

Kennedy Makes MSC Third Stop In 'Space Tour'

Visits Canaveral, Huntsville, St. Louis With Johnson, Webb

"We talk about doing this in five or six years," President John F. Kennedy said last Wednesday of this country's planned landing on the moon. "This indicates how far and how fast we have come, and how far and how fast we must go."

The President had just accepted a small desk model of the Apollo command module from MSC Director Robert R. Gilruth. The presentation concluded an hour-long classified briefing by Dr. Gilruth and his staff and a fast tour of a dozen exhibits set up for him in the Rich Building. They included two mock-ups of the Apollo command module, one of which he entered, escorted by Astronaut Donald K. Slayton; Astronaut M. Scott Carpenter's "Aurora 7" spacecraft, which Carpenter briefed him on; a display of survival equipment demonstrated by Astronaut John Glenn, Jr.; a vibration table; a mock-up of the Gemini spacecraft explained by Astronaut Virgil I. Grissom; a model of the Rogallo wing; and the first showing of a preliminary mock-up and design proposal of the lunar excursion module, explained by Astronaut Alan B. Shepard, Jr.

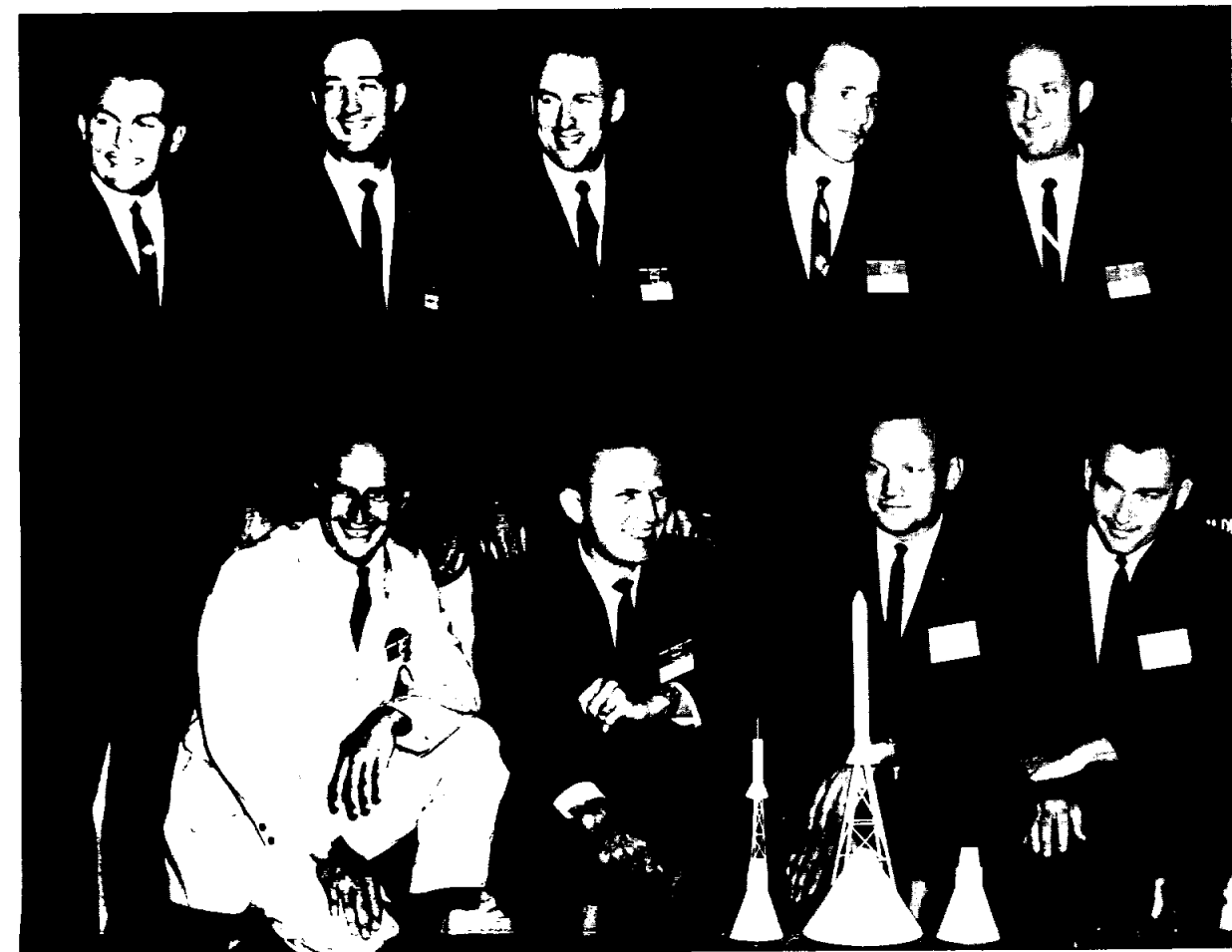
President Kennedy arrived in Houston Tuesday night, Sept. 11, on the third stop in his two-day whirlwind tour of the nation's space facilities. During the day Tuesday he visited Marshall Space Flight Center in Huntsville, Ala. and Cape Canaveral, Fla. From Houston he continued to St. Louis, Mo. and the McDonnell Aircraft Corp. plant, and was back in Washington Wednesday night.

Wednesday morning, he told a crowd of 45,000 gathered in Rice Stadium:

"The exploration of space will go ahead, whether we join it or not . . . no nation which expects to be a leader of other nations can expect to stay behind in this race for space.

"In the last 24 hours we have seen the facilities now being created for the greatest and

(Continued on Page 6)



NINE NEW space flight test pilot trainees made their first public appearance Monday afternoon in a televised press conference at the University of Houston's Cullen Auditorium, as their selection was announced. Left to right they are, (standing) Elliot M. See, Jr., 35; James A. McDivitt, 33; James A. Lovell, Jr., 34; Edward H. White, II, 32; Thomas P. Stafford, 32; (kneeling) Charles Conrad, Jr., 32; Frank Borman, 34; Neil A. Armstrong, 32; and John W. Young, 32.

MSC Names Nine New Pilot Trainees

Nine new Manned Spacecraft Center flight test pilots were presented to the public Monday afternoon in a Houston press conference before being assigned to a comprehensive training program designed to prepare them for possible space flight.

The nine were Neil A. Armstrong; Air Force Major Frank Borman; Navy Lieutenant Charles Conrad, Jr.; Navy Lieutenant Commander James A. Lovell, Jr.; Air Force Captain James A. McDivitt; Elliott M. See, Jr.; Air Force Captain Thomas P. Stafford; Air Force Captain Edward H. White, II; and Navy Lieutenant Commander John W. Young.

From these nine and the present seven astronauts will come the flight crews for future space missions.

Their selection culminated more than six months of extensive evaluation of 200 volunteers.

The new test pilots will not all necessarily participate in actual space flights, MSC Director Robert R. Gilruth stressed at the press conference. "Assignment to flight crews," he said, "will depend upon the continuing physical

and technical status of the individuals concerned, and upon the future flight schedule requirements.

