SPACE BUSINESS Daily

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SOVIETS ACCELERATE SPACE BOOSTER TESTING. In a move indicative of a major acceleration of space testing activity heralding also perhaps the resumption of new major manned space activities, the Soviet Union has scheduled a dual Pacific testing program to be conducted over the next two months. The first program, which began Sunday, will end December 30. Its impact area after launch from the Baykonur-Karasakpay facility will be an 80-mile-diameter section of the Pacific, 1400 miles west of Hawaii. The second program, to run concurrent with the first, began yesterday and will continue until New Year's Eve. Its impact area will be 2200 miles northwest of Hawaii. This latest series of tests is the second Pacific test program this year. The earlier program ended last month (SPACE Daily, Oct. 14) after initiation July 27 (SPACE Daily, July 27).

NASA ADVANCE PLANNING UNDER OVERSIGHT REVIEW. Representative Olin E. Teague's (D-Tex.) NASA Oversight Subcommittee is preparing the report, to be issued probably in January, on the state of advanced planning in the National Space Program (SPACE Daily, Oct. 7). The examination of DOD advanced planning and NASA's **AA (APOLLO** Applications) program will be the next major study following the Oversight Subcommittee's report on the **APOLLO** Pacing Items (SPACE Daily, Oct. 21) and the Karth subcommittee's **SURVEYOR** investigation.

The advanced planning study will look at the total management effort being expended in this field by NASA and DOD and the "interface" between the two agencies. Over twenty companies who participate in the space program have also been asked to submit their views on the future course of the national space effort. The investigation will include an examination of the relationship between the DOD and NASA manned space station programs.

MAJOR UPSURGE IN DOD SPENDING FORECAST. Government economists have prepared an estimate for Federal spending in 1966 which is expected to total $10-13 billion while listing expenditures for the Vietnam War as an unknown quantity. Based simply on current trends and not considering a major outlay for Vietnam in the next year (Calendar 1966), the economists project a $4-5 billion increase in Defense spending as a most conservative estimate. The Administration is making every effort to play down the possibility that the DOD spending might be double that of the economists' estimate.

HIBEX FIRED FROM SILO AT WHITE SANDS. The first launch of a **HIBEX** (HIgh Boost EXperimental) booster vehicle was successfully completed last week at

White Sands. The 17-foot system is a development concept for future anti-missile missile systems which would combine high acceleration climb and highly maneuverable high altitude upper stages for close-in warhead defense. The missile, assembled and launched by Boeing, is an Army Missile Command development for the Advanced Research Projects Agency's Project **DEFENDER**. The propellant is provided by Hercules. The upper stage interceptor for the **HIBEX** program, known in the first phase as **UPSTAGE** (SPACE Daily, Sept. 8, '64) and in a second phase as **PRESTAGE** (SPACE Daily, Sept. 24), is under development by Douglas.

ALGERIA HAS SOVIET SAMS. A parade in Algiers yesterday included two Soviet surface-to-air missiles of the type used in North Vietnam and in Cuba. Most of the equipment in the parade was of Russian or Czech manufacture.

GEOS A POSTPONED. **GEOS A**, originally scheduled to be launched today (SPACE Daily, Nov. 1), has been postponed until Thursday, November 4, due to a break in an electric circuit of its flashing light beacon system.

ARMY WANTS ADVANCED SATELLITE TRACKING STUDY. Fort Belvoir's Research and Development Laboratories will issue requests for quotations for a program of investigations of advanced satellite tracking instrumentation systems about November 9. The study will include geometric and dynamic satellite reductions.

