MISSION 7300 PROGRAM HISTORY

VEHICLES/CAPABILITY

FARRAH I and II OVERVIEW

FARRAH I and II were the first [redacted] program spacecraft to employ monopulse direction-finding (DF) capability in combination with a technical intelligence (TI) receiver. This permitted a single spacecraft to support highly accurate, rapid reporting on the Electronic Order of Battle (EOB) and General Search (GS) mission, while providing a TI mission capability in the 2 to 18 GHz frequency range. FARRAHs I and II were launched on 11 May 1982 and 25 June 1984, respectively, into 382 nmi circular, near-polar inclination (96 degrees) orbits. Although both vehicles were designed with a 36 month mean mission duration, both continue to provide valuable SIGINT data via their transpond capability. 25X1

FARRAH I

P-11 Spacecraft: 4433
Mission Name: FARRAH I
Mission Number: 7346
Launch Date: 11 May 1982
Design Life: 36 months
Operational Life: Still operating as of 5 Feb 1996

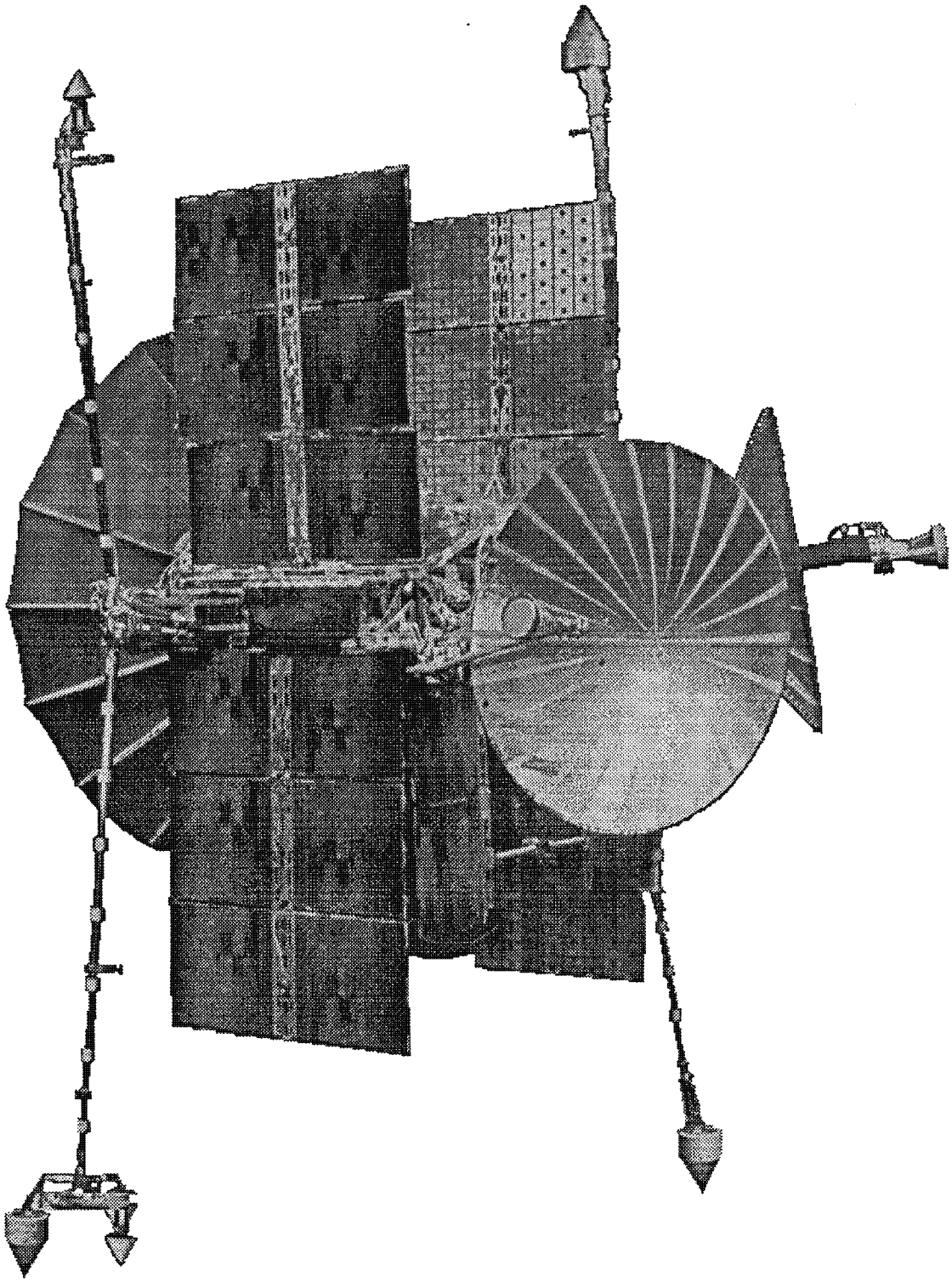
MISSION:
EOB, general search, TI, and directed search for pulsed and CW emitters in the 2.0 to 18.0 GHz frequency range (sidelobes and mainbeams).