"Important Role"

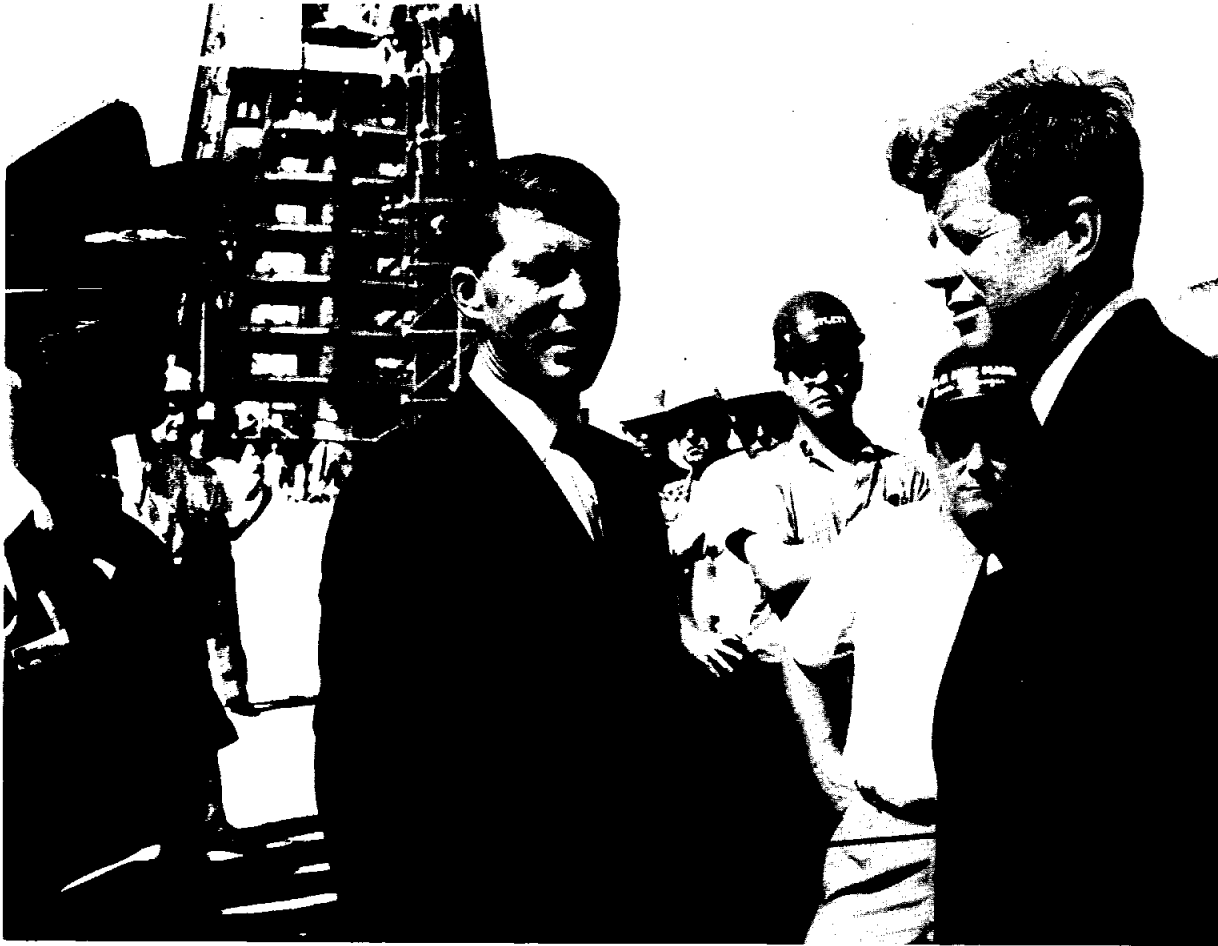
"The new flight test personnel will, however, have an important role in the Manned Spacecraft Center space program, in addition to any flight participation. This role will include contributions to engineering design, to the development of future spacecraft, the monitoring of flights, and to the development of advanced flight simulators."

The original invitation for volunteers for the flight test program was announced last April. Criteria for selection included experience as a jet test pilot, preferably still going on; status as an experimental flight test pilot acquired either through military service, through aircraft industries, or

(Continued on Page 4)



ARRIVING at Houston International Airport Sept. 11, President John F. Kennedy starts down the ramp followed by Rep. Albert Thomas of Harris County. Another plane with Vice President Lyndon B. Johnson aboard had arrived 13 minutes earlier. The visit was the first time the President and Vice President had been in the city at one time.



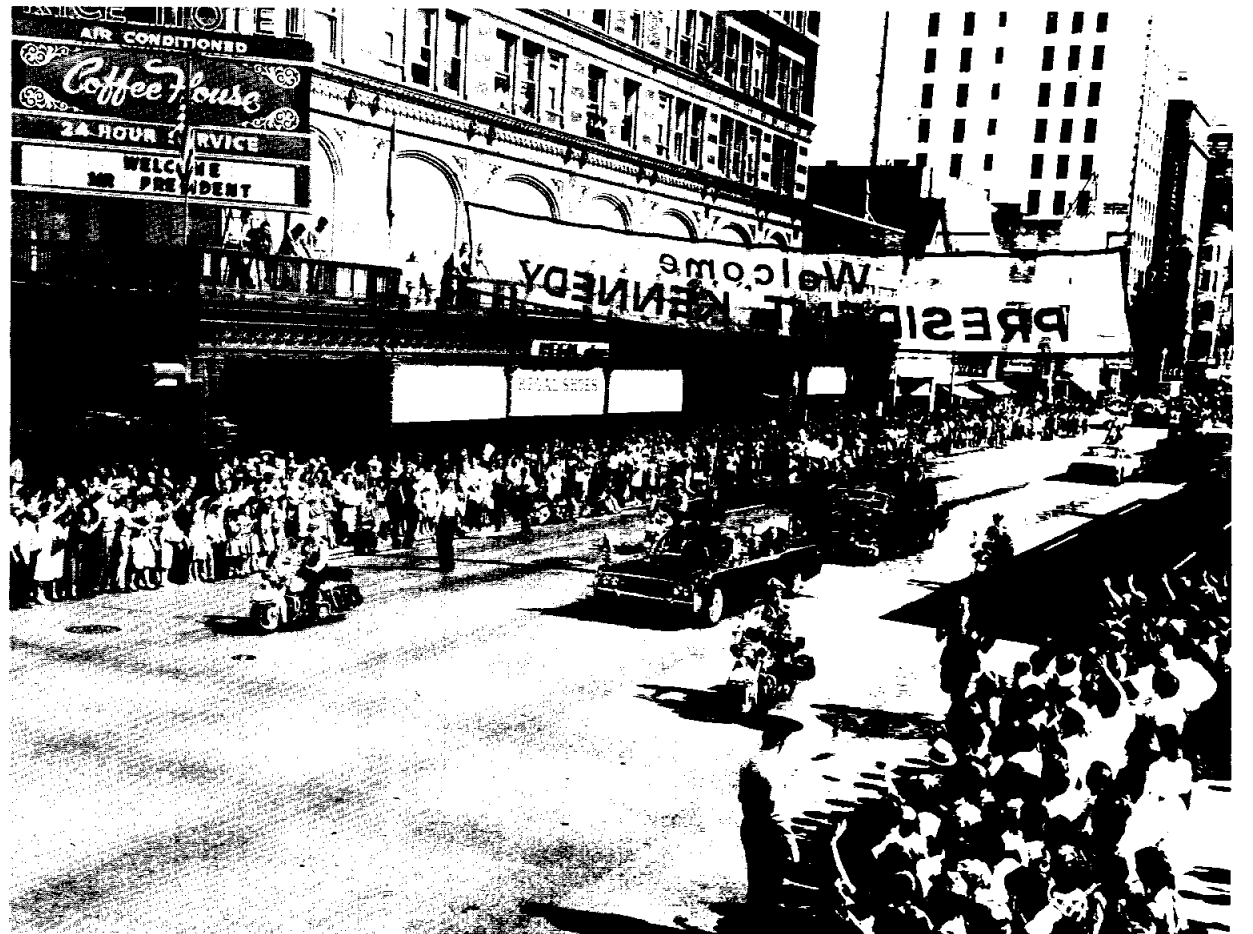
VISITING CAPE CANAVERAL Tuesday on his two-day tour of the nation's space facilities, President Kennedy is briefed by Astronaut Walter Schirra at Complex 14. In the background is the MA-8 configuration that will lift Schirra into orbit late this month.



