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IMMEDIATE

Press Kit

Project RCA (Satcom 1R)

RELEASE NO: 83-44

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NASA TO LAUNCH RCA SATCOM 1R

NASA will launch the RCA Satcom 1R communications satellite on a Delta 3924 launch vehicle from Launch Complex 17B, Eastern Space and Missile Center, Cape Canaveral Air Force Station, Fla., no earlier than April 11.

RCA Satcom 1R will replace the first of RCA's domestic communications satellites, RCA Satcom 1 (launched on Dec. 12, 1975). The RCA Satcom 1 satellite, located at 136 degrees west longitude, has provided earth communications during the last seven years.

To be placed at 139 degrees west longitude, 35,900 kilometers (23,000 miles) above the equator, the RCA Satcom 1R satellite will provide a wide range of communications services to government and commercial customers in the United States. The satellite carries 24 active solid state transponders.

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Satcom 1R will join five other previous RCA communications satellites already in orbit. The satellites provide coverage for all 50 states and Puerto Rico with television, voice channels and high speed data transmission. Currently, there are more than 4,000 earth stations with direct access to these spacecraft.

This will be the second launch of a Delta 3924 vehicle. The three stage Delta vehicle consists of: an extended Long Tank First Stage with Rocketdyne RS-27 engine and nine Castor IV strap-on solid motors for the first stage; the new improved Aerojet AJ10-118k second stage; a Thiokol TE-364-4 third stage engine. The entire vehicle is 8 feet (2.4 meters) in diameter (excluding the strap-on solid motors) and 116 feet in height (353.57 m).

McDonnell Douglas Astronautics Corp., Huntington Beach, Calif., is the prime contractor for production and launch of the Delta launch vehicle. The apogee kick motor, mounted inside the spacecraft itself, is a Thiokol Star 30 motor.

RCA American Communications, Inc. (Americom) Princeton, N.J., is responsible for the management of the RCA Satcom Program including acquisition of the spacecraft, associated tracking, telemetry, command systems and launch vehicle support. Spacecraft development and production are the responsiblity of RCA's Astro Electronics Division, Princeton. The Delta Project Office at the Goddard Space Flight Center, Greenbelt, Md., is responsible to NASA's Office of Space Flight for overall project management of the launch vehicle.

The Cargo Operations Office at NASA's John F. Kennedy Space Center, Fla., is responsible to Goddard for launch operations management. All launch costs incurred by NASA, including the vehicle hardware and launch services, are reimbursed by RCA Americom.

RCA earth stations are located near New York City, San Franciso and Los Angeles, and at Anchorage, Juneau, Nome, Bethel, Valdez and Prudhoe Bay in Alaska.

During the transfer orbit, the Intelsat stations at Fucino, Italy, and Carnarvon, Australia, augment tracking, telemetry and command operations to provide improved global coverage. On the seventh apogee, the Star 30 apogee kick motor will be fired to produce a near-synchronous orbit. Positioning of the spacecraft at 139 degrees west longitude above the equator will follow using the satellite's on-board attitude-positioning gas system.

Nominal orbit characteristics are:

Transfer Orbit	**Satcom 1R**
Apogee Altitude	19,323 nm
Perigee Altitude	93 nm
Inclination	24.12 degrees
Argument of Perigee	178.2 degrees
Operational Orbit	
Station Longitude	139 degrees (W)

(END OF GENERAL RELEASE; BACKGROUND INFORMATION FOLLOWS)

RCA SATCOM 1R DESCRIPTION

The RCA Satcom 1R replaces the previous RCA Satcom 1 communications satellite which has completed seven years service. The Satcom 1R thus maintains full services from the RCA domestic communications satellite system which provides a wide range of communications service for government and commerical customers in all the 50 states and Puerto Rico.

The spacecraft will be placed into a 35,900 km (22,300 mi.) geosynchronous orbit by a Delta 3924. With solar panels deployed, the satellite spans 4.72 m (15.5 ft.). Without the solar panels, the spacecraft main body measures 1.82 m (6 ft.) across.

The RCA Satcom 1R's total transfer weight (including the Star 30 apogee motor) is 1,121 kg. (2,472 lbs). On orbit weight is 598.6 kg. (1,320 lbs).

The three-axis stabilized spacecraft is equipped with the power, attitude control, thermal control, propulsion, structure, and command, ranging and telemetry necessary to support mission operations from booster separation through 10 years in geosynchronous orbit.

Spacecraft life, with continuous full power, is designed to be 10 years.