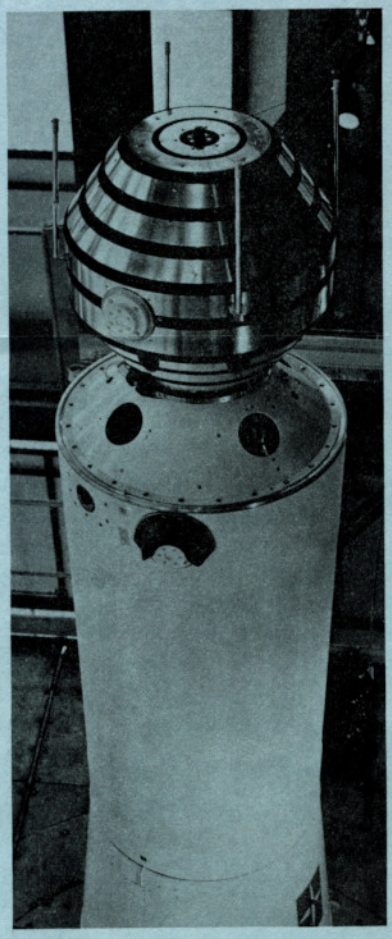
GODDARD CONTRACTS MOBILE APOLLO STATION WITH COLLINS. NASA-Goddard is presently negotiating a supplemental agreement with Collins Radio for the establishment of requirements of a transportable tracking station at the Grand Bahama Islands for **APOLLO** implementation. Collins will supply the installation, integration, and checkout of **APOLLO** network equipment which will be furnished as GFE. The contract will cover an 18-month period.

NASA-CAMBRIDGE TO DEVELOP ADVANCED COMPUTER TECHNIQUES. NASA-Cambridge will, in the future, undertake a program of applied research for the development of multi-processing techniques for the establishment of computer systems for handling the total spaceborne requirements of advanced space missions.

HUGHES TO STUDY LEM LANDING VISIBILITY. Hughes Aircraft has been selected from among six bidders for a $95,000 contract to determine the optimum lighting conditions for the visual control of the descent and touch-down of the Lunar Excursion Module (**LEM**) (SPACE Daily, July 21 & Aug. 27).

GOODYEAR TO STUDY ADVANCED ASM GUIDANCE. Goodyear Aerospace has received a $150,000 contract for the development research for an advanced tactical air-to-surface missile guidance technology from Wright-Patterson. The effort is identified as concept number 5.

FIRST FLIGHT MODEL OF FIRST FRENCH SATELLITE



This is the first flight model of the **A-1**, the initial member of the French satellite family (SPACE Daily, Oct. 8). Shown atop **DIAMANT**, the vehicle that will carry it into orbit, **A-1-1** is a 90-pound payload that may be launched this month, now that tests of the **SAPHIR**, the **DIAMANT**'s forerunner, have been successfully completed (SPACE Daily, Oct. 14 & 19).

The three-stage **DIAMANT** is one of France's "precious gem" vehicles. Its first stage is Nord Aviation's liquid-fueled **EMERAUDE**, its second is Nord's solid-fueled **TOPAZE**, and its third is Sud Aviation's solid-fueled **RUBIS** (pictured). **SAPHIR** comprised just **EMERAUDE** and **TOPAZE**. Recently, compatibility checks were made with **TOPAZE** and **RUBIS** while the first **DIAMANT** was being prepared for shipment to the Hammaguir launch site in Algeria (SPACE Daily, Oct. 19).

(Photo: SEREB)

FIRST EOLE SET FOR '68 WALLOPS LAUNCH

The initial **EOLE**, the French weather satellite (SPACE Daily, Oct. 4), will go aloft in 1968, probably from Wallops Island on a **SCOUT** vehicle, not in 1967 from a foreign site on a **DIAMANT** vehicle as earlier planned. The **EOLE**s are the **D-3** series of satellites that will relay weather data from constant-altitude balloons to test the feasibility of such a meteorological network. (The **D-1** and **-2** series will use experimental payloads and **DIAMANT**s.)

BUDGET WILL HURT FRENCH GUIANA LAUNCH SITE

Yvon Bourges, French State Secretary for Scientific Research and Nuclear Problems, has told the National Assembly that the proposed FY '66 space budget's meager funding for the would-be launching range in French Guiana (SPACE Daily, Oct. 5) will hamper the range's establishment even if other projects are decelerated or cancelled. Stressing the need for the site, which was intended to become operational late in 1969, he said stretching construction out until the end of '69 will still not allow it to be ready to meet the demands already on it.

