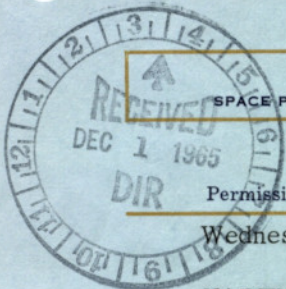


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Wednesday, December 1, 1965

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KARTH SURVEYOR/LUNAR ORBITER REVIEW UNDERWAY. Rep. Joseph E. Karth's (D-Minn.) second inspection trip to the West Coast to review the progress of the **LUNAR ORBITER** and the lagging **SURVEYOR** (SPACE Daily, Nov. 19) was underway yesterday with a visit to Boeing-Seattle to inspect the development efforts on the **LUNAR ORBITER**. The chairman of the House Space Committee, Rep. George P. Miller (D-Calif.), is accompanying Karth, who is the chairman of the full committee's Space Sciences Subcommittee.

The Karth inspection had originally scheduled an observance of a static test of the 156-inch solid booster at Lockheed today. However, this test had to be scrubbed and has been scheduled for a later date. Karth, also accompanied by Rep. Charles A. Mosher (R-Ohio) and a member of the staff, Frank Hammill, and joined by Reps. Weston E. Vivian (D-Mich.), Thomas M. Pelly (R-Wash.), and Brock Adams (D-Wash.) for part of the inspection, will continue down the coast to JPL and Hughes for another inspection review of the **SURVEYOR** program. Four days after SPACE Daily's announcement of the Karth trip JPL officially "approved" another two-to-three-month stretch-out in the scheduled launch date of the first **SURVEYOR** to the Moon (SPACE Daily, Nov. 24). The date is now officially May, with June most promising.

NEW ELDO LAUNCHER MAY GET OK IN SPRING. **EUROPA-1**, the first member of ELDO's launch vehicle stable (SPACE Daily, Oct. 5) (ELDO: European Launcher Development Organization), may appear in an advanced version as well as in its initial (present) version if ELDO so decides next spring. Dissatisfied with **EUROPA-1**'s progress, which has met with continued technical problems despite the portent of success earlier this fall (SPACE Daily, Oct. 21), ELDO has been considering three concepts of an improved configuration and is now favoring the second concept, which was studied by SEREB and Hawker Siddeley and which will probably be developed by SEREB.

The existing **EUROPA-1** configuration is designated **ELDO-A**. The proposals are **ELDO-AS** (-A with an apogee motor), **ELDO-B** (hydrogen/oxygen third stage), and **ELDO-C** (hydrogen/oxygen second and third stages). If the favored, -B, is approved, it will use a British upper-stage motor--possibly a six-ton, four-chamber Rolls-Royce unit--with construction possibly involving other European companies such as SEPR in France and BOLKOW in Germany.

FIRST MOLNIYA MOSCOW-PARIS TV COMPLETED.

Soviet engineers have

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successfully completed the first successful color telecast from Moscow to Paris by way of the **MOLNIYA-I** communications satellite (See yesterday's SPACE Daily). The test had originally been scheduled for late December (SPACE Daily, Oct. 26 & Nov. 23). The Soviets say the transmission is a major contribution to further development of color space TV communications.

GEMINI VIII EXTRAVEHICULAR PLAN MAY BE POSTPONED.

The plan to allow astronaut Major David Scott to drift and maneuver outside his spacecraft for one full orbit during the mission of **GEMINI VIII** may be an experiment that will have to be postponed until March or April. Originally scheduled for February, the flight may be stretched to a later date to provide time for a newly scheduled series of tests of the **AGENA** spacecraft target vehicle for the rendezvous and docking portion of the flight and to work out troubles which have developed with the Hand Held Maneuvering Unit. This maneuvering unit is a part of the Extravehicular **GEMINI** Mobility Unit (**EGMU**) now completing its qualification vacuum tests (SPACE Daily, Nov. 29).

LOCKHEED 156 FIRING RESCHEDULED TO DEC. 14.

The December 1 demonstration test firing of a full-length 156-inch-diameter solid propellant motor equipped with a fluid injection thrust vector control system (SPACE Daily, Nov. 19 and 22) has been postponed until December 14 due to bad weather in the vicinity of the Potrero facility.

BSD TO ISSUE DECOY RFPs LATE IN DECEMBER.

