Mobile Phone Terminal In the photo, an employee of a real estate firm is contacting his office by means of HICOM, an advanced central terminal for mobile telephones. Developed by the Orlando Division of Martin Marietta Aerospace, Orlando, Florida, and manufactured by Harris Corporation's RF Division, Rochester, N.Y., HICOM upgrades service to users, provides better system management to telephone companies, and makes more efficient use of available mobile telephone channels through a computerized central control terminal.

The real estate man, for example, was able to dial his office and he could also have direct-dialed a long distance number. Mobile phones in most areas not yet served by HICOM require an operator's assistance for both local and long distance calls.

HICOM improves system management by automatically recording information on all calls for accurate billing, running continual performance checks on its own operation, and reporting any malfunctions to a central office. A particular advantage to the phone company is

HICOM's ability to eliminate "call cheating." For years, mobile phone service companies have been plagued by "bandits." A bandit can purchase equipment on the open market and use the network without paying for the service, by giving the operator a fictitious number or a real number not his own. HICOM won't allow that. When a mobile phone is taken off its hook, the computer-controlled terminal immediately searches its memory to see if the caller is a legitimate subscriber. The user does not get a dial tone if he fails the computer test.

Development of HICOM was aided in part by NASA technology. Under contract to Marshall Space Flight Center, IBM Space Systems had prepared a report on improving computer reliability through "redundancy"—designing parallel modules so that if one failed the backup would take over the function automatically. Martin Marietta-Orlando applied the NASA technology to the communications controller and realized substantial savings in development time and money.