

SPACEPORT



NEWS

Volume 2, Number 40

NASA Launch Operations Center, Cape Canaveral, Florida

October 3, 1963



FALL FASHIONS, space-age-style, include this mock-up of the Apollo suit made by International Latex Corporation. An outer garment will be worn when the astronaut walks on the moon.

ETHIOPIAN EMPEROR DUE HERE

Haile Selassie, colorful Emperor of Ethiopia, will tour NASA/Cape facilities Sunday. He is visiting the United States at the invitation of President Kennedy, with whom he met Tuesday.

A direct descendent of the Queen of Sheba and to Menelek, King Solomon's first son, the 71-year-old Emperor has ruled his country since 1930.

He is Ethiopia's 225th consecutive Solomonic ruler.

Ethiopia is a mountainous land in northeast Africa bordering the Red Sea. It is about the size of Texas and New Mexico combined, and has approximately 22,000,000 inhabitants.

In 1936 Italy invaded Ethiopia, and the Emperor fought until forced to withdraw. League of Nations efforts to end the aggression were futile. British forces freed the country in 1941.



Haile Selassie



HIGH OVER the Cape, a helicopter hovers to allow aerial cameramen to photograph NASA construction sites. For the full story on this unusual mission, turn to Page 4.

AREA WAGE SURVEY TO BE CONDUCTED

A full-scale Area Wage Survey is to be conducted locally as a joint effort by NASA and the Army-Air Force Wage Board, to establish prevailing rates for the crafts and trades in the Canaveral area.

New pay schedules for local Federal Wage Board personnel, including those assigned to LOC, will be effected within the next 40 working days.

This survey has no effect upon the salaries of Class Act employees who are paid under the general schedule.

Bertram To Present Paper In Houston

Emil Bertram, Chief of LOC's Special Projects Office, will present a paper at the Mercury Summary Conference which runs today and tomorrow at Houston.

Title of his paper is "Mercury-Redstone Launch Vehicle Development and Performance."

A full-scale mock-up Atlas launch vehicle and Astronaut Gordon Cooper's Faith 7 capsule will be on display at the conference.

Cooper will present a sum-

mary report on his flight, and a total of 19 speakers will give talks covering Mercury spacecraft development, flight operations and mission results.

Social Club To Meet

The NASA Women's Social Club will meet next Wednesday at the Holiday Inn in Cocoa Beach. Dinner will be at 5:30 p.m. and the meeting will begin at 7. November activities will be discussed.



WHERE YOUR DOLLARS GO

Where will your United Fund dimes and dollars go? This year 21 agencies will benefit from the contributions. Among them:

The Arthritis and Rheumatism Foundation, which furthers basic research and carries forward education to aid approximately 11 million stricken Americans.

The Brevard Heart Loan Fund, which provides no-interest loans or grants for heart surgery and hospitalization, and finances education and research in heart and other circulatory diseases.

The Central Brevard Crippled Children's Clinic and the North Brevard Rehabilitation Center, which provide physical, occupational and speech therapy to handicapped children and adults.

The Central Brevard Mental Health Association, which makes the public aware of the problems and new approaches in the fight against mental health.

The Damon Runyon Memorial Fund for cancer research.

The Brevard Association for Retarded Children which works to develop better attitudes toward retarded children and to provide a training program for trainable retarded children.

The Children's Home Society of Florida, which offers adoption services, foster home placements and guidance to unwed mothers.

The Salvation Army and the National Travelers Aid Association, which specialize in aid to transients.

The South Brevard Charities and the Titusville Cooperative Charities, which aid those in need who cannot qualify for state or county assistance.

The Boy Scouts, Girl Scouts, Red Cross, USO and YMCA, whose work is well known.

New services benefitting from the United Fund this year include a Visiting Nurse Service, the Central Brevard Branch of the South Brevard YMCA, Child Guidance Clinic and Catholic Charities of Brevard County, which provide adoption and unmarried mothers services.

Contributors may specify that all or part of their gifts go to one or more of the individual agencies.

DIDN'T IT RAIN?

If you think it's rained hard in the past couple of weeks, listen to this:

The greatest officially recorded 24-hour rainfall in

Florida is 23.22 inches at New Smyrna Beach, a few miles north of the Merritt Island Launch Area. It happened in 1924.

SPACEPORT



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Published each week by the National Aeronautics and Space Administration's Launch Operations Center, Cape Canaveral, Florida.



COLONEL Clarence Bidgood, left, who is retiring as LOC's Facilities Chief, is presented a certificate of commendation by LOC Director, Dr. Kurt H. Debus. The certificate read: "In recognition of his exceptional contribution to the National Aeronautics and Space Administration's Manned Lunar Landing Program, Colonel Clarence Bidgood is hereby commended by the organization which he has served so effectively."



