAG, Inc., Counterproposal.— Cherry & Webb Broadcasting Company and The Outlet Company opposed the deletion of VHF Channel 10 from Providence. Travelers Broadcasting Service Corporation, Hampden-Hampshire Corporation, and CBS opposed the foregoing counterproposal since it was mutually exclusive with counterproposals for the additional assignment of VHF channels to Hartford, Springfield-Holyoke and Boston.

Pittsfield

260. (a) Census Data.— The standard metropolitan area of Pittsfield has a population of 66,000 and the City of Pittsfield has a population of 53,000.

(b) Counterproposal of Greylock Broadcasting Company.—Greylock Broadcasting Company requested the assignment of VHF Channel 3 to Pittsfield by deleting that channel from New London and by making the following changes in the assignments proposed in the Third Notice:



City	Third Notice		Proposed Changes	
	VHF Chan- nel No.	UHF Chan- nel No.	VHF Chan- nel No.	UHF Chan- nel No.
Pittsfield, Mass.		64	<u>3</u>	64
Syracuse, N.Y.	3, 8	*43	<u>5</u> , 8	*43
Rochester, N.Y.	5, 10	15, *21, 27	<u>3</u> , 10	15, *21, 27
Montpelier, Vt.	3	40	<u>8</u>	40
Lewiston, Maine	8	17	<u>3</u>	17
Hamilton, Ontario	13	51, 57	<u>6</u>	51, 57
Toronto, Ontario	6, 9, 11	19, 25	9, 11, <u>13</u>	19, 25
Orillia, Ontario	3	30	<u>5</u>	30
Sudbury, Ontario	5, 7	17, 23	<u>3</u> , 7	17, 23
New London, Conn.	3	63	—	63

(c) Statement in Support of Greylock Broadcasting Company Counterproposal.— Greylock Broadcasting Company argued that the operation of Channel 3 at Mt. Greylock in Pittsfield would result in more extensive coverage than the operation of that channel in New London or other New England cities for which the channel was requested. In view of the size of this alleged service area, Greylock contended that Pittsfield should be considered as the second Massachusetts city for assignment purposes. Greylock argued that a second city in the more populous state of Massachusetts should receive a VHF channel in preference to a second city in the smaller and less populous state of Connecticut. Finally, Greylock asserted that the use of Channel 3 at Pittsfield would better implement the priorities than would the use of this channel at either Hartford or Springfield, Holyoke.

(d) Oppositions to the Greylock Broadcasting Company Counterproposal.— Thames Broadcasting Company opposed the deletion of Channel 3 from New London. Lewiston-Auburn Broadcasting Corporation opposed the substitution of Channel 3 for Channel 8 at Lewiston. Springfield Regional Television, Hampden-Hampshire, Hartford Times, Travelers Broadcasting Service Co., CBS, WAGE, Inc., the Buffalo Courier Express, et al., opposed the counterproposal of Greylock Broadcasting Co., since it was mutually exclusive with the counterproposals for additional VHF channels in Springfield, Hartford, Boston, Syracuse, and Buffalo. Stromberg-Carlson Co., licensee of WHAM-TV 65/, Rochester, New York, opposed the Greylock Broadcasting Company proposal in so far as it would result in the assignment of Channel 3 to Rochester in lieu of Channel 5.

Providence

261. (a) Census Data.— The standard metropolitan area of Providence has a population of 737,000 and the City of Providence has a population of 249,000.

(b) Existing Stations.— The Outlet Company is licensed for the operation of Station WJAR-TV, Providence, on Channel 11. The Commission ordered the Outlet Company to show cause why the license of WJAR-TV should not be modified to specify operation on Channel 10, in lieu of Channel 11.

65/ WHAM-TV is presently operating on Channel 6. In the Third Notice the Commission has ordered the licensee to show cause why the license of WHAM-TV should not be modified to specify Channel 5.



(c) Statements of The Outlet Company and Cherry & Webb Company Supporting the Proposed Assignments.— The Outlet Company, licensee of WJAR-TV, supported the Commission's assignments for Providence and agreed to the proposed channel change for WJAR-TV. Cherry & Webb Broadcasting Company also supported the assignments for Providence and stated that the Providence assignments provided the minimum necessary to meet the needs of the area; and that the deletion of one of the two VHF assignments proposed for Providence would result in an inequitable distribution of facilities. 66/

(d) Providence Educational Reservation.— The JCET, Brown University, Providence College, University of Rhode Island, the Rhode Island College of Education, and the Providence School Department supported the reservation of Channel 22 for non-commercial educational use. The JCET stated that the Catholic Schools of the Archdiocese of Providence also supported the reservation. Brown University stated that a state-wide meeting had been held for the purpose of discussing the utilization of educational television, and that as a result of this meeting, an educational television committee was established under the chairmanship of the State Director of Education. No opposition to this reservation was filed.

Hartford

262. (a) Census Data.— The metropolitan area of Hartford has a population of 356,000 and the City of Hartford has a population of 177,000.

(b) Counterproposal of The Hartford Times, Inc.— The Hartford Times, Inc., proposed 3 alternative plans for the assignment of VHF Channel 3 to Hartford which would delete that channel from New London and make the following alternative changes in the assignments proposed in the Third Notice:

City	Third Notice		Plan 1	
	VHF Chan- nel No.	UHF Chan- nel No.	VHF Chan- nel No.	UHF Chan- nel No.
Hartford, Conn.		18, 24	<u>3</u>	18, 24, <u>59</u> , <u>81</u>
New Haven, Conn.	8	59	8	<u>75</u>
New London, Conn.	3	63	—	<u>47</u> , 63
Plan 2				
Hartford, Conn.		18, 24	<u>3</u>	18, 24, <u>59</u> , <u>81</u>
New Haven, Conn.	8	59	8	<u>75</u>
New London, Conn.	3	63	—	<u>47</u> , 63
Montpelier, Vt.	3	40	<u>8</u>	40
Lewiston, Maine	8	17	<u>3</u>	17
Plan 3				
Hartford, Conn.		18, 24	<u>3</u>	18, 24, <u>59</u> , <u>81</u>
New Haven, Conn.	8	59	<u>8</u>	<u>75</u>
New London, Conn.	3	63	—	63, <u>83</u>
Montpelier, Vt.	3	40	<u>8</u>	40
Lewiston, Maine	8	17	<u>3</u>	17

66/ Matheson Radio Company, Inc., objected to all statistics in the Cherry & Webb statement based on Chamber of Commerce or trade area publications and requested that such data be stricken from the record. We believe, however, that such data is admissible in this proceeding.

(c) Statement in Support of The Hartford Times Counterproposal.— The Hartford Times argued that the Hartford area should be considered in terms of the Hartford-New Britain metropolitan district with a population of 501,000, making it the third largest in the New England area and vastly more important as a population and economic center than New London. It was also urged that 78% of the service area of a VHF station operating on Channel 3 at Hartford would overlap the service area of a VHF station operating on Channel 3 at New London. With respect to its proposal to utilize Channel 47 at New London, Hartford Times recognized that such assignment would result in a violation of the UHF assignment limitation requiring 60-mile separation to prevent interference due to oscillator radiation but asserted that the interference would be at a minimum.

(d) Oppositions and Conflicting Counterproposals to The Hartford Times Counterproposals.— Thames Broadcasting Corp., opposed the deletion of VHF Channel 3 from New London. CBS, Matheson Radio Company, Greylock Broadcasting Company, Regional TV Corporation and Hampden-Hampshire opposed the counterproposal of Hartford Times since it was mutually exclusive with counterproposals for the assignment of VHF channels to Boston, Pittsfield, and Springfield. Lewiston-Auburn Broadcasting Corp., opposed the substitution of Channel 3 for Channel 8 in Lewiston.

(e) Counterproposal of Travelers Broadcasting Service Corp.— Travelers Broadcasting Service Corp. proposed 2 alternative plans for the assignment of a first VHF channel and a third UHF channel to Hartford. Plan 1 would delete Channel 3 from New London and Plan 2 would delete Channel 10 from Providence by making the following changes in the assignments proposed by the Commission in the Third Notice.

City	Third Notice		Plan 1	
	VHF Channel No.	UHF Channel No.	VHF Channel No.	UHF Channel No.
Hartford, Conn.		18, 24	<u>3</u>	18, 24, <u>81</u> or <u>83</u>
New London, Conn.	3	63	—	63, plus <u>22</u> or <u>81</u> or <u>83</u>
Montpelier, Vt.	3	40	<u>8</u>	40
Lewiston, Maine	8	17	<u>3</u>	17
Providence, R.I.	10, 12	16, *22	10, 12	16 plus <u>22</u> if 81 or 83 is assigned to New London
Plan 2				
Hartford, Conn.		18, 24	<u>10</u>	18, 24, <u>81</u> or 83
Providence, R.I.	10, 12	16, *22	—, 12	16, *22

(f) Statement in Support of Travelers Broadcasting Service Corp. Counterproposal. — In support of its request to delete Channel 3 from New London, Travelers asserted that the population of the Hartford area is 356,000 compared to New London's 30,367; that Channel 3 at Hartford would serve more persons and area than a similar operation at New London; that the use of Channel 3 at New London would be wasteful since approximately half of the signal would be lost over water; and that UHF would not be suitable to the terrain in the Hartford area. With respect to its proposal to assign Providence's



Channel 10 to Hartford, Travelers stated that the use of this channel at Hartford would bring a first VHF service to a large population center in addition to providing a second VHF service to an even greater population; while the use of this channel at Providence would merely duplicate the service area of an existing VHF station in that city.

(g) Oppositions and Conflicting Counterproposals to Travelers Broadcasting Service Corporation.— Oppositions to the above counterproposal have been filed by Thames Broadcasting Corporation, Cherry & Webb Broadcasting Company and the Outlet Company, WTAG, Inc., Regional TV Corporation, Greylock Broadcasting Company, CBS, Matheson Radio Company, Lewiston-Auburn Broadcasting Corporation and Hampden-Hampshire Corporation.

New Haven

263. (a) Census Data.— The metropolitan area of New Haven has a population of 263,000 and the city of New Haven has a population of 164,000.

(b) Existing Station.— Elm City Broadcasting Corporation is licensed for the operation of Station WNHC-TV, New Haven, on Channel 6. This station is presently operating as a community station with 2 kw power at 510 feet antenna height. The Commission ordered the licensee to show cause why the license of WNHC-TV should not be modified to specify operation on Channel 8 in lieu of Channel 6. The Third Notice proposed to remove the community classification of this station and would permit the station to operate with full power and antenna height.

(c) Answer of Elm City Broadcasting Corp. to Show Cause Order.— Elm City Broadcasting Corporation acceded to the Commission's proposed change in assignment for WNHC-TV but limited its acceptance of the change on the condition that the proposals set forth in Appendices A and B of the Third Notice be finalized without substantial change prejudicial to Elm City and that the frequency assignments proposed in Appendix C of the Third Notice for communities in Connecticut be adopted. The Commission indicated in the Third Notice that antenna heights above 500 feet would not be authorized where the effect of the utilization of such heights would cause adjacent channel interference to the Grade A service area of another station assuming operation by such station with maximum power and an antenna height of 500 feet. Adjacent channel interference was to be calculated on the basis of 0 db ratio. The American Broadcasting Company, Inc., licensee of Station WJZ-TV operating on Channel 7 in New York City, and General Teleradio Inc., licensee of Station WOR-TV operating on Channel 9 in New York City, both opposed the assignment of WNHC-TV on Channel 8. These parties stated, however, that they would have no objection to the use of this channel in New Haven if the conditions with respect to the use of antenna heights above 500 feet were modified to permit the use of such heights without regard to adjacent channel interference or in the alternative, if the provisions of this section were waived for Stations WJZ-TV and WOR-TV.

Educational Reservations in the State of Connecticut

264. (a) The Storrs Educational Reservation.— The University of Connecticut supported the reservation of UHF Channel 26 in Storrs for non-commercial educational use. The University stated, however, that "definite action

based upon adequate financial support from State public monies stands little chance of becoming an immediate reality"; and that unless an educational channel was reserved for at least a decade their plans for an educational television station could not be realized.

(b) Counterproposal of Connecticut State Board of Education. — The Connecticut State Board of Education requested the reservation for non-commercial educational use of the following UHF channels: Bridgeport, Channel 43; Hartford, Channel 18; Norwich, Channel 57; and Waterbury, Channel 53. ^{67/} As an alternative to the request for the above listed channels, the Connecticut State Board of Education requested a revision of the Commission's proposed policy with respect to UHF flexibility channels. Specifically, the State Board of Education requested that the Commission permit an educational institution to apply for such a channel in any community in which no television channel had been reserved for non-commercial educational use. The State Board of Education also requested that "the Commission propose a plan which will allow coverage of eastern Connecticut for non-commercial education without entirely eliminating the possibility of a commercial station in that large area." The Board submitted a statement by the Acting Governor of Connecticut declaring that it was the intention of the state administration to introduce before the State General Assembly a bill proposing the authorization to the State Board of Education of \$1,200,000 for the construction and operation of an educational broadcast service to serve the entire State of Connecticut. The bill in question, if approved, would be effective during the budgetary period, fiscal 1953-55.

Conclusions: Boston and Durham

265. The Counterproposal of CBS, in so far as it requests the assignment of VHF Channel 9 in Boston by the substitution of UHF Channel 56 or a flexibility channel in Durham for VHF Channel 11 (Plans 2 and 3) must be denied for the reason that it would result in two violations of the minimum co-channel assignment separations.