The Ballistic Systems Division will issue requests for proposals December 23 for the design, development and test of atmospheric decoys as devices for warhead re-entry penetration aids. The program will include the development of flight test data of various atmospheric observables of several decoy configurations. This program is in addition to a recent program initiated by BSD to develop a decoy system of models for tests in wind tunnels, high altitude chambers and for radar cross section measurements (SPACE Daily, Nov. 17). At present there are no plans for flight testing in the earlier program.

Companies receiving RFPs for the new program include: Avco/RAD, Aeronutronic, Bendix-Pacific, Bjorksten Research, Boeing, Cutler-Hammer, G.C. Dewey, Douglas-M & SS, Fairchild, Federal Scientific, General Dynamics/Pomona, GM-Defense, Goodyear-Aerospace, Honeywell-Military, Hughes, Kaman Nuclear, Ling-Temco-Vought, Lockheed-M & S, Lundy Electronics, Martin, McDonnell, Motorola, NAA-Los Angeles, Northrop-Nortronics, Planning Research, RCA-Defense, Radiation, Raytheon, Republic, Sperry-Phoenix, Sylvania Electronic, TRG, TRW Systems, Watkins-Johnson, Westinghouse, General Electric, Chrysler-Defense, Battelle, Cornell, Univ. of Mich., Ohio State, Southwest Research, Stanford, and Univ. of Texas.

MARQUARDT TO STUDY SLURRIES FOR RAM-JET/ROCKET MISSILES.

The Bureau of Naval Weapons will contract with Marquardt's Astro division for a program to establish the feasibility of employing highly concentrated metal slurry fuels for ramjet/rocket missile systems having limited volume capabilities.

DECISION IMMINENT ON NEW TERMINALS FOR APOLLO SHIPS. Because ComSat's satellite system for **APOLLO** communications will be supported in part by the three **APOLLO** tracking ships (SPACE Daily, Oct. 11), the Navy's Instrumentation Ships Project Office (ISPO) must now decide how to provide the additional shipboard ground stations that will be required for such support, and that decision is due today, although it may be held up. General Dynamics, whose Electric Boat Division at Quincy, Mass., is converting the ships (SPACE Daily, Sept. 10, 1964, and Oct. 26), is awaiting the word from ISPO so, if GD is to procure the terminals, it can initiate preparations of an RFP.

If the decision is not forthcoming, the snag will probably be the funding, which will probably originate within NASA. Also, ISPO is considering letting NASA procure the stations and turn them over to GD as GFE. GD is under contract to the Bureau of Ships, and the Navy will own the ships and use them for DOD projects after their **APOLLO** employment is over.

GEMINI VII STILL ON SCHEDULE

With major pre-countdown preparations scheduled for today, all of NASA's activities for the dual **GEMINI VII/VI** launching were "proceeding on schedule". **GEMINI VII** astronauts spent yesterday reviewing the flight plan for the December 4 launch while the **GEMINI VI** astronauts practiced simulated rendezvous maneuvers in preparation for their December 13 launch. One rehearsal still to be accomplished is a practice session at stowing the refuse, supplies and equipment for the two week **GEMINI VII** mission.

The support crews at Houston flight control center and six remote flight control sites (Canary Islands; Canarvon, Australia; Kauai, Hawaii; Guaymas, Mexico; Corpus Christi, Texas; the track ship Rose Knot; and the tracking ship Coastal Sentry) are conducting simulated mission exercises with the 23 **GEMINI** tracking stations. The aircraft carrier USS Wasp, prime recovery ship for both missions, sailed from Boston to assume her station south of Bermuda.

S-IC-T STATIC TEST FIRED

A ground test version of the **SATURN V** booster (**S-IC-T** stage) has been successfully static fired for its full flight duration of about 2 1/2 minutes at NASA-Marshall. The **S-IC-T** achieved its full thrust of 7.5 million pounds during the firing which was the second conducted by prime contractor Boeing. All earlier firings were conducted by Marshall's Test Laboratory, which directed the latest test firing.

NASA CONFIRMS SOVIET LUNAR COLOR REPORTS

A group of amateur astronomers working with NASA has confirmed the earlier observations of N. Kozyrev, a Soviet astronomer, who reported seeing faintly colored areas on the Moon. Using a "Moon-Blink" apparatus which causes a colored light source to show up as a definite "blink" when viewed through colored filters, the American astronomers took some 36 photographs which indicate a blue source of color in the light reflected from the Crater Aristarchus during a four-hour period on November 15.