DR. DAVID P. MORRIS, (center), Chief of Medical Operations, MSC, Cape Canaveral, presented this plaque, containing the United States and the Christian flags carried aboard Faith 7, to Dr. Alva Sizemore, right, minister of the First Christian Church, Cocoa Beach. At left is Ola Yates, chairman of the Church Board. The flags were carried by Astronaut Gordon Cooper on his 22 orbit flight and were presented in his behalf.

MILA CLOSED FOR SAFETY REASONS

MILA's Industrial Area has been closed to the public on weekends and at night. A NASA spokesman cited safety precautions as one of the prime reasons.

Buildings in the MILA area are in various stages of com-

pletion some several stories high, and they could present safety hazards.

Workmen and anyone with a Cape badge who needs to get into the area may do so by logging in with the watchman.

YARDLEY PRESENTED NASA SERVICE AWARD FOR MERCURY WORK

John F. Yardley, Cape Base Manager for McDonnell Aircraft, was presented a NASA Public Service Award in Washington Tuesday for his contributions to the Mercury Program.

The citation read, "presented to John F. Yardley in recognition of his outstanding contributions to the success of Project Mercury, in organizing, training, and directing the first contractor team of aerospace engineers and specialists skilled in the new and rigorous discipline of manned spacecraft preflight preparation and checkout."



Yardley, a graduate of Iowa State College, was assigned to Canaveral in 1960. He was nominated for the award by G. Merritt Preston, Manager of NASA's MSC-AMR Operations.

Preston said the superior performance of Yardley and his McDonnell engineering team assisted materially in assuring the unqualified success of Project Mercury, thus reflecting creditably upon NASA and contributing substantially to the increasing prestige of the United States in space sciences.

Yardley's technical knowledge, organizational ability and leadership qualities, Preston said, were consistently reflected in the capable performance of his engineer team.

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Mt. Everest To Mars

According to one American physiologist, micro-organisms found on Mount Everest may indicate whether life can exist on Mars.

William Siri, deputy leader of the recent successful American Everest expedition, has said the 29,028-foot Everest summit was "environmentally about halfway between earth and Mars, where conditions are just a little bit worse."

Organism which could survive lack of oxygen and low temperatures high on Everest might indicate if life could exist on Mars, Siri said.



COLONEL G. A. FINLEY, center, Canaveral District Engineer of the U.S. Army Corps of Engineers, as new president of the Canaveral Post of the Society of American Military Engineers, is presented the symbolic gavel by outgoing president Jack Newgent. At left is B. B. Nelson of GE, who spoke at the installation meeting.

Satisfactory Data

Explorer XVI Goes Mute After 7½ Months In Space

Explorer XVI, has ceased transmitting usable experimental data after seven and one-half months of satisfactory performance.

Dr. Raymond L. Bisplinghoff, director of NASA's Office of Advanced Research and Technology (OART), said: "We are pleased with the performance of Explorer XVI because it yielded the first statistically significant data on the penetration of meteoroids."

The satellite experiment, called the S-55b, was launched from the Wallops Station, Wallops Island, Va., Dec. 16, 1962, to measure meteoroid penetration of thin metal surfaces in the near-earth environment. The surface of the barrel-shaped satellite contains five types of impact detectors on an exposed experiment area of 28 square feet.

Although no experimental data are now being received, Explorer XVI continues to respond to radio commands and still transmits when commanded to do so. However, the signal from the satellite is an unintelligible steady tone.

The Office of Advanced Re-

search and Technology plans to instrument and launch two more meteoroid satellites, the S-55c and S-55d, to continue measurements of meteoroid penetrations.

There were more than 15,000 meteoroid hits recorded by microphone impact sensors which covered about one-tenth of the total exposed experiment surface. These sensors did not measure penetration.

The penetration hazard, as determined from Explorer XVI's actual measurements, has been compared with the best existing predictions of meteoroid densities in space. The direct, measured data are being used to refine prediction methods for estimating the penetration hazard and to provide design information for engineers who must select proper thicknesses of material for spacecraft skins.

Meteoroids are particles of various sizes that travel through space at high velocities. They may be composed of iron, silicates, or other substances. They usually burn (become meteors) when they enter the earth's atmosphere.

Supersonic Airliner Feasibility Studies Nearing Completion

Feasibility studies nearing completion for NASA by two major airframe companies confirm that a solid foundation of research and advanced industrial technology exists on which the United States program to develop and build a supersonic airliner can be based.

The studies began in January after eight years of experiment and analysis by several NASA research centers had evolved four aerodynamic concepts which appeared promising as supersonic commercial transports.

Most Promising

Contractor reports made during a three day technical session at the Langley Research Center on September 17, 18 and 19 indicate that two of the four airplane concepts studied — configurations known as SCAT-16 and SCAT-17 — appear to be the most promising from the standpoint of commercial design. (The letters SCAT stand for Supersonic Commercial Air Transport.)

