A SATELLITE PRIMER

I. HOW SATELLITES WORK

Communications satellites are relay stations positioned in space which receive signals from transmitting earth stations in one location and "relay" those signals to receiving stations in other locations. The earth stations can be located in different countries such as Canada and the US or they can be on different continents, North America and Europe for example. As long as both stations can see the same satellite, communication is possible. Communications through a satellite can be in the form of television, voice or data, or combinations of these.

When satellites were first launched in the late 1950's, they had very little power available because of the technology of the day and because launch vehicles could only handle relatively small satellites. Today, using the latest technology, satellites can transmit powerful signals to earth enabling the use of much smaller and less costly receiving stations to be in the hands of users.

II. ACCESS TO SATELLITES

The business of international satellite communications has been controlled overseas for years by select government agencies (PTT's) and by Comsat in the US. Even with the modernization of communications and the deregulation of the industry in the US, most foreign government entities and Comsat have maintained their tight grip on satellite telecommunications. Satellite communications has the potential to break these monopolies by allowing users to bypass traditional gateways controlled by these government PTT's since the satellite signals arrive from the sky and cannot be stopped by physical barriers as could a telephone line or a cable. What they cannot do by technology, however, they have done by cartel. Intelsat, the international entity which controls the global satellite system, is a monopoly owned by these foreign governments and Comsat. Working together they have made the benefits of satellite communications available only to these same PTT's, which already control all communications into and out of their nation, again leaving the consumer stranded with high prices and restrictive regulations. Although the technology (like so many others) was originally developed in the United States with taxpayer funds (by NASA), its use internationally to bring the benefits of lower costs and increased flexibility of use

has been stymied by the hand-in-glove working relationships of the monopolies of Intelsat and its foreign governmental partners.

One way of breaking the stranglehold which these entities have brought upon worldwide communications is by encouraging separate international satellite systems, and allowing them to operate freely worldwide. This attitude would bring down communications costs, introduce the latest technology to the developing world, and allow the free flow of information beyond international borders.

III. THE PAS-1 SATELLITE

PAS-1, the world's first international private satellite system, was launched in June 1988 from Kourou, French Guiana. It was placed into service in September 1988 and has been serving the US, Europe and Latin America since that date with the newest technology and the lowest costs presently available anywhere in the world. Some rural locations in Latin America where roads have yet to be built are already capable of receiving CNN (among others) which is being broadcast to Latin America 24 hours a day. PAS-1's high-powered technology is allowing Latin Americans to receive television on very low-cost systems presently unavailable with other international satellites

covering the same area and opening the door to provision of low-cost information services where they never existed before.

Several of PAS-1's beam patterns are attached. These footprints also list the transponder power or EIRP (effective isotropic radiated power). The high power of PAS-1's beams provides for excellent coverage and superior signal quality with small broadcast antennas.