266. The CBS counterproposal (Plans 2 and 3) would require co-channel operation of Channel 11 in New York and Providence. WJAR-TV is now operating on Channel 11 in Providence and WPIX is operating on this frequency in New York City. The distance between the transmitters of these stations is 160 miles. It was to improve this low co-channel separation that the Commission issued a show cause order in this proceeding which would require WJAR-TV to move to Channel 10. Under the Commission's plan, the nearest co-channel station to WJAR-TV would be located in Augusta, Maine, at a distance of approximately 185 miles. The CBS counterproposal (Plans 2 and 3) would also require co-channel operation of Channel 13 at Providence and Station WATV at Newark, New Jersey. WATV is presently operating on Channel 13 at Newark and its transmitter is 165 miles from Providence. The Commission's assignment plan would not involve such co-channel operation but would place the second Providence VHF assignment on Channel 12. The nearest co-channel assignment to Providence on Channel 12 is Binghamton,

^{67/} By Memorandum Opinion and Order dated October 31, 1951, the Commission stated it would not consider the requests of the Board for a reservation of Channels 57 in Norwich and 53 in Waterbury.



New York, at a separation of about 235 miles. Further, we find that a reduction in the number of VHF assignments in New Hampshire to one is not warranted in order to make another VHF assignment for the City of Boston and the State of Massachusetts.

267. In view of the fact that the CBS counterproposal (Plans 2 and 3) would in two instances reduce the co-channel separations proposed by the Commission below the minimum separations adopted herein and would reduce the number of VHF assignments in New Hampshire to one, the CBS proposal, in so far as it requests the deletion of VHF Channel 11 from Durham (Plans 2 and 3), is denied. On the basis of the record, the reservation of Channel 11 in Durham for non-commercial educational use is finalized.

Conclusions: Boston, Hartford, Springfield, Holyoke, Worcester,
Providence

268. The counterproposals of CBS (Plan 1) and Matheson Radio Co., requested the deletion of Channel 10 from Providence in order to assign a VHF channel to Boston. In addition, the counterproposal of Matheson Radio Co., would delete Channel 9 from Manchester, New Hampshire, a city of 83,000 people. The counterproposals of Hampden-Hampshire and Travelers Broadcasting Service Corporation (Plan 2) also requested the deletion of Channel 10 from Providence in order to assign a VHF channel to Springfield-Holyoke and Hartford, respectively. The counterproposal of WTAG, Inc., requested the deletion of Channel 12 from Providence in order to assign that channel to Worcester.

269. All of the foregoing counterproposals seek the deletion of a VHF channel from Providence. Upon careful consideration of all the evidence, we believe that these counterproposals must be denied. The entire State of Rhode Island, with a population of 792,000, has but two VHF assignments; and both of these are located in the City of Providence, which ranks 19th among the nation's metropolitan areas and is the second largest city in the New England area with a metropolitan area population of 737,000. The Matheson Radio Company counterproposal would, in addition, delete the only VHF commercial assignment from the State of New Hampshire. It is our view, under the circumstances presented, that the reduction of the VHF assignments in Rhode Island to one would result in an unfair and inequitable distribution of assignments among the states and that the record does not support the deletion of a VHF channel from Providence. Moreover, with respect to the counterproposals of CBS and Matheson, we do not believe the record warrants the deletion of an assignment from a city as large and as important as Providence in order to create another assignment for Boston. Accordingly, the counterproposals of CBS, Hampden-Hampshire Corporation, Travelers Broadcasting Service Corporation, and WTAG, Inc., are denied in so far as they request the deletion of a VHF channel from Providence; and the counterproposal of Matheson Radio Company requesting the substitution of UHF channels for VHF channels in Providence and Manchester is also denied.

Conclusions: Show Cause Order (WJAR-TV)

270. An appropriate authorization will be issued to the Outlet Company to specify operation of WJAR-TV on Channel 10.



Conclusions: Providence Educational Reservation

271. On the basis of the record the reservation of UHF Channel 22 in Providence for non-commercial educational use is finalized.

Conclusions: The Boston Educational Reservation

272. The educational organizations in Boston have demonstrated their interest in establishing a non-commercial educational television station in the Boston area. They have supported this interest with concrete plans to establish such a station by banding together in an association, the Lowell Institute Cooperative Council of Boston. They have mobilized their resources and, further, have already established a non-commercial educational FM station.

273. As set out above, CBS opposed the reservation of Channel 2 in Boston for non-commercial educational use and requested the assignment of that channel for commercial use. We recognize that competition in broadcasting, both at the national and local level, should be maintained and stimulated. However, the reservation of channels for non-commercial educational use of necessity results in a reduction of potential commercial competition by providing fewer channels to the commercial service. But the demands of commercial interests and educational interests for the assignment of channels to their respective services require an evaluation of the ends to be served by both classes of stations. We can find no justification on the record for the conclusion that the alleged demands of economic competition outweigh the benefits to be derived from non-commercial educational television so as to require us to deviate from our general policy with respect to the designation of educational reservations and place the Boston reservation in the UHF.

274. We reject CBS's contention that the availability to it of a commercial channel in Boston is an appropriate matter for our consideration at this time. In this rule making proceeding we are concerned with the assignment of channels to meet the needs and interests of states and communities for non-commercial educational and commercial television. The qualifications or particular circumstances of individual applicants are matters that can and should be fully determined in licensing proceedings.

275. In view of the foregoing, the CBS counterproposal is denied in so far as it requests a shift of the reservation to a UHF channel and the reservation of Channel 2 in Boston for non-commercial educational use is finalized.

Conclusions: Boston and Brockton

276. The counterproposal of Enterprise Publishing Company seeks the assignment to Brockton of a VHF channel proposed in the Third Notice for Boston. Brockton will receive Grade A service from the operation of VHF stations in Boston since it is located less than 20 miles from that city. It is our view that where a community seeks a first VHF assignment by the deletion of a VHF assignment from one of the very largest cities of the United States, the deletion is not warranted where the smaller city receives Grade A VHF service from stations located in the larger city. It is our view, therefore, that the deletion of a VHF assignment from a city as large and as important as Boston to create one for Brockton is not warranted.



Conclusions: Springfield-Holyoke, Hartford, Pittsfield, New London

277. Parties in three cities, Springfield, Hartford and Pittsfield, seek the assignment of Channel 3 for their respective cities by deleting that channel from New London. The counterproposals of Regional TV Corporation and Hampden-Hampshire Corporation requested the deletion of Channel 3 from New London and the assignment of that channel to Springfield. The counterproposal of Greylock Broadcasting Corporation requested the deletion of Channel 3 from New London and the assignment of that channel to Pittsfield. The counterproposals of Hartford Times, Inc., and Travelers Broadcasting Service Corporation requested the deletion of Channel 3 from New London and the assignment of that channel to Hartford.

278. We stated above in connection with the discussion of requests for the deletion of a VHF channel from Providence that the reduction of VHF assignments in Rhode Island to one would, in our view, result in an unfair and inequitable distribution of assignments among the states. We are of the same view with respect to requests for the deletion of a VHF channel from New London in order to assign a channel to Pittsfield or to Springfield-Holyoke. We do not believe, under the circumstances presented, that the second VHF channel proposed to be assigned to Connecticut should be deleted in order to assign a fifth VHF channel to the State of Massachusetts.

279 It is our view, however, that the requests for the deletion of Channel 3 from New London in order to assign that channel to Hartford are meritorious and should be granted. The proposed assignment of Channel 3 to New London was predicated primarily on the Commission's desire for maintaining optimum co-channel spacings wherever possible. The Commission has reconsidered the need for such wider spacings in this area. In light of the record, we have determined that closer spacings can be utilized in an area such as New England where high population centers lie in very close proximity. The population of Hartford is more than 5 times the population of New London, and Hartford is presently without any VHF assignment. Moreover, the New London area would receive VHF service from stations located in Providence and New Haven; and if Hartford is assigned a VHF channel, New London would receive Grade A service from a station in Hartford. It is our view, therefore, that Channel 3 should be deleted from New London and assigned to Hartford.

280. Accordingly, the counterproposals of Regional TV Corporation, Hampden-Hampshire Corporation and Greylock Broadcasting Corporation are denied, and the counterproposals of the Hartford Times, Inc., and Travelers Broadcasting Service Corporation are granted, in so far as they requested the deletion of Channel 3 from New London and the assignment of that channel to Hartford.

Conclusions: Requests for UHF Assignments in Connecticut

281. Counterproposals have been filed by three parties requesting the assignment of additional UHF channels in Connecticut. The Hartford Times, Inc., requested the assignment to New London of Channel 47 to replace Channel 3. It also requested that two additional UHF channels, Channel 59 proposed for New Haven and flexibility Channel 81 be also assigned to Hartford. The Connecticut State Board of Education requested the reservation for non-commercial use of several UHF channels in Connecticut. Finally,



there is the request of Travelers Broadcasting Service Corporation for the assignment of UHF Channel 81 or 83 to Hartford and the assignment of a UHF channel to New London to replace Channel 3.

282. Since we have deleted VHF Channel 3 from New London, it is our view that a UHF channel should be assigned to that community in substitution for the deleted channel. Channel 47 cannot be assigned to New London as proposed by Hartford Times, Inc., since such assignment would be in violation of the minimum separation requirement established herein. Accordingly, UHF Channel 81 is assigned to New London.

283. There remains for our consideration the conflicting UHF demands of the Connecticut State Board of Education and the Hartford commercial interests. ^{68/} It is our view that on the basis of the record the request of the Connecticut State Board of Education is entitled to the highest consideration. The Board of Education has requested educational reservations in Hartford and Bridgeport, and in addition that the Commission propose a plan which would allow coverage of eastern Connecticut without entirely eliminating the possibility of a commercial station in that area. It is impossible because of the scarcity of channels in this area to satisfy the whole request of the Connecticut State Board of Education. We feel, however, that it is possible to grant the counterproposal to the following extent: We have set aside Channel 24 in Hartford to be reserved for use by a non-commercial educational station. Likewise, we have reserved Channel 71 in Bridgeport and Channel 63 in Norwich for a non-commercial educational television station. To accomplish this we have, however, deleted the assignment to Storrs, and substituted Channel 26 in New London for Channel 63. In doing so, we have considered the fact that a Hartford station can serve Storrs. We have also considered that there is a greater likelihood, on the basis of the record, that an educational station will be built in Norwich than in Storrs. In addition it may be pointed out that a Hartford station would also provide service to Waterbury.

284. In view of the total spectrum space available for use in the State of Connecticut, the Commission is not in a position to grant any further assignments to Hartford for commercial purposes. The assignments we have made permit practically no further assignments in this area in either the VHF or the UHF. Under these circumstances, further assignments to Hartford are not warranted and the requests of the Hartford Times, Inc., and Travelers Broadcasting Service Corporation for additional UHF assignments in Hartford must be denied.

Conclusions: New Haven (WNHC-TV) Show Cause Order

285. We have in another portion of this Report discussed the problem of whether the Commission, in effecting an assignment Table and in establishing Rules and Standards for the assignment of television stations, should permit the use of antenna heights above 500 feet without regard to possible adjacent channel interference that might be caused as a result of such operation. We have there reached the decision that in view of the great gain in service areas

^{68/} No request was made by the State Board for a VHF reservation in Hartford for non-commercial educational use.



at the expense of minor interference, and for other reasons there set out, the Commission will permit the use of antenna heights above 500 feet without regard to adjacent channel interference so long as specified minimum mileage separations are maintained.

286. The situation presented with respect to adjacent channel operation in New York and New Haven illustrates the soundness of the Commission's decision on this matter. The record indicates that if WJZ-TV operates with 200 kw at its present site on the Empire State Building, that station would increase its total Grade A land area coverage from 3,670 to 5,430 square miles, an increase of 48%. On the other hand, the interference area that would be caused to WNHC-TV operating on Channel 8 with 200 kw at 510 feet would be only 75 square miles, or at the most, 88 square miles as contended by Elm City. The remaining Grade A service area of WNHC-TV would be approximately 2400 square miles. Our decision with respect to power and height in Zone I, the interference to WNHC-TV would be slightly increased over the 88 square mile figure. However, the total Grade A remaining service area of WNHC-TV would be considerably increased. We are of the opinion that this small amount of interference should not negate the great gain in coverage that would be derived from the operation of WJZ-TV at its present antenna height with full power. Similarly, WOR-TV operating on Channel 9 in New York would gain extended coverage with the use of full power at its present antenna height while the interference to WNHC-TV would be slight. We do not believe as is contended here, that §307(b) of the Communications Act requires us to prohibit such operation of WJZ-TV and WOR-TV. On the contrary, we are of the view that the mandate of the Communication Act that the Commission shall provide an efficient distribution of radio service requires that the small amount of adjacent channel interference should not preclude the large gain in service area. In any event, adjacent channel interference is not a loss of service to the public since in the "interference area" the viewer would always have at least one service, and in some areas both services.

287. In view of the foregoing, the Commission is finalizing the assignment of Channel 8 to New Haven. An appropriate authorization to Elm City Broadcasting Corporation will be issued to specify operation of WNHC-TV on Channel 8.

