



Pres. Joseph V. Charyk (center) of new Communications Satellite Corp. holds conference with top aides  
Headquarters for company is in a former Washington mansion



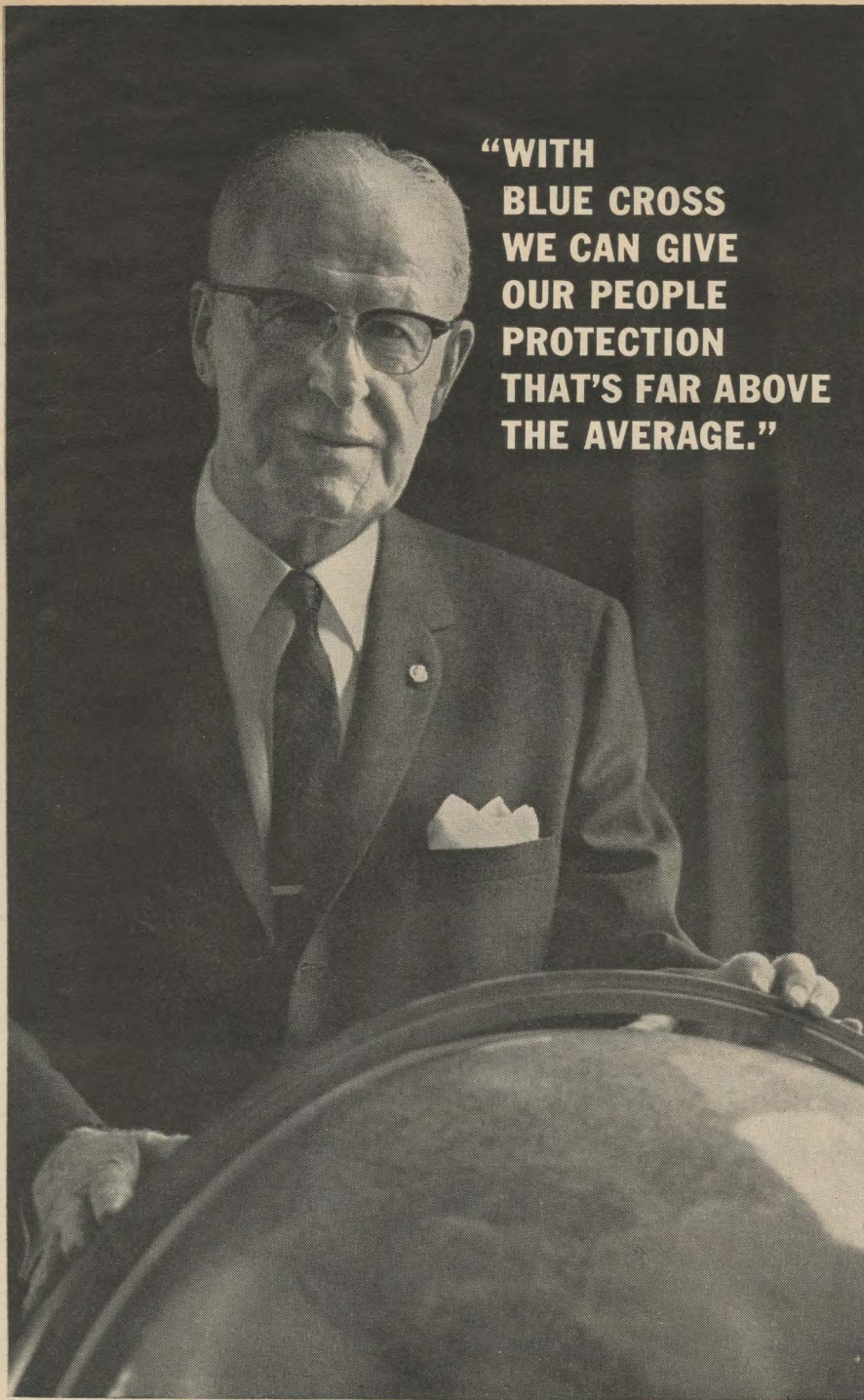
## COMMUNICATIONS

# Launching a satellite company

Space communications monopoly assembles its staff, grapples with basic problems

On a stately 26-acre estate in Washington, officers of the new Communications Satellite Corp. are racing to put together a billion-dollar corporation to handle a satellite system of international communications. They're hoping to have the system, which may cost \$500-million, ready for commercial operation by 1967.

