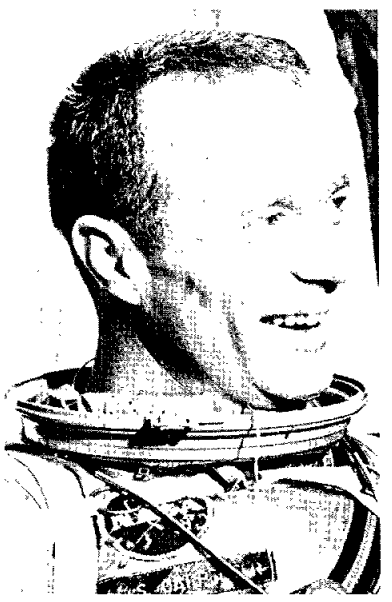
Space News NASA ROUNDUP!

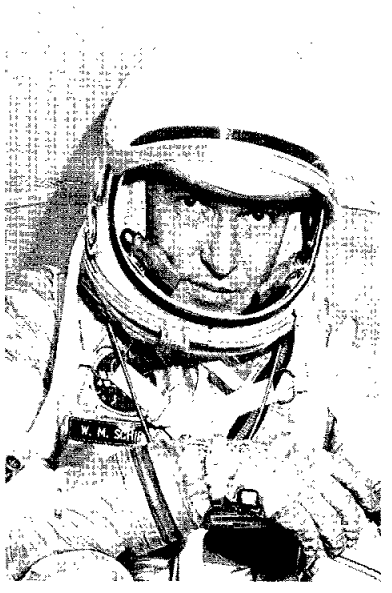
VOL. 1, NO. 15 MANNED SPACECRAFT CENTER, HOUSTON, TEXAS MAY 16, 1962

MA-7 Preparations Near Completion

THE MA-7 BIRD and spacecraft are poised for flight.



M. SCOTT CARPENTER



WALTER M. SCHIRRA, JR.

Flight Mission, Landing Areas, And Pilot's Tasks Are Revealed

Project Mercury, other NASA and contractor employees have been extremely active at Cape Canaveral in recent weeks as they have worked toward completion of preparations for the MA-7 flight scheduled to be launched in mid-May.

Astronaut M. Scott Carpenter is the prime pilot, and Walter M. Schirra, Jr., is back-up pilot for the flight.

The MA-7 mission is a second test to evaluate the performance of a man-spacecraft system, investigate man's capabilities in the space environment, and obtain the pilot's opinions on the operational suitability of the spacecraft and supporting systems for manned space flight.

The pre-planned landing area at the end of the first orbit is 500 miles east of Bermuda, 500 miles south of Bermuda at the end of the second orbit, and approximately 800 miles southeast of Cape Canaveral at the end of the third orbit.

If the mission ends after the first or second orbit, the astronaut will be moved to the Kindley Air Force Base Hospital in Bermuda for a 48-hour rest and de-briefing. If the mission goes a full three orbits he will be flown to Grand Turk Island for a similar 48-hour period before being returned to the mainland.

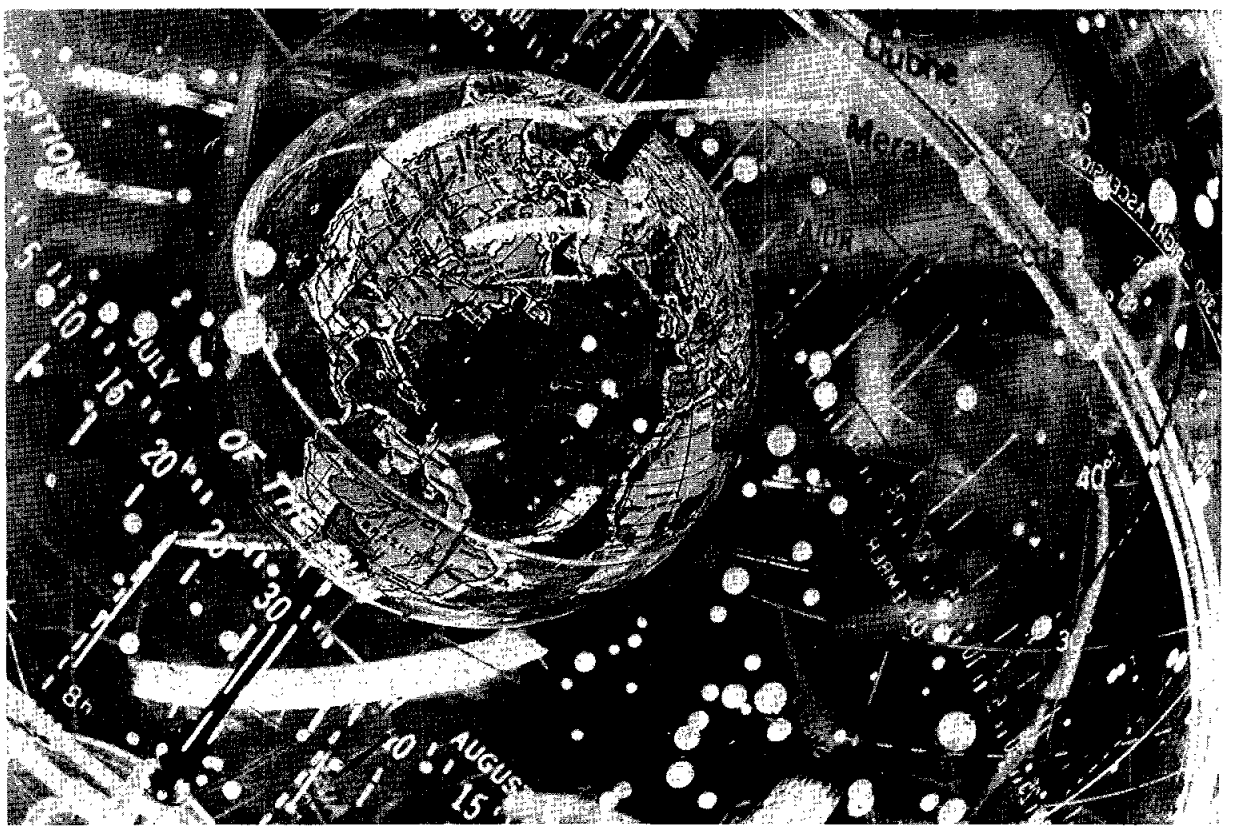
Mission Pilot Tasks

The MA-7 pilot will perform many control tasks during flight to obtain maximum data on spacecraft performance, his own reactions to weightlessness and stress, and to study the characteristics of the earth and stars from his vantage point over 100 miles above the earth's surface.

During the scheduled four-and-a-half hour flight, the astronaut has been programmed to:

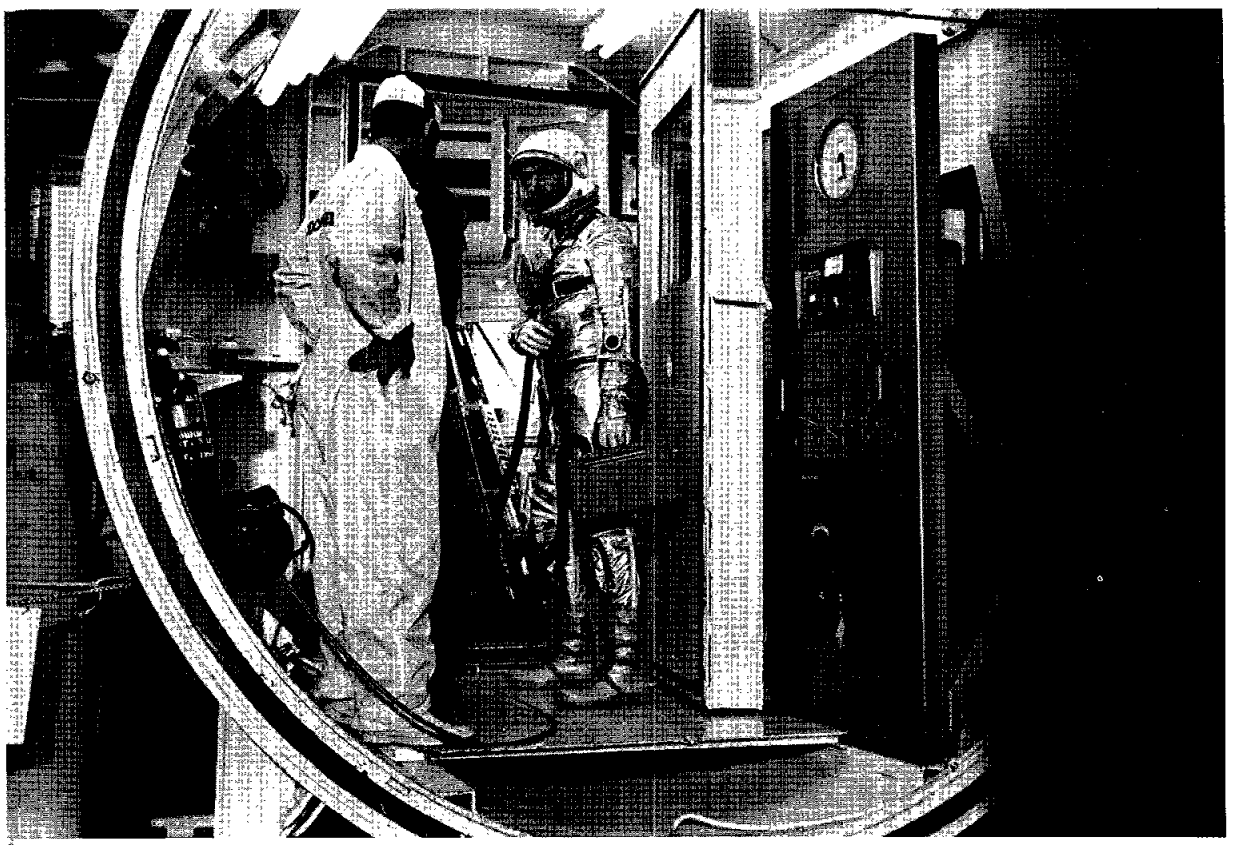
- Perform "systems management," the monitoring of the environmental control system, electrical system, attitude control and communications systems.
- Program and monitor critical events of launch and reentry.
- Control vehicle attitude involving unique problems not encountered in standard aircraft.

