

telecom update

A REPORT FROM THE TELECOMMUNICATIONS OFFICE OF THE MARYLAND CENTER FOR PUBLIC BROADCASTING

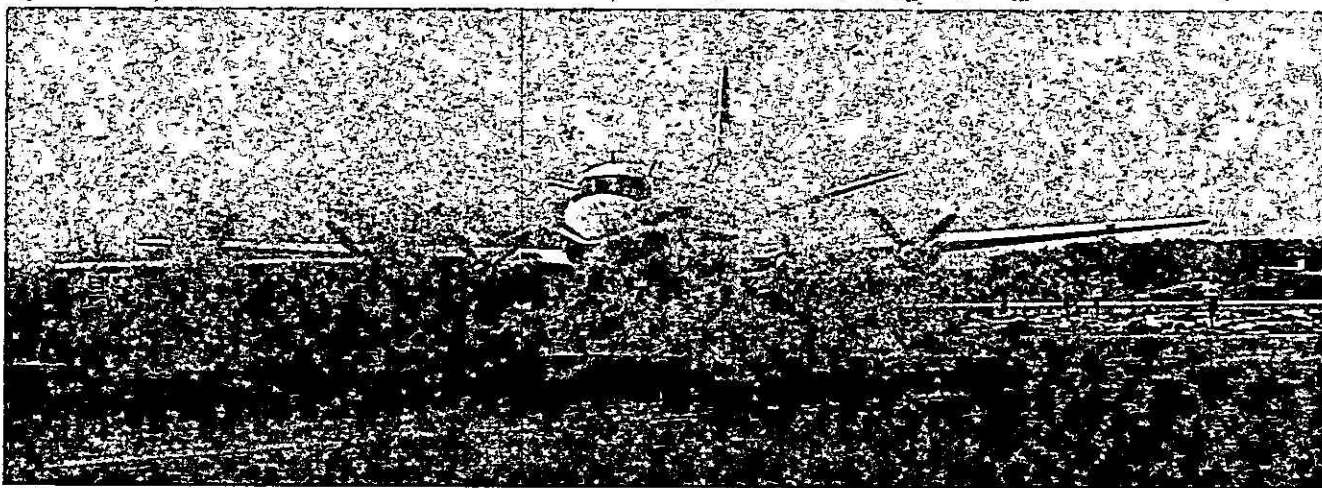
SUMMER 1978

MARYLAND EMERGENCY MEDICAL DEMONSTRATION USES TWO SATELLITES

The sounds: The deafening screeches of metal rupturing metal, followed by an explosion and then moans, screams, and sobs.

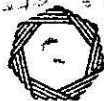
The scene: A placid airport runway suddenly turned into an inferno of smoke and flame.

The incident: An out-of-control ground aviation fuel tanker strikes a taxiing commercial jetliner, and flames engulf both. Two hundred passengers and 15 crew members are on the plane, and one person is in the fuel truck. Many burn and injury casualties result. "The Federal Aviation Administration Control Tower will initiate the practice exercise via the airport crash telephone network on sighting smoke originating from the accident site."

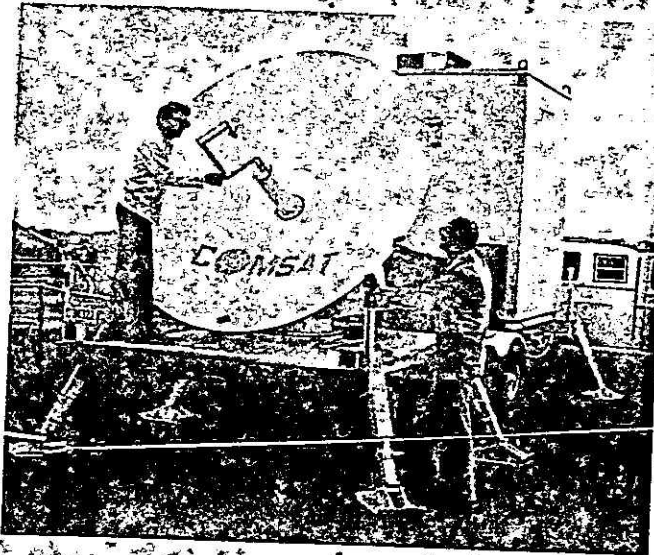
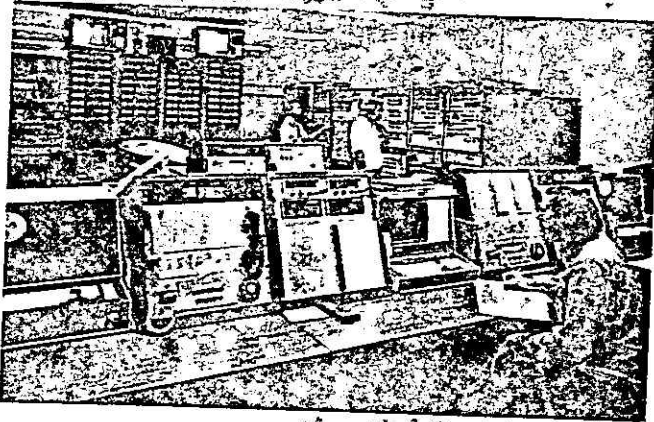