But right now, the corporation has nothing but a \$5-million line of credit. And a lot of basic decisions still lie ahead for the company, which was created by Congress as a government-sanctioned private monopoly. These decisions will be made by CSC Chmn. Leo D. Welch,



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formerly chairman of Standard Oil Co. (N.J.), and Pres. Joseph V. Charyk, former Under Secretary of the Air Force.

**The problems.** The new corporation's problems are: getting the necessary manpower, making technical decisions on what type of system to install, completing negotiations with foreign countries that will be served by the system.

But tackling them is complicated by the corporation's quasi-governmental status. In addition to coming up with an economical system that will turn a profit, the corporation must keep these considerations and aims in mind:

- The Administration wants the communications system to be a showpiece for democracy, with early service to underdeveloped countries.

- Congress wants wide public ownership, and wants to make sure no one of the communications companies participating in the new corporation will dominate its operations.

- The Federal Communications Commission, with power over rates, will also regulate the corporation on how to contract for materials and services. Already, FCC is annoyed because the corporation has not yet issued a stock offering to the public.

**Will it be economical?** It's pretty well agreed that a satellite communications system eventually will be a sound economic venture. Assessments vary, however, on just when such a system will become profitable. CSC officials hope that they can get the system to operate in the black within three or four years after it goes into service. That would be about 1970-71 if the initial system begins operating by 1967 as hoped. Others are less optimistic on this point. "It depends on whose crystal ball you are looking into," says one government official who follows the matter closely.

The economics of the system will depend directly on how much it costs to install and maintain and how much use is made of it. As a working goal, the corporation looks to a three-year lifetime of its satellites as the economical benchmark. Anything less than this would make the going rough for CSC; anything longer would make it easier.

The systems services will be sold to existing international communications companies such as AT&T and RCA. In turn, these carriers will make the service available to the public. While most of the international carriers have said that they plan to use the new satellite system, obviously they won't junk their present communications networks the minute the satellite system goes into

service. It must be fitted into their operations. Rates charged to the public are expected to be comparable to those now in effect for cable calls.

The FCC, too, will control the rates that the satellite corporation charges to the communications carriers for use of the satellites. These have not been determined yet, but rates are obviously a key element in the economics of the system.

**Growth expectations.** The satellite corporation builds its hopes for a profitable system on the expectation that the growth in cable communications between the U. S. and Europe will continue to increase about 20% a year.

Even with plans for a satellite communications system under way, private companies are still planning to install new cables between the U. S. and Europe. So the question is whether the growth in communications usage will outpace the communications equipment being planned to handle it. The satellite corporation, and many others in the field, believe that it will. Historically, they point out, whenever a new service is provided in the communications field, usage demands grow geometrically.