In addition he is scheduled to make research observations, and make detailed voice checks every 30 minutes while making ground station passes. His transmissions are to include critical information such as mode of control, precise attitude, planned retrofire time, control system fuel, oxygen and coolant.



HIS FACE FRAMED through the star map of the Astro Globe, Astronaut M. Scott Carpenter seems to look to the future. The globe is one of the training aids in the Aeromedical Laboratory at Cape Canaveral, and is used for celestial familiarization.

CARPENTER checks over some of the myriad reports involved in testing and preparation of the MA-7 flight, in the crew quarters in Hanger S at Cape Canaveral.



ASTRONAUT Walter M. Schirra, Jr., back-up pilot on the MA-7 flight, and a McDonnell Aircraft engineer are framed in the circular entrance to the altitude chamber at Cape Canaveral just prior to a test run. Between them, one side of the Mercury spacecraft can be seen.

EASY DOES IT as Schirra is assisted into the spacecraft inside the altitude chamber for the test. A part of the spacecraft's complicated wiring system can be seen above his right arm.

MA-7 PILOT M. Scott Carpenter (left) and his back-up pilot, Schirra, discuss the results of Schirra's altitude chamber test in the suit room of the crew quarters at Cape Canaveral. Both must take the same tests prior to the flight.

M. SCOTT CARPENTER dons white tennis shoes to match the rest of his attire in the White Room at Cape Canaveral. The spotless White Room is cleaned and scrubbed several times during each shift to keep it almost sterile.

Behavior Of Liquids In Space To Be Studied During MA-7

Very little is actually known about the behavior of liquids in a weightless environment. Various tests have been conducted using drop towers and aircraft in parabolic flight, but the test durations are inadequate for conclusive evidence.

Project Mercury offers the first opportunity to observe and photograph such behavior over an extended period.

The Gemini and Apollo projects require a detailed analysis of weightless liquid in order to design fluid storage tanks. This experiment will establish the effect of surface tension, but other effects such as viscosity, mass, and liquid/gas volume ratio will be studied.

The apparatus consists of a spherical glass flask, about three inches in diameter, with an internal one-inch standpipe, which extends from the internal surface to slightly past center. The standpipe has three holes around its base to allow passage of the fluid. The flask is guarded on one hemisphere by a lucite shield and on the other by an aluminum reflector. An O-ring is sandwiched between these two shields, so that in the event of breakage of the flask, the liquid will not leak into the cabin.

The glass flask has a volume of 300 milliliters and the liquid occupies 20 per cent of this space, or 60 milliliters. The liquid consists of distilled water, green dye, an aerosol solution to reduce surface tension, and a silicone additive to depress foam.

The only operational requirement at present is that the unit will be installed within the cabin of the MA-7 spacecraft and will be observed by the Astronaut-observer camera. The test device will be located to the right and behind the astronaut's head, and he will periodically observe the experiment using a hand-held mirror. A phase of the flight which is of particular interest is the period during and immediately following retrofire. It is theorized that in a zero-gravity condition, the liquid within the sphere will rise in the standpipe or capillary tube because of surface tension.

The test unit has been qualified for flight at Cape Canaveral by the Lewis Research Center, where it was designed and developed. The qualification test apparatus consisted of a Barry-type shock machine, a Ling Electronic vibration exciter, and a rig for verifying 0_2 compatibility. Bracketry required to mount the experiment has also been flight qualified.

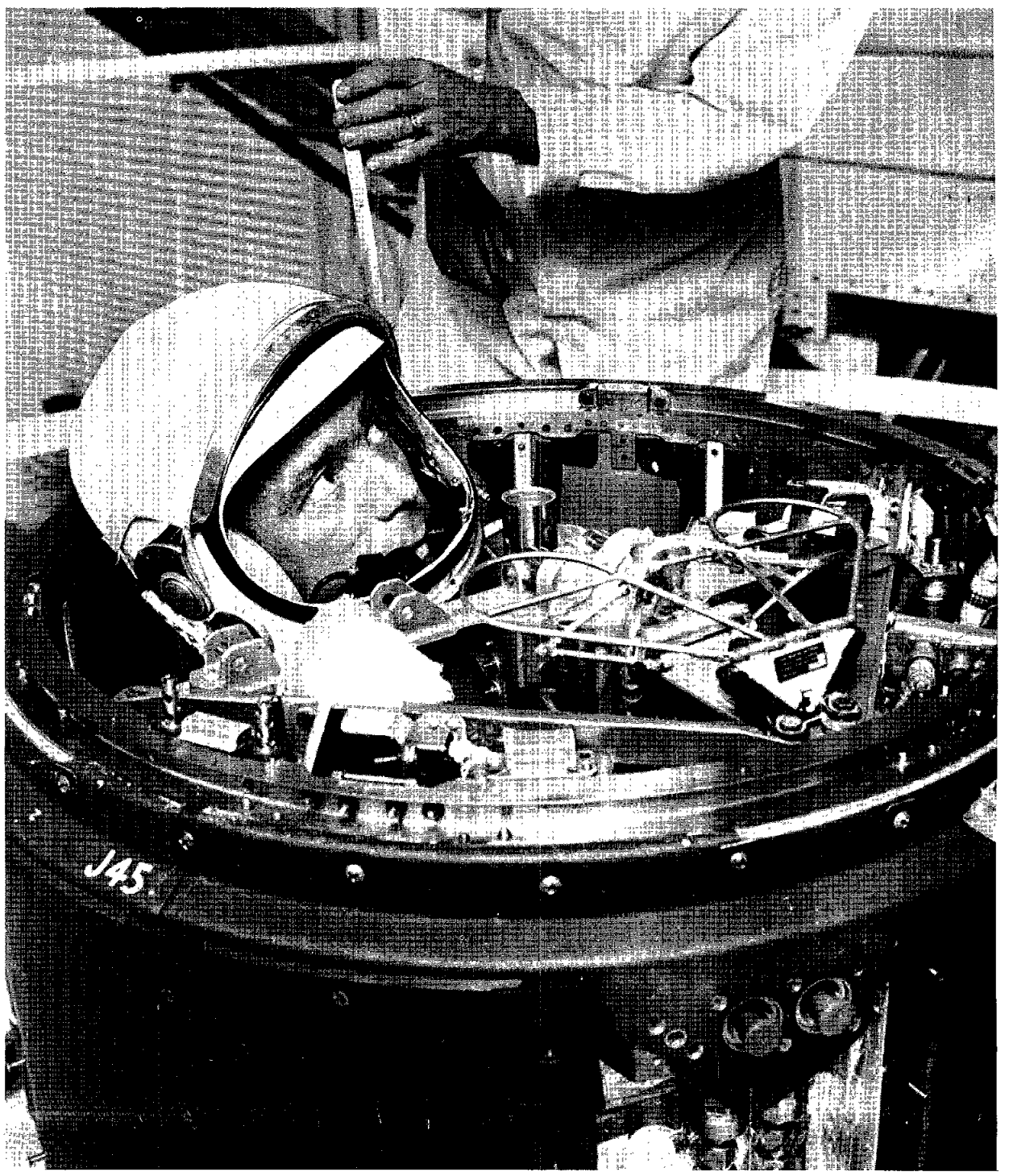
Son Of NASA Man Wins Poster Contest

Mike Hickey, son of NASA Security Officer Francis Hickey, was the first place junior high school winner in the Houston Chamber of Commerce student poster contest.

He is a seventh grade student at Johnston Junior High School.

Winners were selected from over 400 entries submitted by Houston school children.

Awards were presented by William R. Black, Jr. vice president of Bank of the Southwest, in brief ceremonies at Town Hall Gallery, ninth floor, Foley's downtown, where winning posters and runners-up were on public display through May 10.



IT'S A TIGHT SQUEEZE getting out through the top of the Mercury spacecraft, but Astronaut M. Scott Carpenter is well-versed in the process, as are his fellow-astronauts.

HALF-WAY THROUGH, Carpenter straightens up and lifts out an emergency kit. His pressure suit is festooned with accessory equipment, gauges, and fasteners.

MA-7 Experiment To Determine How Colors Reflect In Space, Using Balloon And Confetti

The MA-7 spacecraft has been outfitted with a system that will deploy a tethered balloon during the mission orbital phase.

Of primary interest will be the associated visual phenomena in a space environment, although aerodynamic drag measurements are a secondary objective.

The test apparatus consists of a 30-inch, mylar-aluminum sphere which is to be inflated by an attached 900 psi nitrogen bottle. The balloon is divided equally into five segments, or lunes. The corresponding colors of these surfaces are orange, white, silver (aluminum), yellow, and phosphorescent, which glows at night.

The balloon is tethered with a 100-foot nylon line and an eight-foot strip of .005 aluminum, which acts as a shock absorber. A small metal beam, instrumented with a strain gage, will provide the means of measuring drag. Electric squibs will actuate the spring-loaded deployment and line-cutting mechanisms.

Another objective is provided by the simultaneous dispersion of a cluster of small particles or "confetti." The visual effects and the behavior of these known objects will be closely studied.

Between the folds of the balloon will be placed ¼ inch mylar discs to provide the small particle cluster. The entire experiment package weighs about 2.2 pounds and will be installed within the antenna canister.