One immediate consequence of these budget constraints is the cutback that appears necessary for the French launch schedule for next year. Only 20 sounding rockets, not the 100 planned, and 80 balloons, not 120, will be sent into space if the presently envisioned scaled-down schedule is adopted. These shots will be made from the Hammaguir range in Algeria.

Hammaguir has become a lingering headache for the French because its closure in the summer of '67 will leave the country without a major launch site until the South American facility is opened. Bourges mentioned that his government is already

MORE

BUDGET WILL HURT FRENCH GUIANA LAUNCH SITE - Contd.

looking for opportunities to further cooperate with other countries in securing assistance for the French space program during the interim between Hammaguir and Guiana. NASA, presumably, is expected to play a primary role in providing such assistance.

EXTRAVEHICULAR RENDEZVOUS POSSIBLE WITH GEMINI VII/VI

An ace-in-the-hole plan, not known to be officially approved, for the rendezvous mission of **GEMINI VII** and **VI**, if the single launch pad capability overload can be carried to completion, is an extravehicular rendezvous contact by a **GEMINI VI** astronaut with the **GEMINI VII** spacecraft. After the original overtaking near-approach of the **GEMINI VI** to the **VII**, the **GEMINI VI** astronaut will go out on a 75-foot tether, after the **VI** has dropped back a few feet, and approach and make contract with **VII** and take a few photos. Whether this plan is being held in abeyance as a "kicker" just in case the Soviets force its introduction has not been confirmed.

SPERRY TO MODIFY SHRIKE

BuWeps has awarded Sperry Farragut a $5,710,425 contract for modification of the **SHRIKE** anti-radiation missile for both Navy and Air Force deployment. A change in performance specifications recently resulted in the cancellation of a program to overcome special antenna problems in the missile system (SPACE Daily, Oct. 26).

UTC SUPPLYING SOLIDS FOR AIR-AUGMENTATION TESTS

United Technology Center is providing Martin-Denver 100 solid rocket motors for its research program on air-augmentation as a possible aid to space and missile propulsion systems (SPACE Daily, July 13 and Oct. 4). The motors have a 2500-pound thrust and will be used in wind tunnel tests at the Air Force's Arnold Engineering Development Center (Tullahoma, Tenn.), beginning this month. Like the $1.2 million Martin contract from the Air Force, the $600,000 UTC subcontract will end at this time next year.

INFORMATION SCIENCES ESTABLISHES BIRMINGHAM OPERATION

Information Sciences, a subsidiary of Brown Engineering, has established an operation in Birmingham, Ala. Steve Sokol is acting manager of the operation, which will specialize in commercial systems work for businesses and industries in the Birmingham area.

S-IB-3 ENDS FIRING/S-IVB-3 TO BEGIN

S-IB-3, the third flight version of the **SATURN IB** booster stage, has finished its test firings at NASA-Marshall as **S-IVB-3**, the third flight version of the **SATURN IB** upper stage, is approaching its test firings at Douglas' Sacramento site. Ignited for its full 2.5 minutes last week, **S-IB-3** will leave Marshall Thursday for its assembly location, Michoud Operations, at New Orleans. (See SPACE Daily, Oct. 5, p. 168.)

ELECTRONIC SPECIALTY ACQUIRES SYNTORQUE CORP.

Electronic Specialty Co. of Los Angeles has acquired Syntorque Corp. of West Hurley, N.Y. The agreement has been approved by the boards of directors of both firms.

Syntorque, which will be consolidated with Electronic Specialty's Connecticut Division, manufactures motors and generators for instrumentation and other special applications. President Ralph Kricker will remain as a consultant to Electronic Specialty, and key personnel will also be retained.

LOCKHEED'S GROSS TO CHAIR WRIGHT BROTHERS' BANQUET

Courtland S. Gross, chairman of the board of Lockheed, will be honorary chairman of the Los Angeles Chamber of Commerce's 1965 Wright Brothers' Memorial Banquet. The banquet, which will be held December 17 at the Beverly Hilton Hotel, is held annually to award recognition to military and civilian aviation leaders who have contributed to advancements in flight. General chairman of the event, which commemorates the sixty-second anniversary of the first manned aircraft flight at Kitty Hawk, will be William Habblett, special assistant to the president of Northrop.