CAPABILITIES:
This spacecraft has the combined capabilities of the URSALA and RAQUEL spacecraft on a single platform. Improved DF and parameter measurement accuracies were achieved and major increases in the power subsystem and the command and control subsystem were included. The spacecraft contains an on-board general purpose digital computer used for real-time ELINT deinterleaving and readout directly to remote tactical support vans.

LIMITATIONS:
Limited to transpond collection since the final tape recorder failure on 22 February 1991.
CW DF receiver inoperative.
Carrier 1 failed May 1989 (Backup carrier 6 in use).
-Y antenna not acceptable for SCS loading in the shade.
DF Pulse receiver Band 8 failed at maximum sensitivity
Primary DCU fuse failed December 1982.
Recent average collection has been 50 minutes per day in direct support of Bosnia and

Korean activities.

FARRAH I & II



FARRAH II

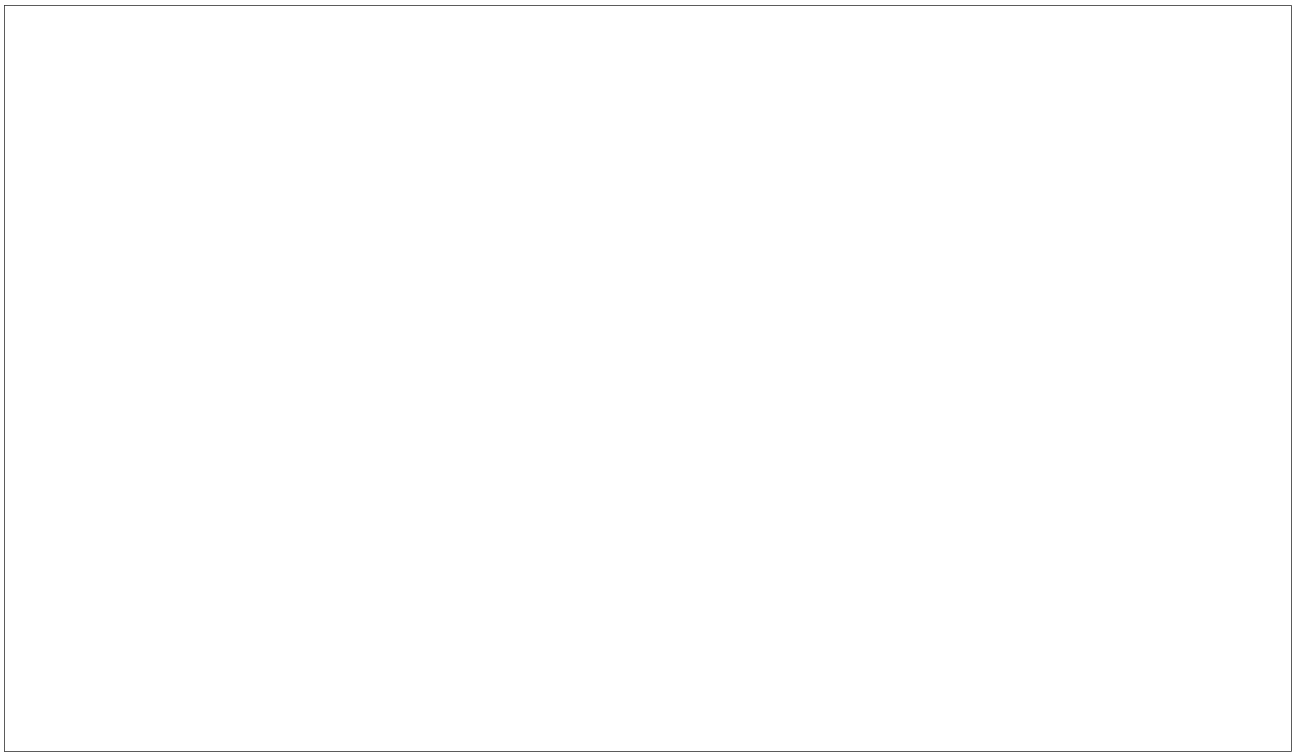
P-11 Spacecraft: 4434
Mission Name: FARRAH II
Mission Number: 7347
Launch Date: 25 June 1984
Design Life: 36 months
Operational Life: Still operating as of 5 February 1996

MISSION:
EOB, general search, TI, and directed search for pulsed and CW emitters in the 2.0 to 18.0 GHz frequency range (sidelobes and mainbeams).