Final Assignments and Reservations

288. The following assignments and reservations are adopted:

<u>City</u>	<u>VHF Channel No.</u>	<u>UHF Channel No.</u>
Durham	*11	
Boston	*2, 4, 5, 7	44, 50, 56
Brockton		62
Pittsfield		64
Springfield-Holyoke		55, 61
Worcester		14, 20
Hartford	3	18, *24
New Haven	8	59
New London		26, 81
Bridgeport		43, 49, *71
Norwich		57, *63
Providence	10, 12	16, *22
Waterbury		53

Hanover, New Hampshire: Educational Reservation

289. (a) Proposed Reservation.— In the Third Notice no channel assignment was proposed for Hanover.

(b) Counterproposal of Dartmouth College.— Dartmouth College filed a counterproposal requesting that UHF Channel 21 be assigned to Hanover to be reserved for non-commercial educational use. This assignment would be accomplished by substituting Channel 51 in Rochester, New Hampshire, for Channel 21.

(c) Statement in Support of Dartmouth College Counterproposal.— Dartmouth College stated that it had investigated the financing required for the construction of UHF television transmitting facilities and that the Board of Trustees was prepared to seek funds for this purpose. Dartmouth College's total operating budget for the fiscal year ending June 30, 1951 was in excess of \$5,400,000. Dartmouth's total assets as of June 30, 1951 were in excess of \$38,000,000.

(d) Opposition to Dartmouth College Counterproposal.— Mid-Hudson Broadcasters, Inc., Poughkeepsie, New York, opposed Dartmouth College's counterproposal on the grounds that in the Third Notice, Channel 21 was assigned to Poughkeepsie, and that "the mileage separation between Poughkeepsie, New York, and Hanover, New Hampshire, is 158 miles." Mid-Hudson pointed out that this would violate the minimum UHF co-channel spacing (165 miles) prescribed by the Commission in its Third Notice. Both Poughkeepsie and Hanover are situated in Zone I.

Conclusions

290. We have above reconsidered the matter of co-channel spacings and have reduced the minimum UHF co-channel assignment spacing in Zone I to 155 miles. On the basis of this revised minimum mileage separations requirement, and in view of the foregoing, it is concluded that UHF Channel 21 should be assigned to Hanover and reserved for non-commercial educational use. Channel 51 will, therefore, be substituted in Rochester, New Hampshire in place of Channel 21.

Final Assignments and Reservation

291. The following assignments and reservation are adopted:

<u>City</u>	<u>UHF Channel No.</u>
Rochester, N.H.	51
Hanover, N.H.	*21

State of New York: Educational Reservations

292. (a) Proposed Reservations.— In the Third Notice the Commission proposed the following reservations for non-commercial educational use in New York State:



<u>City</u>	<u>UHF Channel No.</u>
Albany-Schenectady-Troy	*17
Binghamton	*46
Buffalo	*23
Ithaca	*14
New York City	*25
Rochester	*21
Syracuse	*43
Utica-Rome	*25

(b) Support of the Educational Reservations: The Board of Regents of the University of the State of New York supported the foregoing reservations for non-commercial educational use in the state of New York. The Board stated that it proposed to utilize the resources of more than 8,000 state educational and cultural institutions to afford educational opportunities to more than 91% of the population of the state. Sample program schedules, detailed as to content and objectives, were submitted by the Board. The Board proposes to construct a non-commercial educational television network at an estimated cost of \$3,855,540 with an annual technical operating cost of \$2,273,941 based on 16 hours of operation Monday through Friday and 12 hours Saturday and Sunday. Programming would be apportioned among the public and private institutions under its supervision and costs will be borne by participating institutions supplemented by state aid. Statements were also filed by the following institutions in support of the reservations of channels for non-commercial educational use in their respective communities and in support of the State Board's plan for a state-wide network: The City College of the City of New York, the Board of Education of the City of New York, Fordham University, The College of Forestry of the State of New York, Syracuse University, the Brooklyn Public Library, the New York State College for Teachers at Buffalo, the University of Rochester, the Rochester Institute of Technology, Rochester Board of Education and the University of Buffalo. No oppositions were filed with respect to the educational reservations proposed in the Third Notice.

(c) Counterproposal of Board of Regents of the University of the State of New York.— The Board of Regents requested the additional reservation of a channel for non-commercial educational use in New York City, Malone and Poughkeepsie.

(d) Statement in Support of Board of Regents Counterproposal.— With respect to New York City, the Board requested that either UHF Channel 19 or 31, which the Commission proposed to assign for commercial use, be reserved instead for non-commercial educational use. The Board urged that one educational station in New York City is inadequate to meet the needs of a state-wide program and the special educational needs of the city itself. No oppositions were filed to this counterproposal. With respect to Malone, the Board requested that UHF Channel 20, which the Commission proposed to assign for commercial use, be reserved instead for non-commercial use. In the alternative, the Board requested the assignment and reservation of an additional channel for non-commercial educational use. No oppositions were filed to this counterproposal. With respect to Poughkeepsie, the Board requested that UHF Channel 21, which the Commission proposed to assign for commercial use, be reserved instead for non-commercial educational use. The Mid-Hudson Broadcasters, Inc., of Poughkeepsie opposed this request on



the grounds that it would be in violation of the Commission's announced method employed in the making of non-commercial educational station reservations. In the alternative, the Board requested the assignment and reservation of an additional channel for non-commercial educational use. No oppositions were filed to this alternative request.

Conclusions

293. We believe the record supports the assignment and reservation of channels in Malone and Poughkeepsie for non-commercial educational use. Since we have assigned only one channel to these cities for commercial purposes, we are assigning Channel 66 to Malone and Channel 83 to Poughkeepsie and we are reserving these channels for use by non-commercial educational stations. 69/

294. In view of the total spectrum space available for use in this area, we do not believe the Board of Regents' request for the reservation of a second channel for non-commercial educational use in New York City is warranted. The assignments we have made herein permit practically no further assignments in this area in either the VHF or the UHF. This portion of the request of the Board of Regents is therefore denied.

295. On the basis of the foregoing, the reservations of channels for non-commercial educational use in Albany-Schenectady-Troy, Binghamton, Buffalo, Ithaca, New York City, Rochester, Syracuse and Utica-Rome are finalized.

Final Reservations

296. The following reservations for non-commercial educational use are adopted:

<u>City</u>	<u>UHF Channel No.</u>
Albany-Schenectady-Troy	*17
Binghamton	*46
Buffalo	*23
Ithaca	*14
Malone	*66
New York City	*25
Poughkeepsie	*83
Rochester	*21
Syracuse	*43
Utica-Rome	*25

69/ The Board of Regents also suggested that provision be made for share time operation as between non-commercial educational and other television services if no "reasonable solution to the problem" presented in Malone and Poughkeepsie could be found. In view of the fact that channels have now been reserved in these cities for use by non-commercial educational stations, this suggestion has been given no further consideration.



Final Reservations

981. The following reservations in the Territories for non-commercial educational use are finalized:

<u>City</u>	<u>VHF Channel No.</u>
Anchorage, Alaska	*7
Fairbanks, Alaska	*9
Juneau, Alaska	*3
Ketchikan, Alaska	*9
Lihui, Hawaiian Islands	*8
Honolulu, Hawaiian Islands	*7
Wailuku, Hawaiian Islands	*10
Hilo, Hawaiian Islands	*4
San Juan, Puerto Rico	*6

Remaining Commercial Assignments Proposed in the Third Notice

982. As indicated above (paragraph 248) no comments have been received in this proceeding with respect to the large majority of assignments proposed in the Third Notice. It is our view that the proposed assignments for which no comments have been filed and which we have not considered elsewhere in this Report constitute a fair and equitable distribution of the available channels. Accordingly, these assignments are included in the Table of Assignments (§3.606(b) of the Rules) and are adopted herewith.

Temporary Processing Procedure

983. At the conclusion of this proceeding the Commission expects to receive, within a relatively short period of time, an unprecedented number of applications for new television broadcast stations. The filing and processing of these applications will be the first step toward the development of the nationwide television broadcast service provided for in the new Table of Assignments and the new Rules and Regulations. The Commission is, therefore, amending §1.371 of its Rules and Regulations by deleting footnote 10 as it presently reads and substituting a new footnote 10. The new footnote 10 to §1.371, designated as Appendix C-1, sets forth the procedure to be followed, until further order of the Commission, in the processing of television broadcast applications.

984. Footnote 10 sets forth in detail the manner in which the Commission will process applications for permits to construct new television broadcast stations, applications for permits and modifications thereof relating to presently operating television stations and stations authorized after April 14, 1952, applications for licenses and modifications thereof, and petitions relating to television authorizations.

985. Supplementing the underlying principles of the Table of Assignments, the processing procedure adopted today is designed to make television service available to the greatest number of people in the shortest period

of time 198/ consistent with the provisions of the Communications Act and the public interest. Separate processing lines are being provided for different categories of applications. With the exception of applications for channels designated for use by non-commercial educational stations, applications will be grouped within these categories and given a processing priority by category. The categories are set up on the basis of the present lack of television service in the communities for which they are filed. Applications for non-commercial educational television stations, which are expected to be relatively few in number during the period for which the temporary processing procedure is being set up, will be processed separately in the order in which they are filed, beginning July 1, 1952, except that the priorities set up for applications for other new television stations will be effective with respect to non-commercial educational stations where there is a conflict of transmitter sites cutting across the category lines. The same procedure will be followed for applications for Puerto Rico, Alaska, Hawaiian Islands, and Virgin Islands.

986. The first applications to be processed, however, will be those arising out of final determinations made by the Commission with respect to presently operating television stations whose channel assignments will be changed as a result of the orders to show cause set forth in the Commission's Third Notice, since the implementation of these changes will affect the orderly implementation of the Table of Assignments. These applications will be processed beginning with the effective date of the new rules.

987. Upon the completion of processing the applications flowing from the orders to show cause, two processing lines will be established to operate concurrently. The operation of these lines will not begin before July 1, 1952, in order to allow a reasonable period for filing new applications and amending those now on file. One line will process applications for new television stations in all cities not presently receiving television service. 199/ The other line will process applications for new television stations in cities presently receiving

198/ Although the Commission has previously processed applications for new television broadcast stations upon the basis of the date of filing, that procedure cannot appropriately be applied to the present situation. In its Order of September 30, 1948 adopting footnote 10 to §1.371, the Commission stated that pending applications and those thereafter filed would not be acted upon, but would be placed in the pending file. In its Notice of Further Proposed Rule Making of July 11, 1949, and its Third Notice of March 22, 1951, the Commission requested new applicants to refrain from filing applications because of the amendments which would be required when the "freeze" would be lifted. Implicit in these requests was the assurance that persons complying therewith would not be placed in a disadvantageous position vis-a-vis persons who might file new applications in disregard of the Commission's requests. Processing by date of filing would therefore be inequitable under these circumstances.

199/ A standard of 40 miles from the nearest main transmitter in operation has been adopted as the test of whether a city is receiving service. This is a reasonable standard for processing purposes based upon the record herein. The method for computing distances for this purpose is also specifically set forth in footnote 10.



service. Within the group in the first processing line, the cities for which applications are filed will be taken in the order of their populations, so that the largest concentrations of population now receiving no service will be handled first.

988. On the second processing line, five separate groupings are being made, each group to be handled upon completion of the preceding group. The first two of these groups give precedence to the UHF service, where either no VHF channels (excluding non-commercial educational channels) are assigned or all VHF channels (excluding non-commercial educational channels) are already occupied. Since all existing stations are in the VHF band, and all present receivers require at least some modification to receive stations in the UHF band, this precedence will help enable the younger service to make a firm start, a matter of great importance to the development of the assignment pattern provided for in the Table of Assignments. The three remaining groups provide, in order, for cities with one service but no local station, for cities with one local station but no other service, and for cities receiving service from two or more stations, thus carrying out the principle of making service available first to cities now receiving none, and then making available a local service before other cities are provided with multiple services. Further priorities are provided within the categories in the second processing line, depending upon the number of operating television stations in the city, where the nature of the category permits a distinction on that basis, and otherwise upon a population basis, except for the group of cities presently receiving service but to which only UHF channels are assigned, which will be processed upon the basis of the number of services presently being received.

989. A separate processing line will be set up to handle applications to modify construction permits granted on and after July 1, 1952, petitions for reconsideration of actions taken with respect to applications for new television stations, and petitions for waiver of hearing of these applications, all to be processed as filed. The new processing procedure also provides that applications for changes in existing facilities (other than those required under the orders to show cause), and license applications, which clearly are not as urgent as applications for construction permits for new television stations, will be processed at a later date, and that priority will depend upon the number of operating stations in the city, with population a secondary standard of priority.

990. The Commission will publish, from time to time, lists of cities for which applications for new television stations falling within the above-mentioned categories are filed, so that the general public and all applicants and other interested parties may be kept informed of the progress of the processing procedure. These lists will be revised periodically to reflect the insertion in the processing lines of new applications, and will show the order on the appropriate processing line of each city for which one or more applications are filed.

991. In order to expedite the procedure with respect to the licensing of new television broadcast stations, applications will be considered for grant only on the specific channel designated therein. Hearings held because of conflicts in channel requests within any city or hyphenated community will be limited to the applicants seeking the same channel. Where two or more applications for new stations in different cities, or applications for changes in

existing facilities, are in conflict because the distance between their respective proposed transmitter sites is less than that provided in the Rules, they will, of necessity, also be designated for hearing on a competitive basis. It should be particularly noted, because of the fact that some applications will normally be reached for processing before others, that applications whose transmitter sites may conflict with other applications in communities which would be reached for processing at an earlier stage will, in order to receive comparative consideration with such other applications, have to be filed at least one day before Commission action on the other application, or, in the event that the other application has been designated for hearing, 20 days before the designated hearing date. This procedure is identical with that which has been in force heretofore, but is mentioned because the provisions made herein for the staggered order of processing might otherwise give potential applicants an erroneous impression of their rights.