SCAT-16 is an airplane concept evolved by scientists and engineers of the Langley Research Center. It uses the principle of the variable sweep wing to provide good flying characteristics at the low speeds needed for landing and take-off as well as for efficient supersonic cruise.

SCAT-17 grew out of research conducted at the NASA Ames Research Center, Mountain View, California. Its distinguishing features are a fixed delta (triangular) wing mounted well aft on a long fuselage with canard (forward of the wing) control surfaces.

NASA NEWCOMERS

Ten new employees have joined LOC in the past week. They are:

Diane L. Martin, Charles E. Hurst, Terrance K. Fiechtner, Irene G. Mitchell, Robert B. Krause, Bobby J. Register, Larry J. Grimes, Joe E. Moxley, Nathaniel Pilate and Jane C. Hardy.

AERIAL PHOTOGRAPHIC TEAMS



PHOTO COORDINATOR Steve Pantano, left, of LOC's Audio-Visual Branch, briefs photographers George Nevin and E. G. Westberg and pilot Bob Lockrow on the day's mission. Most flights last two hours and may cover many sites.

Several times a month a three-passenger helicopter flies over Canaveral and MILA, hovering above complexes and construction sites at altitudes ranging from 500 to 1,500 feet.

Most Cape workers in outside areas have seen the chopper so often they take it for granted. But to anyone unaware of the mission the helicopter and crew are fulfilling, it's a rather unusual sight, for it appears that a man is virtually leaning out of one side aiming a bazooka-like object toward the ground.

The "bazooka" is actually a 16 mm movie camera, the man is a professional photographer, and the mission is aerial photographic coverage of NASA construction sites.

Black and white photographs of these sites are taken every other week primarily for LOC's Facilities Office, although distribution of the pictures is made to more than 40 contractors and interested organizations such as the Corps of Engineers.

The movie film is shot to record construction progress for monthly and quarterly reports.

All aerial photographic requests are submitted to LOC's Audio-Visual Branch and photo coordinator Steve Pantano accompanies contractor photographers on each flight to direct the mission.

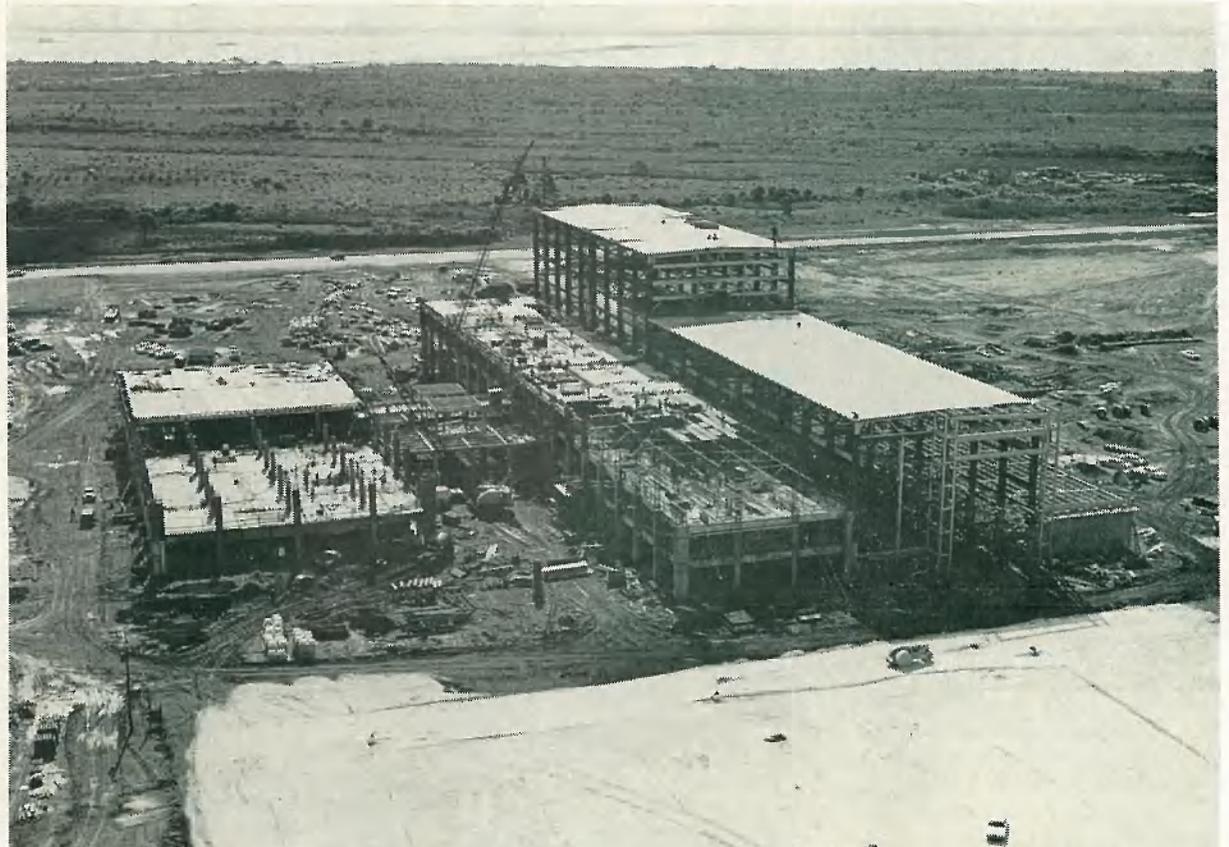
The helicopters are provided by Air Florida, Inc., under contract. Manager Bob Lockrow usually pilots the chopper.