HALT IN ABM/CUT IN STRATEGIC SYSTEMS ASKED

The Committee on Arms Control and Disarmament of the National Citizens Committee on International Cooperation, chaired by Dr. Jerome B. Wiesner, former special assistant to the President for science and technology, presented yesterday a series of sweeping recommendations to the Arms Control and Disarmament Panel of the White House Conference on International Cooperation meeting in Washington.

3-Year ABM Moratorium Proposed

Committee recommendations include a three-year moratorium on the development of anti-missile missiles by both the United States and the Soviet Union. The Committee says, in part, "The reason for our proposal is simple; this Committee does not believe the time is appropriate for a decision to deploy. First of all, there remains the basic question of the military value of the system. . . Beyond the technical and military-economic questions, the Panel believes that the United States has not given the political consequences of the ABM deployment sufficient thought and certainly has not yet explored the ways in which the U.S. and the USSR could avoid unintended effects of the systems on the other's deterrent force."

The Committee suggests that "In the absence of a moratorium, and assuming that ballistic-missile defenses are built, the United States will have to rethink its suggestions of early 1964 that a freeze on offensive and defensive weapons and their characteristics be considered by the United States and Soviet Union and discussed with their major allies. This is because an agreement along these lines would not be possible during the construction of ballistic-missile defenses; because it seems technically difficult to design a proposal that would freeze a dynamic contest between deployed ballistic-missile defenses and the weapons designed to surmount them; and because it may be more difficult, though this is somewhat controversial, to reach agreement on a freeze of offensive weapons while the defenses that neutralize them were uncontrolled."

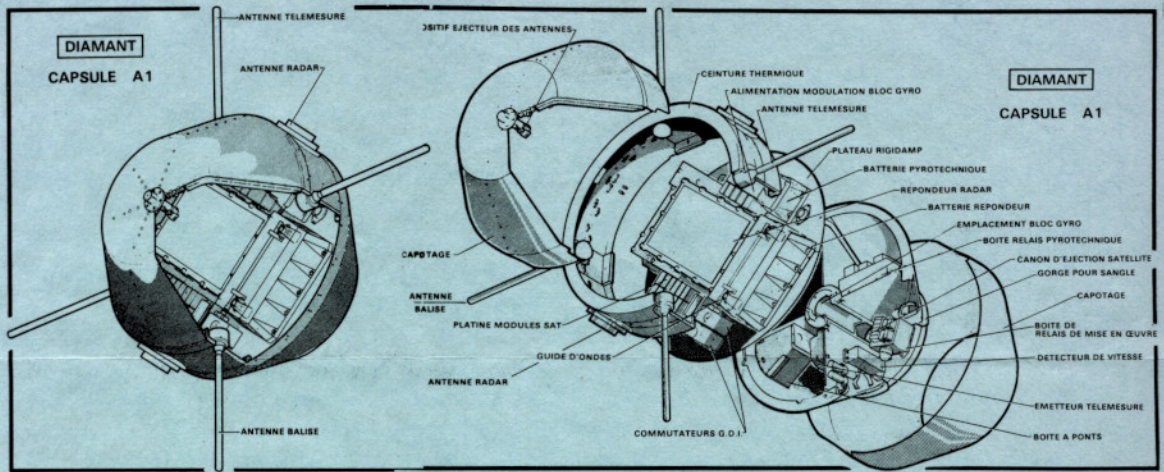
One-Third Cut in Strategic Systems Asked

The Committee said further that ". . . the United States cannot be content with containing the competition or freezing it. . . we consider much deeper cuts in strategic inventories--on the order of a one-third cut--to be worth serious consideration."

And finally, "The recent announcement by the United States of her intention to carry out experiments for the purpose of learning about the military uses of satellites. . . led some observers to the erroneous conclusion that the United States was repudiating her intention. . . to refrain from placing nuclear weapons in space. To ensure against this possible misunderstanding, the United States Government should continue to reaffirm. . . her commitment to the (UN) General Assembly resolution against weapons of mass destruction in outer space."