992. The new rules and regulations herein adopted will require substantial amendments in existing applications before they may be considered, and the new footnote to §1.371 contains instructions with respect to filing such amendments, as well as with respect to amendments which may be made by new applicants prior to the completion of Commission processing of applications for the city or community involved.

Amendment and Recodification of the Rules

993. Subpart E of Part 3 of the Commission's Rules governing Television Broadcast Stations has been amended and recodified. The new rules which have been added to the Subpart and the rules which have been revised implement the decisions reached by the Commission in these proceedings. Rules which were inconsistent with the new rules and obsolete rules have been deleted. In addition, the Standards of Good Engineering Practice Concerning Television Broadcast Stations have been amended to reflect the Commission's decisions in these proceedings and have been recodified and made a part of Subpart E. Finally, new Subpart E also contains editorial changes and improvements in and clarification of certain of the language of the existing Rules which make no changes in their substantive requirements.

994. In view of the foregoing, it is ordered that §1.371 of Part 1 of the Commission's Rules and Regulations relating to the processing of applications for television broadcast stations is amended as set forth in Appendix C(1) below.*

995. In view of the foregoing, it is ordered that FCC Form 301, "Application for Authority to Construct a New Broadcast Station or Make Changes in an Existing Station", is amended as set forth in Appendix C(2) below.†

996. In view of the foregoing, it is ordered that the "Standards of Good Engineering Practice Concerning Television Broadcast Stations" are deleted and Subpart E of Part 3 of the Commission's Rules and Regulations, "Rules Governing Television Broadcast Stations", is amended as set forth in Appendix D below.††

* [See ¶51:371, supra].

† [See ¶98, Form 301, infra].

†† [See ¶¶53:601 et seq., supra].



997. The amended Rules and amended FCC Form 301, as set forth in Appendices C and D below, are promulgated pursuant to Sections 1, 4(i) and (j), 301, 303(a), (b), (c), (d), (e), (f), (g), (h) and (r), and 307(b) of the Communications Act of 1934, as amended, and pursuant to the provisions of Section 4 of the Administrative Procedure Act.

998. It is ordered that the above amendments as set forth in Appendices C and D will become effective 30 days from the date of publication in the Federal Register. *

THE NEXT PAGE IS PAGE 91:1003

* [Date of publication will be given in NOTE, p. 53:601 supra, as soon as known].



APPENDIX A

Table I

Population Density Per Square Mile by Zones, 1950

	<u>Land Area</u>	<u>Population</u>	<u>Population Per Square Mile</u>
Total United States	2,974,725	150,697,361	50.7
Zone I	329,805	73,250,736	221.1
Zone II	2,405,479	65,999,295	27.4
Zone III	239,441	11,447,330	47.8
Zone I			
District of Columbia	61	802,178	13,150.5
Rhode Island	1,057	791,896	749.2
New Jersey	7,522	4,835,329	642.8
Massachusetts	7,867	4,690,514	596.2
Connecticut	4,899	2,007,280	409.7
New York (Part)	35,386	14,446,405	408.2
Wisconsin (Part)	5,033	1,512,731	300.6
Michigan (Part)	21,867	5,524,484	252.6
Maryland	9,881	2,343,001	237.1
Pennsylvania	45,045	10,498,012	233.1
Ohio	41,000	7,946,627	193.8
Delaware	1,978	318,085	160.8
Illinois	55,935	8,712,176	158.8
Indiana	36,205	3,934,224	108.7
Virginia (Part)	21,571	2,331,241	108.1
New Hampshire (Part)	4,541	433,519	95.5
West Virginia (Part)	19,363	1,483,938	76.7
Maine (Part)	9,129	586,232	64.2
Vermont (Part)	1,465	52,864	36.1
Total Zone I	329,805	73,250,736	222.1
Zone II			
West Virginia (Part)	4,717	521,614	110.6
North Carolina	49,097	4,061,929	82.7
Tennessee	41,797	3,291,718	78.8
Alabama (Part)	24,791	1,874,263	75.6
Kentucky	39,864	2,944,806	73.9
Georgia (Part)	40,116	2,819,324	70.3
South Carolina	30,305	2,117,027	69.9
California	156,740	10,586,223	67.5
Louisiana (Part)	9,268	534,181	57.6
Missouri	69,226	3,954,653	57.1
Virginia (Part)	18,322	987,439	53.9
Mississippi (Part)	24,849	1,175,818	47.3
Iowa	56,045	2,621,073	46.8

	<u>Land Area</u>	<u>Population</u>	<u>Population Per Square Mile</u>
Zone II (Continued)			
Vermont (Part)	7,813	324,883	41.6
Wisconsin (Part)	49,672	1,921,844	38.7
Minnesota	80,009	2,982,483	37.3
Arkansas	52,675	1,909,511	36.3
Washington	66,786	2,378,963	35.6
Oklahoma	69,031	2,233,351	32.4
New York (Part)	12,558	383,787	30.6
Michigan (Part)	35,155	847,282	24.1
Kansas	82,108	1,905,299	23.2
New Hampshire (Part)	4,476	99,723	22.3
Texas (Part)	181,281	4,000,334	22.1
Nebraska	76,663	1,325,510	17.3
Oregon	96,315	1,521,341	15.8
Maine (Part)	21,911	327,542	14.9
Colorado	103,922	1,325,089	12.8
North Dakota	70,057	619,636	8.8
South Dakota	76,536	652,740	8.5
Utah	82,346	688,862	8.4
Idaho	82,769	588,637	7.1
Arizona	113,575	749,587	6.6
New Mexico	121,511	681,187	5.6
Montana	145,878	591,024	4.1
Wyoming	97,506	290,529	3.0
Nevada	109,789	160,083	1.5
Total Zone II	2,405,479	65,999,295	27.4
Zone III			
Louisiana (Part)	35,894	2,149,355	59.9
Florida	54,262	2,771,305	51.5
Alabama (Part)	26,287	1,187,480	45.2
Texas (Part)	82,232	3,710,840	45.1
Mississippi (Part)	22,399	1,003,096	44.8
Georgia (Part)	18,367	625,254	34.0
Total Zone III	239,441	11,447,330	47.8

Source: 1950 U.S. Census of Population



APPENDIX A

Table II

Number of Cities Over 50,000 and Land Area, By Zone and State

1950

<u>Zone or State</u>	<u>Number of Cities Over 50,000</u>	<u>Land Area (Square Miles)</u>
Total United States	232	2,974,725
Zone I	128	329,805
Zone II	86	2,405,479
Zone III	18	239,441
Zone I		
District of Columbia	1	61
Rhode Island	4	1,057
Massachusetts	17	7,867
New Jersey	14	7,522
Connecticut	6	4,899
Wisconsin (Part)	4	5,033
Delaware	1	1,978
Michigan (Part)	9	21,867
Ohio	14	41,000
New York (Part)	12	35,386
Pennsylvania	15	45,045
Indiana	9	36,205
New Hampshire (Part)	1	4,541
Illinois	12	55,935
Virginia (Part)	4	21,571
West Virginia (Part)	3	19,363
Maryland	1	9,881
Maine (Part)	1	9,129
Vermont (Part)	-	1,465
Total Zone I	128	329,805
Zone II		
California	20	156,740
Georgia (Part)	5	40,116
North Carolina	6	49,097
Louisiana (Part)	1	9,268
South Carolina	3	30,305
Tennessee	4	41,797
Iowa	5	56,045
Alabama (Part)	2	24,791
Kentucky	3	39,864
Missouri	4	69,226
Virginia (Part)	1	18,322

<u>Zone or State</u>	<u>Number of Cities Over 50,000</u>	<u>Land Area (Square Miles)</u>
Zone II (Continued)		
Washington	3	66,786
Texas (Part)	8	181,281
Minnesota	3	80,009
Kansas	3	82,108
Oklahoma	2	69,031
Michigan (Part)	1	35,155
Nebraska	2	76,663
Utah	2	82,346
Wisconsin (Part)	1	49,672
Colorado	2	103,922
Arkansas	1	52,675
South Dakota	1	76,536
Oregon	1	96,315
Arizona	1	113,575
New Mexico	1	121,511
Idaho	-	82,769
Maine (Part)	-	21,911
Mississippi (Part)	-	24,849
Montana	-	145,878
Nevada	-	109,789
New Hampshire (Part)	-	4,476
New York (Part)	-	12,558
North Dakota	-	70,057
Vermont (Part)	-	7,813
West Virginia (Part)	-	4,717
Wyoming	-	97,506

Total Zone II	86	2,405,479
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Zone III

Texas (Part)	8	82,232
Florida	5	54,262
Alabama (Part)	2	26,287
Louisiana (Part)	2	35,894
Mississippi (Part)	1	22,399
Georgia (Part)	0	18,367

Total Zone III	18	239,441
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Source: 1950 U.S. Census of Population.



APPENDIX E

Index of Assignment Decisions

<u>City</u>	<u>Proposed Assign- ments and Reserva- tions</u>	<u>Counter proposals and related filings</u>	<u>Conclusions</u> (Paragraph Numbers)	<u>Final Assignments and Reserva- tions</u>
ALABAMA				
Auburn	790	790	791	791
Birmingham	792	793	796-799	800
Mobile	790	790	791	791
Montgomery	792	794	796-799	800
Tuscaloosa	792	795	797-799	800
University	790	790	791	791
ARIZONA				
Flagstaff	239	239	239	239
Phoenix	937	937	938	938
Tucson	937	937	938	938
Yuma	935	935	238, 936	936
ARKANSAS				
Blytheville	634	634	636-638	640
Fayetteville	619	619	620	620
Fort Smith	615	615	616, 617	618
Little Rock	615	615	616	618
CALIFORNIA				
Bakersfield	959	959	238, 960	961
Fresno	939	941	238, 945-948	950
Los Angeles	975	975	976	976
Monterey	962	962	963	964
Oakland		See San Francisco-Oakland		
Port Chicago	956	956	957	958
Sacramento	939	940	943, 944	950
Salinas	962	962	963	964
San Bernardino	975	975	976	976
San Diego	971	971	238, 972, 973	974
San Francisco- Oakland	951	953	952-954	955
San Jose	975	975	976	976
Santa Barbara	939	942	949	950
Stockton	975	975	976	976
Visalia	939	942	947	950



<u>City</u>	<u>Proposed Assign- ments and Reserva- tions</u>	<u>Counter- proposals and related filings</u> (Paragraph Numbers)	<u>Conclusions</u>	<u>Final Assignments and Reserva- tions</u>
COLORADO				
Boulder	850	852	861	869
Colorado Springs	850	854	863	869
Craig	850	853	865, 866	869
Denver	850	851	860, 865-867	869
Durango	850	856	865, 868	869
Grand Junction	850	857	865, 868	869
Montrose	850	858	865, 868	869
Pueblo	850	855	863	869
CONNECTICUT				
Bridgeport	253	264	283	288
Hartford	253	262, 264	236, 268-269 277-281, 284	288
New Haven	253	263	281, 285-287	288
New London	253		236, 277-283	288
Norwich	253	264	283	288
Storrs	253	264	283	
Waterbury	253	264	283	288
DELAWARE				
Wilmington	339	339	340, 346	347
DISTRICT OF COLUMBIA				
Washington	331	331	332	332
FLORIDA				
Daytona Beach	778	778	779	781
Fort Lauderdale	807	808	816	818
Gainesville	807	809	814	818
Jacksonville	807	810	815-817	818
Miami	819	820, 821	827-830	831
Orlando	807	811	814, 816, 817	818
Panama City	807	812	814	818
Pensacola	782	783	784-788	789
St. Petersburg		See Tampa-St. Petersburg		
Tallahassee	778	778	779, 780	781
Tampa- St. Petersburg	819	820, 822	828-830	831
West Palm Beach	807	813	814	818

SIXTH REPORT ON TELEVISION ALLOCATIONS

J91:45



<u>City</u>	<u>Proposed Assign- ments and Reserva- tions</u>	<u>Counter- proposals and related filings</u>	<u>Conclusions</u>	<u>Final Assign- ments and Reserva- tions</u>
(Paragraph Numbers)				
GEORGIA				
Albany	782		786	789
Athens	766	767	770-774	775
Atlanta	766	768	771-774	775
Columbus	776	776	777	777
Macon	776	769	772, 774	775
Savannah	776	776	777	777
Valdosta	819	820, 822, 823	824, 826	831
IDAHO				
Boise	896	896	897	897
Moscow	898	898	899	899
ILLINOIS				
Carbondale	518	518	519	520
Centralia	529	529	537	546
Champaign	526	527	534-545	546
Chicago	507	507	508, 509	510
Dekalb	515	515	516	517
Moline		See Davenport, Iowa		
Peoria	526	529	534-545	546
Quincy	556	556	557	558
Rockford	511	511	512	512
Rock Island		See Davenport, Iowa		
Springfield	513	513	514	514, 546
Urbana	526	528	534-545	546
INDIANA				
Bloomington	441	441	442, 443	444
Evansville	445	445	446, 447	447
Fort Wayne	438	438	439	440
Gary	459	459	236, 461	462
Indianapolis	430	430	236, 431-433	434
Lafayette	457	457	458	458
Logansport	435	435	436	437
Michigan City	452	452	453	453
Muncie	454	454	236, 455	456
South Bend	450	450	451	451
Terre Haute	448	448	449	449
IOWA				
Ames	547	547	549-554	555
Cedar Rapids	526	533	534-545	546
Davenport-Rock Island-Moline, Illinois	521	521	522-524	525
Des Moines	547	547	548-554	555