A TOUR OF HANGAR 5 was conducted by Cape Operations Manager Merritt Preston (left foreground). Here he explains a point to Vice President Lyndon B. Johnson, President Kennedy and NASA Administrator James E. Webb.



BACK-UP PILOT for the MA-8 mission Gordon Cooper explains the complex instrument panel of spacecraft #19 to the President. Later, Kennedy spoke to a crowd of NASA employees outside Hangar 5, telling them "we shall be first" in space.



ON HIS WAY TO RICE STADIUM Wednesday morning to speak to a crowd of 45,000, the President waved to thousands more that lined the streets of downtown Houston, beginning outside the Rice Hotel shown here, where he spent the night Tuesday.



JUST BEFORE the President's arrival at Manned Spacecraft Center, the J. P. Cornelius grade school on Westover turned out for a look at Chief Executive in person. Wearing sun hats they made themselves, 700 children lined the roadway opposite the side entrance to the Rich Building.



THE PRESIDENT stepped from his car at the Rich Building after his morning speech at Rice Stadium. Still seated in the rear seat is Texas Governor Price Daniel. MSC Director Robert R. Gilruth can be seen just behind Kennedy. The men opening the doors and those in the convertible in the background are Secret Service agents.



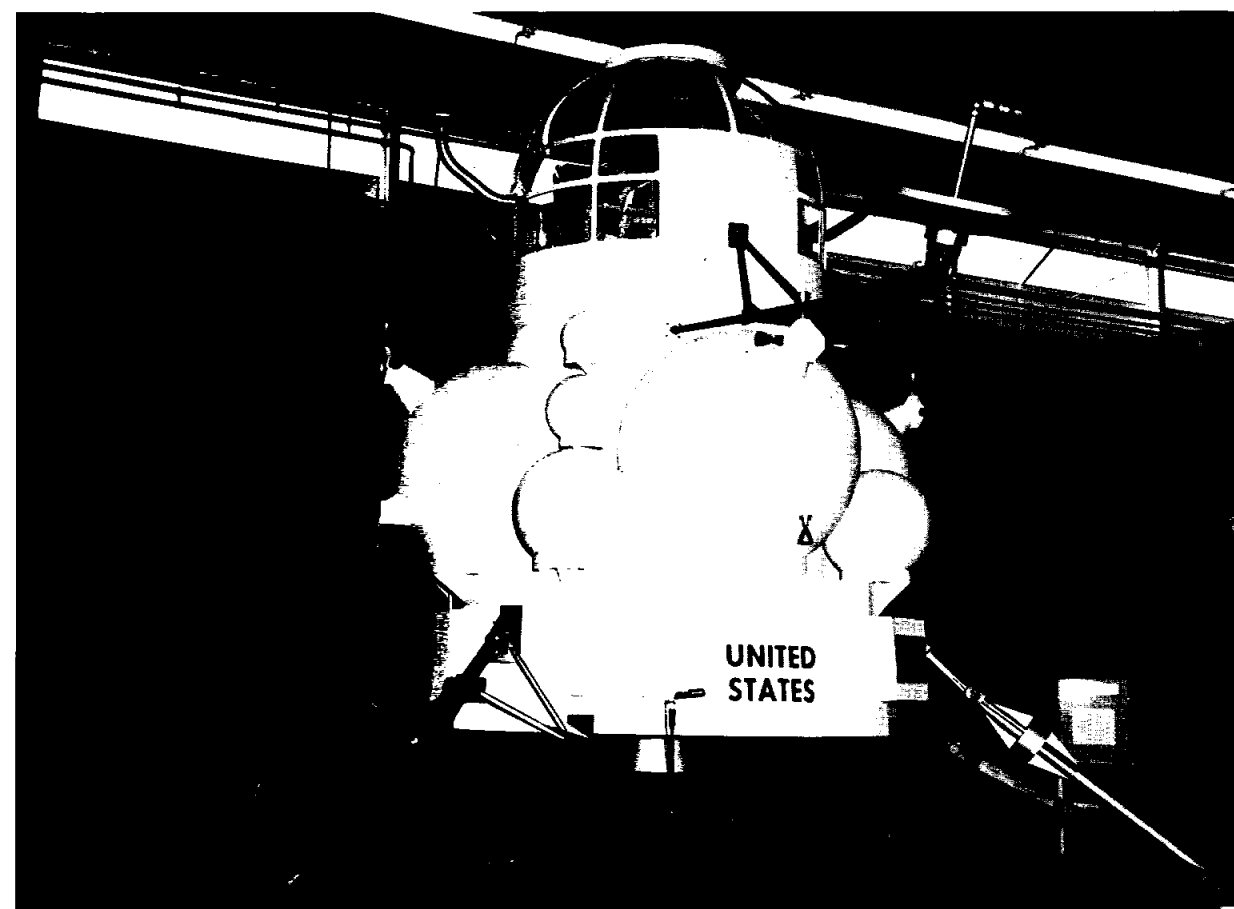
STARTING INTO THE BRIEFING ROOM at MSC, Kennedy is flanked by MSC Director Gilruth, (left) and Vice President Johnson. The classified briefing lasted over an hour.



ASTRONAUT JOHN H. GLENN, JR. gives the President a quick run-down on the display of survival gear as the Chief Executive took a quick tour of a dozen displays set up for him after the classified briefing.



ASTRONAUT Alan B. Shepard, Jr. told Kennedy about the first preliminary proposal mock-up of the lunar excursion module. At left is NASA Administrator Webb and Vice President Johnson. Above them is the model of the Rogallo wing for bringing a spacecraft down safely on land.



LOOKING RATHER IMPROBABLE, since it does not need a streamlined shape for an airless moon landing, the lunar excursion module mock-up attracted perhaps more attention than any other single exhibit in its first public display.



MSC Director Robert R. Gilruth presented the President with this mounted model of the Apollo spacecraft at the end of Kennedy's visit.

New Group Slightly Younger; Includes Two Civilian

(Continued from Page 1)

through NASA, or else a certificate of graduation from a military test pilot school; a degree in physical or biological sciences, or in engineering; U. S. citizenship; age less than 35 at the time of selection; a height of six feet or less; and recommendation from the applicant's organization.

The qualifications were similar to those of the original seven astronauts, but unlike earlier criteria opened the way for civilian volunteers. The new standards also allowed candidates to be somewhat taller and reduced the age limit required, the latter because of the long-range nature of the program.

From Seven States

The new pilots were born in seven of the United States, two each from Ohio and Texas and one each from California, Indiana, Pennsylvania, Illinois and Oklahoma. (The Project Mercury astronauts were born in Colorado, Oklahoma, Ohio, New Jersey, New Hampshire and Wisconsin.)

Four Air Force, three Navy and two civilian pilots form the new group. The Project Mercury team is composed of three Navy, three Air Force and one Marine pilot.

The pilots selected in 1959 had an average of more than 3,500 hours flying time, including 1,700 hours in jet aircraft. The new group has an average of about 2,800 hours flying time, 1,900 of it in jets.

