

July 28, 1998

Experimental Licensing Branch  
Federal Communications Commission  
2000 M Street, N.W. Suite 230  
MS 1300E1  
Washington, D.C. 20554

RE: KA2XHN  
File No. 4800-EX-R-97

Dear Sir or Madam:


COMSAT Corporation, by its COMSAT World Systems Business unit (COMSAT), herein files a progress report required by the FCC in connection with the experimental authority granted in the above-noted file.

COMSAT continues to conduct a number of wideband mobile tests and demonstrations involving the transmission of data and voice at C-and Ku-band frequencies using the INTELSAT satellite system and seagoing vessels.

The overall purpose of these tests and demonstrations continues to be to demonstrate the viability of C-and Ku-band communications via INTELSAT in the maritime environment. Based on the experience to date, COMSAT continues to find that such service is technically feasible and compatible with existing fixed-services and the electromagnetic environment. In this regard, we note that we have received no indications whatsoever, since the start of the experimental program, of interference into any lawfully operation radio station. Accordingly, we continue to believe that the transmission of data and voice using the INTELSAT system to and from vessels at sea holds great promise for the international telecommunications marketplace.

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Respectfully submitted,  
COMSAT Corporation  
COMSAT World Systems

By   
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Robert A. Mansbach  
Its Attorney

**REPORT ON TESTING OF WIDEBAND MOBILE  
SERVICES UNDER PART V EXPERIMENTAL AUTHORITY**

Pursuant to its current experimental authorization, CWS is in the process of conducting two major wideband mobile (WBM) tests involving the transmission of voice and data signals at C-band frequencies via INTELSAT satellites in the Atlantic Ocean Region to and from seagoing vessels. The purpose of these tests is to determine the technical and commercial feasibility of providing various WBM services via INTELSAT. The services being provided are generally of a type which could not be offered via INMARSAT, due to bandwidth limitations inherent in L-band satellite networks. Experience to date with these experiments has been positive, both in terms of satisfying mobile communications requirements and with regard to the technical feasibility of using C-band frequencies for mobile applications.

One of the experiments now underway is called Project Challenge Athena III. For this test, the Navy is using various INTELSAT satellites and beam configurations to provide 1.544 Mbps full-duplex, digital communications services to the USS George Washington, and other ships assigned to the Atlantic and Pacific fleet. Shipboard earth stations for this test are being provided by Maritime Telecommunications Network and Harris.

The high bandwidth communications being provided to the Navy ships have allowed the provision of a variety of services. Specific applications include:

- full-time availability of a ship-to-shore and shore-to-ship T-1 carrier
- an average of 240 video images transmitted per week
- an average of 10-12 digitized x-rays sent ashore for consultation per week. (In at least one case, transmission of an x-ray and the associated consultation with a doctor at the National Institutes of Health avoided the need for medical evacuation of an injured sailor.)
- support of eight to 12 shipboard pay phones enabling sailors to call home. Sailors can purchase phone debit cards aboard ship and be billed at the rate of one dollar per minute. For the 16 hours per day the phones are made available, they are in use 98% of the time.

- availability of 24 "official-use" phones for secure and other military communications
- support for intelligence data broadcasting systems
- transmission of public affairs photographs and stories

While perhaps some of these applications could have been supported in the past, WBM service allows them all to be offered simultaneously. Further, a sophisticated multiplexing network aboard the Navy ships allows capacity to be transferred from one application to another on a real-time, as needed basis.

In addition to the above ten "large deck" Navy ships included in the Challenge Athena III program, the Navy has implemented a trial pay phone service on numerous other ships using phone debit cards to allow the crew to communicate with family and friends. All of the major US telecommunication carriers have participated in this trial involving over a dozen Navy ships of a size smaller than aircraft carriers. The United States telecommunication carriers are evaluating business cases to develop a revenue producing service.

Renewal of CWS's experimental license will enable it to continue experiments currently in place and to undertake additional tests and demonstrations. We expect that future testing will contribute invaluable information on the use of FSS frequencies in the maritime environment, examine the feasibility of steerable spot beams and further assess unique military applications of the service. Specifically, during the period 1997-2000 the Navy will implement the follow-on program to project Athena III with an ATS (Afloat Telecommunications System) program and the testing WBM communications to 20 additional ships other than aircraft carriers, utilizing various shipboard earth station sizes and designs. New service providers are also expected to test WBM service at various transmission rates using shipboard earth stations from several different manufacturers.

Accordingly, renewal of experimental authority will encourage the testing and development of these promising new services and thereby promote the public interest.