<u>City</u>	<u>Proposed Assign- ments and Reserva- tions</u>	<u>Counter- proposals and related filings</u>	<u>Conclusions</u>	<u>Final Assign- ments and Reserva- tions</u>
(Paragraph Numbers)				
IOWA (Continued)				
Dubuque	559	559	560	561
Fort Dodge	547	547	548-554	555
Iowa City	565	565	566	546,566
Keokuk	556	556	557	558
Mason				546
Sioux City	562	563	564	564
Waterloo	526	532	534-545	546
KANSAS				
Lawrence	588	588	589,590	596
Manhattan	597	597	598	598
Topeka	599	599	600	600
Wichita	601	601	602,603	604
KENTUCKY				
Louisville	463	463	464-466	467
Middlesborough	759	759	762	763
Owensboro	435	435	436	437
LOUISIANA				
Alexandria	843	843	844-846	847
Baton Rouge	832	833	838,839	842
Houma	832	834	839	842
Lafayette	843	843	844-846	847
Lake Charles	832	836	840,841	842
New Orleans	832	835	838-841	842
Shreveport	832	837		842
MAINE				
Bangor	249	249	250	250
Orono	251	251	252	252
Portland	249	249	250	250
MARYLAND				
Baltimore	331	331	332	332
MASSACHUSETTS				
Boston	253	256	256-268,272-276	288
Brockton	253	257	276	288
Holyoke		See Springfield-Holyoke		
Pittsfield	253	260	277-280	288
Springfield- Holyoke	253	258	268-269,277-280	288
Worcester	253	259	268-269	288



<u>City</u>	<u>Proposed Assign- ments and Reserva- tions</u>	<u>Counter- proposals and related filings</u>	<u>Conclusions</u> (Paragraph Numbers)	<u>Final Assign- ments and Reserva- tions</u>
MICHIGAN				
Ann Arbor	505	505	506	506
Bad Axe	848	848	236,849	849
Bay City	490	490	236,491,492	493
Cadillac	500	500	501	502
Calumet	500	500	501	502
Coldwater	468	468	236,469	470
Detroit	478	478	235,479-483	484
Escanaba	500	500	236,501	502
Flint	471	471	235,472,473	474
Grand Rapids	485	485	486-488	489
Hancock	500	500	501	502
Lansing	475	475	235,476	477
Marquette	500	500	501	502
Saginaw	497	497	498	499
Sault Ste. Marie	503	503	504	504
Traverse City	494	494	495	496
MINNESOTA				
Duluth	579	579	580	584
Mankato	526	530	534-545	546
Minneapolis- St. Paul	570	570	571	571
New Ulm	526	530	534-545	546
St. Paul		See Minneapolis		
MISSISSIPPI				
Biloxi	805,843	805,843	806,844-846	806,847
Jackson	782	784	785-788	789
Meridian	801	801	802,803	804
State College	805	805	806	806
University	805	805	806	806
MISSOURI				
Clinton	848	848	849	849
Columbia	585	585	586	587
Hannibal	556	556	557	558
Kansas City	588	588	591,592-595	596
Kirksville	527	529	539,540	546
St. Joseph	567	567	568	569
St. Louis	567	567	568	569
Springfield	567	567	568	569
MONTANA				
Billings	927	927	928	929
Bozeman	927	927	928	929
Butte	923	923	236,924,925	926
Great Falls	927	927	928	929



<u>City</u>	<u>Proposed assign- ments and Reserva- tions</u>	<u>Counter- proposals and related filings</u>	<u>Conclusions</u>	<u>Final Assign- ments and Reserva- tions</u>
(Paragraph Numbers)				
MONTANA (Continued)				
Miles City	927	927	928	929
Missoula	927	927	928	929
NEBRASKA				
Alliance	851	851		869
Lincoln	610	610	612,613	614
Omaha	610	610	611,613	614
NEVADA				
Las Vegas	969	969	970	970
Reno	965	965	966,967	968
NEW HAMPSHIRE				
Durham	253	254	265-267	288
Hanover	None	289	236,290	291
Rochester		289	290	291
NEW JERSEY				
Andover	None	327	236,329	330
Camden	None	327	329	330
Freehold	None	327	329	330
Hammonton	None	327	329	330
Montclair	None	327	236,329	330
Newark	325	325	326	327
New Brunswick		327	329	330
NEW MEXICO				
Albuquerque	930	930	931	931
Gallup	932	932	933	934
Raton	932	932	933	934
Roswell	930	930	931	931
Santa Fe	930	930	931	931
Silver City	932	932	238,933	934
NEW YORK				
Albany-Schenec-				
tady-Troy	292	292,319	236,295,320	296,321
Binghamton	292,297	292,297	295,298	296,299
Buffalo	292,300	292,301	235,236,295,303-307	296,308
Corning	None	315	235,316	
Ithaca	292,300	292,302	295,303-307	296,308
Kingston	None	322	236,323	324
Malone		292	236,293	296
New York City	292,325	292,325	294-295,326	296,327



<u>City</u>	<u>Proposed Assign- ments and Reserva- tions</u>	<u>Counter- proposals and related filings</u> (Paragraph Numbers)	<u>Conclusions</u>	<u>Final Assign- ments and Reserva- tions</u>
NEW YORK (Continued)				
Niagara Falls	300	301	303-307	308
Oneonta		319	320	321
Poughkeepsie		292	236,293	296
Rochester	292	292,317	295,318	296
Rome		See Utica-Rome		
Schenectady	292	319	320	321
Syracuse	292,309	292,311	235,295,312-313	296,314
Troy		See Albany-Schenectady-Troy		
Utica-Rome	292	292	295	296
Watertown	309	310	235,312-313	314,321
NORTH CAROLINA				
Asheville	757	757	758	758
Chapel Hill	757	757	758	758
Charlotte	714,757	715,757	720-722,758	726,758
Durham	757	757	758	758
Greensboro	714,757	757	758	726,758
High Point	714	716	721,722	726
Kinston	848	848	849	849
Raleigh	757	757	758	758
Salem		See Winston-Salem		
Wilmington	757	757	758	758
Winston-Salem	714,757	717,757	720-722	726
NORTH DAKOTA				
Bismarck	605	605	606	606
Dickinson	605	605	606	606
Fargo	605	605	606	606
Grand Forks	605	605	606	606
Minot	605	605	606	606
Williston	605	605	606	606
OHIO				
Akron	390	391	393	394
Cincinnati	404	404	236,405-409	410
Cleveland	411	412	236,413-415	416
Columbus	417	417	418-419	420
Dayton	395	395	396-397	398
Oxford	388	388	389	389
Sandusky	411	412	413	416
Steubenville	348	353	236,358-360,362	366
Toledo	386	386	387	387
Warren	399	399	400	400
Wooster	390	392	393	394
Youngstown	401	401	236,402	403
Zanesville	427	427	428	429



<u>City</u>	<u>Proposed Assignments and Reserva- tions</u>	<u>Counter proposals and related filings</u>	<u>Conclusions</u>	<u>Final Assignments and Reservations</u>
(Paragraph Numbers)				
OKLAHOMA				
Enid	621	621	622	623
Lawton	624	624	630	632
Muskogee	848	621,848	622,849	623,849
Norman	621	621	622	623
Oklahoma City	624	624,625	627,632	632
Pryor Creek	848	848	849	849
Stillwater		621	622	623
Tulsa	624	624,626	627-632	632
OREGON				
Albany	877	881	235,883	890
Corvallis	919	919	920	920
Eugene	914	914	915-917	918
Portland	911	911	912	913
Salem	921	921	922	922
PENNSYLVANIA				
Altoona	367	368	236,370	371
Beaver Falls	384	384	235,385	
Braddock	None	351	357	
Erie	376	376	236,377-380	381
Harrisburg	333	333	236,334	335
Johnstown	374	374	375	375
Lancaster	339	339	341-346	347
Lebanon	336	336	337	338
Lock Haven	None	382	236,382	382
McKeesport	None	350	355	
Philadelphia	339	339	340-345	347
Pittsburgh	348	349	236,354-358, 361-363,365	366
Reading	336	336	337	338
Scranton	333	333	236,334	335
State College	372	372	373	373
Washington	348	352	358,361-362	366
RHODE ISLAND				
Providence	253	261	268-271	288
SOUTH CAROLINA				
Charleston	764	764	765	765
Clemson	764	764	765	765
Columbia	759	759,760	761	763
Greenville	764	764	765	765
Spartanburg	759	759	762	763



<u>City</u>	<u>Proposed Assignments and Reserva- tions</u>	<u>Counter- proposals and related filings</u>	<u>Conclusions</u>	<u>Final Assign- ments and Reservations</u>
(Paragraph Numbers)				

SOUTH DAKOTA

Brookings	607	607	608	609
Pierre	607	607	608	609
Sioux Falls	607	607	608	609
Vermillion	607	607	608	609

TENNESSEE

Bristol	755	755	756	756
Chattanooga	751	751	752	752
Cookeville	745	747	749	750
Harriman	848	848	849	849
Kingsport	753	753	754	754
Knoxville	751	751	752	752
Maryville	848	848	849	849
Memphis	634	634	635-639	640
Nashville	745	746	748, 749	750
Shelbyville	848	848	849	849

TEXAS

Amarillo	667	669	671	672
Austin	710	710	711	711
Beaumont- Port Arthur	685	685	686	687
Breckenridge	644	644	645	646
Brownsville	673	675	677, 678	679
College Station	694	694	695	695
Corpus Christi	708	708	709	709
Dallas	662	662	663-665	666
Denison	647	649	652	653
Denton	647	650	652	653
El Paso	702	702	703	703
Fort Worth	704	704	705	705
Galveston	706	706	707	707
Harlingen	673	675, 676	238, 677, 678	679
Houston	680	680	681-683	684
Laredo	696	696	697	697
Longview	654	654	655, 656	657
Lubbock	667	668	238, 670, 671	672
McAllen	673	674	238, 677-678	679
Monahans	667	668	670	672
Port Arthur	See Beaumont-Port Arther			
San Angelo	698	698	699	699
San Antonio	658	658	660	661
Sherman	647	648	651-652	653
Temple	641	641	238, 642	643
Texarkana	700	700	701	701
Victoria	658	658	238, 659	661
Waco	688	688	689	690
Weslaco	674	676	238, 677-678	679
Wichita Falls	691	691	692	693



<u>City</u>	<u>Proposed Assignments and Reserva- tions</u>	<u>Counter- proposals and related filings</u>	<u>Conclusions</u>	<u>Final Assign- ments and Reservations</u>
(Paragraph Numbers)				
UTAH				
Logan	900	906	907	910
Odgen	900	904	907	910
Price	900	902	909	910
Provo	900	905	907	910
Salt Lake City	900	901	907-909	910
Vernal	900	903	907-909	910
VERMONT				
Burlington	251	251	252	252
VIRGINIA				
Blacksburg	743	743	744	744
Bristol	755	755	756	756
Charlottesville	735	737	738-741	742
Danville	743	743	744	744
Harrisonburg	367	369	236, 370	371
Lynchburg	743	743	744	744
Newport News	727	729	731	734
Norfolk-				
Portsmouth	727	728	730-733	734
Petersburg	735	737	738-741	742
Portsmouth		See Norfolk-Portsmouth		
Richmond	735	736	738-741	742
Roanoke	743	743	744	744
WASHINGTON				
Bellingham	877	878	236, 884-889	890
Ellensburg	891	891, 893	236, 892, 894	892, 895
Kennewick		893	236, 894	895
Longview	877	880	235, 884-889	890
Olympia	873	873	874, 875	876
Omak-Okanogan		893	236, 894	895
Pasco		893	236, 894	895
Pullman	893	893	894	895
Richland		893	236, 894	895
Seattle	877, 893	879, 893	235, 882, 884-889	890
Spokane	893	893	894	895
Tacoma	873, 893	873, 893	875	876
Walla Walla	870	870	236, 871	872
Wenatchee		893	236, 894	895
Yakima		893	236, 894	895
WEST VIRGINIA				
Beckley	714	719	723-725	726
Charleston	421	423	424-425	426
Clarksburg	427	427	428	429
Huntington	421	422	236, 424-425	426



<u>City</u>	<u>Proposed Assignments and Reserva- tions</u>	<u>Counter- proposals and related filings</u>	<u>Conclusions</u>	<u>Final Assign- ments and Reservations</u>
	(Paragraph Numbers)			

WEST VIRGINIA (Continued)

Morgantown	712	712	713	713
Princeton	714	718	721,722	726
Wheeling	348	353	358-360	366

WISCONSIN

Adams	None	579	236,582	584
Chilton	None	579	236,582	584
Eau Claire	579	579	580	584
Green Bay	572	572	236,574-577	578
LaCrosse	579	579	580	584
Madison	579	579	581	584
Marinette	579	579	580	584
Milwaukee	572,579	572,579	573-577,583	578,584
Racine		579	583	
Richland Center		579	236,582	584
Park Falls	None	579	582	584
Shell Lake	None	579	236,582	584
Superior	579	579	580	584
Wausau		579	236,582	584