Average age of the new group is 32.5, compared to 34.5 year age average of the seven Mercury astronauts. Average weight of the new pilots is slightly over that of the first group—161.5 pounds as compared to 159 pounds. The new pilots average only two-tenths of an inch taller than those already in the program, however.

Applications were received until June 1 and each application was carefully reviewed in terms of these basic qualification requirements. Each candidate who met the five basic standards was required to take and complete a variety of forms describing his academic background, flight and work experience in detail. Each was required to take a medical examination and to forward the results to MSC.

Selection Committee

A preliminary selection committee met in June to consider 63 of the most highly-qualified applicants. The committee was composed of MSC management, and representatives from the present group of astronauts.

Criteria such as flight test experience, academic achievement and present supervisor's evaluation were studied.

Thirty-two of the most outstanding applicants were selected for further study. This group included volunteers from all four military services and civilian applicants.

During July and August, the group of 32 were given medical



NEIL A. ARMSTRONG
Test Pilot, NASA

Neil A. Armstrong

Neil A. Armstrong was born Aug. 5, 1930, in Wapakoneta, Ohio.

He graduated from Purdue University in 1955 with a bachelor of science degree in aeronautical engineering, and has since attended the University of Southern California on a part-time basis, working toward a master's degree in mathematics.

Armstrong was a naval aviator from 1949 until 1952 and during the last two years of that service flew 78 combat missions in the Korean conflict.

After his graduation from Purdue he worked for NACA's Lewis Flight Propulsion Laboratory prior to going to work at Edwards AFB as an aeronautical research engineer for NACA, and later NASA.

Armstrong has flown 2,400 hours, including 900 in jet aircraft.

Armstrong has participated in flight test work on the F-100, F-104, B-47, F-102 and the X-15. He is a senior member of the American Rocket Society, a member of the Experimental Test Pilots Association, and a member of the Institute of Aerospace Sciences. He was the recipient of the 1962 Institute of Aerospace Sciences Octave Chanute award.

examinations, and one was eliminated as being too tall. During the week of August 12, the remaining 31 applicants reported to Houston for four days of examinations and interviews. For the next few weeks, the selection committee carefully reviewed and evaluated tests and interviews. Eventually, nine were selected from which to draw flight crews for future missions.

"It is planned that in late stages of Apollo spacecraft development a third group of flight test personnel will be selected to join those then available as the pool from which Apollo flight crews will be chosen," personnel Director Stuart Clarke said Monday.

Training Program

MSC Associate Director Walter C. Williams said that an intensive training program will be implemented in mid-



FRANK BORMAN
Major, USAF

The son of Mr. and Mrs. Steven Armstrong of Wapakoneta, he has blond hair and blue eyes, is five feet, 11 inches tall and weighs 165 pounds.

He is married to the former Janet Elizabeth Shearon of Chicago, Ill., and they have one son, Eric, 5.

His hobbies include tennis, golf and swimming.

Frank Borman

Frank Borman was born March 14, 1928, in Gary, Indiana.

He attended the United States Military Academy at West Point, from which he graduated in 1950 with a bachelor of science degree. He received his master's degree in aeronautical engineering from the California Institute of Technology, Pasadena, in 1957.

He entered the Air Force after graduation from West Point, had pilot training at Williams AFB, Ariz., and attended the USAF Survival School at Stead AFB, Nev. From 1957 until 1960 he was an instructor of thermodynamics and fluid mechanics at the Military Academy.

From 1960 until the present he has served as an instructor at the Aerospace Research Pilot School at Edwards AFB,

October for the new pilots. "The early phases of this training program will familiarize them with the Mercury spacecraft, launch vehicle and operational techniques. They will then receive spacecraft and launch vehicle briefings on Gemini and Apollo. As they become more familiar with Gemini and Apollo, they will be assigned, together with the current Mercury pilots, to help establish design and operational concepts," Williams said.

"Concurrent with the project-oriented aspects of the program, the men will attend basic science lectures one or two days per week. Because of their previous academic and occupational experience, most of the courses will be of the refresher type. The basic program will place special emphasis on space navigation, computer theory, flight mechanics,



CHARLES CONRAD, JR.
Lieutenant, USN

Calif., and in this capacity has prepared and delivered academic lectures, simulator briefings, and flight test briefings on the theory and practice of spacecraft testing. He has kept abreast of developments in manned spacecraft and consulted with engineers and test pilots to collect material for use in the continuous revision of course curriculum.

Borman has accumulated 3,600 hours flying time including 3,000 in jets.

He is the son of Mr. and Mrs. Edwin Borman of Phoenix, Ariz. He is five feet, 10 inches tall, weighs 163 pounds, has blond hair and blue eyes.

He is married to the former Susan Bugby of Verona, N. Y., and the couple has two sons, Fredrick, 11 and Edwin, 9.

His hobbies include handball, camping, swimming, hiking, and baseball.

Charles Conrad, Jr.

Charles Conrad, Jr., was born at Philadelphia, Penna., June 2, 1930.

He graduated from Princeton University in 1953 with a bachelor of science degree in aeronautical engineering.

He entered the Navy following graduation and became a naval aviator. His last assignment was as safety officer for Fighter Squadron 142, and

astronomy, physics of the upper atmosphere and space, bioastronautics, advanced propulsion systems, aerodynamics, guidance and control, space communications, global meteorology, and selenology.

"During later phases of the training program, the pilots will work with static and dynamic simulators to establish detailed flight operational procedures.

"NASA has established a special aircraft operations group in Houston to provide proficiency flying for the pilots. T-33 and F-102 type aircraft are being assigned.

"Although the early phases of this training program were tailored primarily for the new pilots, the Mercury pilots will be integrated with the new group immediately, and all will train together insofar as is practical," Williams said.



JAMES A. LOVELL, JR.
Lieutenant Commander, USN

prior to that time he was an F4H flight instructor at the Naval Air Station, Miramar, Calif.

Conrad attended the Navy Test Pilot School at Patuxent River, Md., and from 1959 until 1961 he was a flight instructor and performance engineer at the Naval Air Station there.

He has logged more than 2,800 hours flying time, including 1,500 hours in jet aircraft.

Conrad is a member of the Institute of Aerospace Sciences and an associate member of the Society of Experimental Test Pilots.

The son of Charles Conrad of Sarasota, Fla. and Mrs. Frances V. Sargent of Haverford, Penna., he is five feet, six and one half inches tall and weighs 138 pounds. Conrad has blond hair and blue eyes.

His wife is the former Jane DuBose of San Antonio, Tex., and the Conrads have four sons—Pete, 8; Thomas, 5; Andrew, 3; and Christopher, 2.

Conrad's hobbies include golf, swimming, and water skiing.

James A. Lovell, Jr.

James A. Lovell, Jr., was born March 25, 1928, in Cleveland, Ohio.

He attended the University of Wisconsin from 1946 until 1948 and the U. S. Naval Academy from 1948 to 1952.

His last Navy assignment was as flight instructor and safety officer at the Naval Air Station at Oceana, Va. From January, 1958 until July, 1961, he was a test pilot at the Naval Air Test Center at Patuxent River, Md. His work there included service as program manager for the F4H Weapon System Evaluation. He was graduated from the Aviation Safety School at the University of Southern California in 1961.

Lovell has logged more than 2,300 hours flying time, including 1,600 hours in jet aircraft.

The son of Mrs. Blanch Lovell, Edgewater Beach, Fla., he is five feet, 11 inches tall and weighs 165 pounds. He has blue eyes and blond hair.

