CASE STUDY: HALLMARK

250K AEROSTAT SYSTEM c1971
TETHERED AEROSTAT OPERATIONS in GRAND BAHAMA ISLAND

THE CHALLENGE

The primary mission and challenge was to provide a low level airborne ground suveillance system that used aerostats as radar platforms. Hallmark was started as a TCOM test and evaluation system shortly after TCOM was formed and consisted of a 250K aerostat system now called a 53M. It demonstrated Television and FM broadcasting equipment as well as testing of other electronic payloads such as radio repeaters and microwave relays for communication.

QUICK FACTS:

- Hallmark was started in 1971, shortly after TCOM was formed, and was installed in the middle of Grand Bahama Island near High Rock
- Because of this system, the U.S. Customs Service established the Tethered Aerostat Radar System (TARS) in 1984 that would help counter illegal drug trafficking
- Bahamas Evaluation,Test & Assembly (BETA) site provided 125,000 km2 network color TV broadcasts and long-range (200 km) 1200-channel wideband microwave link plus VHF omni-directional maritime comms

THE SOLUTION

This TCOM system used airborne Wankel engine generators which was gasoline fueled, to supply power to the aerostat and the tether was a Dacron cable called Nolaro which was short for -no-lay-rope-. This tether did not carry power or fiber-optic signals. Also, this first TCOM aerostat system utilized a three point, weather-vaning mooring system which allowed for safe and efficent aerostat launching, flight, recovery and moored operations. TCOM continues to use this same mooring system concept for all aerostat systems currently being delivered.

THE RESULT

In the late 1970's, the 53M (250K) aerostat was replaced with TCOM's next generation aerostat system (called the 365K at the time and would be considered a 67M with today's model number convention where the M would represent the approximate length of the aerostat in meters) and testing/evaluation of this new, larger aerostat continued.

In the early 1980's, this same Bahamas test site would be transformed into the U.S. Coast Guard's LASS (Low Altitude Surveillance System) that used a radar payload to search for drug smugglers bringing illegal drugs into the U.S. The first antidrug aerostat went operational in 1985 at High Rock Grand Bahama Island. The second site was built at Fort Huachuca, Ariz., in 1986 which was later named a TARS site. Customs began seeking proposal requests from contractors for these balloons in 1987. Overall responsibility for the program fell to Customs and the Coast Guard, until congressional language in 1991 and 1992 transferred management to the Defense Department, with the Air Force as executive agent.

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