WYOMING

Cheyenne	None	851	867	869
Laramie	850	859	864,865,866	869
Rawlins	None	851		869

ALASKA

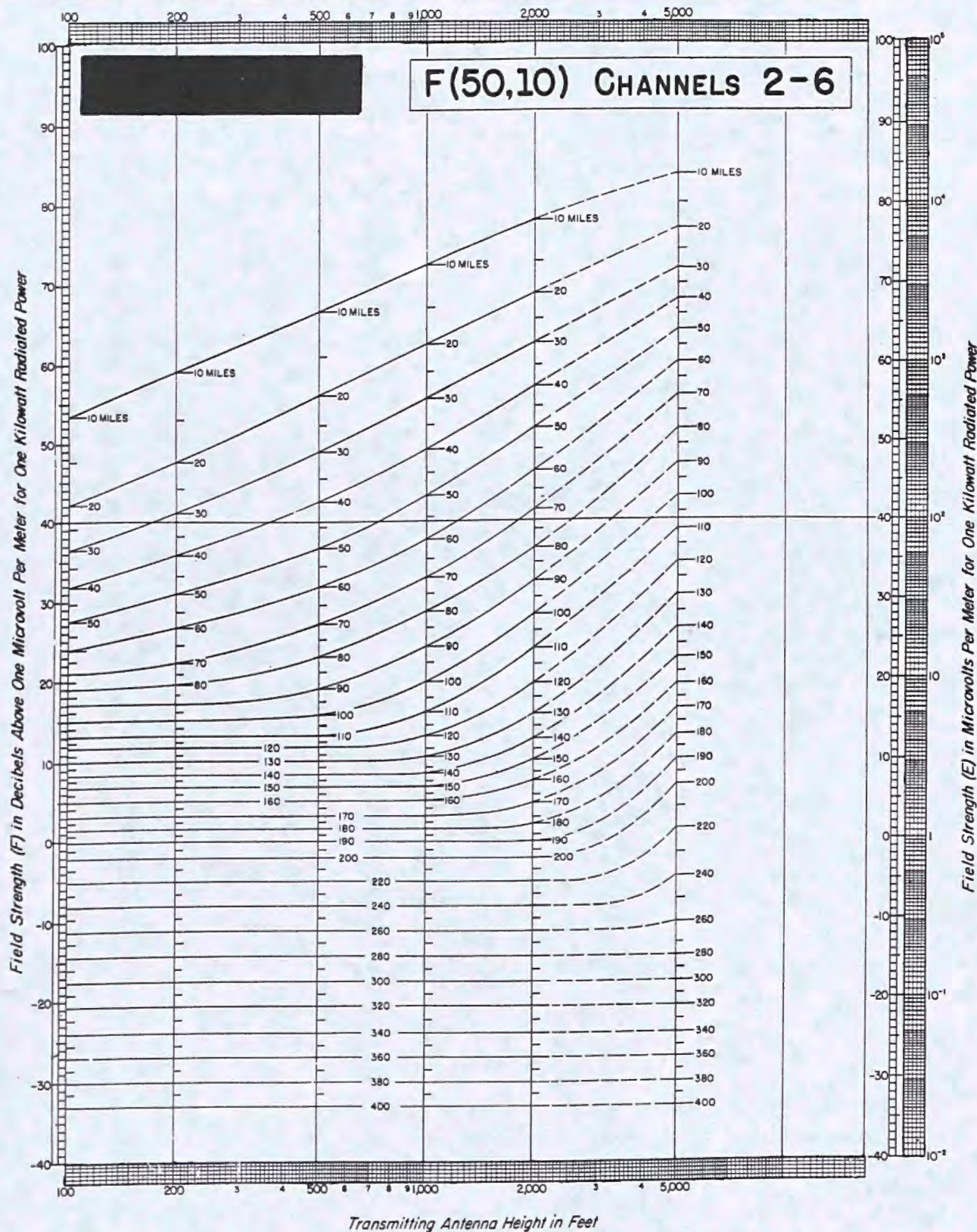
Anchorage	978	978	979,980	981
Fairbanks	978	978	979,980	981
Juneau	978	978	979,980	981
Ketchikan	978	978	979,980	981

HAWAIIAN ISLANDS

Lihui	978	978	979,980	981
Honolulu	978	978	979,980	981
Wailuku	978	978	979,980	981
Hilo	978	978	979,980	981

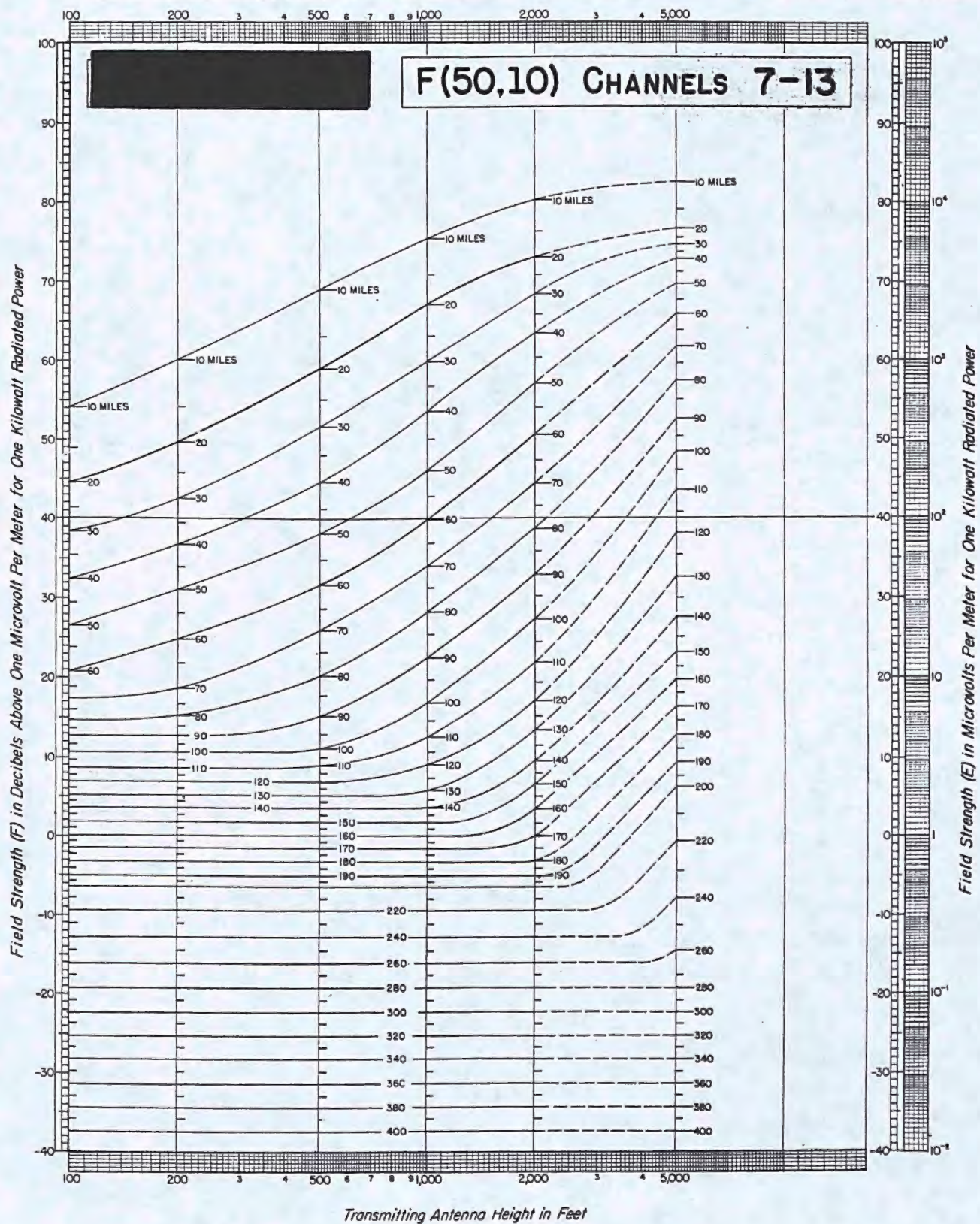
PUERTO RICO

San Juan	978	978	979,980	981
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TELEVISION CHANNELS 2-6
ESTIMATED FIELD STRENGTH EXCEEDED AT 50 PERCENT OF THE POTENTIAL
RECEIVER LOCATIONS FOR AT LEAST 10 PERCENT OF THE TIME
AT A RECEIVING ANTENNA HEIGHT OF 30 FEET

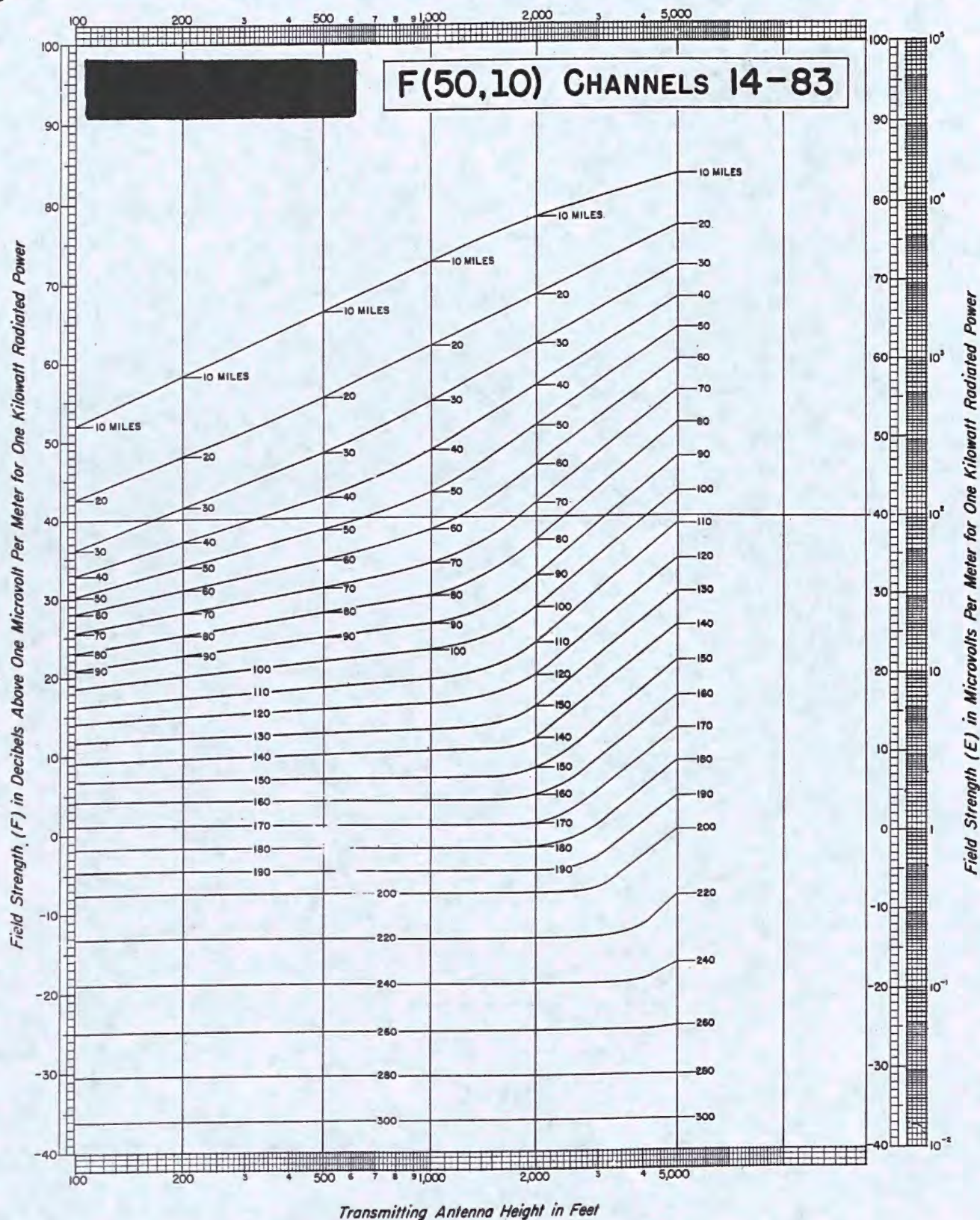
APPENDIX B FIGURE 1



TELEVISION CHANNELS 7-13

ESTIMATED FIELD STRENGTH EXCEEDED AT 50 PERCENT OF THE POTENTIAL
RECEIVER LOCATIONS FOR AT LEAST 10 PERCENT OF THE TIME
AT A RECEIVING ANTENNA HEIGHT OF 30 FEET

FIGURE 2



TELEVISION CHANNELS 14-83
ESTIMATED FIELD STRENGTH EXCEEDED AT 50 PERCENT OF THE POTENTIAL
RECEIVER LOCATIONS FOR AT LEAST 10 PERCENT OF THE TIME
AT A RECEIVING ANTENNA HEIGHT OF 30 FEET

FIGURE 3



CONCURRING OPINION OF COMMISSIONER E. M. WEBSTER

The importance of television in the field of education has already been firmly established in the minds of all thinking people. Accordingly, it is not a question as to whether programs of this nature should be televised, but, rather, whether the Commission should reserve, for future use by educational groups, certain television channels for non-commercial educational purposes only, or leave the production of such programs to the discretion of the commercial interests, including those educational groups desiring to operate commercially.