Simulated explosion signals beginning of disaster exercise.

This was the scenario for a mammoth medical training exercise in emergency management of an airport catastrophe. Held recently at Maryland's Baltimore/Washington International Airport (BWI), the exercise was designed and conducted by the Maryland Institute for Emergency Medical Services (MIEMS) in conjunction with the Maryland Department of Transportation. According to R Adams Cowley, M.D., Founder-Director of MIEMS, the dramatic training exercise was held in order to establish a plan for managing large numbers of casualties in a disaster situation.



Early in the exercise planning stages, the Telecommunications Office of the Maryland Center for Public Broadcasting joined with MIEMS to ask several questions: What if local medical facilities were completely overwhelmed by such a catastrophe? Suppose local ground communications were blocked or overburdened? Could space technology allow Maryland medics to "reach into the sky" and receive instant expert assistance in patient assessment and treatment from specialists at distant locations?



Above: CTS Control, NASA/Lewis Research Center, Cleveland, stands by for satellite transmission.

Below: COMSAT Laboratories earth station is readied for CTS transmission.

sets connected to the "briefcases," view still pictures transmitted from Baltimore, and offer medical assistance to MIEMS Paramedical Training Officer Ron Schaefer at the disaster site.

From the start, space communications became an important component of the exercise plans. The premise was to see if communications satellites could make possible instant additional medical support for the disaster site. And it worked!

For the disaster exercise, two experimental satellites were used. They were NASA's Applications Technology Satellite-6 (ATS-6) and the Communications Technology Satellite (CTS), which is operated jointly by NASA and the Canadian Department of Communications.

In the ATS-6 segment of the demonstration, NASA's Goddard Space Flight Center, Greenbelt, Maryland, provided three remarkable portable earth stations. The size of ordinary briefcases (See *Telecom Update*, Winter, 1978), these special transceivers were placed at BWI Airport and at the medical facilities of O'Hare International Airport, Chicago, and Logan International Airport, Boston. With NASA/Goddard technicians at each airport, audio and black-and-white slow-scan television images were sent from Baltimore to the satellite and back to earth in Chicago and Boston.

At each distant airport, medical specialists were able to turn on TV sets connected to the "briefcases," view still pictures transmitted from Baltimore, and offer medical assistance to MIEMS Paramedical Training Officer Ron Schaefer at the disaster site.

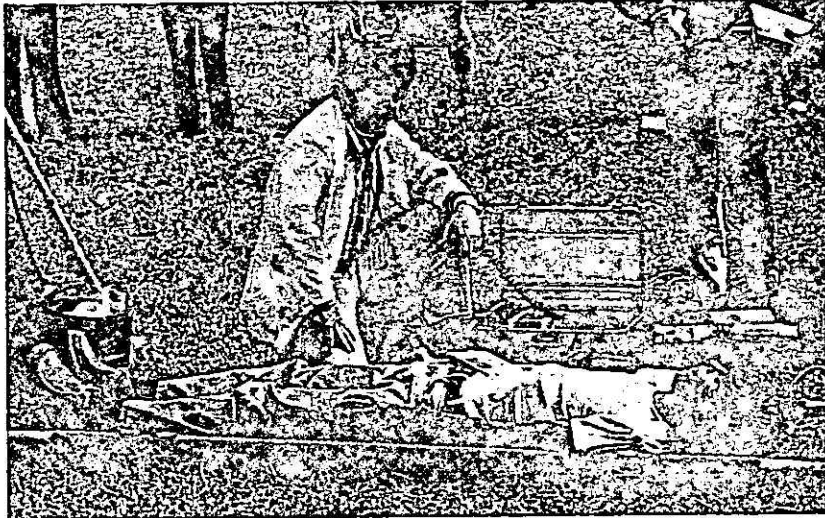
Simultaneously, CTS, managed by NASA's Lewis Research Center, Cleveland, Ohio, was the means for sending audio and full-motion color video from Baltimore to the Brooke Army Medical Center, Fort Sam Houston, Texas. Using a highly-portable 2.4-meter earth terminal provided by COMSAT Laboratories, Clarksburg, Maryland, MIEMS Paramedical Training Officer Lou Jordan was able to communicate directly with burn specialists in Texas. Said Jordan of the experience: "I felt that I had the doctor right where I needed him, right over my shoulder. There was no feeling of distance. We were a team. We were one. I knew he was seeing exactly what I was!"

