SPACE

# Communications Satellites

➤ DEVELOPMENT of more than one U. S. system of commercial communications satellites is probably "not commercially feasible," the chairman of the Federal Communications Commission told a Senate commerce subcommittee.

Newton M. Minow said the emphasis should be on developing a central system with "a potential capacity for global coverage," giving "equitable access" to other nations who want to use it.

The subcommittee met to consider a resolution by Sen. Vance Hartke (D.-Ind.), who wants a six-month study by a special commission charged with evolving a national telecommunications policy, now lacking.

Sen. Hartke said the problem is acute because of increasing demands for use of the radio spectrum. He said Congressional action is imperative to prepare the United States for the International Extraordinary Administrative Radio Conference, to be held in Geneva in 1963.

Because of spectrum limitations, the nation that first launches an experimental commercial communications satellite will have a decided advantage when decisions on usage and allocations are made in Geneva, witnesses agreed.

Jean Felker, assistant chief engineer for American Telephone and Telegraph Company, said his company hopes to have an experimental system operating during the first six months of 1962, and a full commercial system operating by 1965. He said he thought spectrum limitations rule out the scientific feasibility of multiple systems.

The Bell system envisaged by A.T.&T. involves relay satellites in orbit at a height of about 6,000 miles above the earth. Forming "a sort of umbrella over the world," Mr. Felker said, the satellites would be tracked by a ground station that picks up the rising satellite as the previous one "sets." A network of 20 to 40, with self-contained electronic equipment, could carry several hundred telephone conversations at the same time.

A ground station with five large antennas is to be constructed at Rumford, Maine. It will be protectively covered by "a canvas bag that weighs 20,000 pounds but is only one-sixteenth of an inch thick," Mr. Felker said.

Bell's eventual goal, he said, is a communications satellite in a "fixed" orbit about 22,300 miles out in space. Present rocket technology and tracking techniques are inadequate for this, however.

Mr. Minow emphasized that long-distance communications is the immediate goal of the satellite program. He said satellite-to-public television is strictly a long-term objective.

A.T.&T. will build experimental satellites at its own expense, but has a contract with the National Aeronautics and Space Administration under which the Government agency will launch them. NASA later will be reimbursed for launching costs.

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## Both Private and Public Satellites Due in Year

➤ THE BATTLE over private or Government ownership of communications satellites is now changing scene from earth to space.

Two communications satellites—one privately financed, the other built with Government funds—are scheduled to be launched into orbit within a year, according to the National Aeronautics and Space Administration in Washington, D. C. Both shots are primarily experimental, aimed at eventually developing a world-wide communications system.

NASA's recently announced contract, granted to American Telephone and Telegraph Company to build two to four satellites at its own expense, supports President Kennedy's endorsement of private ownership and operation of the U. S. portion of any space communications program. The contract gives A.T.&T. a fairly free hand, with NASA requiring only that all information obtained from the experiments be available to the Federal space agency.

"The communications satellite shots reflect the urgent need to bring global communication to the operational stage," Dr. Leonard Jaffe, chief, NASA's communications program, told SCIENCE SERVICE. However, he said that much more research is needed before the satellite system becomes truly operational.

A.T.&T. satellites are scheduled to be launched into space next April and October astride a Thor-Delta rocket. If successful, two other shots will probably then be attempted.

The 125-pound, sphere-shaped satellites will carry instruments capable of handling different kinds of communications. They will be put into orbits ranging from 600 miles at the nearest point to as much as 3,000 miles out in space.

The NASA satellite, which is being built by the Radio Corporation of America (RCA), is expected to be launched next July. Its function will be similar to the privately owned satellites.

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