Lovell is married to the former Marilyn Lillie Gerlach of Milwaukee, Wis. and they have

Four Air Force, Three Navy Pilots Born In 7 States



JAMES A. McDIVITT
Captain, USAF

three children—Barbara Lynn, 9, James Arthur, 7 and Susan Kay, 4.

His hobbies include golf, swimming, handball and tennis. He is a member of the Toastmasters' Club and was an Eagle Scout.

James A. McDivitt

James A. McDivitt was born in Chicago, Ill., June 10, 1929.

He attended Jackson Junior College from 1948 to 1950, and the University of Michigan from 1957 to 1959, receiving a bachelor of science degree in aeronautical engineering from the latter and graduating first in his class.

He joined the Air Force in 1951 and during the Korean conflict flew 145 combat missions in F-80's and F-86's. He attended the U. S. Air Force Experimental Test Pilot School at Edwards AFB in 1959 and 1960 and the U. S. Air Force Aerospace Research Pilot Course in 1961. His last assignment was as an experimental flight test officer at Edwards.

McDivitt is a member of the Institute of Aerospace Sciences, the American Rocket Society, and the Society of Experimental Test Pilots.

He has logged more than 2,500 hours flying time including 2,000 hours in jet aircraft.

His parents are Mr. and Mrs. James McDivitt of Jackson, Mich. He is five feet, 11 inches tall and weighs 155 pounds. He has brown hair and blue eyes.

McDivitt is married to the former Patricia Ann Haas of Cleveland, Ohio, and they have three children, Michael A., 5; Ann Lynn, 4; and Patricia W., 2.

His hobbies include handball, squash, golf and swimming.

Elliot M. See, Jr.

Elliot M. See, Jr. was born in Dallas, Tex. July 23, 1927.

He received a bachelor of science degree from the U. S. Merchant Marine Academy in 1949, and a master of science degree from the University of California at Los Angeles in 1962.

See served in the Navy from 1953 to 1956. Following his



ELLIOT M. SEE, JR.
Test Pilot, General Electric

graduation in 1949 until he entered the Navy and since that service, he has worked for General Electric, first as a flight test engineer and later as an experimental test pilot.

His last job with General Electric was at Edwards, Calif., where he served as project pilot on the J79-8 Engine Evaluation Program in their F4H bailed aircraft. He assisted the project engineer and flew approximately half of the F4H missions.

See is a member of the Institute of Aerospace Sciences.

He has logged more than 3,200 hours flying time, including 2,300 hours in jet aircraft.

His parents are Mr. and Mrs. Elliot M. See of Dallas. He is five feet, 8 inches tall, weighs 150 pounds, and has brown hair and blue eyes.

See is married to the former Marilyn Jane Denahy of Georgetown, Ohio, and they have two daughters, Sally, 6, and Carolyn, 5.

His hobbies include swimming, golf, skiing and baseball.

Thomas P. Stafford

Thomas P. Stafford was born in Weatherford, Okla., Sept. 17, 1930.

He was graduated from the U. S. Naval Academy at Annapolis, Md. in 1952, then went into the Air Force.

His last assignment was as chief of the performance branch, Experimental Test Pilot Division, USAF Aerospace Research Pilot School at Edwards AFB, Calif. In this assignment, he was responsible for supervision and administration of flying curriculum for student test pilots. He monitored all flight and academic schedules, established basic textbooks and participated in and directed the writing of flight test manuals for use by staff and students.

Stafford is co-author of the Pilot's Handbook for Performance Flight Testing.

He has accumulated 3,500 hours flying time including 2,500 hours in jet aircraft.

His mother is Mrs. Ellen Crabtree of Weatherford, Okla. Stafford is six feet tall and weighs 170 pounds. He



THOMAS P. STAFFORD
Captain, USAF

has black hair and blue eyes.

He is married to the former Faye Laverne Shoemaker, also of Weatherford and they have two daughters, Dianna, 8, and Karen, 5.

Stafford's hobbies are handball, squash and swimming. He is a member of Toastmaster's International.

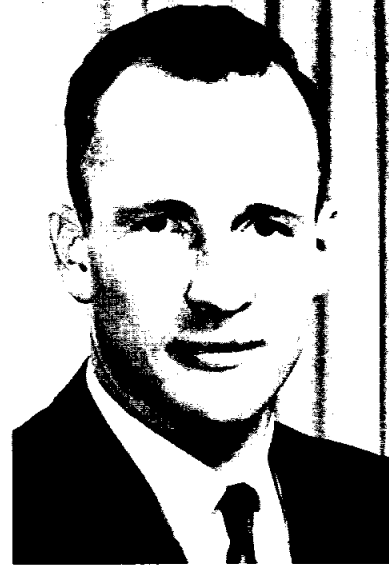
Edward H. White II

Edward H. White II was born in San Antonio, Texas, Sept. 14, 1930.

He graduated from the U. S. Military Academy at West Point in 1952 with a bachelor of science degree. He received a master of science degree in aeronautical engineering in 1959 from the University of Michigan.

He joined the Air Force following his graduation from the Military Academy and attended the Air Force Test Pilot School in 1959. He also attended the Air Force Survival School at Bad Tolz, Germany.

White's last assignment was as an experimental test pilot with the Aeronautical Systems Division at Wright-Patterson



EDWARD H. WHITE, II
Captain, USAF

AFB, Ohio, where he made flight tests for research and weapons systems development, wrote technical engineering reports and made recommendations for improvement in aircraft design and construction.

He has logged 2,900 hours flying time including 1,700 hours in jets.

White is the son of Mr. and Mrs. Edward H. White of St. Petersburg, Fla. He is five feet, 11 inches tall, weighs 176 pounds, and has auburn hair and brown eyes.

He is married to the former Patricia Eileen Finegan of Washington, D. C. and they have two children, Edward, 9, and Bonnie Lynn, 6.

White's hobbies include squash, handball, volleyball, swimming and golf.

John W. Young

John W. Young was born in San Francisco, Calif. Sept. 24, 1930.

He graduated from Georgia Institute of Technology in 1952 with a bachelor of science degree in aeronautical engineering.



JOHN W. YOUNG
Lieutenant Commander, USN

Young joined the Navy in June of 1952. His last assignment was as maintenance officer for Fighter Squadron 53 at the Naval Air Station, Miramar, Calif.

Earlier this year he set world time-to-climb records for the 3,000 meter and 25,000 meter events in Project High Jump. He has logged 2,300 hours flying time, including 1,600 hours in jet aircraft.

From 1959 until 1962 he was program manager and test pilot for the Navy's F4H project, flying and writing technical reports and test results for preliminary evaluation by the Navy.

His father, William Young, lives in Orlando, Fla. Young is five feet, nine inches tall, weighs 173 pounds, has brown hair and green eyes.

He is married to the former Barbara Vincent White of Savannah, Ga. and they have two children, Sandra, 5 and John, 3.

His hobbies include swimming, water skiing and physical fitness exercises. He is also a member of Toastmasters International.

Trainees Comment On 'Why?'

The final nine selections from more than 200 applicants for space pilot trainee slots were asked Monday what drew each of them to apply for the job.

NASA test pilot Neil Armstrong turned out to be speaking for the group when he said, "It was the general challenge of the unknowns of the

program, and the general alignment of this part of it with our national goals."

All eight of the others concurred, and some of them added their own comments.

"I like to be on the first team," said Frank Borman.

"I want to be part of it," agreed Charles Conrad, Jr. "I made up my mind years ago that if I ever had a chance, I'd volunteer for this."

"I'll have to agree with my compatriot," agreed James A. Lovell, Jr. "I've been interested in space work for a number of years."