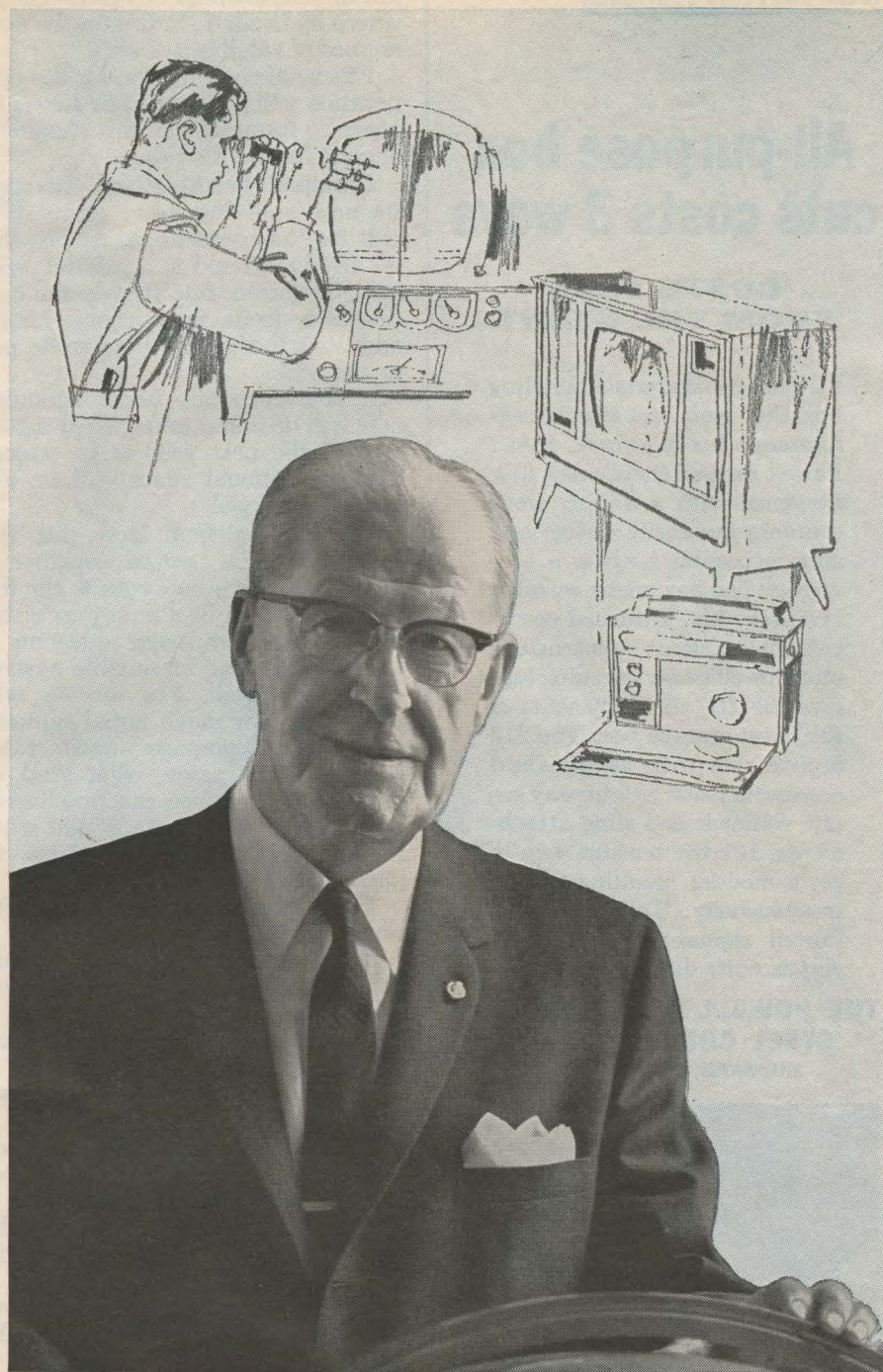
**Watchdog committee.** So CSC is moving ahead optimistically with its plans. And to make sure there are no slips in getting the new corporation off on the right foot, the White House recently set up an ad hoc committee under the joint chairmanship of Dr. Jerome B. Wiesner, scientific adviser to the President, and Nicholas deB. Katzenbach, Deputy Attorney General, to tie together the various government agencies whose work affects the communications system. Members come from the State and Defense Depts., National Aeronautics & Space Administration, Bureau of the Budget, and National Space Council.

The corporation already is beginning to get its manpower problem solved. Since the corporation's two top officers took over the reins five months ago, a staff of 40 has been assembled. This is expected to grow to about 100 a year from now. Before 1967, it will climb to 200 to 300.