The success of the satellite demonstration was a direct result of the cooperation and effort of many individuals and agencies. The COMSAT Laboratories portion of the demonstration was designed and executed by Joachim Kaiser, Jeffrey Steinhorn, and Fred Seidel. Managing the NASA/Lewis CTS operations were Patrick L. Donoughe and Erwin A. Edelman. The ATS-6 segment of the demonstration was supervised by NASA/Goddard's Albert A. Whalen, James P. Brown, I.Y. Galicinao, Joseph L. Day, and Lee Harper. Assisting Dr. Cowley in Baltimore were Alexander J. Gretes and Andy Trohanis.

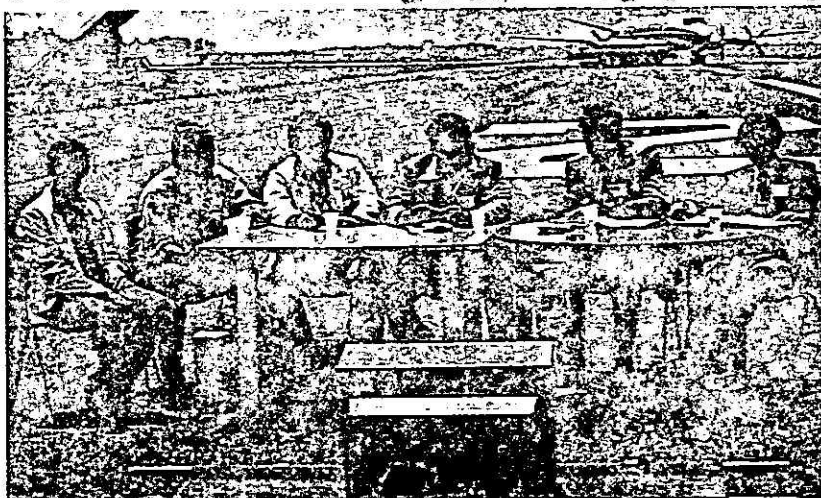
In addition to those agencies actively participating in the exercise, a special group of doctors at the Veterans Administration Hospital in Albuquerque, New Mexico, viewed the proceedings via CTS and assisted in the evaluation process. Dr. Cowley says that the satellite demonstration evaluation results are now being analyzed and that the initial figures are extremely encouraging. For example, the variation in the patient assessment completed during the drill by physicians in Maryland and in Texas-- for the same group of patients-- was approximately an amazing 3%. Further study is continuing on the feasibility of regularly using two-way satellite communication in actual medical diagnostic procedures.



Above: Col. Basil A. Pruitt, left, leads medical team in Texas during Maryland disaster drill. Below: Satellite view of Maryland "victim" in Texas.



Above: Ron Schaefer receives instructions on ATS-6 satellite from Chicago and Boston via NASA/Goddard's "briefcase" earth station. Below: Following the conclusion of the exercise, R A Cowley, M.D., center, conducts one of two live teleconferences designed to evaluate the effectiveness of the earlier demonstrations. (ATS-6 satellite was used for teleconference with Chicago and Boston; CTS satellite, with San Antonio.)



BALTIMORE CITY TELECOMMUNICATIONS EVENT

Planning is under way for a unique telecommunications event to be held in the new galleries of the Baltimore City Hall this fall. Opening on October 20 and continuing for four weeks, there will be a major exhibit portraying public broadcasting and telecommunications in Maryland, the development of space communications, and the use of space technology for the benefit of all people.

Coordinated by the Maryland Center's Telecommunications Office, the project is a joint effort of the Maryland Center, the City of Baltimore, and NASA's Goddard Space Flight Center. The exhibit will be highlighted by a series of live communication satellite demonstrations between Baltimore and other North American cities.