

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
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FOR RELEASE:  
Immediate

PROJECT: SKYNET II-B/Delta 105

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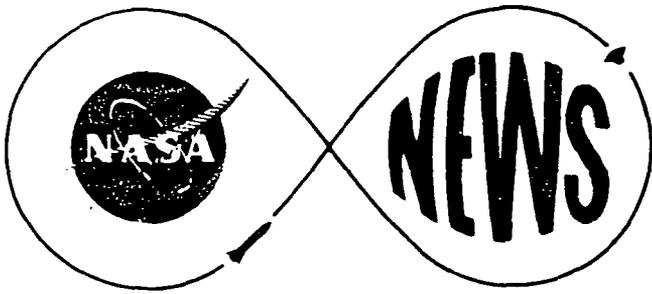
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NASA TO LAUNCH BRITISH SKYNET COMMUNICATIONS SATELLITE

A British defense communications satellite is scheduled for launch into synchronous orbit over the Indian Ocean aboard a NASA Delta three-stage launch vehicle from Cape Canaveral, Fla. about Nov. 22. The launch window is open from 7:40 to 8:10 p.m. EST.

Called Skynet II-B, the spacecraft was built for the United Kingdom's Ministry of Defence. It will be placed in an elliptical orbit with an apogee of 36,950 kilometers (22,960 miles) and perigee of 185 km (115 miles). At an appropriate time -- probably as early as the first apogee some 5.8 hours after launch -- a solid rocket motor on the spacecraft will inject it into its 35,786-km (22,400-mi.) circular synchronous orbit.

-more-

November 13, 1974

A hydrazine control system will handle any relatively minor orbital anomalies and keep the satellite on its station over the equator at 50<sup>o</sup> E. longitude.

Goddard Space Flight Center, Greenbelt, Md., has project responsibility for the Delta, while the Kennedy Space Center provides launch support. NASA launch services are provided on a reimbursable basis to the U.S. Department of Defense (DOD), which represents the Skynet project in the United States.

The DOD procures the spacecraft propulsion systems from U.S. manufacturers and contracts for NASA's launch services through the U.S. Air Force Space and Missile Systems Office.

The spacecraft was developed by Marconi Space and Defence Systems Ltd. in the United Kingdom and McDonnell Douglas Astronautics Co., Huntington Beach, Calif. is the prime contractor for the Delta vehicle and launch services.

Robert C. Baumann of NASA's Goddard Space Flight Center is Associate Director of Projects for Delta.

(END OF GENERAL RELEASE. BACKGROUND INFORMATION FOLLOWS.)

SKYNET II-B/DELTA 105 LAUNCH OPERATIONS

NASA's John F. Kennedy Space Center's Unmanned Launch Operations Directorate plays a key role in the preparation and launch of the three-stage, Thrust-Augmented Delta rocket carrying the Skynet spacecraft.

The Delta 105 first stage was erected on Pad B at Complex 17 at Cape Canaveral Air Force Station on Oct. 17 and the three solid strap-on rocket motors were mated with the first stage on Oct. 18. The Delta second stage was erected Oct. 24, the third on Nov. 1. The Skynet spacecraft was placed atop the spin-stabilized, solid-propellant third stage on Nov. 5. The payload fairing, designed to protect Skynet during its flight through the atmosphere will be erected atop Delta 105 four days before launch.

STRAIGHT-EIGHT DELTA 2313 MODEL STATISTICS

Height: 35.4 meters (116 ft.), including shroud.

Maximum Diameter: 2.4 meters (8 ft.) without attached solids.

Liftoff Weight: 106,000 kms (230,250 lbs. or about 116 tons).

Liftoff Thrust: 1,278,000 newtons (286,500 lbs.) including strap-on solids.  
1,766,000 N (396,000 lbs.) at T+25 seconds.

First Stage: (Liquid only): Extended long tank Thor produced by McDonnell Douglas Astronautics Co.; engines produced by Rocketdyne Division of Rockwell International.

Diameter: 2.4 meters (8 ft).

Height: 21.3 meters (70 ft).

Propellants: RJ-1 kerosene is used as the fuel and liquid oxygen is utilized as the oxidizer.

Thrust: 890,000 Newtons (200,000 lbs).

Burning Time: About 3 min. and 48 sec.

Weight: Approximately 85,276 kms (187,607 lbs)  
excluding strap-on solids.

Strap-on Solids: Three solid propellant rockets pro-  
duced by the Thiokol Chemical Corp.

Diameter: 0.8 meters (31 inches).

Height: 6.0 meters (19.8 ft).

Total Weight: 13,410 kg (29,568 lbs).  
4,470 kg (9,850 lbs.) each.

Thrust: 693,950 Newtons (156,000 (lbs.) total for three  
231,317 Newtons (52,000 (lbs.) each.

Burning Time: 38 seconds.

SECOND STAGE: Produced by McDonnell Douglas Astronautics Co.,  
using a TRW engine. Major sub-contractors for the vehicle's  
inertial guidance system located on the second stage are  
Hamilton-Standard and Teledyne.

Propellants: Liquid--Aerozene 50 for the fuel and  
Nitrogen Tetroxide ( $N_2O_4$ ) for the oxidizer.

Diameter: 1.5 meters (5 ft) plus 2.4 meters (8 ft)  
attached ring.

Height: 5.2 meters (21 ft).

Weight: 6210 kms (6.8 tons).

Thrust: About 42,300 Newtons (9,500 lbs).

Total Burning Time: 284 secs. (1st burn)  
16 secs. (2nd burn).

MAJOR DELTA SKYNET FLIGHT EVENTS

<u>EVENT</u>	<u>TIME</u>	<u>ALTITUDE (NM)</u>	<u>VELOCITY (Feet Per Second)</u>
Liftoff	0 Seconds	0	
Three solid motor burnout	38 seconds	(2.4)	1,837
Three solid motor jettison	1 min. 10 sec.	7	2,362
Main engine cut-off (MECO)	3 min. 48 sec.	47	16,425
First/second stage separation	3 min. 56 sec.	51	16,445
Second stage ignition	4 min. 2 sec.	53	16,419
Fairing jettison	4 min 37 sec.	67	17,000
Second engine cut-off (SECO)	8 min. 45 sec.	92	25,678
Restart stage II	21 min. 44 sec.	98	25,631
Second engine cut-off (SECO) <sub>2</sub>	22 min. 0 sec.	98	26,422
Third stage spin up	22 min. 50 sec.	99	26,445
Second/third stage separation	22 min. 52 sec.	99	26,445
Third stage ignition	23 min. 30 sec.	100	26,438
Third stage burnout	24 min. 14 sec.	102	36,692
Third stage/spacecraft separation	25 min. 30 sec.	123	33,581