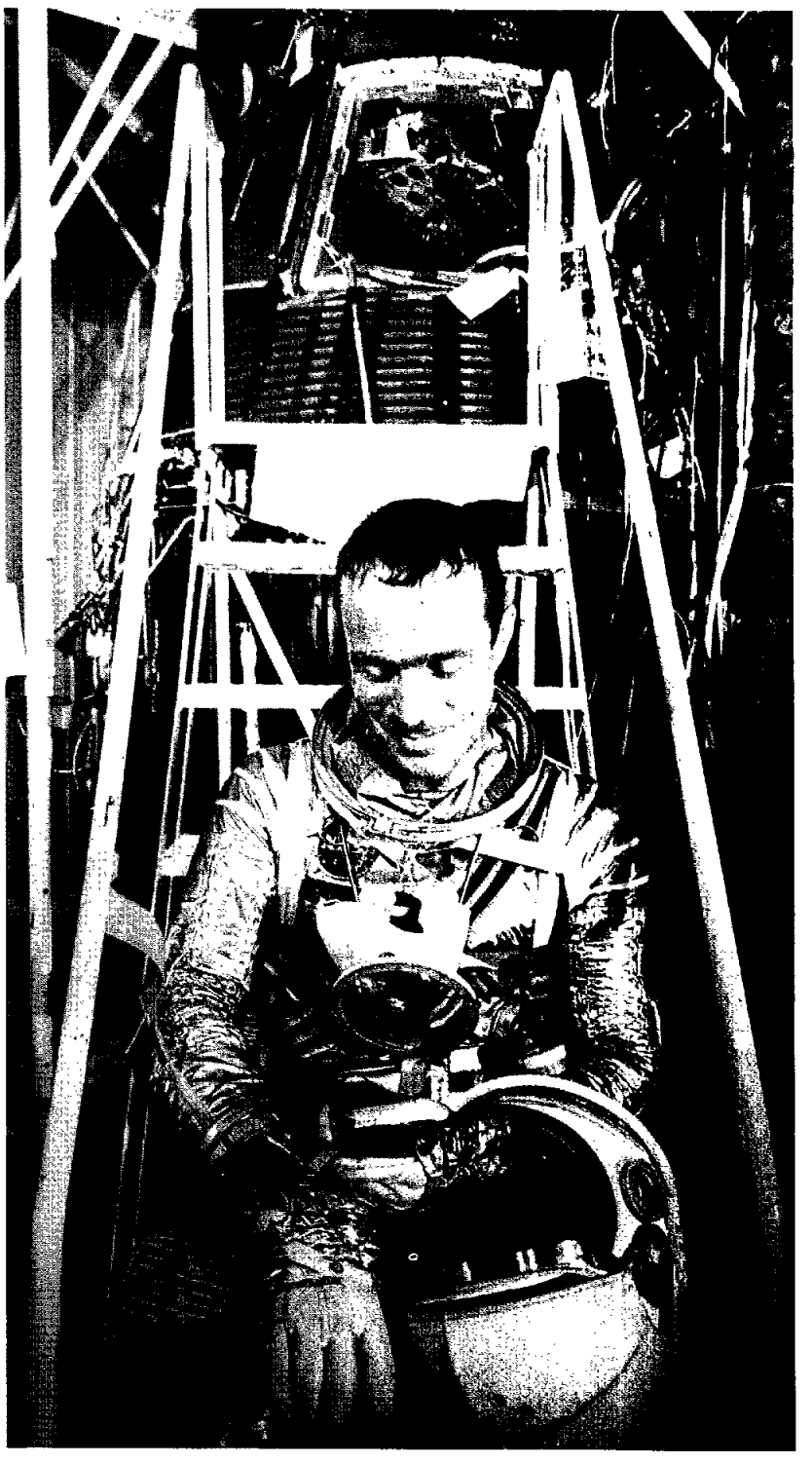
The operational plan calls for deployment of the balloon by the astronaut at the beginning of the second orbital pass. Output from the strain gage and vocal response resulting from visual observations will be recorded on tape. It is desired that the tethered phase last for nearly one orbital period; however, maneuverability of the spacecraft is necessarily restricted and earlier release may be required.

The visual portion of this experiment will be concerned with the reflection characteristics of various colors in space, and the relative merit of these colors for optimum visibility. A correlation between observed and actual separation of the object from the spacecraft after release will be established.

The aerodynamic portion will measure atmospheric drag and stability while deployed and a relationship between these parameters and object separation following release will be analyzed.

The astronaut will observe the operation from the deployment sequence, through tethering, to release and separation, and any oscillations or gyrations will be noted. Photography of angular displacement, the various colors, and confetti dispersion will be provided for correlation with visual responses. The astronaut will orient the spacecraft in order to track the balloon's trajectory after it is released and photographs during this phase are requested when distances are recorded.

This project was essentially initiated in January of this year, and a rigorous qualification test phase at the NASA Langley Research Center was followed by delivery of the packaged unit to Cape Canaveral on March 13. The unit has been installed in spacecraft No. 18, the MA-7 orbital vehicle.



A PIXIE SMILE lights Carpenter's face as he finishes the egress procedure and climbs down a ladder from the Mercury spacecraft.

LSU Honors 3 Alumni Williams, Purser, Faget

Three members of the Manned Spacecraft Center, all alumni of Louisiana State University, took part as speakers and panelists in the Spring Alumni Weekend at LSU last week and were tapped into Omicron Delta Kappa, National leadership society.

They were Walter C. Williams, associate director of the center, Paul E. Purser, special assistant to the director, and Maxime A. Faget, assistant director for research and development.

Williams is a graduate of the LSU engineering class of '39, and a native of New Orleans. Purser, a native of Amite, graduated in the same class. Faget, class of '43, is a native of Carville.

The three formed a panel which appeared before a large audience Friday in Dodson Auditorium, during a televised program in which Projects Mercury, Gemini and Apollo were discussed. Williams outlined the three projects, which he said were designed ultimately to land a team of American astronauts on the moon.

Purser described the space center at Houston and its purpose, Faget explained to the assembly that the emphasis on Project Gemini will be on enlarging the scope of the operation including more control of the craft by the crew.

"We hope eventually to make it possible for spacecraft to rendezvous with each other," he said.

During the question and answer period which followed the panel discussion, Williams said they have worked to correct the condition which caused Glenn's heat shield to show some deterioration. Williams said a wire switch has been made to remedy this.

To another question regarding needed power to activate the Apollo craft, one of the panel said it would need about 10 times the 1,300,000 pounds used in the 17-orbit flight of Russian Cosmonaut Titov.

Faget explained that spacecraft run some risk from radiation passing through the Van Allen belt of the atmosphere, in which the craft may experience trouble from solar storms. These are problems that must be solved, he noted.

Another problem facing men who might land on the moon is getting themselves launched again. Faget said scientists are working to solve the question of doing with a crew of three men what it is now taking thousands of men to do on earth.

Asked if it would be possible for the crew of the Apollo craft to get out and walk around on the moon, Williams told the crowd, "It wouldn't be worthwhile if they couldn't."

The symposium was co-sponsored by the LSU College of Engineering Alumni Association and the Engineering Student Council.

In addition to the panel symposium, Williams spoke Friday morning at the convocation sponsored by Omicron Delta Kappa and Mortar Board. Faget spoke at a luncheon reunion of the classes of '39 and '43 held at the Faculty Club Friday afternoon. Purser spoke at the ODK banquet Friday night, at which all three were named as new members to the society.

Williams is best known for his work as operations director on Project Mercury and for his participation in the X-1 and X-15 programs. Purser is recognized as an authority in the fields of aerodynamic heating, drag stability, and control, and was the pioneer in the use of free-flying rocket models as research instruments. Faget contributed to basic original design concepts embodied in Project Mercury manned spacecraft. He holds patents on the Mercury escape system and a flight mach number meter.

Tech Services Shop Looks Like Scene Of Science Fiction Movie

"The Technical Services Division is responsible for establishing and operating those technical shops which are necessary for the support of MSC Divisions and Offices," reports an MSC organization announcement. "Jack A. Kinsler is acting Division chief."

That cryptic statement does not begin to describe the Alice-in-Wonderland atmosphere of the Tech Services shop in the Rich Building.

In the barn-size shop area, life-size mockups of the Apollo spacecraft tower over plywood-and-sheet-metal imitations of Gemini and used Mercury spacecraft pose in every position between lathes and saws and enigmatic pieces of machinery.

Tech Services puts together everything from a huge first concept mock-up of the Apollo for the Communications Branch to six-inch, perfectly scaled models of the Mercury spacecraft, put together with screws so tiny they have to be threaded on a jewelers' lathe, for display purposes.

"We made this one out of plywood and aluminum sheeting for the Communications Branch," said model shop supervisor Charles Tucker. "It's the first concept of the Apollo mock-up, the final configuration as of now. Originally this one was going to be floated, so we made it watertight at the bottom. The bright yellow part is a special plastic. That top section is going to be removable. The air-lock will come up through that top section there."

Next to the sleek, cone-shaped model was the skeleton of another, covered only by battered pieces of felt. Sheet-metal mock-ups of three couches, much like the Mercury couch in shape, lay next to it, and an ordinary water faucet protruded incongrously from its side. "We had that one made up and ready for three people to spend 72 hours in," explained Tucker. "It had running water, air conditioning and cooking facilities."

On the other side of the room, smaller plastic configurations of the Apollo circled by metal rings floated in a tank of water. Weights can be attached to the rings at the bottom so that scientists and technicians can arrive at the best possible configuration of the Apollo for purposes of buoyancy.

Nearby a technician at a woodworking machine was turning our hand-sized models of the Mercury spacecraft for exhibits and displays.

Others were finishing the interior surfaces of a mock-up of the two-man Gemini, complete with mock-ups of two couches which slide in and out on runners. The mock-up can be mounted on an axis and rotated into various positions. since technicians testing the craft in "astronaut position" would be unable to remain on their backs at earth gravity for long periods of time.

In the machine shop, supervisor William S. Lee displayed a partially completed clear plastic globe much like the one the astronauts have used for celestial recognition training. A map of the Heavens can be painted on it and another globe, painted to represent the earth, mounted inside, or imitation satellites mounted on runners can circle its "sky."

"This one will have to do with guidance control," said Lee. We can put small hollow mock-up of a spacecraft in the center. The globe is motor driven and will turn in any direction the operator wants it to."

Tech Services does everything from making brackets for instrument mountings to furnishing personnel to run a vacuum chamber. There is even a team of skin divers for water tests.

A full scale model of the Mercury spacecraft and its escape tower, looking for all the world like the real thing, was being readied for a trip to Austin to be used in a display. Another Mercury, this one having been actually fired, was just back from Texas City and Galveston.

On the opposite side of the room, a "drop model," or test vehicle for rough handling, turned a scarred bottom to view.

Next to it was a centrifuge with an eight-foot arm, capable of spinning at 800 revolutions per minute. The attachments at the ends of the arm hold pieces of equipment to be tested, and Lee said the centrifuge is in constant use.