**Top aides selected.** Some of the key men have come from industry, others from government agencies.

For manager for components development and systems research, CSC brought in Sidney Metzger, formerly RCA's man in charge of radio communication, engineering, and equipment for Projects Score, Tiros, and Relay.

CSC's systems analysis manager is S.H. Reiger, until recently a



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senior staff member of RAND Corp., where he headed studies on the economics of satellite systems.

Financial coordination for the corporation will be handled by Lewis C. Meyer, formerly a top financial analyst for the Air Force.

**Cramped headquarters.** Housing its new staff has been more difficult for the corporation. At present, it's headquartered in a palatial mansion, Tregaron. But already the corporation needs more room. Latest additions to the staff have to be put in the attic.

A new corporate home undoubtedly will be found in the Washington area in the next year or so. Meanwhile, additional space will be obtained piecemeal.

**The big decision.** Now that the corporation has gotten together a basic staff, it can move on to the decision that will be the key to virtually every other major question it faces—what kind of satellite system should it install. The answer will determine how much initial capitalization the company must raise through stock sales, what kind of international service can be offered, who will be able to use it, and what it will cost foreign countries to participate.

This is the timetable the corporation has set for itself:

**By the end of this year,** it wants to have analyzed the various satellite systems.

**By next summer,** it wants to freeze on a design for its satellites.

**By early 1966,** it wants to have prototypes in orbit.

**By 1967,** it hopes to have much of the system in commercial operation.

**The alternatives.** The three technical systems under consideration are:

- Thirty or so satellites in low orbits at altitudes of approximately 3,000 mi.
- Fifteen to 20 satellites in medium-altitude orbits of about 6,000 mi.
- Three satellites in 22,300-mi.-high synchronous orbits where they would appear to remain in a stationary position.

The guessing at this time is that the corporation will install a medium-altitude system, at least at the outset. It virtually has ruled out the low-altitude system because of the large number of satellites involved. The synchronous satellite, too, has a low priority. In spite of Syncom II's success, little experience has been obtained with this type of satellite. Messages, too, are hampered by an echo when transmitted over such great distances.

**Technical considerations.** But even if the medium-altitude system is adopted, many other technical matters remain to be solved. Metzger divides the problem into four parts: ground stations, communications equipment carried in the satellite, the satellites themselves, and the booster needed to loft the satellites into orbit.

It's expected that at least three ground stations will be built in the U.S. Overseas, most major countries are expected to have their own stations. Regional stations probably will be used to serve groups of smaller nations.

The corporation has pretty much settled on the Atlas-Agena booster to put its satellites into orbit. It will use a multiple-launch technique in which some half dozen satellites can be placed into orbit by a single shot.

The major share of CSC's work will go into the spacecraft and the equipment it will carry. Equipment has to be made that will make it possible for several ground stations to communicate simultaneously with the satellites. The Telstar and Relay satellites can accommodate only two ground stations, either talking with each other or both beaming messages in the same direction.

So the corporation must develop a multiple-access satellite to allow several countries to use the system at the same time. Toward that end, CSC has split a \$150,000 three-month contract among AT&T, RCA, and Hughes Aircraft for studies of three different approaches to solving the problem.

**Foreign participation.** The work of getting some of the foreign participants into line has started. CSC had its first talks early this year with Canada, Britain, Germany, France, and Italy. New conferences will be started this fall. The corporation reportedly is ready to tell these countries that if they invest in the communications system, they will be eligible to compete along with U.S. companies for CSC hardware and research and development purchases.

**Cost.** With so many loose ends, it is still too early to set forth the actual cost of getting a satellite system into service, but the corporation believes a medium-altitude system with capacity for 600 voice channels would cost from \$400-million to \$600-million.

The corporation's \$5-million line of credit, spread among 10 banks, will get things started. But it's likely to be completely used up by the time CSC finally issues stock, a move it may make early next year. **End**