When the Third Notice of Further Proposed Rule Making was issued March 22, 1951, I stated in a separate opinion that I believed the reservation of channels for non-commercial educational television stations was warranted only upon a showing that there is a reasonable probability that, if such reservation were made, the channels would be utilized in the reasonably near future. It was my opinion that a vast majority of the representatives of educational institutions had little concept of the costs and practical problems involved in the construction and operation of a television station, and that when brought face to face with practicalities they might find the economic hurdle difficult if not impossible to surmount. I was unable to overcome the feeling that the proponents of non-commercial educational channel reservations, knowing the importance of education to the well-being of our nation, and having been alerted to the mass appeal of television, were carried away by the glowing potentialities thereof in the field of education and failed to approach this new venture from a practical point of view. It appears that, of those educational organizations not privately endowed, few, if any, have the active backing and cooperation of their state or local governments which will be called upon to appropriate the funds for such non-profit operations. Nevertheless, with virtually no reasonable assurance that funds would be available for the construction and continued operation of non-commercial educational television stations, the Commission was requested to indefinitely reserve channels therefor. In other words, in the face of claims by commercial interests that, with the cooperation of educators, they could produce educational television programs in a manner which would be in the best interest of the public, we were asked to permit a scarce and valuable part of the public domain to lie fallow, possibly for a period of years, if the educational groups found it infeasible to put these channels to reasonably prompt use.

I felt, as I am sure all of the Commissioners did, that I could not permit the understandable burst of enthusiasm displayed by the educational group to sway my thinking as to whether the public interest would best be served by indefinitely reserving a certain number of channels for future use by the non-commercial groups, or by making all television channels immediately available for use by commercial stations and looking to this group to furnish the public with educational programs. In my opinion neither interest presented a strong case up to the time the Third Notice of Further Proposed Rule Making was issued, and, on the basis of the record then made, I was not satisfied that we would be justified in making the requested reservations.

Neither the Commission's notice nor my separate opinion directed either group to show, in the proceedings scheduled to follow the Third Notice, what it contemplated doing by way of televising educational programs. However, it appears to me that the logical course for the commercial group to have

taken, if it was serious in its contention that reservations of television channels should not be made for non-commercial educational stations, would have been to show what commercial stations are capable of doing in this connection both as to quality and quantity. By the same token, I expected the educational group to take steps to support the proposed reservations on a city-by-city basis. It cannot be said that the opportunity to make such a showing was not given, since comments with respect to the table of assignments in the city-by-city portion of the proceedings were specifically provided for in footnote 12 of the Third Notice.

It was my hope that by buttressing their respective positions the conflicting interests would give the Commission more affirmative data on which to base a decision, and I so indicated in my separate opinion. It does not appear to me that this was effectively done by either group. The failure of the commercial interest to make a strong, positive showing with respect to educational productions leaves me with the impression that that group is not as prepared to voluntarily go forward with this type of television programming as originally indicated. As for the educational group, in a relatively few instances a showing was made that there were definite plans for constructing and operating non-commercial educational television stations in the near future. But with respect to an overwhelming majority of the 209 communities tentatively assigned educational channels by the Third Notice, support therefor by local educational organizations took, for the most part, the form of affidavits stating that reservations of such channels were desired. In the case of 18 1/2 communities receiving tentative assignments of educational channels, no testimony at all was given by local institutions that the use of such channels is contemplated even in the distant future. While the Joint Committee on Educational Television did file a sworn statement which endorsed the Commission's proposal to reserve channels in these 18 communities and requested that the assignments be made final, its affidavit made no effort to justify these specific reservations.

In my opinion the proposals of both groups, having been weighed in the balance, leave much to be desired. On the one hand we have the non-commercial educational group, imbued with lofty motives and high hopes, but, generally speaking, without funds or reasonably firm plans for televising educational programs in the near future. On the other hand we have the commercial interest, apparently possessed of means for televising educational programs in the reasonably near future, but likewise without plans as to what, if anything, would be done in this connection. However, since the future, if not

1/ Portland, Maine
Bangor, Maine
State College, Pa.
Erie, Pennsylvania
Dayton, Ohio
Bozeman, Montana
Miles City, Montana
Butte, Montana
Minot, North Dakota

Dallas, Texas
College Station, Texas
Gainesville, Florida
Panama City, Florida
Las Vegas, Nevada
Columbus, Georgia
Biloxi, Mississippi
Roanoke, Virginia
San Juan, Puerto Rico



the present, status of educational programming in the field of television depends on the provision made therefor at this time, the Commission, as I see it, finds itself in the unenviable position of having to make a choice between the inadequate proposals of these interests, or promulgate rules requiring commercial stations to provide adequate educational programs. I am not ready at this point to recommend that this latter step be taken.

Having made little or no showing as to what it is willing to do in this connection, obviously, we cannot depend on the commercial interest to give this vitally important type of programming the attention it merits. Therefore, we are left with no alternative. Despite the inadequate showing made by the non-commercial educational group, circumstances dictate that the requested reservations be made. There is this much to be said in favor of such assignments. Regardless of the obstacles which must be overcome, in general, educational institutions, in order to further the purpose for which they exist, undoubtedly will be conscientiously concerned with the construction and operation of non-commercial educational stations at the earliest possible date. We can only hope that their state and local governments share their interest and foresight.

One of the considerations which enables me to accept the reservation of channels is the fact that, in the event the educators fail in their efforts, the Commission, at any time it considers it in the public interest to do so, can reconsider its decision in this connection and, through rule making proceedings, assign idle educational channels for commercial purposes, and possibly promulgate rules requiring other than non-commercial educational stations to provide adequate educational programs. Moreover, after a period of one year from the date on which this table of assignments is made final, any interested party is at liberty to petition the Commission for rule making proceedings looking toward the commercialization of any or all educational channels lying fallow at that time. Accordingly, in view of the observations set out above, and on the basis of the entire record, I believe it is in the public interest to reserve the channels for non-commercial educational television stations specified in this Report and Order.

SEPARATE VIEWS OF COMMISSIONER HENNOCK
CONCURRING IN PART AND DISSENTING IN PART

1. For the reasons set forth hereinafter, I find it necessary to dissent from the Commission's decision in its Sixth Report and Order concerning:

- A. The Increases in Station Power and Antenna Height:
- B. The Use of Channels #66-83:
- C. The Procedure for Processing and Hearing Applications:

2. With reference to the Educational Reservations, and the Table of Assignments, I am Concurring in the decision in so far as it adopts the principle of reserving channels for educational purposes and in so far as it assigns specific channels for such purposes, and Dissenting from the decision in so far as it fails to make a more adequate and proper provision for education herein.

A. The Increases in Station Power and Antenna Height. (Pars. 143-165 of the Sixth Report)

The question of power and antenna height concerns in essence the relationship between the VHF and the UHF portions of the spectrum, as well as the development of television in the smaller communities of the country. By granting increases in power and antenna height the Commission, in my opinion, has unduly and unnecessarily enhanced the VHF at the expense of the UHF. As the UHF is the new and heretofore experimental portion of the spectrum containing 85% of all TV channels, and its use is so clearly necessary to a national system, the Commission should not hinder its development by adding to the advantage held by the already highly developed VHF. Rather, the UHF should now be encouraged in every way possible so as to aid its development, establishment and eventual growth into an integral part of a truly nation-wide television system.

I believe therefore that the Commission in general should retain the provisions now in its Rules regarding power and antenna height for the lower VHF and finalize a maximum power of 50 kw for these channels (2-6) at a maximum antenna height of 500 feet, or their equivalent ^{1/} Retaining the maximum height of 500 feet, maximum power for the upper VHF (channels 7-13) should be raised to 150 kw to keep the 3 to 1 ratio adopted by the Commission tending to equalize potential coverage, and a maximum power of 1000 kw authorized for the UHF, to assist the early development of its high power operations. Even 50 kw (or 150 kw) at 500 feet, it should be noted, would permit increases in power and height for nearly all stations now operating which, despite already extensive coverage, are presently below these maxima.

The primary aim of this allocations proceeding must be the maximum utilization of all television channels. Certainly a system comprising only a few hundred VHF stations, each with the greatest possible coverage, would be most efficient from the point of view of these individual stations. This would not, however, even approximate a nation-wide system and it would be most unfortunate if the medium were to develop in such a manner, depriving scores of cities of their sole opportunity for local self-expression in television.

There are serious economic problems facing the development of the UHF against presently existing or future VHF service, basic to a determination of this question of powers and heights, which the Commission apparently has minimized or disregarded. Even the briefest consideration makes clear the difficulties confronting a potential UHF operator in a community now receiving no VHF service or only marginal VHF service, which community is subsequently flooded by reliable, multiple VHF signals from far-off, larger

^{1/} Thus, antenna heights of over 500 feet would be permitted for all channels when proportionate decreases in power were utilized to provide an equivalent ratio which would keep a station's particular contour constant. Such a practice has heretofore been followed and will be in the future with respect to heights over 1000 feet in Zone 1. (See §3.614(b)(1) of the TV Rules).



cities. First, the VHF sets purchased in the area, which may number in the tens of thousands and even approach "saturation", will not be able to receive local telecasts over UHF, without being converted. 1a/ Furthermore, the VHF operations in the larger cities in all likelihood will, if established practices are continued, obtain exclusive rights to network affiliations and operations in the area, thus securing for themselves a large body of highly popular TV programming. In addition, the major national and regional advertisers who provide much of the necessary economic base for television operations will tend, for practical business reasons, to gravitate toward those existing VHF stations with extensive coverage. Thus, the potential UHF operation will predominantly be forced back upon new UHF and converted sets and upon local programming resources and local advertisers, which alone may not provide sufficient support for a television station.

Similar economic difficulties, with the exception of the set conversion problem, will also confront the establishment of a local, small-city VHF station. Thus, provisions for height and power intimately affect assignments to smaller cities. The Commission has recognized that some delay is certain before television, more costly and complicated than radio, develops in these smaller cities. This very allocations plan has been expressly formulated to give these cities additional time to take advantage of their assignments thus preserving their future opportunity for local television outlets. Mere assignments however, are not enough; the Commission must also establish rules and conditions which make these assignments reasonably capable of being translated into actual operations.

There will be, irrespective of the power and height authorized, some degree of VHF overlap. This decision, however, substantially aggravates the amount of this overlap and to that extent may deter full development of the whole TV spectrum. To illustrate: Commission propagation data shows that operations at maxima of 50 kw and 500 feet in the lower VHF will, when limited by noise only, have a Grade B service radius of 52 miles. Operations at 100 kw and 2000 feet on these channels limited by noise only will, however, result in a Grade B service radius of 86 miles, an increase of 34 miles 2/ Expressed in terms of land coverage, this results in an increase of the station's Grade B service area from 8,500 square miles to 23,300 square miles.

While co-channel interference lessens the extension of coverage brought about by increased power and height, such extension will in all events be considerable. Thus at a separation of 220 miles, with both co-channel stations going to the maximum of 100 kw at 2000 feet, each station's Grade B service radius in the other's direction will increase from 50 miles to 67 miles. If

1a/ It should be noted that the efficiency and convenience of UHF converters has not yet been proved. In view of the difficulties previously had with other converters, in FM and television, this remains a serious problem for existing TV sets.

2/ Statistics for the upper VHF show a comparable extension of Grade B service radius limited by noise only of from 44 to 80 miles as the result of equivalent increases but, for purposes of simplicity, only lower VHF figures have been used.

only one station goes to the new maxima, its radius will increase from 50 miles to 76 miles in the direction of its co-channel station; although the latter, remaining at 50 kw and 500 feet, will suffer a 5 mile decrease in its service radius in the former's direction, the higher maxima will still effect a substantial net increase in overall coverage. 3/ These increases, in my opinion, should not be permitted, particularly in view of the fact that the wider mileage separations and the use of offset carrier established in this Report have, by diminishing co-channel interference, already resulted in service areas greater than those provided prior to the "freeze."

The Commission's experience with FM, where the set problem was so crucial, should make it clear beyond question that practical economic considerations cannot be left largely to chance in the establishment of a new service. Moreover, the "safety factor", often referred to in this Report, would seem to require that there be no further major extension of the coverage of individual VHF stations throughout the country at least until UHF clears its initial hurdles in getting started and more definite knowledge is gained concerning UHF and its interrelationships with the VHF. Nor should the application of this "safety factor" be limited to Zone 1, for the ultimate health of the UHF will have a vital bearing upon television development in all zones. 4/

To increase power and height now is irrevocably to cast the die in favor of the VHF and to take an unnecessary gamble with the future of our entire television system. Particularly in view of the Commission's statutory duty to "generally encourage the larger and more effective use of radio in the public interest", I believe that no further increases in power and antenna heights, beyond those minor ones hereinbefore indicated, should be permitted.

B. The Use of Channels #66-83 — (Pars. 26-32 of the Sixth Report)

The Commission, in my opinion, should have adopted and finalized the proposal in its Third Notice to give a substantial preference in these unassigned "flexibility" channels to cities without television assignments. 5/ Under this

3/ In other directions, it should be noted, both operations would tend to approach the noise limitation figure of 86 miles referred to above, for the stations will not necessarily be limited in every direction by co-channel separations of this order.

4/ The temporary loss of some service to outlying areas if power and height are not increased is more than compensated for by the substantial enlargement of the opportunity for development of local TV outlets. Subsequently, if it should appear that some local outlets will not be forthcoming, the increases in power and height could then (in accordance with the "safety factor") be granted to extend coverage to these outlying areas.