The Committee's other recommendations include: methods of halting the growth and spread of nuclear arsenals; initiatives for curbing conventional arms races among the underdeveloped countries; measures for further reducing tensions in Europe and moving toward settlement of the outstanding East-West differences; that the United States attempt to bring Red China into a genuine dialogue on disarmament and other security matters; and recommendations for making the law of the UN Charter more effective and for strengthening UN peacekeeping machinery. (The highlights, but not the details, of this report were published by others last week, over the weekend and Monday, even though the information was embargoed by the White House until yesterday afternoon. SPACE Daily has had the prepared portions of this report for several days awaiting the end of the embargo, The Editor,)

FIRST FRENCH SATELLITE NICKNAMED CITRON



The initial member of France's satellite family has been unofficially dubbed **CITRON** (lemon) in keeping with the description given America's first satellite attempt (which failed), **VANGUARD**: grapefruit. Officially designated **A-1A**, **CITRON** was orbited last Friday from the Hammaguir range in Algeria by a **DIAMANT** (Diamond) vehicle, which, because of **CITRON**'s success, is now considered flight qualified (yesterday's *SPACE Daily*).

Expected for late this month since early October (*SPACE Daily*, Oct. 8 and Nov. 8), the launch was fixed for about the 25th three weeks ago (*SPACE Daily*, Nov. 9), and all indications early last week favored that time (*SPACE Daily*, Nov. 23). The liftoff date had been set hopefully for at least a week earlier (*SPACE Daily*, Nov. 10), but sandstorms and technical problems held it up.

The three-stage **DIAMANT** left Pad Brigitte (all Hammaguir pads are named after girls whose names begin with "B") at 3:47 PM Paris time (2:47 PM Hammaguir time and 9:47 AM EST) on the 26th. The countdown began at 4 AM Paris time (3 AM Hammaguir time and 10 PM, Nov. 25, EST), with liftoff scheduled for 10:30 AM Paris time, but trouble in electrical circuitry brought a hold while tests were quickly run back in Paris at SEREB headquarters (SEREB is prime **DIAMANT** contractor). The trouble turned out to be due to a faulty diode in the third stage.

The exploded view of **CITRON** above does not show the configuration's final appearance, which is characterized by shiny metallic bands that run horizontally over the entire exterior (see first photo, *SPACE Daily*, Nov. 2).

Initially, **CITRON** assumed a 326/1096-mile, 34.65-degree, 108-minute orbit and transmitted telemetry normally. Over the weekend, the orbit changed to 330/1117 miles, 34.24 degrees, and 109 minutes, and the transmissions weakened. The intended orbital elements, as reported to *SPACE Daily* prior to the launch, were (approximately) 315/1550 miles and 33 degrees, and the satellite was designed for a lifetime of about two weeks.

SEREB supervised **CITRON**'s development for the DMA (France's Delegation Ministerielle l'Armement) and subcontracted the major design and fabrication work to MATRA, which also performed testing and qualification activities. One prototype, two ground-test models, six flight-test models, and two flight models were built.

AERONUTRONIC ORGANIZES FOR RMP PROGRAM

Philco-Aeronutronic has assigned engineering personnel to work under the direction of M. W. Sweeney, chief engineer of Re-Entry and Space Systems Programs, on the division's \$30 million contract for the DOD's Re-Entry Measurements Program (RMP). The contract, which calls for Aeronutronic to develop and build payload experiments and a standardized payload deployment system, was awarded in October by the Air Force Ballistic Systems Division (SPACE Daily, Oct. 27). Experiments are to be flown on **ATLAS** missiles launched from Vandenberg AFB.

AMERICAN BERYLLIUM OPENS NORTH EASTERN OFFICE

The American Beryllium Division of Loral Corp. has opened a North Eastern regional sales office in Waltham, Mass., to serve the New England and Middle Atlantic states. American Beryllium is a precision fabricator of beryllium and other metal and ceramic components and structures used in space applications.

AIA SUPPORT/SPARE PARTS/PUBLICATIONS OFFICERS ELECTED

The Aerospace Industries Association's Product Support Committee and its related committees on Spare Parts and Service Publications have elected officers for 1966. These committees are part of the organization's Industry Planning Service.

Otto F. Janssen, corporate manager for Garrett's Military Product Support, will head the Product Support Committee with Carl W. Diehl, manager of customer services for Bell Helicopter, serving as vice chairman.

Elected to head the Spare Parts Committee were Donald J. Arbuthnot, McDonnell spacecraft product support manager, chairman; and Sam Saliba, manager, Customer Supply Division, Lockheed-Georgia, vice chairman. Howard G. Maxwell has been elected chairman, and Anthony A. Farkas vice chairman of the Service Publications Committee. Maxwell is department engineer of Lockheed-Georgia's Service Manuals and Bulletins Department, and Farkas is chief of publications for North American's Columbus Division.