Commented Elliot See: "I feel this is the most interesting and the most important thing I could possible do."

"It's a real honor to be a representative of 180 million American people," added Thomas P. Stafford.

"I felt I had something to give to this program," said Edward White, II.

Last to speak was John W. Young, who drew a laugh when he muttered "I agree with those other eight guys," then added seriously, "I couldn't turn down a challenge like that."

Mercury Astronaut Donald K. "Deke" Slayton was named coordinator of astronaut activities Monday, with the announcement of the nine new test pilots being added.

According to MSC Associate Director Walter C. Williams, Slayton will be responsible for the assignment of the nine to training and other activities, and will advise the director and associate director on flight crew affairs.

G. Merritt Preston, manager of Cape operations for Manned Spacecraft Center, has been named acting director of Launch Operations Center, Cape Canaveral, during the temporary absence of LOC Director Kurt H. Debus.

Preston will have full authority to exercise all of functions, powers and duties of the director's office during the period from Sept. 7 through Oct. 3.

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
Chief, Internal Communications . Ivan D. Ertel
Editor Anne T. Corey

On The Lighter Side

Hundreds of thousands of Americans, Englishmen, Canadians, Germans, Poles, Italians, Japanese, Tunisians, Swedes, Greeks, Egyptians, Australians, Hungarians, Swiss, Frenchmen, Russians and even some Texans have swarmed into the NASA exhibit at the Seattle World's Fair to see what is new in space.

Most of them had some idea of NASA's programs.

The others are quoted herein:

Lady (looking at the F-1 engine): "Where does the astronaut sit?"

Woman (looking at the base of the Saturn C-1): "I suppose this is one of your space stations and those lights are so you can see it and track it from Earth."

Guide: "And this is a model of the Ranger IV which hit the moon last month." Visitor: "How did you get it back?"

Woman: "What happened to Scott? Guide: "He was lost in the Antarctic in 1912." Woman: "I knew those polar orbits weren't safe."

Woman (during tour of exhibit): "This is a wonderful exhibit for such a small country . . . didn't we recently sever foreign aid to NASA?"

Visitor (to his wife, while looking at Echo): "It's a hundred feet in diameter and ten stories high, and weighs less than you do!"

Two men, (looking at Ranger I and II)—Man 1: "I wonder what that is." Man 2: "Oh, that one goes to the moon. See the wings? They open up just before landing to glide it in."

Woman (looking at Ranger I and II): "It's certainly nice of them to take the insides out of Glenn's capsule so you can see what it looks like."

Visitor (pointing to power cord for capsule illumination): "Is this the umbilical connection for the astronaut?"

Woman (talking to daughter): "These solar cells are painted so the transmissions will be over a different variety of frequencies. The ones on the top are for recording X-rays from the sun."

Woman (to guide): "Where's Shepard's little house?" (As disbelief covers guide's face) "You know, the one he took the trip in?"

Guide: "This is a model of the Ranger which will place a capsule on the lunar surface." Visitor: "Oh, that's between Venus and Mars, isn't it?"

Question: "Do they give gold space capsule pins to all those good guides who are acquainted with space vacuum in the heads of operations?"

Woman: "What happened to Ranger III?" Guide: "It missed the moon and is now orbiting the sun." Woman: "Oh! Then you've lost a man!"

Man: "What kind of protective covering does Ranger have?" Guide: "It has a nose cone which is released after the satellite is outside the earth's atmosphere." Man: "What other covering does it have?" Guide: "Outside the atmosphere there is no need for any other such covering as there is no air resistance." Man: "But what happens when it rains?"

Man: "What is this unsymmetrical-dimethylhydrazine . . .?" Guide: "That's the name of one of our exotic fuels." Man: "Exotic nothing! How about Lolalukalane or something like that?"

—Taken from "Is This Where They Have Glenn's Space Needle?" Seattle World's Fair, 1962.

President Visits Here

(Continued from Page 1)

most complex exploration in man's history."

Of Houston, he said, "What was once the furthest outpost in the old frontier of the West will be the furthest outpost on the new frontier of science and space. During the next five years, NASA expects to double the number of scientists and engineers in this area, to increase outlays for salaries and expenses to \$60 million a year; to invest some \$200 million in plant and laboratory facilities; and to direct or contract for new space efforts over \$1 billion from this Center.

"This year's space budget is three times what it was in January, 1961, and it is greater than the space budget of the previous eight years combined. That budget now stands at five billion four hundred million dollars a year—a staggering sum, though somewhat less than we pay for cigars and cigarettes every year. . . . (But) I think we must pay what needs to be paid. I don't think we ought to waste money but I think we ought to do the job. And this will be done in the decade of the 60's."

President Kennedy was greeted by a crowd of 25,000 at Houston International Airport Tuesday night and presented with a key to the city by Houston Mayor Lewis Cutrer as part of the welcoming ceremony. He spent the night at the Rice Hotel. An estimated 172,000 persons lined the route to the hotel, where 3,000 more were congregated.

Accompanying the President to Houston were Vice President Lyndon B. Johnson; Rep. Albert Thomas of Harris County, head of the House Appropriations Committee; Rep. George Miller (D-Calif.) chairman of the House Science and Astronautics Committee; and James E. Webb, NASA Administrator.

Crowds also lined the route from the Rice Hotel to Rice University Stadium Wednesday morning and from the stadium to the Rich Building. Opposite the side entrance to the Rich Building some 700 grade school children from J. P. Cornelius school cheered the President's arrival.

At Cape Canaveral Tuesday, President Kennedy told a cheering crowd gathered around Hangar S that "we shall be first" in space. He saw the Mercury-Atlas which will take Astronaut Walter M. Schirra into space and was met upon his arrival by Schirra himself, who explained the project. He looked at two Titan II boosters, and talked briefly at public and classified briefings on this and other space programs. He visited Complex 37, launch site for Saturn C-1 boosters and talked briefly at Hangar S with Astronaut L. Gordon Cooper before visiting the high altitude chamber there.

MSC PERSONALITY Executive Asst. Ray Zavasky Had A Long NACA Career

"It's a trouble-shooting job in the planning and programming areas," said Raymond L. Zavasky, executive assistant to the director. "As our organization grows, we take on a number of new functions. Frequently, until we pass these things on to whatever office is set up to handle them directly, they must be handled by Dr. Gilruth's staff."

A veteran of government research and development work, Zavasky began as a junior aeronautical engineer with NACA at Langley immediately after his graduation from the University of Pittsburgh in 1942 with a BS in Mechanical Engineering. Prior to that he had spent a couple of college summers as lab technician with Erie Resistor Corporation.

He is a native of Erie, growing up in the heart of the Great Lakes coal country.

In 1943 he transferred from the full scale wind tunnel at Langley to the office of the chief of the Aerodynamics Division. By 1945 he was head of the Research Staff Office, handling research correspondence and budget and equipment justifications, and assisting in the preparation of laboratory progress reports.

Designated aeronautical technical assistant, and then aeronautical research scientist, Zavasky acquired more responsibility in the same office, advising laboratory officials on research policy and procedures and assisting in the development of such procedures applicable to new situations.

By the summer of 1958 he was working primarily in the field of space research and development planning and coordination, helping draft the technical programs in a variety of scientific areas.

With the formation of NASA in October of 1958, Zavasky went to Washington, D. C. with the Space Task Group, and was appointed executive

assistant Robert R. Gilruth, who was then Director of Project Mercury. In February, 1959, he returned to Langley.