The average photographic run takes about two hours, and 60 or more photos are taken in black and white and color. Flights are set up by first checking with LOC's Transportation and Security offices and the Air Force Range Safety Officer, to be sure no launches are scheduled.

Cameramen, strapped tightly into the helicopter's cab, use speed graphic and K-20 aerial cameras. Movie photographers mount their 16 mm Ariflex cameras on a specially-designed mount.

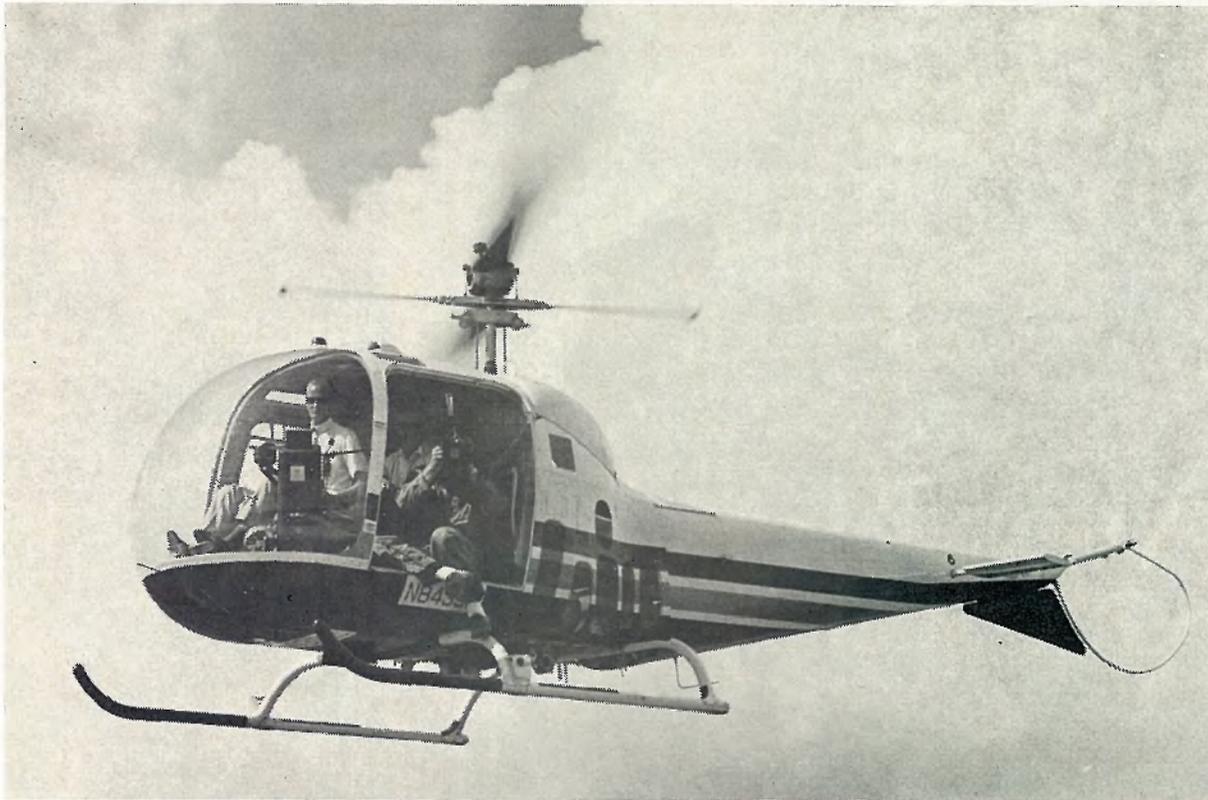


JUST prior to takeoff, photographer George Nevin loads his 16mm movie camera.



END RESULT of one mission was this sharp aerial photo showing stage of construction on MSC's Operations and Checkout Building at the Merritt Island Launch Area. On an average helicopter run, about 60 photos will be taken of many Cape and MILA sites.