NLRB SAYS GOODYEAR INFORMATION SHOULD GO TO UAW

An examiner for the National Labor Relations Board has recommended that Goodyear Aerospace be required to furnish the United Auto Workers with information about workers in the company's Research Department. The UAW, which is not represented in the Research Department, contends that it needs information about the number, names, job descriptions, wages, working hours and fringe benefits of technicians in the department in order to insure that Goodyear does not shift work normally done by union employees and other departments to the Research Department, thereby undermining the union.

Frederick U. Reel, in making the recommendation, said that Goodyear has not contended that the information is confidential and that the UAW has shown that the information is needed to protect its status in the other departments.

DOD NEGOTIATIONS

J. W. Marchetti Inc.--with Rome Air Development Center for research and development work on investigation of antenna angular accuracy.

Agbabian-Pacobsen Associates, Los Angeles, Calif.--with Air Force Ballistic Systems Division for nonpersonal engineering services and supplies including but not limited to, studies, testing, integrated planning and liaison with associate contractors.

Travelers Research Center--with Naval Oceanographic Office for an objective analysis of cloud cover using satellite and surface data.

Dorne and Margolin Co.--with Rome Air Development Center for a study and investigation of an antenna reflector technique.

Aerojet-General Corp.--with Army Missile Command for engineering services to accomplish **HAWK** motor investigation.

Astro Systems International, Fairfield, N.J.--with Air Proving Ground Center for conducting an irradiant characteristics study relative to satellite damage detection.

Hughes Aircraft Co., Space Systems Division--with Air Force Space Systems Division for research and development to provide infrared test chamber measurements.

IIT Research Institute, Technology Center--with Air Force Systems Engineering Group for interceptor guidance techniques.

ITT--with Air Force Systems Engineering Group for research in ECM.

United Aircraft Corp., United Technology Center--with Bureau of Naval Weapons for research directed toward demonstrating for liquid rocket usage a simple inexpensive advanced packageable flight-type integrated dual manifold thrust control injector incorporating a closed loop control system.

Spectra Inc., Mountain View, Calif.--with Air Force for continuation of research and development toward the study of rocket aspect instrumentation, calibration and data processing.

Bolt, Beranek and Newman--with Air Force for research directed toward the investigation of improved concepts and design of a speech communication index meter.

Radio Corporation of America, Aerospace Systems Division--with Air Force Space Systems Division for a research program directed toward development of variable point guidance equations.

Perkin-Elmer Corp., Electro-Optical Division--with Army Missile Command in support of Project **GLOW**.

General Electric, Atomics Products Division--with Air Force Special Weapons Center for design analysis of star-r nuclear thermionic power system.

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DOD NEGOTIATIONS - Contd.

General Applied Science Laboratories, Westbury, N.Y.--with Naval Training Device Center for a study of the type of electronic countermeasures used and the effects produced on moving target radars.

NASA NEGOTIATIONS

ITT Industrial Laboratories--with Goddard for integration support for image disector camera subsystem into the **NIMBUS** satellite.

GCA Corp., GCA Technology Division--with Houston for Earth-based lunar atmospheric studies.

Electro-Optical Systems--with Lewis for continued testing of an ion thruster system.

North American Aviation, Space and Information Systems Division--with Houston to develop a long-range master plan for the NASA-owned plant in Downey, Calif.

Bell Aerosystems Co.--with Edwards to provide engineering and programming support during the research evaluation of a concept of energy management.

DOD CONTRACTS**Army**

Western Electric Co.--\$7.1 million for FY 1966 engineering services for **NIKE HERCULES**.

Hercules Powder Co.--\$17.2 million modification to an existing contract for propellants.

Telecomputing Services, Panorama City, Calif.--\$1.1 million modification to a contract for data reduction services.

Navy

Honeywell--\$2.5 million for **POLARIS** guidance equipment.

Air Force

Philco Corp.--\$2.6 million increment to an existing contract for work on satellite control network.

Northrop Corp., Space Laboratories--\$91,140 for investigation of crew seating systems for lunar vehicles.

Radio Corporation of America, Missile & Surface Radar Division--\$325,000 for engineering services in connection with the **BMEWS** program.