LAUNCH OPERATIONS

NASA's John F. Kennedy Space Center is responsible for the preparation and launch of Delta 3924 which will carry the RCA Satcom I R satellite into orbit.

The Delta first stage and interstage adapter were erected on Pad B of Complex 17 at the Cape Canaveral Air Force Station on Jan. 31. During the first week of Feb. the nine solid strap-on solid rocket motors were mounted in place around the base of the first stage. The first and second stages were mated on Feb. 7. The initial electrical and mechanical checkout of the vehicle took place on Feb. 14, and an electrical systems test was conducted on Feb. 25. A guidance systems test was performed on March 1, and a simulated flight was conducted on March 15. A flight program verification test is to be conducted a week before launch.

On March 14, the RCA I R spacecraft arrived by trailer at Cape Canaveral Air Force Station and underwent inital checkout in Hangar AE. Apogee kick motor X-rays and other preparations were conducted March 14 through March 18. Checkout of the safe and arm device was performed on March 21. On March 23, propellants were to be loaded into the spacecraft, the apogee kick motor was to be installed, and the safe and arm device was to be connected.

The spacecraft went to the Delta Spin Test Facility on March 21 for final processing. Propellants were loaded into the spacecraft on March 23, and the spacecraft was mated with the Delta third stage on March 25. It was moved to the pad on March 28 and mated with the Delta vehicle, followed by functional tests. The payload fairing which protects the spacecraft on its flight through the atmosphere was installed March 31.

NASA/INDUSTRY TEAM

NASA Headquarters

Lt. Gen. J. A. Abrahamson	Associate Administrator for Space Flight
Joseph B. Mahon	Director, Expendable Launch Vehicle Program
Peter Eaton	Manager, Delta Program
Robert E. Smylie	Associate Administrator for Space Tracking and Data Systems

Goddard Space Flight Center

Dr. Noel W. Hinners	Director
John J. Quann	Deputy Director
William C. Keathley	Director, Project Management
Robert C. Baumann	Acting Delta Project Manager
William A. Russell, Jr.	Deputy Delta Project Manager
John D. Kraft	Manager, Delta Mission Analysis and Integration
Richard H. Sclafford	RCA Satcom 1R Mission Integration Manager
Robert Seiders	RCA Satcom 1R Network Support Manager
Ralph Banning	Network Director

Kennedy Space Center

Richard G. Smith	Director
Thomas S. Walton	Director, Cargo Operations
Charles D. Gay	Director, Expendable Vehicles Operations
D. C. Sheppard	Chief, Automated Payloads Division
Wayne L. McCall	Chief, Delta Operations Division
David Bragdon	Spacecraft Coordinator

RCA American Communications Inc.

Dr. James J. Tietjen	President
John Christopher	Vice President of Technical Operations
Joseph Schwarze	Director, Space Systems
William Palme	Manager, Advanced Space Programs
Joseph Elko	Manager, Spacecraft Engineering

CONTRACTORS

RCA American Communications Inc. Astro Electronics Div. Princeton, NJ	Spacecraft management development/production
McDonnell Douglas Astronautics Co. Huntington Beach, Calif.	Delta Launch Vehicle
Rocketdyne Division Rockwell International Canoga Park, Calif.	First stage engine (RS-27)
Thiokol Corp. Huntsville, Ala.	Castor IV strap-on solid fuel motors
Aerojet Liquid Rocket Co. Sacramento, Calif.	AJ10-118k second stage
Thiokol Corp. Elkton, Md.	TE364-4 Third Stage Engine

Major Subcontractors

SPAR Aerospace Division Ste-Anne-de-Bellevue Quebec, Canada	Antenna Input and Output
Charles Stark Draper Labs Cambridge, Mass.	Momentum Wheel Assembly
Lockheed Space Systems Division Sunnyvale, Calif.	Earth Sensor Assembly and Horizon Sensor Assembly
Thiokol Corp. Elkton, Md.	Apogee Kick Motor (Star 30) in spacecraft
Hughes Aircraft Co. Electro Dynamics Division Torrance, Calif.	Traveling Wave Tube Amplifiers
Rocket Research Redmond, Wash.	Reaction Engine Assembly
Cubic Corp. Defense System Division San Diego, Calif.	Beacon Transmitter and Command Receiver
Parsons of California Stockton, Calif.	Structure and Solar Panels
Adcole Corp. Waltham, Mass.	Sun Sensor Assembly
Northrop Corp. Norwood, Mass.	Rate Measuring Assembly

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NOTE TO EDITORS: Recorded telephone updates on the status of the RCA Satcom 1R launch are available by dialing 301-344-0890.

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