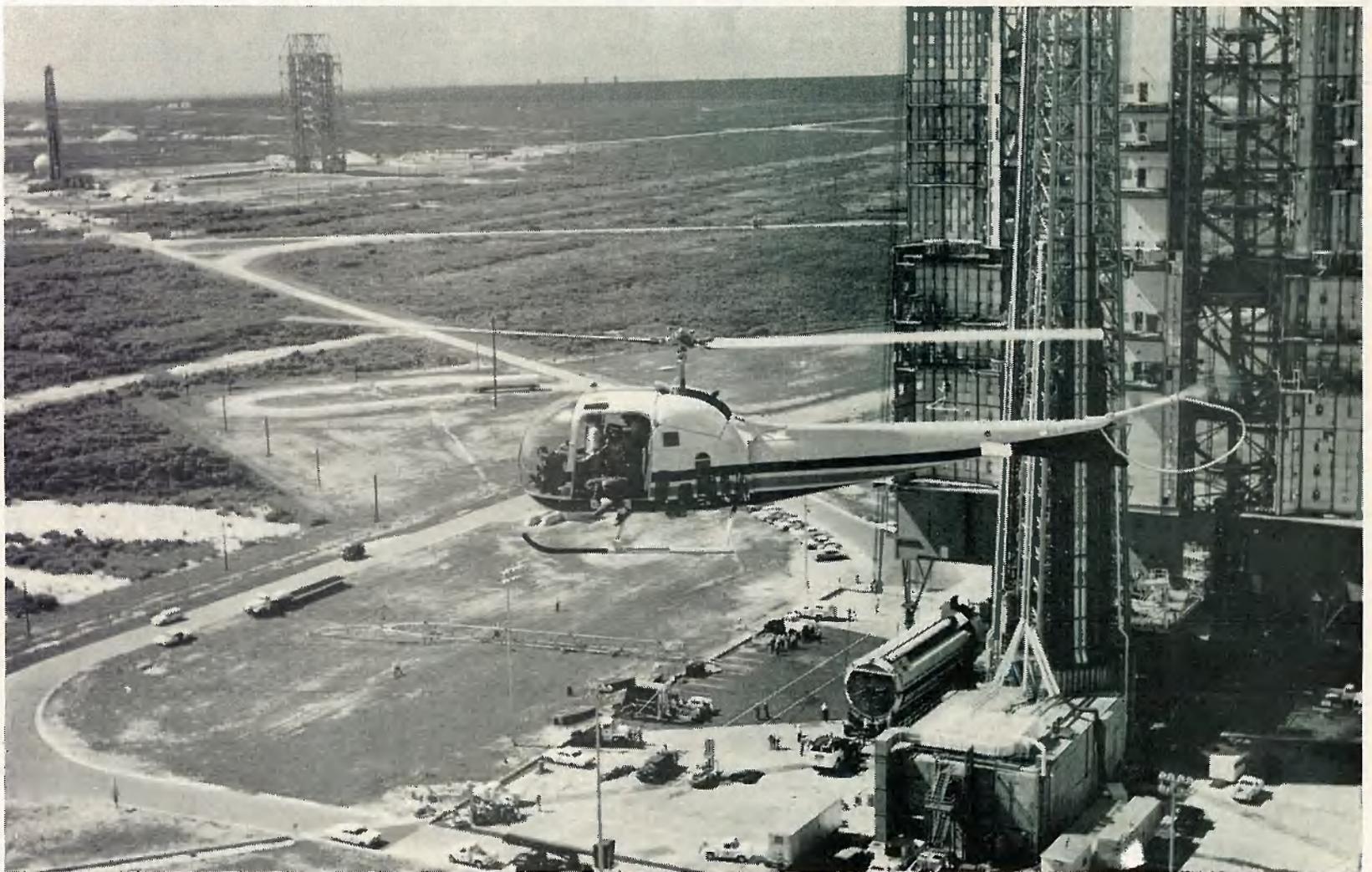
FILM CONSTRUCTION PROGRESS



PILOT Bob Lockrow steadies helicopter during filming.



PHOTOGRAPHER Dick Crowe zeros in on a construction sight with his 16 mm Ariflex camera, mounted atop a specially-designed stand.



HELICOPTER HOVERS over Pad B at Complex 37. That's the SA-5 Booster down below.

News Photo by E. G. Westberg



Harlow Powers



Pauline Rudolph



Fabian Andrews



Paul Siebeneichen



Helen Dahl

Capeside Inquirer

Do You Smoke Too Much?

How much do you smoke? That's what the Capeside Inquirer asked of NASA employees, and found a variety of answers. Most people agreed, however, they did smoke more than they liked, and were seeking ways to cut down.

An average smoker, the survey showed, puffed through just over a pack of cigarettes a day.

Although no foolproof remedies were passed along, here are the answers to the question, "Do you smoke too much?"