Technician Norwood Smith is in charge of operating the vacuum chamber at the other end of the shop. Capable of duplicating pressures up to an altitude of 400,000 feet, it can also vary the temperature between 500 degrees F. and 100 degrees below zero. "Individual components are run through tests here," said Smith: "the lower section can vibrate as well, for testing purposes. Receivers, transmitters, smaller units mounted in missiles and spacecraft can be tested. The thing that gives us our biggest problem in this area is the humidity."

Equipment for almost all of the scientific and technical shops of MSC is installed and serviced by Tech Services technicians. To meet future requirements, some awesome pieces of machinery have been ordered, including a 23-foot boring mill, a huge oven for curing plastics, a solar simulator, a high vacuum simulator capable of duplicating conditions at 500 miles altitude, and a 170db acoustical chamber. In days to come, the shop should look more and more like the set for a science fiction movie.

The Chamber of Commerce of the United States

Great Living American Award

to the

Project Mercury Team

Robert R. Gilruth

Astronauts

Malcolm S. Carpenter — Virgil I. Grissom

Leroy G. Cooper, Jr. — Walter M. Schirra, Jr.

John H. Glenn, Jr. — Allen B. Shepard, Jr.

Donald K. Slayton

For the outstanding contribution which these men have made to space science and technology, and to the extension of human capabilities in space flight,

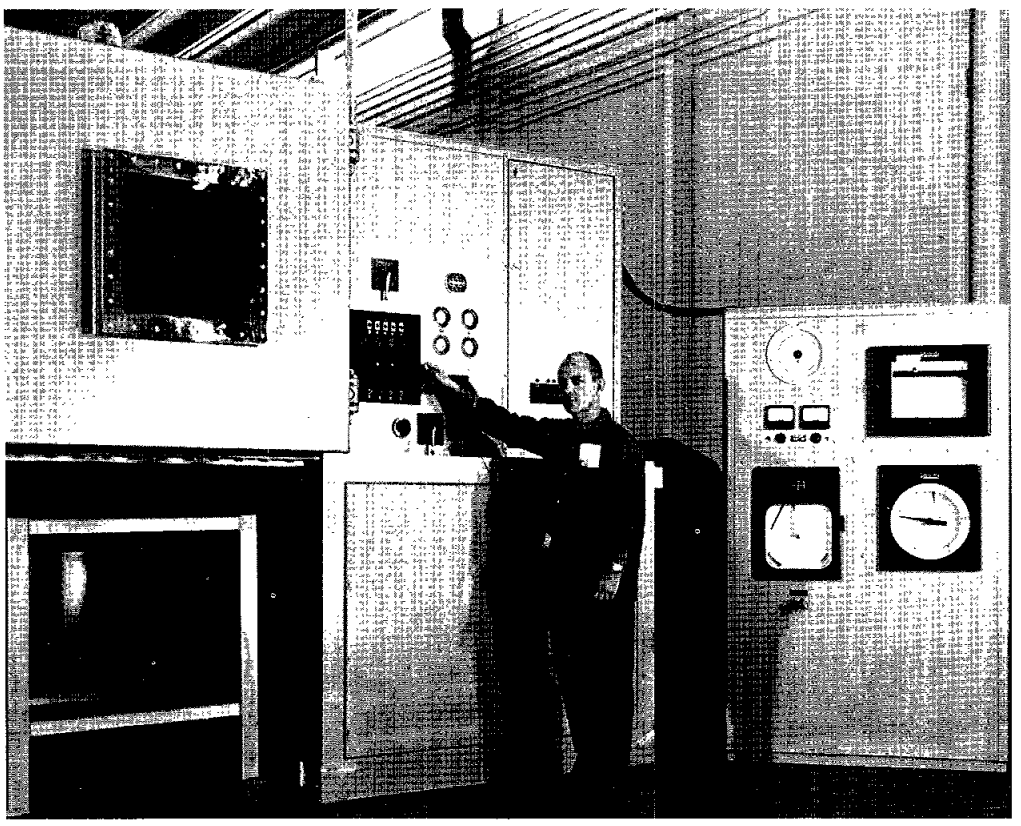
For the unwavering dedication, abiding fortitude, personal courage, and sense of team work which these men have demonstrated;

For the unceasing perseverance which these men have applied to maintaining our nation's leadership and exploration of space for peaceful purposes,

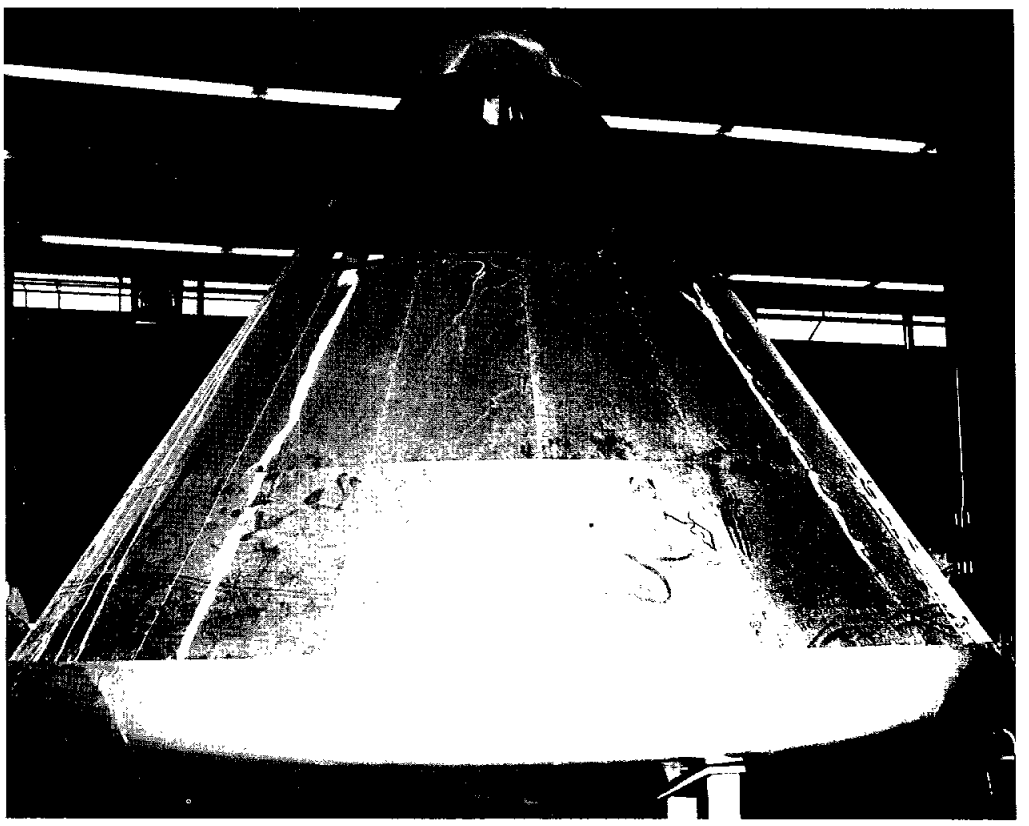
For the inspiring individual enterprise, personal integrity and voluntary cooperation which these men have exemplified in all their actions,

We salute and honor these men - and, through them, all those who serve in Project Mercury - and we present to them this award as great living Americans.

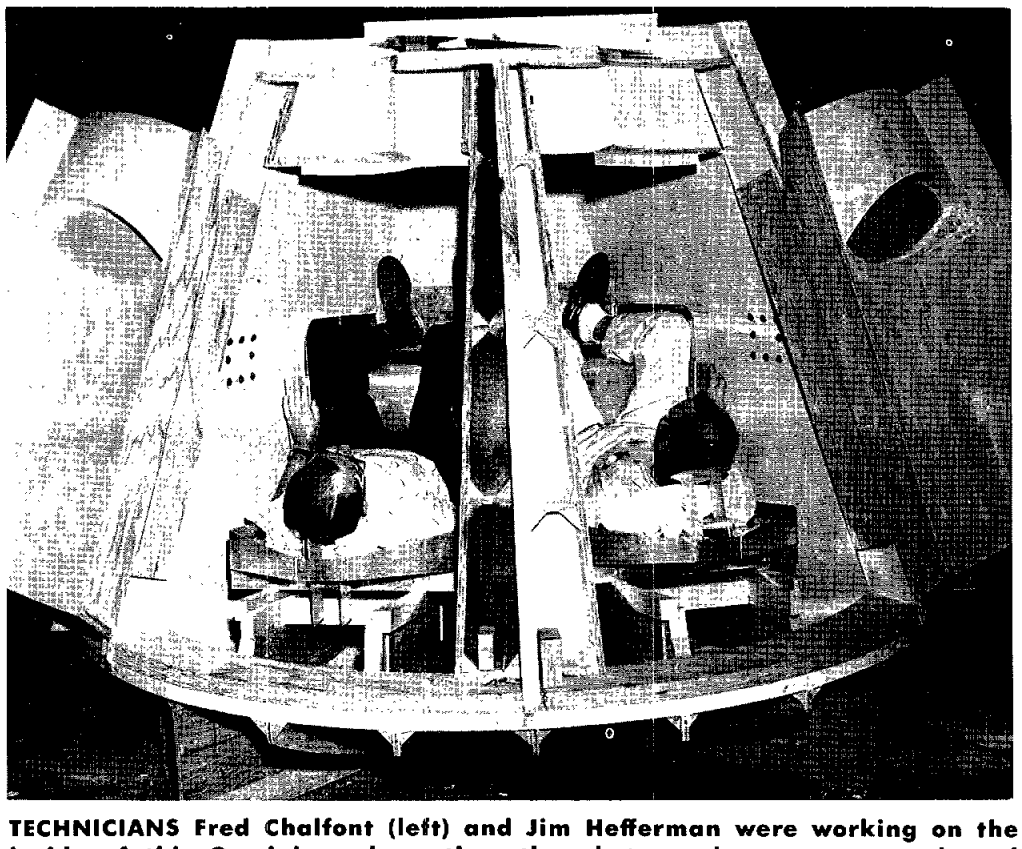
(Signed) Richard Wagner
Title, President, Chamber of Commerce of the United States
Washington, D. C. / April 30, 1962