Zavasky headed the committee which planned facilities for the new Manned Spacecraft



Raymond L. Zavasky

Center at Clear Lake and more recently served as MSC representative in the industrial applications program. He has been active in the Apollo program, space science activities, and miscellaneous assignments in programming and budgeting.

He is married to the former Edith Halton of Decatur, Ga. and Charlotte, N. C. and the couple has one son, Mitchell, now serving in the Air Force.

An accomplished pianist, according to his friends, Zavasky is also an avid record collector. He says his large record collection "would equal some shops" and leans heavily to classical music and contemporary jazz.

WELCOME ABOARD

(Continued from Page 8)

Sheeran, John E. McLeaish, Bennett W. James, Jr. (Downey, Calif.), Alfred N. Vela, III, Charles J. Ward, Jr.

Data Computation Division: Lawrence F. Guseman, Jr., Robert K. Hesson, Paul H. Phillips, Robert N. Lea, Elmer E. Lunsden, William H. Davenport, Jeanne S. Fulton, James L. Raney, Mary M. Scrip, Mary K. Kammerman,

Protection System

(Continued from Page 8)

LTV has also received another contract from NASA to furnish a specimen of ablation material which will be bonded to the beryllium chute canister of a Mercury spacecraft. The material will be given a re-entry test on the spacecraft scheduled for orbital flight in September.

Russell A. Breckenridge, Judith L. Alexander, Samuel Geller.

Personnel Division: Opal E. Loden, Shirley A. Porter.

Reliability & Flight Safety: Lorrain R. Remmich, Hazel P. Matthys.

Management Analysis Division: Carl Richard Symonds, Charles Pace.

Logistics Division: William S. Swilley, Grayden F. Meyer, Phillip R. Wesley, Robert D. Stone, Branda F. Stutes, Marie S. Valverde.

Security Division: Hester H. Cross, Peggy F. Neal, Roddy C. Puffer, Glen E. Brace.

Financial Management: Walter H. Meek, Jr., Flody J. Eaton.

Program Analysis & Evaluation: Charles E. Howard, William J. Wagoner.

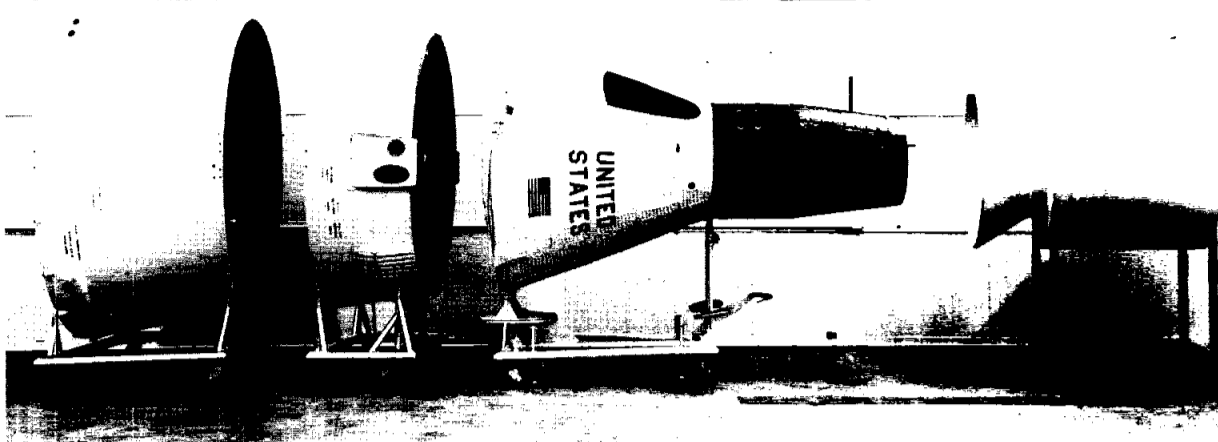
Technical Information: John T. Wheeler.

Space Physics: Carl L. Kotila.
Office of Chief Counsel: Wilma R. Wells.

Conferees Get Close Look At Gemini Spacecraft



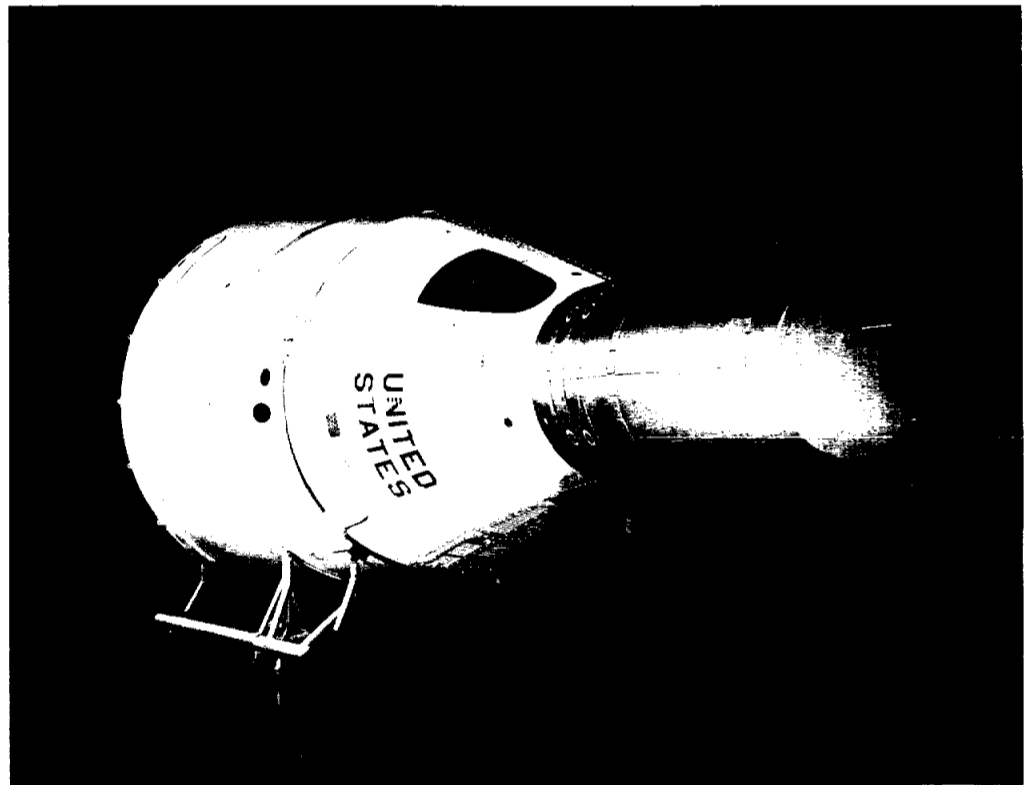
A SPACECRAFT BUILT FOR TWO, the two-man Gemini mock-up, was exhibited to 140 industry and NASA representatives at the St. Louis Plant of McDonnell Aircraft last month. "Pilots" are McDonnell technicians.