Harlow Powers, Financial Inventory Accounting: "Yes. I took up cigars to cut down on cigarettes. It has helped somewhat, but I can afford to cut it in half and still be smoking too much."

Pauline "Rudy" Rudolph, Cashier, Finance Division: "No, because I enjoy it. Besides, I have too much nerv-

ous energy stored to stop smoking. If I stopped, my 'even' disposition would go up in smoke."

Fabian Andrews, Chief Passenger Travel Section: "It's the only vice I have left."

Paul Siebeneichen, Chief, Community Development: "Yes. I've stopped smoking six times, but started in again seven times. Frankly, I think it is a habit that should be stopped and I'm going to try again."

Helen Dahl, Legal Office: "I don't smoke that much to cut down. A pack of cigarettes lasts me almost three days. I would never want to be a heavy smoker."

Dick Mazurkiewicz, Plans and Program Management: "No. I just bought five cartons of cigarettes while in Nassau. They say smoking will cut five years from your life. So who wants to be 105?"



Dick Mazurkiewicz

News Photos by Russ Hopkins

NASA ESTABLISHES RELIABILITY RULES FOR CONTRACTORS

NASA has adopted a set of uniform, general guidances to be followed by contractors to assure reliability of space system hardware.

They will apply to contracts estimated to cost over \$1,000,000 and certain other items considered critical to the performance of spacecraft, launch vehicles or other equipment for space flight.

Purpose of the guidelines is to strengthen and provide a uniform approach to reliability programs in contract projects.

In 1958, for example, the U.S. space program had about two failures for each successful attempt to orbit a satellite. In 1962, and the first eight months of this year, however, NASA had no unsuccessful Earth orbit attempts.

Inquiries concerning the publication should be directed to the LOC Reliability Office, UL 3-6104.

ADVANCED NIMBUS CONTRACT TO BE VIEWED

Two aerospace companies have been selected for contract negotiations by the NASA/Goddard Space Flight Center for work on the advanced Nimbus weather satellite.

The two contracts, awarded under competitive bidding to GE and RCA total \$417,000. When negotiations are completed, the two contracts are expected to exceed one million dollars.

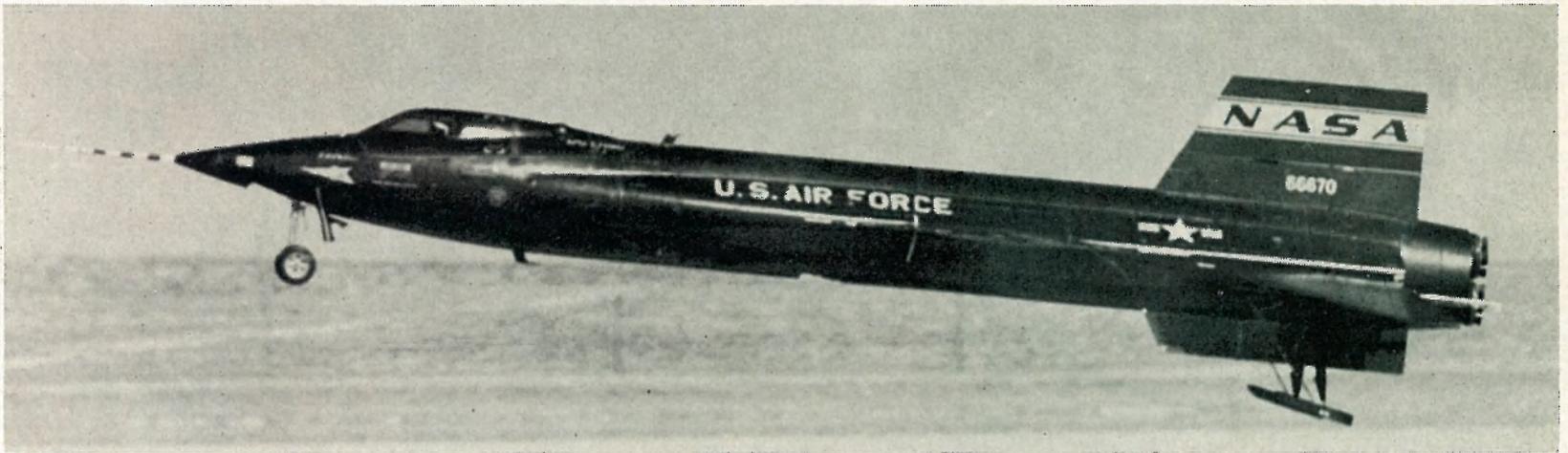
GE's \$252,000 contract calls for development of the operating procedures for the Nimbus technical control center at the Goddard Space Flight Center, plus personnel training of engineers and technicians who will operate the center. The center will provide complete operational control of the meteorological satellite system during pre-launch, launch and post-launch operations.