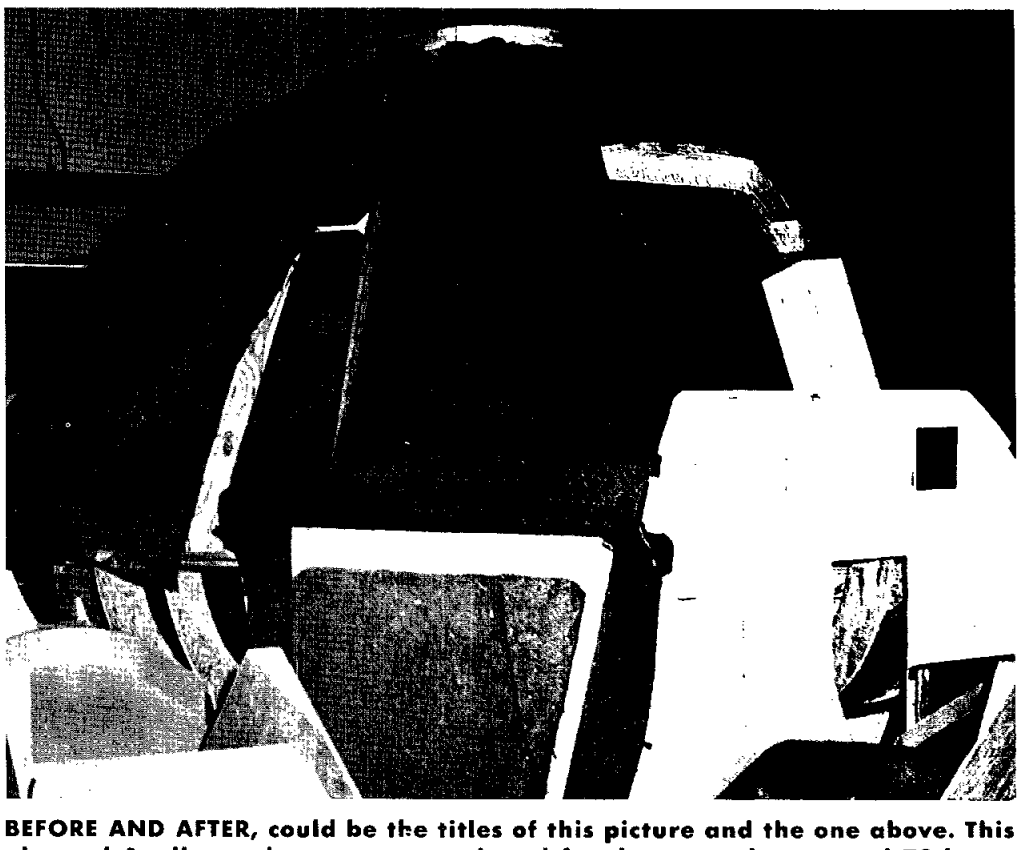
THIS VACUUM CHAMBER can make things high and hot for small components of spacecraft or boosters which are tested in it. Handling the controls is technician Norwood Smith of Tech Services. The chamber can duplicate altitudes up to 400,000 feet and temperatures of up to 500 degrees F.



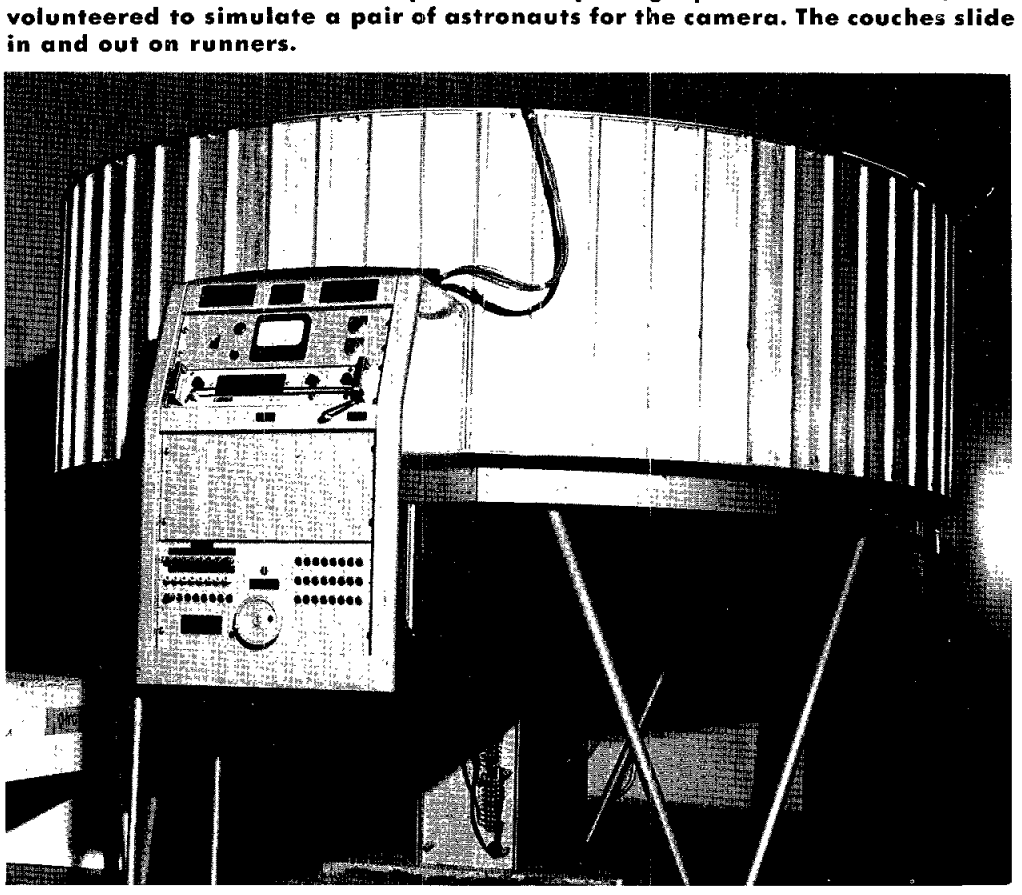
THE FIRST three-dimensional "sketch" of the Apollo's proposed shape, this mock-up will be used by the Communications Branch. Its bottom is watertight plastic, and the sides are covered by sheet metal. It even has its own press-clipping—taped to the right side.



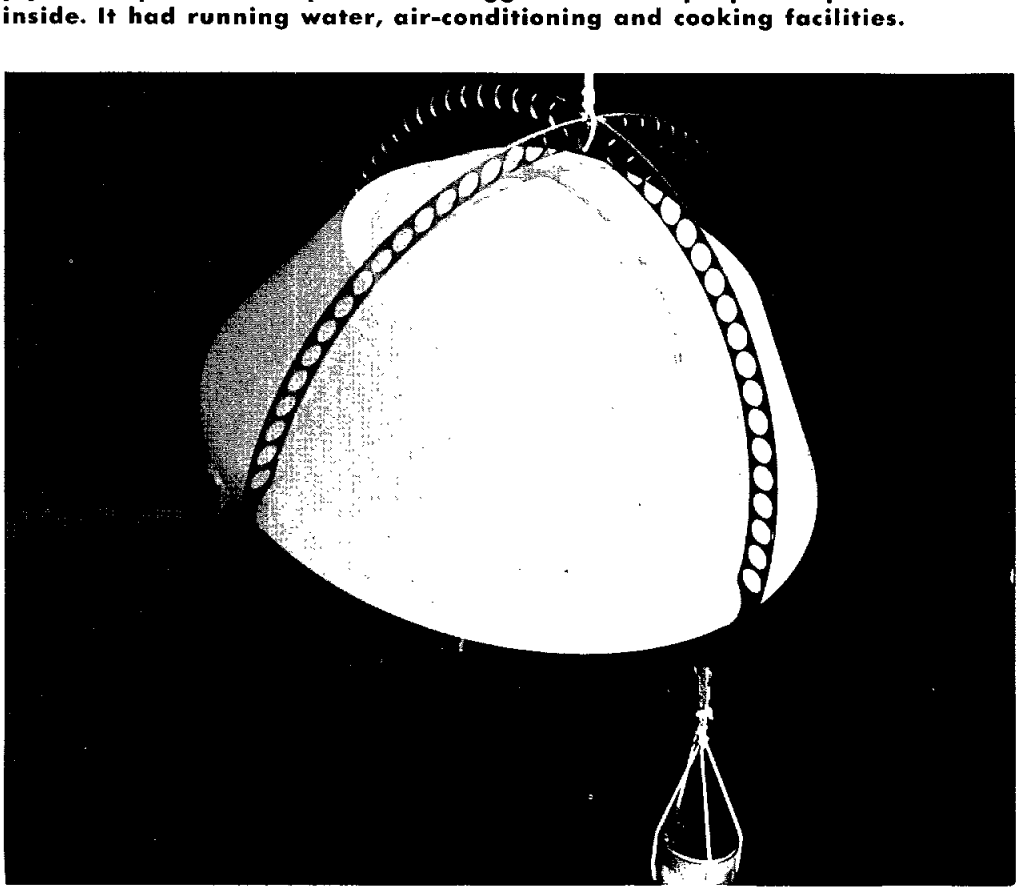
TECHNICIANS Fred Chalfont (left) and Jim Hefferman were working on the inside of this Gemini mock-up then the photographer came around, and volunteered to simulate a pair of astronauts for the camera. The couches slide in and out on runners.



BEFORE AND AFTER, could be the titles of this picture and the one above. This plywood Apollo mock-up was once rigged for three people to spend 72 hours inside. It had running water, air-conditioning and cooking facilities.



SPIN THE BOTTLE, king size. The eight-foot arm inside this centrifuge can spin component parts of spacecraft systems at 800 RPM's, until they literally fly apart, in order to find out how much stress each could take.



LOOKING like an egg laid by a dizzy space-chicken, the plastic object above is a floatation model of the Gemini spacecraft. Weights can be attached anywhere along the bottom or sides, such as the one dangling at right.

The SPACE NEWS ROUNDUP, an official publication of the Manned Spacecraft Center, National Aeronautics and Space Administration, Houston, Texas, is published for MSC personnel by the Public Affairs Office.