AERONCA BACKLOG SHOWS 20 PER CENT INCREASE

Aeronca had sales of $24,700,000 and a loss of approximately $200,000 for the first nine months of 1965. Total backlog as of September 30 was approximately $45,800,000, an increase of about 20 per cent over June 30. Since September 30, an additional $3 million in new business has been recorded.

A. G. Handschumacher, chairman of the board and chief executive officer, said that "The unfavorable nine month statement was significantly affected by...technical difficulties and consequent production delays causing excessive start-up and preproduction costs incurred since the beginning of the mine case contract."

CUBIC'S NINE-MONTH BACKLOG SETS NEW RECORD

Cubic Corporation's sales for the first nine months of 1965 were $9,146,100, up 15 per cent from last year's $7,956,300, while earnings dropped 42 per cent from $398,800 to $279,500. Backlog for the period set a new record of $11 million compared to the $8 million reported at the end of the same period last year.

Walter J. Zable, president and chairman of the board, attributed the decline in earnings to development costs of Cubic's new Votronics vote-counting machine.

ELECTRONIC SPECIALTY EARNINGS UP 21 PER CENT

Electronic Specialty Co. of Los Angeles had sales of $57,842,770 for the first nine months of 1965, compared to last year's $56,793,722. Earnings increased 21 per cent from $764,049 to $929,671. Backlogs of the electronic and mechanical product groups exceeded $60 million compared to $50 million last year.

NASA-CAMBRIDGE TO HOST IEEE HALL EFFECT CONFERENCE

NASA-Cambridge will host a two-day conference of the Electron Devices Group of the IEEE at MIT's Kresge Auditorium, November 8 and 9. The conference will investigate the applications of the Hall Effect, a crystal device that functions in a magnetic field.

Session chairmen include E. H. Putley of the Royal Radar Establishment, England; H. Welker of Siemens-Schuckerwerke AG, Germany; P.M. Rodot, C.N.R.S., Laboratories de Bellevue, France; and R. K. Willardson, Bell and Howell Research Center, Pasadena, Calif. O. K. Homeriki of the Institute of Electronic, Automatics and Telemechanics, Academy of Sciences, Tbilisi, USSR is scheduled to present a paper at one of the four sessions.

ERC To Provide Research Management Link

Dr. Albert J. Kelley, deputy director of NASA-Cambridge, in addressing the annual banquet of the East Coast Conference on Aerospace and Navigational Electronics of the IEEE in Baltimore, said that the Center will aim at providing a research management link between the space program and industry. "Our goal and our job is to work with industry, universities, and other Government agencies to ensure that in the areas of NASA responsibilities in electronics we move forward boldly, rapidly, wisely, but above all, together." Kelley went on to say that the United States is shifting from a production to a research and development-based economy and that knowledge is important in this new economy, and that the purpose of NASA-Cambridge is to serve as a knowledge center in the field of electronics.

FIRST MINUTEMAN II INSTALLATIONS COMPLETE

Sylvania has completed communications installation between MINUTEMAN II command post and its 10 missile silos. The work is the first completed on Strategic Air Command Wing VI which will be composed of 150 missiles and 15 launch control centers dispersed over a 7500-square-mile area. The main communications link is backed up by a radio network using buried antennae.

TI TO USE DEBENTURE PROCEEDS TO RETIRE $8.2 MILLION DEBT

Texas Instruments will use the proceeds from its $50 million of sinking fund debentures due in 1990 to retire some $8,187,500 of indebtedness and for general corporate purposes, principally expenditures for property additions. So far in 1965, the company has expended $28,350,000 for property additions and improvements.

The registration statement filed with the SEC provides for the interest rate, public offering price, and underwriting terms to be supplied by amendment (SPACE Daily, Oct. 28 & Nov. 1).

FEDERAL-MOGUL SALES UP/EARNINGS DOWN

Federal-Mogul's sales for the first nine months of 1965 were $156,148,000, compared with last year's $152,148,000. Earnings dropped 27 per cent from $12,823,000 to $10,066,000. Figures for both years include sales and profits of Sterling Aluminum Products, which was acquired by Federal-Mogul this May.