NASA-SCANDINAVIANS ANNOUNCE APPROVAL ON SATELLITE TESTS

NASA and the Scandinavian Committee for Satellite Telecommunication representing Denmark, Norway and Sweden have announced the approval by the participating governments of a Memorandum of Understanding for the testing of experimental communications satellites launched by NASA.

Vice President Lyndon B. Johnson, who recently toured Scandinavia, received at a ceremony in Copenhagen the Danish Government's note approving the Memorandum, which brought the agreement into effect.

Under the agreement the Scandinavian Committee will provide a ground station to receive multichannel telephonic or telegraphic signals transmitted from a United States ground station via an orbiting communications satellite.



X-15 OBJECTIVES MET OVER PAST FIVE YEARS

In the five years since NASA took over direction of the X-15 program from its predecessor, the National Advisory Committee on Aeronautics, the rocket-powered aircraft has attained its original design goals and far exceeded its design altitude.

Many original X-15 research objectives have been accomplished and others have been added to the program since flight tests of the research plane began on June 8, 1959.

The X-15 research plane continues contributing significantly to aeronautical and space science programs while setting unofficial world altitude and speed records in the process.

Joseph A. Walker, NASA's chief research pilot, has made the headlines recently with

steep climb missions that took one of the three X-15's to record altitudes.

Walker holds the unofficial world speed record for manned aircraft with 4,104 miles per hour (Mach. 5.92) set June 27, 1962, in the X-15 No. 1.

Emphasis now is on advanced research and technology to support existing programs in manned and unmanned flight and to provide a basis for more advanced objectives. These missions contribute to both the space program and the national effort for a supersonic commercial air transport.

In the follow-on X-15 program, about two-thirds of the research work is in support of space science and one-third is for aeronautical investigations.

Modifications in the X-15 are designed to improve its research value particularly in respect to air-breathing propulsion, hypersonic aerodynamics, and structures. Current planning calls for use of the X-15 through 1967 in support of such research objectives.

A recent flight marked the completion of an initial heat-transfer investigation to determine the effects of air pressure, speed and angle of attack (air-flow) on aerodynamic heating. Data will be analyzed for use in improving future vehicles.

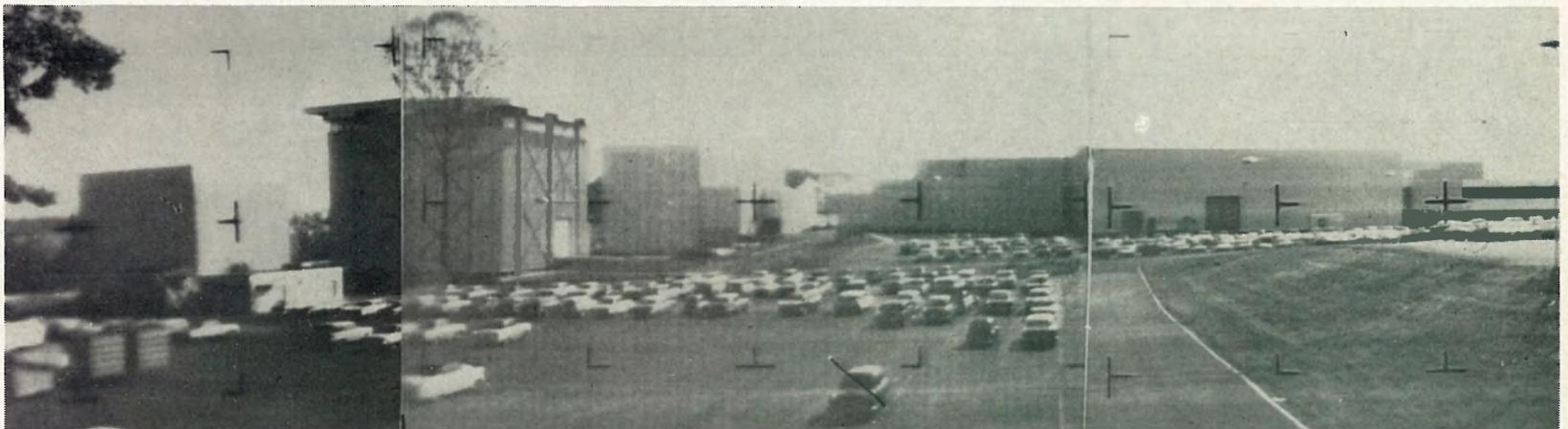
Other X-15 accomplishments have been experimental work on stability and control during reentry from high altitudes, advanced flight control systems, structural dynamics, piloting aspects with

both aerodynamic controls and reaction-control rockets, and the measurement of physiological effects on pilots under extreme flight environments.

Examples of advanced space experiments using the vehicle as a flying test bed are: ultraviolet stellar photography, infrared rocket-engine exhaust signature, horizon-sensing stabilization equipment for spacecraft, measuring the earth's scatter-back of infrared and ultraviolet radiation, and studies of space systems under zero-G conditions.