Director . . . . . Robert R. Gilruth
Public Affairs Officer . . John A. Powers
Editor . . . . . Ivan D. Ertel
Staff Writer . . . . . Anne T. Corey
Staff Photographer . . . . . Bill Taub

On The Lighter Side

There is an indication that some of the other planets may be using women in their space programs. The Farnsworth & Chambers Building was recently visited by a flower-waving, self professed horticulturist who said to the receptionist, "Tee hee hee, tee hee hee, I plant flowers on Mars. What do you have for me to do down here?" She was politely but firmly escorted by security personnel to the nearest appropriate "landing strip" on Telephone Road where she could secure the necessary services for re-fueling for her return trip.

The language which has become acquainted with Project Mercury has spread, to some extent, to space science cartoons. An early morning Houston show features about seven or eight minutes of a serial daily. On a recent chapter showing, a spaceship which had been in trouble in deep space reported back to headquarters on earth and, in answer to a query, replied that everything was A-OK.

EDITORIAL EXCERPTS

New York Times, April 17

AN EARLY LOOK AT THE WORLD'S FAIR IN SEATTLE

The Seattle World's Fair, with the 21st century as its theme, gives every promise of success as a cultural event as well as an elegant sideshow.

The fair's most popular exhibit is likely to be the National Aeronautics and Space Administration's splendidly displayed collection of missiles, satellites, and space capsules.

Without having intended to be, this is a cultural and even an esthetic exhibit in a sense that many people have begun to understand, and that the fair over-all may do much to confirm. Our lives are now so dominated by science that our most creative effort may be going into the production of scientific devices, leaving art as a second-rate manifestation of our time.

One weather satellite on display is abstractly as beautiful and expressively more powerful than the sculpture commissioned to decorate the fair, which is not bad sculpture at that. This could mean that we must accept the equality of the scientist-technician with the creative artist as the expressive agent of our century.

WELCOME ABOARD

The following persons joined MSC during the month of April, 95 at the Houston site, 27 at Langley AFB, Va., 2 at Downey, Calif., 1 at St. Louis, Mo., and 4 at Cape Canaveral.

Office of the Director: Harley A. Soule, Raymond C. Sebold.

Audit Office: Robert H. Voigt, Jerald L. Greif.

Legal Office: Edward F. Parry.

Reliability & Flight Safety Office: Charles N. Rice, Lawrence R. Steinkardt.

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Gemini Project Office: Barbara L. Moore, Willis B. Mitchell, Jr., Leona G. Smith, James B. Jackson, Alberta Semra. Louis A. Bernardi, Ralph E. Tuttle, Duncan R. Collons.

Apollo Project Office: Dorothy L. Anderson, George A. Lemke.

Preflight Operations: Myrtle Camilla Zita, Harold W. Cochran, Alan H. Spring.

Flight Operations: Clifford E. Charlesworth, Francis G. Parks, Daniel T. Lockard, Dale E. Moore, Charles R. Lewis, Frank S. Kawalkiewicz, William E. Smith, Jerry C. Bostick, Louise H. Walters, Ester R. Lizcano, Richard L. Brown, Sr., Fred D. Koons, Oscar Patterson, William E. Platt, Frank J. Herbert, W. B. Driver, Charles A. Beers, James L. Tomberlin, Richard D. Parten, Gene F. Muse.

Flight Crew Operations: Donald M. Goldenbaum.

Office of Asst. Director for Research & Development: Jean A. Tarpley.

Systems Evaluation and Development Division: Weldon F. Heath, Frank E. Hess (student-trainee), Frances M. Smith, William R. Dusenbury, Judy S. Brown, Jesse L. Phillips, Herschel J. Wood, Jr., Allen H. Watkins.

Life Systems Division: Dale G. Sauers (student-trainee), Franz G. Rinecker, Capt. Robert L. Peake (USAF), Jerry R. Goodman, Paul F. Kiehl, James H. Barnett, Jr.

Spacecraft Research Division: Irene B. Baugh, James W. Van Artsdalen, Walter R. Russell, Edward A. Stavinoma, Marion D. Kitchens, Aaron Cohen.

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Administrative Services: Helen H. Ragsdale, Dorothy M. Colleps, Wanda B. Carter, Iris M. Blackburn, Elizabeth B. Jezewaki, Carole A. Bailey, Sylvia L. LaFerney and Robert E. Thrower.

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Technical Services: Richard W. Grow, William R. Burks, Joseph A. Blanco, Herbert P. Andrews, Frank L. Parmenter, Bill L. Johnson, Joseph F. Naples, John W. Heckler.

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Logistics: Lucy M. Cruz.

Personnel: Helen K. Montgomery, Shirley K. Davidson, Hope S. Trefalls, TSgt. James Koplin (USAF), Kathryn R. Anderson, Alice A. Drake, Anne W. Brown.

Financial Management: Mildred E. Kineard, Alene Lewis, Raphael F. Hoffman, Alfred E. Guthrie, Elizabeth S. Rogers, Martha De La Portilla.

Security: Jean G. Redford, Jennie R. Carlin, Martha H. McRoberts.

Facilities Section: Jo Ann Gernand, Paul H. Anderson, Arthur M. Crabtree, Knight C. Smith.

Data Computation and Reduction Division: William D. Stuart, Jr., Eugene H. Brock.

Photo Services Section: Terry N. Slezak, William G. Landers, Charles J. Bauer, Ludy T. Benjamin, Earl J. Ottinger, Jr., Carmelo Sustaita, George G. Collins.

MSC PERSONALITY

Audit Officer Thomas Cassias Is Native Of Denver, Colo.

"Yon Cassius has a lean and hungry look; he thinks too much: such men are dangerous. He is a great observer and he looks quite through the deeds of men."

Shakespeare's Caesar was not referring to Thomas J. Cassias, acting manager of the MSC Audit Office, who spells his name with an "a."

Thomas J. Cassias

But Cassias, who is six feet tall and on the lean side, comes in for a lot of kidding, just the same. And people constantly misspell his last name.

Of Danish descent, he is a native of Denver, Col. and held a number of government positions before joining MSC at Langley last November.

The Audit Office has the responsibility for contract audits and works with Department of Defense auditors.

A graduate of Englewood High School in Denver, Cassias attended the School of Commerce, Accounting and Finance at Denver University and later took courses at the University of Detroit, Mich.

He began his career as a Civilian Conservation Corps trainee in accounting work, at Ft. Logan, Col. and came into government service in October of 1934 in the Finance Department of the Army, at the disbursing office of Ft. Logan. He was an administrative assistant by 1943, when he accepted a position as head cost auditor with the U. S. General Accounting Office in Detroit, Mich. During the period between 1943 and 1947 he worked on audits of war contracts assigned to Chrysler Corporation, and was later assistant chief of the unit for audit of War Assets Administration activities.

In June of 1947, doctors advised Cassias that his young son's asthma condition might be alleviated by a different climate, and the family moved back to Denver. Cassias became owner-partner in an infant supply shop, a salesman and finally office-manager of a large transfer and storage company.

He returned to government work in Cincinatti, Ohio in May of 1952 as assistant branch chief of the Cincinnati Branch Office, Auditor General, U. S. Air Force, and became chief of that branch in 1953. In 1955 he transferred to Ordnance Comptroller Field Office in Cincinnati as a staff member, giving accounting assistance to 60 ordnance installations in the surrounding area.

In September of 1959 Cassias accepted a position in Washington D. C. as management analysis officer for the Office of Executive Management, Army Ordnance Corps, responsible for development, maintenance and improvement of the Ordnance Command management system. He remained with the office until his transfer to NASA in 1961.

Cassias and his wife, the former Marjorie Ruth Jones of Conroe, Texas, have two children, daughter Celia, 15, now a sophomore at Westbury High School, and son Steven, 18, who will enter college in the fall.

His hobbies include bowling (which he says his wife is better at that he is) and golf.

The family moved to Houston from Vienna, Va. in February and have bought a home in Westbury. Cassias says the settling down period is going well and all hands are taking to Texas.

NASA Appoints New Research Director

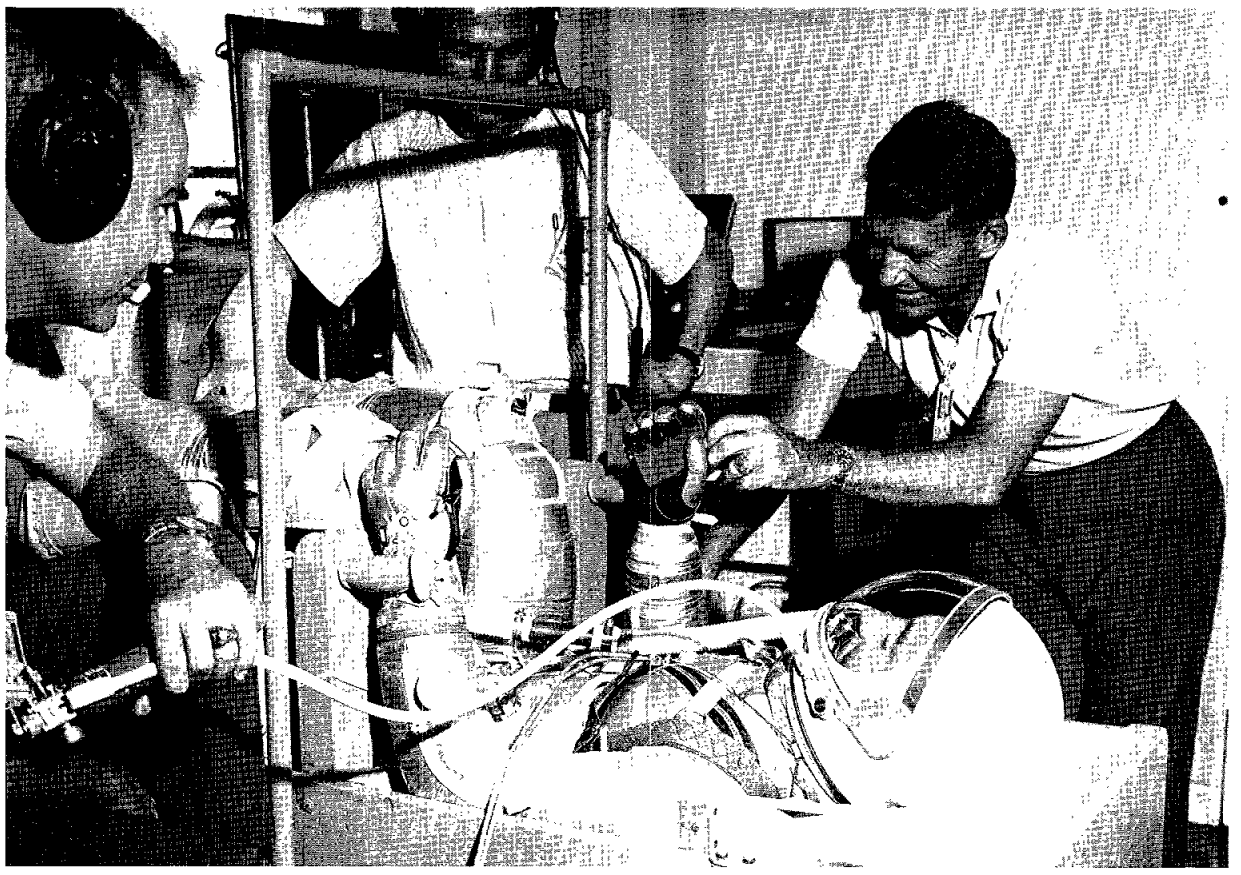
The National Aeronautics and Space Administration announced May 4 the appointment of Dr. Raymond L. Bisplinghoff, Professor of Aeronautical Engineering at the Massachusetts Institute of Technology, as Director of the NASA Office of Advanced Research and Technology.