DOD AWARDS $3.8 BILLION IN PRIMES TO LABOR SURPLUS

The Department of Defense awarded about 16 per cent of the total or $3.8 billion in prime contracts to firms located in labor surplus areas during FY 1965. This compares to 16.3 per cent last year and 15.3 per cent in 1963.

During the year, the number of major labor market areas designated by the Secretary of Labor as "substantial labor surplus" declined from 35 major labor market areas and 14 large cities to 21 major "surplus" areas and five large cities.

DATA PRODUCTS REPORTS RECORD BACKLOG

Data Products Corp. of Culver City, Calif., had a backlog of unfilled orders of $5,618,487 as of September 25, as compared with $3,909,516 at the end of the last quarter and $3,152,403 a year ago. Erwin Tomash, president, says that with the current record volume of new orders being maintained, this favorable trend can be expected to continue during the coming months.

BROWN ENGINEERING SALES UP/EARNINGS DOWN

Brown Engineering had sales of $33,557,890 for the first nine months of 1965, compared with last year's $31,757,890. Earnings for the period declined slightly from $691,770 to $680,270. The decrease in earnings was expected, since the full amount of award fees for performance of NASA contracts will not be known until the fourth quarter. Such contracts represented a major portion of Brown's business in the second and third quarters this year.

NASA-MARSHALL AWARDS FIVE CONSTRUCTION CONTRACTS

NASA-Marshall has awarded the following construction contracts totaling $1,307,145 for additions to several buildings and for paving roads and parking areas.

Greenhut Construction Co., Pensacola, Fla.--$726,400 to build a two-story engineering physics laboratory addition, a one-story welding and chemical metallurgy laboratory and a one-story chemistry laboratory.

Pearce, DeMoss and King, Decatur, Ala.--$389,850 to build an addition to the Test Engineering Laboratory, Building 4666.

M. F. Snyder and Co., Birmingham, Ala.--$116,997 to build a computer addition to Building 4491.

Ashburn and Gray Inc., Huntsville, Ala.--$41,224 for surfacing roads and parking areas.

Bryson Construction Co., Decatur, Ala.--$32,674 for an addition to a deionized water system in the Test Laboratory.

REMOTE SENSING SYMPOSIUM SCHEDULED

The Air Force Cambridge Research Laboratories and the Office of Naval Research will jointly sponsor the Fourth Symposium on Remote Sensing of the Environment at the University of Michigan on April 12, 1966.

DOD NEGOTIATIONS

Philco Corp., Aeronutronic Division--with Army Missile Command for forward area contract support set for testing of **SHILLELAGH** missile system hardware.

Westinghouse Electric Corp.--with Army Electronics Command for the fabrication of a target acquisition system.

HRB-Singer Inc., State College, Pa.--with Office of Naval Research for further research on social change and social unrest.

NASA NEGOTIATIONS

Science Communications Inc., Washington, D. C.--with Washington for the development and implementation of space environment reviews.

DOD CONTRACTS

Army

Washington Engineering Services Co., Kensington, Md.--$117,184 for FY '66 **LANCE** documentation review services.

Wil-Jo Manufacturing Co., Monrovia, Calif.--$87,465 for thrust neutralizer.

Air Force

MHD Research Inc., Newport Beach, Calif.--$57,000 for solid fueled MHD generator feasibility study.

Texas Instruments, Apparatus Division--$446,269 for IR weapons delivery techniques.

Lowell Technological Institute, Research Foundation--$57,422 for study of cost relationships versus tracking accuracy of airborne infrared trackers.

Aerospace Research Associates, West Covina, Calif.--$42,972 for continuation of research on hypersonic flow of blunt delta wings at low angles of attack.

NASA CONTRACTS

Marshall

Raytheon Co., Computer, Space and Information Systems Division--$36,610 for four items of expansion modules.

Ames

TRW Systems Group--$49,800 for study to determine an efficient data format and data system for a lightweight deep-space probe.