Proposed research missions include flights related to recoverable launch (rockets) vehicles, hypersonic propulsion, biotechnology, and environmental evaluation.

Nimbus, Tiros' Successor, Passes Major System Tests



THE UNITED STATES' most advanced weather satellite, Nimbus, passed major system tests last week. This three segment composite photograph shows the General Electric Spacecraft Division Plant at Valley Forge, Pa. A series of tests, under the direction of the Goddard Space Flight Center, demonstrated the full spacecraft system in operation. For the tests, a prototype of the Nimbus spacecraft was mounted on a tower at the Valley Forge Plant. A radio frequency link commanded the spacecraft into operation, pictures were taken, stored in a tape recorder in the spacecraft, and transmitted to the ground station situated in the center of the picture for processing and development. Nimbus, a follow-on to the highly successful TIROS weather project, will be launched into polar orbit from the Pacific Missile Range. By being placed into a polar orbit, its three cameras can snap pictures of the entire sunlit portion of the earth once a day.

NASA AWARDS GRANT TO STRESS SAFETY FOR YOUNG EXPERTS

NASA has given a \$39,000 grant to the Amateur Rocketeers of America (ARA) to produce information material stressing training education and safety for youngsters interested in rocketry.

The grant, part of NASA's program of encouraging interest and safety in amateur rocketry, provides for the development of five kits, which will include textbooks, instructors' guides, and visual aids. The ARA, based at Edinburg, Ind., is to produce one hundred sets of each kit.

Five Books

There will be five different books, dealing with such subjects as rocket propellants, flight dynamics, instrumentation and guidance, and fundamentals of rocketry.

The kits do not offer "how to do it" instructions in the use of hazardous materials involved in the building or fueling of the rockets.

The kits will not be for sale. The ARA will loan out the kits to its local chapters as well as to schools and teachers. Each kit will contain 20 textbooks.

"The purpose of this program is to get budding rocketeers out of their basements and under safe and informed supervision," said James Bernardo, Deputy Director of NASA's Office of Educational Programs and Services.

"In this program we are emphasizing educational and training aspects, and not just gadgetry," he added.



Dear Sir:

I am interested in space, and being 11 years old, I feel I will see many unbelievable things in my years ahead.

Leroy C. Houston



PARTIERS at the Mercury Club's luau Saturday night were treated to a fare of chicken almonidine, barbecued ribs, egg roll, fried shrimp, watermelon and fresh pineapple. As the photos indicate, the food was well received and the luau-dinner-dance was a success.

News Photos by Ed Thomas

TWO LOG EMPLOYEES TOURING CONTINENT

Financial Management Office employees are being treated to a bird's-eye view of the NASA Employees Association sponsored tour of Europe — via post cards sent by Mary Waller and Babette Cissel of LOC.

From New York's Latin Quarter the girls traveled the jet airways to Piccadilly Circus and the Tower of London. Babs reports that she "left her passport on a bus, lost the key to her suitcase, and slept through the tour to Windsor Castle." Mary says that "people everywhere have been simply grand — we hate leaving each place and we tell them all that we will come

back!"

The girls still have to investigate old Heidelberg in Germany, the beauty of the Alps, the romance of Venice, the picturesque garb of a Neopolitan boatman, the ancient city of Rome where so much of history has been written, and last of all, Paris.

WEATHER REPORTS

There is a new source at Canaveral for weather reports concerning the Cape and surrounding areas. By dialing UL 3-5174, you'll get a complete weather report — that is when the number isn't busy.



You can scrape the Cape Canaveral decal off your car's windshield, if you wish, and still get through the main gates.

Under a new Air Force memorandum, registration of privately owned vehicles will be discontinued.

Cape employees are reminded to make sure their auto insurance complies with the Florida Financial Reliability Law.

Civilians who work at Patrick AFB will continue to register their private vehicles with the Air Police at Patrick in building 477.

If a 13-year-old Massachusetts boy is any example, NASA is assured of a bright future as far as enthusiastic personnel are concerned.

Young Edward Muccio, of Malden, has won a \$500 painting of the X-15 plane by placing first in the high altitude event for a two-stage rocket at the National Association of Rocketry's nationwide competition.

His homemade rocket, which cost only \$1.25, soared 1,150 feet.

The National Association of Rocketry is endorsed by NASA.

Ann Lavender, daughter of Al Lavender, deputy chief of LOC's Presentations Section, has been named a semi-finalist in the 1963-64 national merit scholarship competition. She is one of only four students in the county to become a semi-finalist, based on her performance on the national merit scholarship qualifying test, given in more than 16,500 high schools last March.

We left out a definition, as excerpted from the manual "Apollo Terminology." It is milk stool, and it means the physical arrangement of the three storable propellant rocket engines located below the main pressure vessel of the lunar excursion module.