

# GLOBAL BROADCAST SERVICE

## AMC officials demonstrate GBS' speed for delivering images, data, video

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—During the Gulf War in 1991, service-owned and leased commercial communications channels were so overwhelmed that crucial information, such as maps and intelligence data, had to be airlifted to the warfighter. It showed the urgent need for a worldwide, high powered system to broadcast military information. Thus began the development of the Global Broadcast Service, first used during peacekeeping operations in Bosnia. Air Mobility Command representatives, along with GBS experts from Hanscom AFB, Mass., and Keesler AFB, Miss., showed what GBS can do for the military worldwide, and demonstrated significant improvements to the system. The GBS is intended to deliver real-time information, video, data, imagery, and intelligence to the warfighter, and consistently provide it in a time-frame that allows them to act quickly.

### IT'S SO COOL



While current satellite communications systems such as MILSTAR can relay a large graphic image in 22.2 hours, GBS can deliver the same data in 8.4 seconds and it frees up bandwidth on other systems for command and control use. Currently, GBS uses the Asynchronous Transfer Mode as its networking protocol because the only network encryptor available was the ATM based Fastlane KG-75. This "tech refresh" approach will reduce costs and the size of the suites from seven transit cases weighing 600 pounds, to four transit cases weighing 300 pounds. Conforming to the IP industry standard frees bandwidth for operational requirements such as tactical suitability. It also increases GBS broadcast capacity.

### GBS & THE NEXT GENERATION RECEIVE TERMINAL

The GBS system has three major segments: **broadcast, terminal and space**. The **broadcast** segment is composed of the Satellite Broadcast Manager and the Receive Broadcast Manager. The **terminal** segment is comprised of the Primary Injection Points, Theater Injection Point, fixed and mobile ground receive terminals, shipboard receive terminals and, in the future, airborne receive terminals.

*A PIP is a fixed earth station with the primary responsibility for injecting RF streams from the SBM to a specific satellite. The ground receive terminals receive and demodulate the RF signal from the satellite. The TIP is a transportable version of the SBM and PIP; it will be used by field commanders to directly inject theater specific data through the satellite.*

The **space** segment is composed of satellites in geosynchronous orbit. The first phase is supplied by commercially leased satellites. The second phase consists of K/Ka-band GBS transponder packages hosted on three Navy UHF

Follow On satellites, augmented by leased Ku-band commercial transponders. The exact composition and hosting of the third phase will be on the Wideband Gapfiller Satellites.

One final refined piece is the dish antenna. In conjunction with the transition to IP, a Next Generation Receive Terminal is being developed. It uses integrated electronics with a tracking receiver and controller, as well as a lightweight tripod.

This reduces the antenna size and weight by more than 50 percent, and reduces the cost by 33 percent. It also allows for quieter antenna operation.



Master Sgt. Ed Hilton adjusts the terminal.