5/ See Part II, Assignment Principles, of the Third Notice. These unassigned channels, known in the Third Notice as "flexibility" channels, in addition to channels 66 to 83 include those additional assignments which could, consistent with the standards established herein, be made on channels 2 through 65.



proposal, a party in a city without television assignments (and not within 15 miles of an assignment) could have applied in a licensing proceeding for a "flexibility" channel. In contrast, a party in a city to which one or more assignments has been provided would have been ineligible to make such an application and would have been required to institute rule making proceedings to secure a "flexibility" assignment. Such a rule of "limited eligibility" protected the future interest of smaller cities without assignments in these "flexibility" channels, and thereby preserved what generally will be their sole opportunity to obtain local television outlets.

I believe that the Commission has erred in deleting this Third Notice proposal and in making unassigned channels available to all on practically an equal basis. The Commission's statements in this Report to the effect that these channels will "primarily" be used for communities without assignments (commercial and educational) are insufficient in the absence of specific safeguards and standards to accomplish such a needed result. The privilege given cities without assignments to petition for "flexibility" channels even during the general one-year ban on amendments to the Table does not offer anything near the substantial protection required. In view of the anticipated heavy demand for frequencies, the equal right of all parties (after one year) to petition by rule making for these channels and particularly the lack of any definitive criteria under which the Commission could withhold them against such demand, it is likely that most unassigned channels will be pre-empted by larger cities which already have multiple television assignments. I do not believe that we should so encourage the early appropriation of these channels at the expense of smaller communities which may, in time, be able and eager to support a local television station.

C. The Procedure for Processing and Hearing Applications

By far the best system for processing television applications would be the so-called "two-lump" procedure; using it the Commission would separately process all VHF applications and all UHF applications for a given community and would order consolidated hearings when either the total number of VHF or UHF applications exceeded the number of available VHF or UHF channels. The "channel by channel" procedure and the requirement that applications specify transmitter sites will, in my opinion, cause unnecessary legal and administrative difficulties without obtaining any substantial gain in the number of grants without hearing issued by the Commission, and thus should not have been adopted.

Strong reasons exist for preferring the "two-lump" procedure even if it may be assumed (to my mind, incorrectly) that the other would be more expeditious. The "two-lump" method would enable the Commission more closely to meet its primary duty in licensing proceedings to choose the best qualified applicants in a community. For example, its use would obtain the three most worthy applicants (perhaps out of seven or eight) for three VHF channels that may be available in a given city. 6/ "Channel by channel", however,

6/ This applies with equal force to UHF channels and applications, although for purposes of simplicity only the VHF is referred to. It should be noted that were it not for the desirability of getting UHF started against the

will at best obtain the most highly qualified applicant for each of the three channels; in so doing it may bypass one or two more worthy applicants who have been lost in the contest over a particular channel.

That all VHF channels are identical has been a basic principle of the allocations plan and the Commission has denied several counterproposals in these proceedings which sought to distinguish between VHF frequencies as such. By permitting applicants to pick and seek particular VHF frequencies, the "channel by channel" procedure is inconsistent with this basic allocations principle. 7/ Unfortunately, it also offers greater opportunity for and thus encourages maneuvering, pressuring and trading among applicants within available VHF channels. No one can believe that these competitive practices will be intended to or will produce applicants best qualified to serve the public interest and most dedicated to it. Clearly, the Commission should not abdicate to individual applicants its critical role in licensing proceedings: it should not select a procedure that puts a premium on their wiles and strategies.

The contention that "channel by channel" offers greater speed is without substantial foundation in my opinion. Most likely, the number of early grants will be very much the same no matter which procedure is adopted. At best there will be a limited number of instances in which "channel by channel" will free for grant an application otherwise caught in hearing. It is unreasonable to anticipate many islands in the rough seas of VHF competition, instances where there will not be multiple applications requiring hearings for every choice VHF channel. In the case of UHF, the lesser competition will probably bring, in general, fewer immediate applications and should permit a quantity of uncontested grants, regardless of the method adopted.

In view of the anticipated heavy contest for VHF frequencies, it is probable that "channel by channel" will in many instances require multiple hearings in the same community. This increase in the total number of hearings will, in view of the limited hearing staff, cause a serious delay in overall processing. It also raises the possibility of inconsistent results in these several

6/ [Footnote continued from preceding page].

advantage already held by the highly developed VHF, a "one-lump" procedure, including all the multiple applicants for available channels, would for the reasons stated herein be best and should have been adopted.

7/ The "two-lump" procedure on the other hand is not only consistent with the fundamental principles of the allocations plan but is the procedure which in essence has been used by the Commission in FM and heretofore in television. It represents too a sound departure from the method used in AM, where a "channel by channel" procedure was permissible for licensing proceedings brought in the absence of an engineered allocations plan and Table of Assignments.



VHF hearings in a city, due in part to the use of different Examiners and also to the varied and inconsistent decisional factors controlling licensing that may be present in each hearing. 8/ Although a single Examiner for all of these VHF hearings reduces the dangers of inconsistent results, there remains the probability of varied and inconsistent decisional factors in them. Such an arrangement, in any event, would waste whatever time advantage "channel by channel" might otherwise have held, for the Examiner, in order to avoid giving an unfair "head start" to any applicant, would undoubtedly have to hold up his earlier decisions until all VHF decisions in that city were ready for simultaneous issuance.

The requirement for applicants' specification of transmitter sites, apparently one of the prime reasons for Commission adoption of the "channel by channel" procedure, is actually a cardinal weakness of it. Not only will it make more difficult and seriously slow up routine processing but it will require a heavy, and in most cases an unnecessary, expense for all applicants. It opens, moreover, an unfortunately wide avenue for those "backstage" competitive manipulations already referred to.

Since transmitter sites will be specified in more than 1000 applications, it is not unlikely that a good number of them will not meet the established mileage separations to other specified sites. Not only will co-channel separations have to be taken into account here, and adjacent channel separations as well, but, in so far as the UHF applications are concerned, also those many other separations established by the so-called "Taboo Table." 9/ Particularly accentuating this difficulty will be the fact that in preparing an application for filing, there is no way for an applicant to know of the specified sites in other applications to be filed which will cause his to violate the minimum separations.

Every time specified sites violate the separations, a conflict requiring a hearing will be created involving applicants from different cities (as well as between other competing applicants in their respective cities). 10/ These

8/ Thus, for example, depending upon the lineup of applicants for particular VHF channels, the basic factor of local residence may be without substantial significance in one hearing where both applicants possess it, substantially overlooked in another hearing where neither applicant is local to the community, and determinative in a third hearing where one applicant is a local resident and the other is not. Under the "two-lump" procedure, however, all decisional factors would play a consistently equal role in the results for all VHF channels.

9/ See §3.610(b)(3) of the Rules. Briefly to list them, these "Taboo Table" separations, all involving different channels, include I.F. beat (20 miles), Intermodulation (20 miles), Oscillator (60 miles), Sound Image (60 miles) and Picture Image (75 miles). Every one of these separations will have to be taken into account in every direction in measuring and determining the interrelationships of all transmitter sites specified.

10/ Since educators will also be required to specify transmitter sites, they may similarly be forced into conflict with commercial interests in

[Footnote continued on following page].



conflicts, closely resembling those arising in standard broadcasting, are precisely those which the television allocations plan and Table of Assignments were designed to resolve and avoid.

Only a relatively few such conflicts would be able to begin a chain reaction which would tie up extensive regions of the country and large numbers of channels in extremely complicated hearings. Even should the conflict and hearing be limited to applicants in two cities, it is indeed difficult to see what criteria the Commission would use to prefer an applicant from one city over his competitor in another (not to mention the other competitors in each city), for the Table of Assignments has already established that the operations of the several channels which may be involved are, in their respective cities, technically feasible and proper in every respect.

The transmitter problem could best be handled on a "site-to-be-determined" basis under the "two-lump" procedure. The transmitter site and its related issues would then play no part in a comparative hearing. Only the successful applicant (or applicants) holding a construction permit would be required to secure a site meeting minimum mileage separations. Any difficulties in so doing could more easily be ironed out within the greater flexibility of informal, administrative processes. Given the result in either case of sites within the minimum separations, the procedure which reduces difficulties to a minimum should be preferred.

In view of the foregoing contrast of its assured benefits against the probable minimal gains and the serious difficulties entailed in the other procedure, there is every reason to adopt the "two-lump" method for the processing and the hearing of applications.

D. The Educational Reservations, and the Table of Assignments, to which I Concur in so far as the decision adopts the principle of reserving channels for educational purposes and assigns specific channels for such purposes, and to which I Dissent in so far as the decision fails to make a more adequate and proper provision for education therein.

I

I am in complete agreement with the Commission's action in finally adopting the principle of indefinitely reserving television channels for non-commercial educational purposes. I concur, therefore, in the Commission's decision in so far as it has finally reserved specific channels in cities throughout the

10/ [Footnote continued from preceding page].

other cities, a situation inconsistent with the basic non-competitive principle of a reservation. Moreover, in such conflicts there are no established criteria under which the Commission could choose between an educator in one city and a commercial applicant in another.



United States. Both Commission recognition of the principle and the specific reservations mark a significant step forward for educational-TV. I believe, however, that the Commission's provision for education herein is deficient in many vital respects, both general and specific. By failing to provide education with its rightful share of the television spectrum, the Commission, in my opinion, runs the risk of stunting the growth of educational-TV in the formative days of its infancy and of forever retarding the future of our entire educational system.

My Separate Views to the Commission's Third Notice, issued March 21, 1951, pointed out certain defects in the proposals therein respecting educational television in the hope that they would be remedied before final action was taken. Our decision today, however, in large measure finalizes these proposals and thus freezes into permanency most of the flaws and shortcomings contained in them. Furthermore, their adoption has resulted in numerous errors in the specific allocations of the Commission's Table of Assignments. In view of the finality of this action, the additional evidence adduced by educators in the city-by-city hearings and the constantly increasing advancements in educational-TV, I now feel even more certain that the Commission has grievously erred in not providing education with the reservations it needs and deserves and that, in so doing, it has worked an injustice to the public interest.

II

In order to give a proper perspective to the Commission's action, certain background facts should first be stated in summary form. It is fundamental that the Commission is herein shaping the nature and course of television operations for generations to come. In this decision, the Commission allocates and opens up for licensing almost all of the frequencies that now remain available for television service. Education in general will not immediately be able to claim and use these television channels; it will need, as the Commission recognizes, additional time in which to secure funds, evolve organizational structures and, just as important, investigate and develop the new, expanded role which it can, through television, play in the community.

In view of the pent-up commercial demand for television facilities and the certainty of their early preemption for regular commercial operations, only the reservation now of a substantial number of channels will insure their availability for future, full-scale educational use. Provision for education in television must literally be made now or never. Since education cannot in the immediate future compete for the remaining channels, the absence of a reservation in any city is almost a death blow to its opportunity for an educational-television service.

III

There has been no question as to the tremendous potential inherent in large-scale use of television by educators. TV, as the "electronic blackboard", is a teaching tool of rare power and persuasion. Combining sight and sound, blessed with an immediacy of transmission and impact, welcomed by and available to almost everyone, television offers an unprecedented opportunity for education, both formal and informal. It is uniquely capable of serving all of our people in our schools, homes and factories on a constant and

intimate basis. It can do so, moreover, at a cost which is extraordinarily low when full account is taken of its effectiveness and extensive coverage.

To refer to educational-TV, however, is no longer to speak merely of a potential, however basic such considerations might be. The steadily expanding volume of educational telecasting and the many successful experiments in teaching through TV are already realizing the potential of this new medium in every day life. ^{11/} These activities show only a sample of what education could do with its own full-time stations: they provide increasing proof that television, in the hands of educators, could revitalize and expand our entire educational system, and do so at a minimum cost.

IV

The phenomenon of television has had an unprecedentedly rapid growth; it has become in only six years an integral part of the lives and habits of millions of people. Already possessing major standing among the mass

^{11/} The dynamic aspects of the growth of educational television have been dramatically illustrated, not only on but off the record where they must be common knowledge to the Commission. Each month brings a larger number of schools into this field, sponsoring and producing telecasts, initiating classes and workshops (both technical and creative) and securing and operating their own television equipment, including studios and closed circuit operations. (See *inter alia* JCET Exhibit 647). Regular educationally sponsored telecasts of several years standing have proved most successful and have continually been expanding. An outstanding example is found in Philadelphia where the TV "School of the Air", used as part of the regular curriculum in the classroom, has been in operation since 1949 and where, last year, the TV "University of the Air" commenced operations to provide adult education in the home under the joint sponsorship of the area's 19 schools of higher learning. Together, these two programs now telecast a total of nine half-hour programs per week over the three stations in that city. Regular educational telecasts on a more modest scale have been seen also in other cities, including Detroit, New York, Newark, Miami, Chicago, etc. These programs cannot, however, as indicated above, provide anything near an adequate substitute for education's own TV stations.

In the past year, several educational organizations have developed plans for state-wide TV networks. The exhaustive proposal of the New York State Board of Regents is the most highly developed of these, but initial steps toward such networks have also been taken in Wisconsin (now operating a state-wide radio network of eight stations), New Jersey, Connecticut and Washington.

And only a short time ago, a conference in St. Louis of leading educators, citizens and organizations in this field laid the groundwork for a national educational-TV network to facilitate the building and operation of non-commercial stations. This conference underscores the swiftness of developments here, for the possibility of cooperative endeavor within a particular city is herein marked as a significant step forward. (See Par. 44 of the Sixth Report).