Dr. Bisplinghoff, 45, succeeds Ira H. Abbott, who retired in January.

Dr. Bisplinghoff will assume his new duties in July.

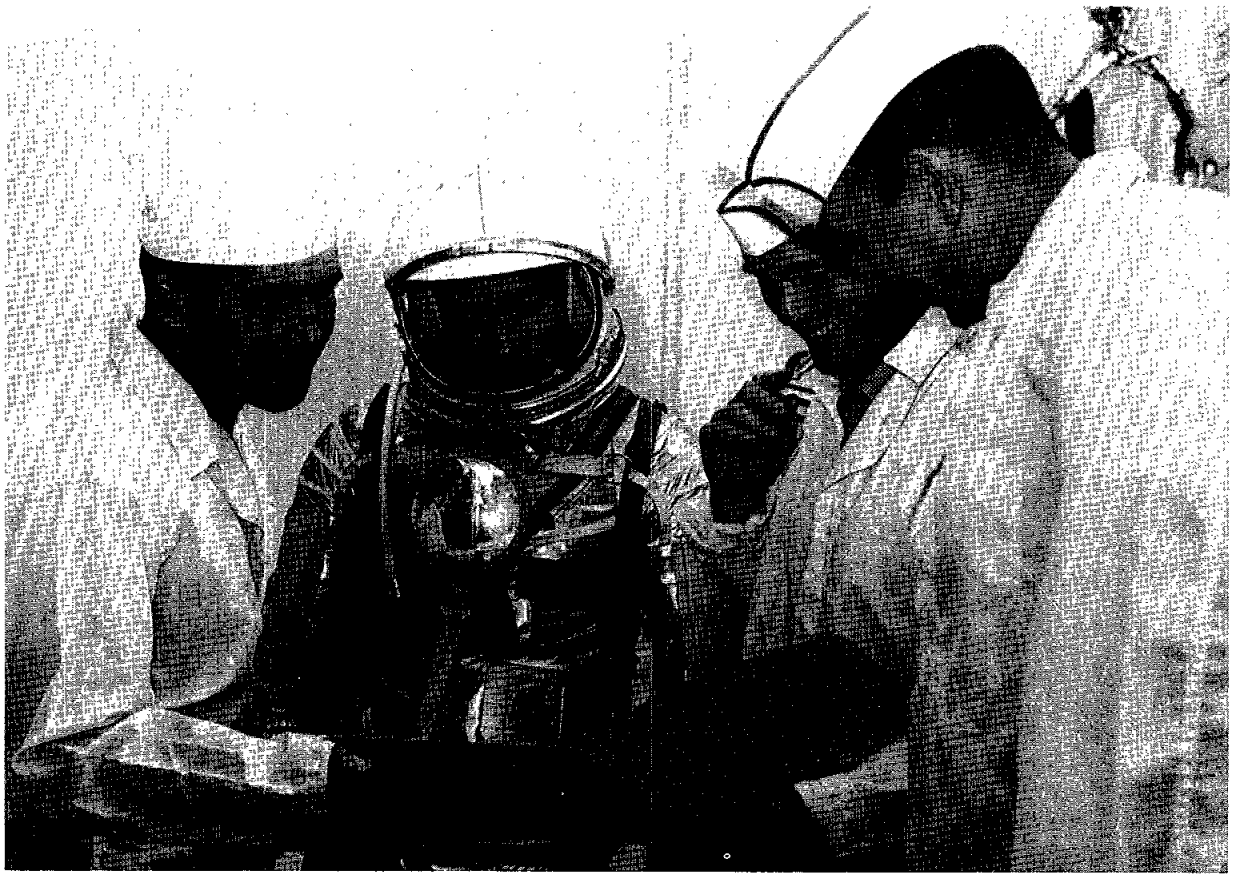
"We feel very fortunate in this appointment," Dr. Robert C. Seamans, NASA Associate Administrator, said. "Dr. Bisplinghoff's experience includes many years in Aeronautical and Space Research, a long association with the Department of Defense, NASA and its predecessor, the National Advisory Committee for Aeronautics. In addition, he has a strong background in industry and education and has supervised a wide variety of research programs."

The office of Advanced Research and Technology is one of four major NASA Program Offices. OART is responsible for conducting Aeronautical and Space Research necessary to accomplish long-range objectives.



PRESSURE-TESTING of the suit is one of the important functions carried on constantly before a flight. Astronaut Carpenter (in suit) is surrounded by Dr. Douglas (left), crew equipment technician Joe Schmitt and the back-up pilot for the mission, Walter M. Schirra, Jr.

ASTRONAUT PHYSICIAN Willian K. Douglas (right) applies the set of bio-sensors to MA-7 pilot M. Scott Carpenter prior to one of the series of tests in preparation for the flight.



LOOKING OVER RESULTS from a White Room test are, left to right, Schirra, Carpenter, Astronaut John H. Glenn, Jr. and an unidentified engineer.

Project Designation Committee Seeks Names For 10 Projects

The NASA Project Designation Committee is searching for names for 10 projects, four of which are so advanced in concept and mission that continuation of existing names such as Nimbus, Syncom, etc., are not appropriate.

Those projects are:

(1) An advanced meteorological satellite in polar orbit.

(2) An advanced meteorological satellite in synchronous orbit.

(3) An advanced active communications satellite in an intermediate orbit.

(4) An advanced active communications satellite in synchronous orbit.

The other projects are:

(1) A system for the navigation of satellites and space probes.

(2) A system using satellites for navigation, for civil purposes.

(3) A large, solid-fuel booster similar to Little Joe in purpose, but considerably larger, for launching at Cape Canaveral.

(4) A series of scientific satellites to make repetitive investigations of various phenomena.

(5) An advanced Saturn configuration (C-5).

(6) A manned orbital space station.

The committee members, in a recent meeting, agreed to study possible names and to compile a list of suggested names from which future requirements might be selected.

MSC personnel are urged to contribute suggestions and may send them to the chairman of the committee—Harold L. Goodwin, Office of Program Development (Office of Public Affairs), Code AFD, Headquarters NASA. All suggested names for the project names must meet the following criteria:

(1) The name must be in the unabridged Webster dictionary.

(2) The name must be short and euphonious.

(3) Whenever possible, the name should follow established patterns; i.e., cloud names would be suitable for meteorological satellites following the pattern of Nimbus. Acronyms like Tiros would not be suitable since they are not found in dictionaries.

(4) Names that might be confused with projects of other agencies should not be used.

CORRECTION

The April 18 issue of Space News Roundup carried a story concerning a speech made by MSC Director Robert R. Gilruth to the Institute of Radio Engineers in Houston.

It erroneously reported that Gilruth told the group that a seven orbit mission and an 18 orbit mission were planned in the Mercury program. No seven orbit missions are planned at this time, but a "Manned One-Day Mission" has been programmed.

X-15

(Continued from page 8)

sonic speeds, the extremes of altitudes and reentry of the earth's atmosphere."

Bikle pointed out that the X-15's high altitude capabilities will be utilized in an extended program of space experiments, in addition to the studies for which it was originally built.

In the flight, the X-15 was carried aloft by a B-52 from Edwards Air Force Base at 9:32 a.m. It was launched at 45,000 feet a few miles North of Mud Lake, Nev., at 10:22 a.m. and glided to a landing on Rogers Dry Lake, Edwards, California, at 10:32 a.m.

The flight plan was intended to obtain data on controlability with reaction jet controls at extreme altitudes as high as 255,000 feet, aerodynamics heating during reentry at high angle of attack, and recovery from extreme altitudes.

Immediately after launch, Walker went into a steep climbing attitude about 38 degrees above the horizontal. He kept the engine running at full throttle for 81 seconds, then shut it down at about 150,000 feet altitude. Momentum carried the aircraft from engine burnout to its peak altitude in a long ballistic trajectory southward over the desert. On his upward course Walker opened the speed brakes to prevent an excessive velocity for the mission. For about two minutes, he was in a near weightless (0-g) flight condition. On reentry he experienced temperatures of about 900 degrees F. on the lower surfaces on wings, fuselage and speed brakes. The airplane weighed 32,600 pounds at launch and 14,500 pounds on landing, consuming nearly nine tons of liquid oxygen and ammonia propellants.

The flight was the eleventh in the X-15 by Walker, an 11-year rocket aircraft veteran. A total of 52 flights have been made by seven pilots since the first operations in June, 1959. Three airplanes were built by North American Aviation. They are powered by a 57,000-pound rocket engine. The program is jointly sponsored by the Air Force, Navy and NASA.

