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IMMEDIATE

Press Kit

Project

RCA-D
(Satcom III-R)

RELEASE NO: 81-172

Contents

GENERAL RELEASE.....	1
RCA-D DESCRIPTION.....	4
KENNEDY SPACE CENTER OPERATIONS.....	4
NASA/RCA-D TEAM.....	6
CONTRACTORS.....	7

(NASA-News-Release-81-172) NASA TO LAUNCH N82-71039
 RCA-D (SATCOM III-R) (National Aeronautics
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National Aeronautics and
Space Administration

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For Release:

IMMEDIATE

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RELEASE NO: 81-172

NASA TO LAUNCH RCA-D (SATCOM III-R)

NASA will launch the RCA-D communications spacecraft on a Delta 3910 launch vehicle from Launch Complex 17A, Eastern Space and Missile Center, Cape Canaveral Air Force Station, Fla., no earlier than Nov. 19 at 8:30 p.m.

Once in orbit, it will be called RCA-Satcom III-R whose mission will be the distribution of video programming to CATV (cable television) systems throughout the United States.

Satcom III-R will join two other RCA satellites, Satcoms I and II, in orbit since 1975 and 1976. 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.

NASA's Delta 3910 launch vehicle consists of a 2.4-meter (8-foot) first stage powered by a Rocketdyne RS-27 liquid-fueled engine; nine Thiokol Castor IV strap-on solid motors; a 1.5-m (5-ft.) diameter second stage powered by a TRW TR-201 liquid fueled engine; and a 2.4-m (8-ft.) diameter fairing.

October 29, 1981

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McDonnell Douglas Astronautics Corp., Huntington Beach, Calif., is the prime contractor for production and launch of the Delta launch vehicle. The company developed and made available commercially the Payload Assist Module (PAM-D) which takes the place of Delta's third stage and is considered part of the payload. A Thiokol Star 48 solid fuel motor is the propulsion system for PAM-D. The apogee kick motor, mounted inside the spacecraft itself, is a Thiokol Star 30 motor.

RCA 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 responsibility 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 Transportation Operations 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. The Payload Assist Module is procured by RCA directly from the manufacturer, McDonnell Douglas Corp.

The RCA-D and future RCA spacecraft are designed for launch by the Space Shuttle or the Delta 3910/PAM-D launch vehicle. The satellites total transfer orbit weight, including the Star 30 apogee motor, is 1,082 kilograms (2,385 pounds) as compared to 907 kg (2,000 lb.) for the earlier Satcom I/II satellites.

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

About 25 minutes after launch, the spacecraft will be injected into an elliptical transfer orbit with apogee near synchronous -- 35,900 kilometers (22,300 miles) -- altitude by the PAM stage. 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 132 degrees west longitude above the equator will follow using the satellite's on-board attitude-positioning gas system.

Nominal orbit characteristics are:

<u>Transfer Orbit</u>	<u>Satcom-D</u>
Apogee Altitude	35,900 km (22,300 mi.)
Perigee Altitude	187 km (116.2 mi.)
Inclination	27.4 degrees
Argument of Perigee	178.0 degrees
Location at Injection:	
Latitude	2.24 degrees
Longitude	15.46 degrees (W)

Operational Orbit

Station Longitude	132.0 degrees (W)
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(END OF GENERAL RELEASE; BACKGROUND INFORMATION FOLLOWS.)

RCA-D DESCRIPTION

The RCA Domestic Communications Satellite (RCA Satcom III-R) is a 24-channel spacecraft to provide commercial communications to Alaska, Hawaii and the contiguous 48 states. RCA Satcom III-R will distribute programming to the nation's cable television systems.

The spacecraft will be placed into a 35,900 km (22,300 mi.) geosynchronous orbit by a Delta 3910 launch vehicle and PAM-D. With solar panels deployed, the satellite spans 11.2 m (37 ft.). The spacecraft main body measures 1.6 by 1.27 by 1.29 m (64 by 50 by 51 in.).

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.

KENNEDY SPACE CENTER OPERATIONS

RCA-D will be launched aboard Delta 158 from Pad A of NASA's Complex 17, Eastern Space and Missile Center, Fla.

The first stage of the launch vehicle and its interstage adapter were erected on Pad A Sept. 29. The nine solid strap-on Castor IV rocket motors were attached on Sept. 30, Oct. 1, 2 and 5, and the second stage was mated with the first on Oct. 6.

The satellite arrived Oct. 19 and was checked out in Hangar AE. On Oct. 29 it was moved to the Delta Spin Test Facility for fueling and mating to the Payload Assist Module, which replaces the Delta third stage. It is scheduled to be mated to the launch vehicle Nov. 11, and the payload fairing, which protects the spacecraft while it is in the atmosphere of Earth, is to be installed Nov. 16.

NASA/RCA-D TEAM

NASA Headquarters

Dr. Stanley I. Weiss	Associate Administrator for Space Transportation Operations
Joseph B. Mahon	Director, Expendable Launch Vehicle Program
Peter Eaton	Manager, Delta
Robert E. Smylie	Associate Administrator for Space Tracking and Data Systems

Goddard Space Flight Center

A. Thomas Young	Director
John H. McElroy	Deputy Director
William C. Keathley	Director, Project Management
David W. Grimes	Delta Project Manager
William R. Russell	Deputy Delta Project Manager, Technical
John D. Kraft	Manager, Delta Mission Analysis and Integration
Richard H. Sclafford	RCA Satcom-D Mission Integration Manager
Richard S. King	Mission Operations and Network Support Manager
Ray Mazur	Mission Support

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

Kennedy Space Center (cont'd.)

Wayne L. McCall Chief, Delta Operations
Division

David C. Bragdon Spacecraft Coordinator

RCA American Communications, Inc.

Andrew Inglis President

John Christopher Vice President of Technical
Operations

Peter Plush Manager, Major Programs and
Technical Operations Services

Joseph Schwarze Manager, Space Systems

William Palme Manager, Major Programs,
Launch Vehicle Integration

Joseph Elko Manager, Spacecraft Engineering

CONTRACTORS

RCA Americom Spacecraft management
RCA Astro Electronics Division development/production
Princeton, N.J.

McDonnell Douglas Astronautics Delta Launch Vehicle and PAM-D
Company payload stage
Huntington Beach, Calif.

Rocketdyne Division First stage engine (RS-27)
Rockwell International
Canoga Park, Calif.

Thiokol Corp. Castor IV strap-on solid fuel
Huntsville, Ala. motors

TRW TR-201 second stage engine
Redondo Beach, Calif.

Major Subcontractors

SPAR Aerospace Division Antenna Input and Output
Ste-Anne-de-Bellevue,
Quebec, Canada

Charles Stark Draper Labs Momentum Wheel Assembly
Cambridge, Mass.

Subcontractors (cont'd.)

Lockheed Space Systems
Division
Sunnyvale, Calif.

Earth Sensor Assembly and
Horizon Sensor Assembly

Thiokol Corp.
Elkton, Md.

Apogee Kick Motor (Star 30)
in spacecraft and Perigee Kick
Motor (Star 48) in PAM-D
Traveling Wave Tube
Amplifiers

Hughes Aircraft Co.
Electro Dynamics Division
Torrance, Calif.

Rocket Research
Redmond, Wash.

Reaction Engine Assembly

Cubic Corp.
Defense Systems 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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