CAPABILITIES:
This spacecraft is a duplicate copy of FARRAH I

LIMITATIONS:
Limited to transpond collection since the final tape recorder failure on 23 January 1991.
+Y antenna not usable for commanding.
TI CW receiver inoperative.
Recent average collection has been 68 minutes per day against the Korean and Bosnia targets and in direct support of the Army EPDS vans.

FARRAH III

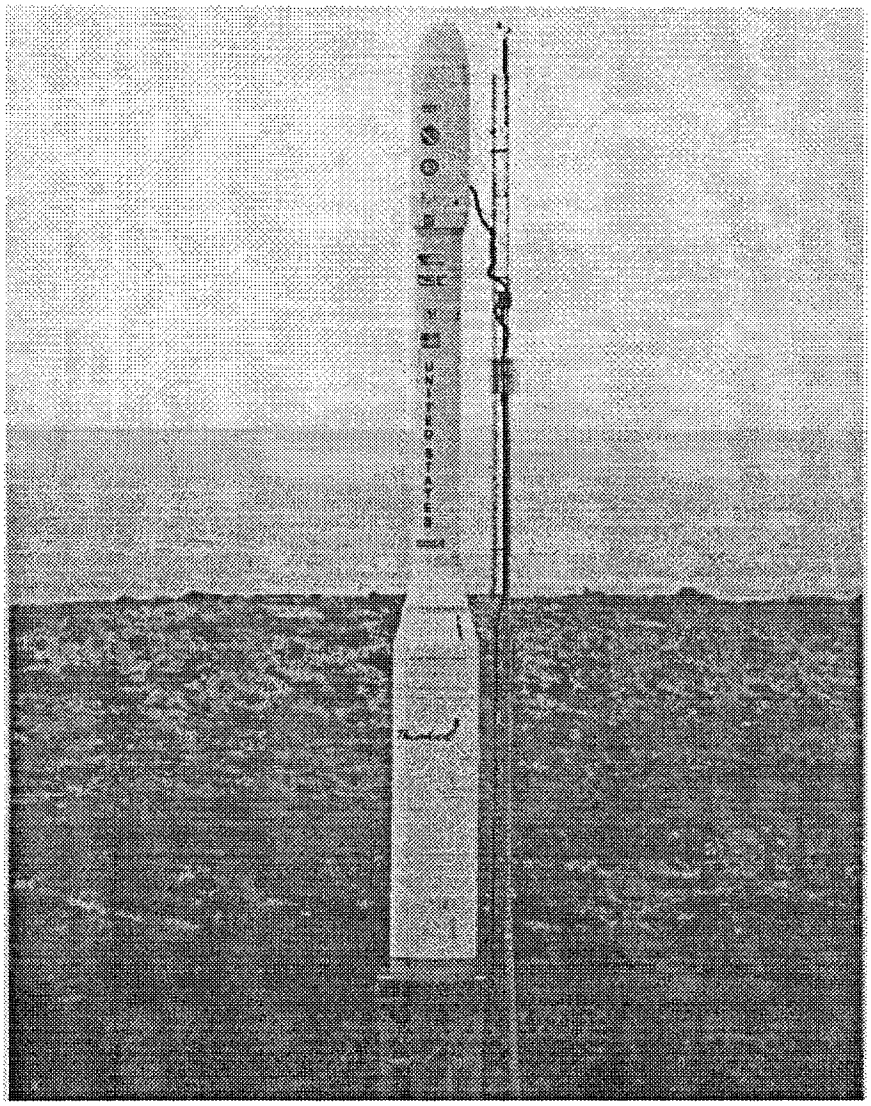


25X1

COMINT Rapid Reporting Interferometry Experiment (CARRIE)

Mission 7245 (CARRIE) is one of several experimental SIGINT systems which are designed to provide force enhancement data to operational warfighters and theater commanders. The CARRIE mission is to demonstrate how new (experimental) capabilities and techniques will improve space system support to military forces, deployed in theater, who are the primary users of CARRIE mission data.

Mission 7245 was launched directly into orbit by a TAURUS ELV on March 13,1994. The spacecraft is in a retrograde orbit inclined at 105 degrees and at an altitude of 290 nautical miles. The period is approximately 96 minutes. The spacecraft's orbit lifetime is estimated at 10 years.