On six previous flights, the X-15 has topped the old official world altitude record mark of 113,000 feet held by the USSR, but these flights were not observed for FAI certification. On October 11, 1961, the X-15 reached 217,000 feet in the program of gradual increase in speeds and altitudes. Many flights have been made at lower speeds and altitudes to explore the full scope of the X-15's research potential.

Space News NASA ROUNDUP!

SECOND FRONT PAGE

IBM Will Develop Gemini Guidance Computer System

IBM has been selected by McDonnell Aircraft Corporation to develop an advanced electronic guidance computer to help steer NASA's two-man Gemini spacecraft into orbital rendezvous with another spacecraft. McDonnell is prime contractor to NASA for the Gemini two-man spacecraft.

The IBM Federal Systems Division will design and develop the Gemini guidance computer and its manual data insertion unit—which enables the astronaut to enter new information into the system during flight.

In addition, IBM has been assigned the responsibility for inertial guidance system performance and integration. In this role the company will integrate the computer with the inertial platform being developed by Minneapolis-Honeywell Regulator Company. IBM will also be responsible for connecting the computer with related devices to be supplied by other contractors, e.g., horizon sensors, radar, star tracker, and control electronics.

To accelerate development, IBM plans to use advanced computer techniques to simulate Gemini orbital missions and analyze system designs.

One of the purposes of the Gemini program is to perfect techniques to join a manned spacecraft with another vehicle while both are in orbit. These techniques may be used on future projects, like Apollo, where spacecraft and propulsions systems could be connected in orbit and then fired on trajectories to the vicinity of the moon. A manned space vehicle already traveling at 17,500 mph in orbit requires much less additional rocket thrust to reach the moon than the thrust required for a vehicle launched from earth.

Gemini will make its first orbital rendezvous with an Agena target. The Agena will be launched into a 150-mile high circular orbit, then, the bell-shaped Gemini spacecraft will be fired into an elliptical orbit that intersects the Agena's path. The Gemini guidance computer—performing more than 7,000 calculations every second—helps the crew to determine the craft's position in space and guide it into position for the final docking maneuvers. The astronauts will then take over and manually control the spacecraft's small maneuvering rockets to make contact with the Agena.

IBM announced that the work will be carried out at its Space Guidance Center, Oswego, N.Y., where other NASA projects currently underway are the processor and data storage equipment for the Orbiting Astronomical Observatory and the inertial guidance computers for space launch vehicles. These projects are contributing high-speed logic circuitry and advanced memory technology to the Gemini computer design.

Walker, X-15 Combine to Set Altitude Record

NASA Pilot Joseph A. Walker achieved one of the prime objectives of the X-15 program April 30 by flying the rocket-powered aircraft to an altitude of 246,000 feet, according to preliminary estimates. Launched Near Mud Lake, Nev., about 200 miles North of Edwards, Walker flew to the peak trajectory over the California Mojave Desert and landed on the Rogers Dry Lake Base 10 minutes later.

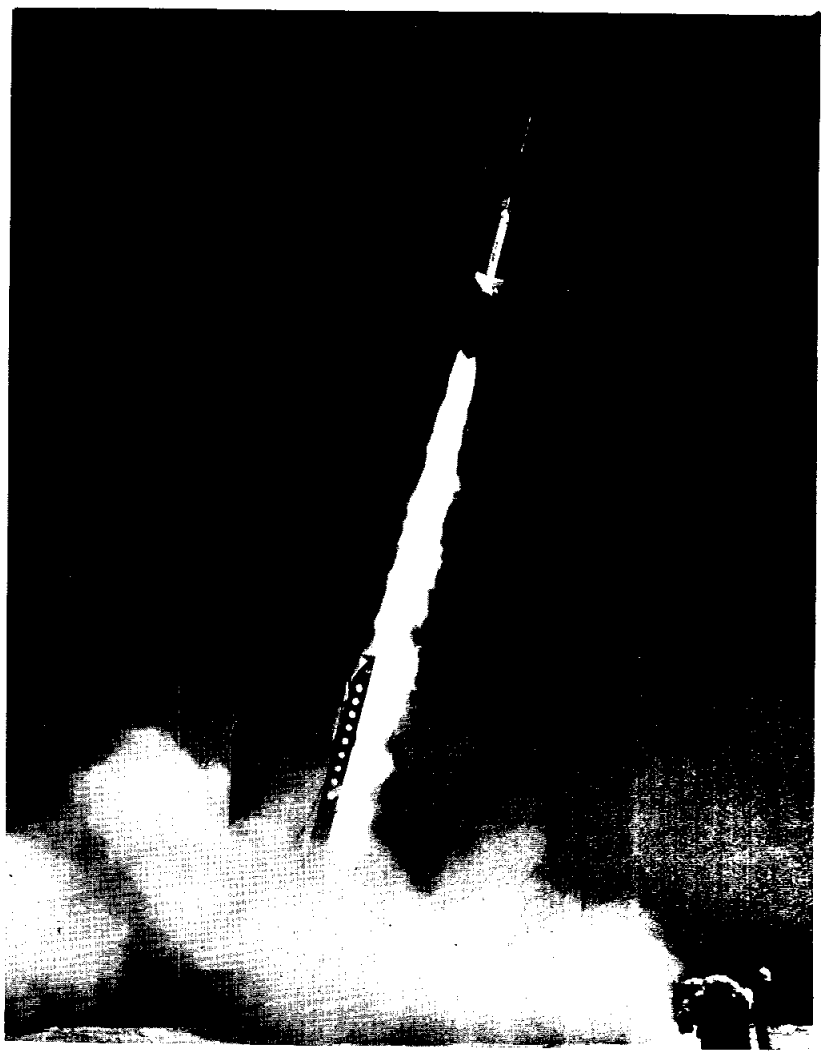
The flight was monitored by timers of the National Aeronautic Association for certification as an altitude record of the Federation Aeronautique Internationale in Paris.

The event marked the accomplishment of one of two major flight objectives designed to study the problems of flight at speeds up to 4,000 mph and altitudes as high as 250,000 feet. The speed objective was reached last November 9, when Major Robert M. White, USAF, attained 4093 mph.

MSC's Associate Director Walter C. Williams, who is really the "father" on the X-15 program, said that it is always a pleasure to note a successful flight and was gratified at the significant advancement indicated by the latest in the series of X-15 tests.

Paul Bikle, Director of NASA's Flight Research Center, said the X-15 program has made many important contributions to aeronautical and space sciences. "I congratulate Joe Walker for his great achievement today," Bikle said. "His flight serves to accentuate the fact that our store of technology is being greatly advanced by the X-15. In the months to come we expect to learn much more about the problems of hyper-

(Continued on page 7)



A NIKE CAJUN launch vehicle blasts off at Wallops Island in the first United States-Japanese exploration of space.

United States, Japan Cooperate In Exploration of Ionosphere

The first joint flight effort in the scientific exploration of space between the United States and Japan was conducted April 26 from NASA's Wallops Station, Wallops Island, Va. at 11:00 a.m. EST. This is the first in a series of three planned launchings.

The flight was designed to probe the ionosphere by simultaneous use of different techniques which were developed in Japan and the United States.

The Radio Research Laboratory, Tokyo, Japan, supplied a Radio-Frequency Resonance Probe experiment which has been flight-tested on Kappa sounding rockets in Japan. During these flights, the experiment recorded the ionosphere's electron temperature and density at the same time.

Scientists from NASA's Goddard Space Flight Center, Greenbelt, Md., furnished the langmuir probe, a device which has been used for many years in the laboratory and in rocket flights to measure electron temperature.

The Nike Cajun launch vehicle used in this experiment reached an altitude of approximately 75.6 statute miles.

R. C. SEBOLD

Former Convair VP Is Named Consultant

R. C. Sebold, formerly vice president-engineering for the Convair Division of General Dynamics Corporation, has been appointed consultant to the director of Manned Spacecraft Center. He will be primarily concerned with the engineering and manufacturing aspects of the Apollo spacecraft development program.

Sebold has spent more than 30 years in the aircraft industry, and was elected a fellow of the Institute of the Aeronautical Sciences in 1958 and served as a vice president of the IAS in 1959.

He is also a member of the Technical Advisory Committee for Aeronautics in the Office of Assistant Secretary of Defense.

Man in Space Trackers End Training Course

The National Aeronautics and Space Administration graduated the first group of Project Mercury (Man in Space) tracking personnel to complete a new course of specialized training at the Agency's Wallops Station, Wallops Island, Virginia.

Seven graduates completed on schedule their studies of the latest techniques for precise operation and maintenance of the Mercury automatic acquisition and telemetry tracking system.

Represented in this first class were personnel from several contractors of the Department of Defense and from the NASA contractor team. The training program, directed by the Goddard Space Flight Center, Greenbelt, Maryland, is available to qualified personnel of all agencies involved in the network ground tracking and instrumentation phase of Project Mercury.

The Mercury Network Training Program consists of specialized courses in acquisition, telemetry, timing capsule communications, PBX and intercommunications, teletype, radar and command systems.

A Mercury mission requires that the subsystems at all 18 sites in the global network must be continuously monitored, and precise data concerning the capsule's location, attitude, and operational status and the astronaut's condition must be constantly known so that appropriate command decisions can be made instantly. Moment-to-moment data must flow between the sites, the computer center at Goddard Space Flight Center, and Mercury Control Center at Cape Canaveral.

Importance of the new program was underscored by Mr. Walter G. Burton, NASA Training Director, who said, "The network must be maintained and operated by personnel with a substantial technical background, who are thoroughly schooled in specialized areas under stringent procedures, so that each vital element in the network functions like a gear in a watch, working together to make up one complete system."

Manned Spacecraft Center Awards Contract for Telephone Service

The National Aeronautics and Space Administration's Manned Spacecraft Center today announced that the Southwestern Bell Telephone Company has been selected to provide administrative telephone service to the Center's permanent facilities now under construction at Clear Lake, Texas.

Contract terms are expected to approximate $200,000 annually, exclusive of long distance services.

Considerations given to this award included factors relative to cost, primary community of interest and inplace capability to provide adequate service.

Two companies whose service areas are adjacent to the Clear Lake site, Southwestern Bell and General Telephone Company of the Southwest, were considered in the award selection.