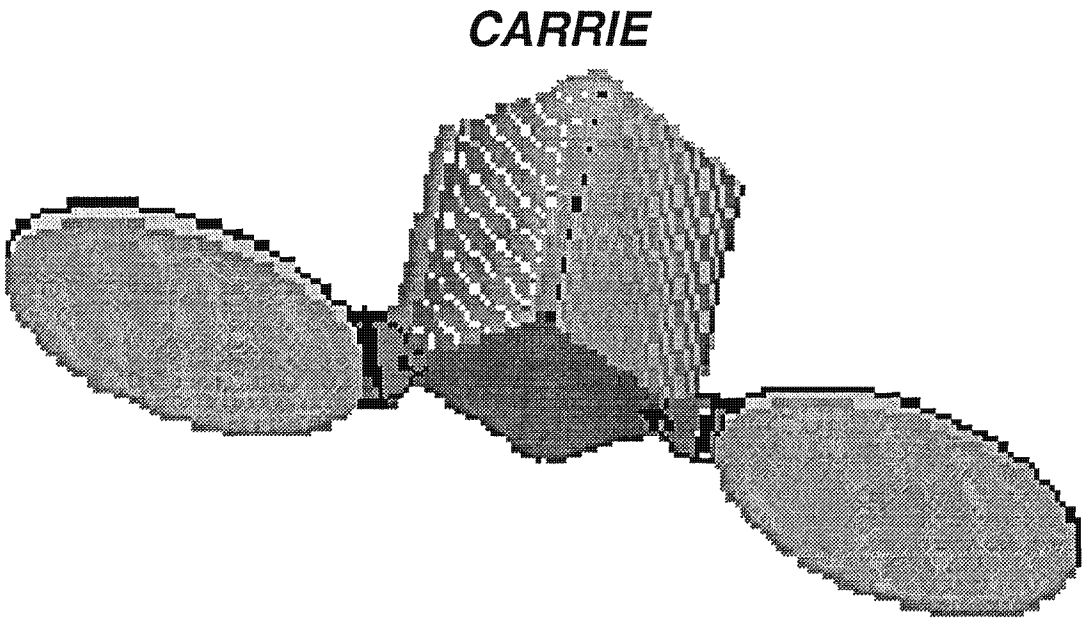


The CARRIE mission is intended to demonstrate improved space system support to military users in the field. As such, the CARRIE system is designed to respond to military commands and theater commanders in a timely manner. The CARRIE spacecraft collects Communications Intelligence (COMINT) signals in the 100 MHz to 850 MHz range. The collected data is transmitted to an EPDS van in realtime if the Area of Interest (AOI) is

within the EPDS acquisition circle. If the AOI is outside the EPDS acquisition circle, the data is stored onboard until CARRIE is within the circle.

CARRIE mission implementation begins when the EPDS van(s) sends collection requirements to the OCMC via a TEP message. The OCMC, in turn, converts the TEP message into an ITEMY message (within five minutes) and forwards these requirements to the CARRIE Ground Segment Mission Planning Organization (OD-1/DOR) via the Special Operations Communications (SOCOMM). The collection requirements are transferred from the SOCOMM to the Mission Planning database via a floppy disk. They are then converted into tasks which identify collection target areas in an AOI and point targets of interest around or near a particular EPDS van. Other mission planning functions use a spacecraft ephemeris to identify those times when the spacecraft will be in view of the AOI's, the AFSCN's RTSs, or the EPDS vans. From this composite, those times for actual spacecraft operation (whether receiving COMINT signals over a target area, transmitting telemetry to and receiving commands from an RTS, or transmitting telemetry to and receiving commands from an EPDS van) are chosen to become part of a daily mission plan. Contact Support Plans (CSPs) are then generated to implement the daily mission plan including what commands will be transmitted to the spacecraft and when they will be sent. Reports transmitted to the EPDS van(s) are fully processed reports which require no further processing by the van.

Since CARRIE Ground Segment architecture is designed to allow corps commanders to receive timely COMINT data, provisions are in place for changing spacecraft collection requirements. These requirements can be changed as late as 90 minutes prior to the last RTS contact preceding the implementation of the specific target collection. To further enhance utility, Military Exploitation of Reconnaissance and Intelligence Technology (MERIT) funded an effort that gives field commanders the option of changing tasking scenarios as CARRIE passes through the EPDS acquisition circle. All hardware and procedures are in place and will be exercised as part of this M7245 experiment.



25X1

25X1

25X1

25X1

25X1

25X1

COMINT And Rapid Reporting Interferometer Experiment