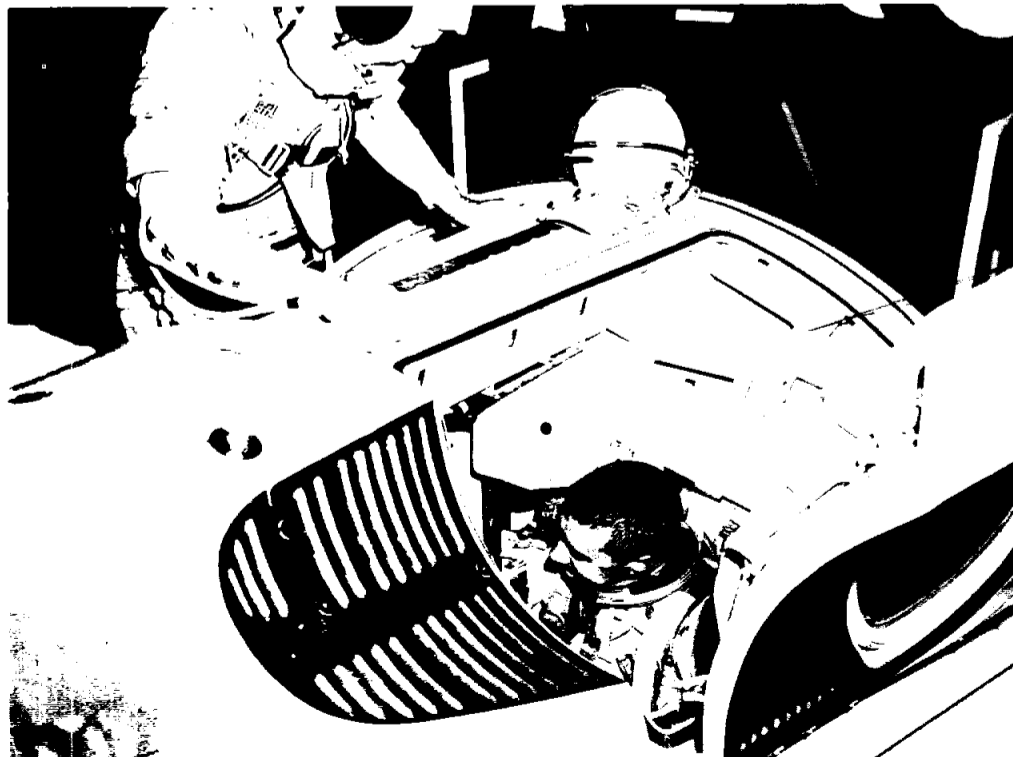
SEPARATED INTO THREE major components, the Gemini spacecraft is composed of the equipment section (far left) which houses most of the oxygen for the life support system, the fuel cells for electric power, and hypergolic fuels for the propulsion system. Second from left is the retro-rocket section, carrying solid fuel rockets which slow down the spacecraft's descent from orbit. Both these sections are to be jettisoned before re-entry. Second from right is the re-entry module which houses the two-man crew throughout the flight. At far right is the adapter of the Agena D with which Gemini will rendezvous and dock in space. McDonnell is the prime contractor for the design, development and construction of the Gemini spacecraft.



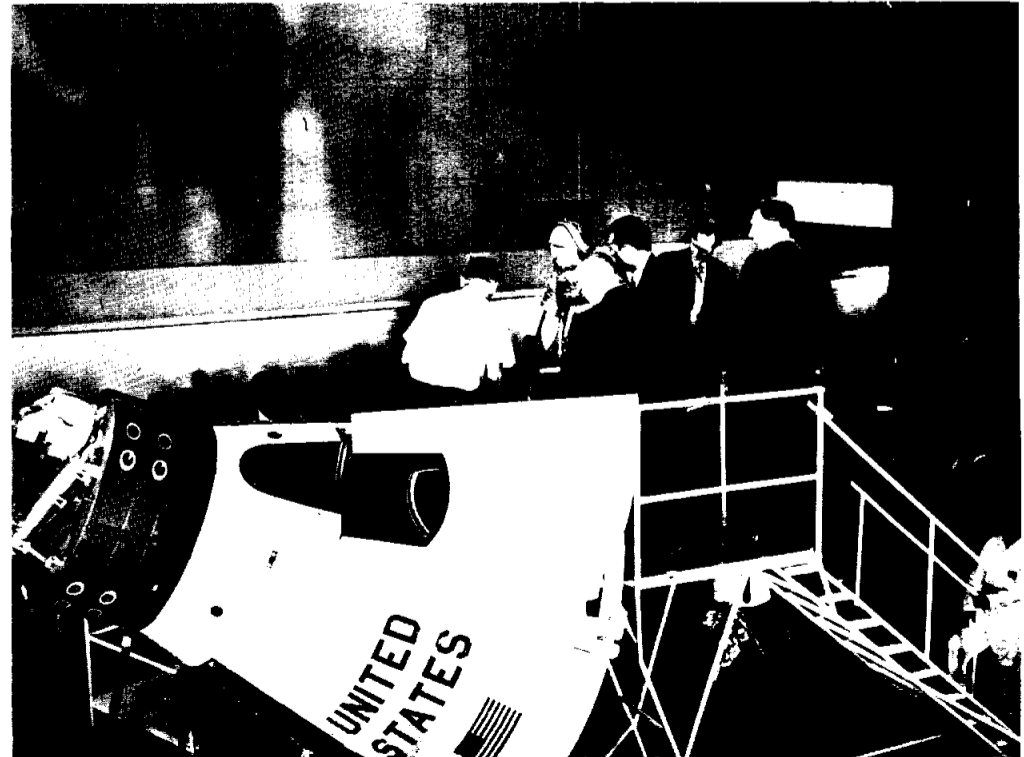
PART OF THE 140 CONFEREES present at the review look over the mock-up during the two-day session. Besides 32 personnel from MSC the conference was attended by representatives from six other NASA centers, five industrial firms, the Air Force and the Navy.



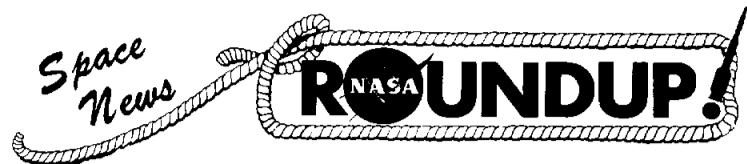
IN ORBITAL POSITION, with the astronauts sitting upright with respect to earth, the re-entry, retrorocket and equipment sections will circle the globe as one unit prior to docking maneuvers. McDonnell is to construct a dozen of the Gemini spacecraft.



ASTRONAUT VIRGIL I. "GUS" GRISSOM tried the model out at the Project Gemini Mock-up Review. Grissom is wearing a prototype of the Gemini space suit now under development, which will have detachable arm and leg sections to promote comfort in missions which could last up to 14 days.



CLIMBING INTO THE MOCK-UP, a McDonnell engineer prepares to simulate movements of the pilot in his data monitoring and control functions. Suggestions were encouraged from those taking part in the conference and ranged all the way from the placing of instruments to major design changes.



SECOND FRONT PAGE

Market Survey Shows Employee Needs By '63

Manned Spacecraft Center will have 2,760 employees, three fourths of them married, with a total of nearly 4,500 children by June of next year.

Three quarters of the employees will have come from outside the Houston Metropolitan area. More than 2100 of them will want to purchase single-family houses; most of the rest will want to rent apartments. A typical house will be a new ranchstyle brick with three bedrooms, two baths, and a price between \$16,000 and \$19,000.

These are among the figures contained in a 38-page basic market survey on housing, school and community facility needs of MSC employees which was released early this month as a guideline report for suppliers of those needs.

Prepared jointly by the Houston Chamber of Commerce and the Personnel Division and Relocation Center of MSC, the report is a comprehensive breakdown on just what MSC employees will want when the center reaches its full strength of 2,760, based on what a sample of the present employees consider necessary—in short, an analysis of potential consumer demand.

New Market

"The location of the Manned Spacecraft Center on a 1,620 acre site some 22 miles from downtown Houston is creating a new and unusual consumer market," the report notes. "This site is surrounded by thousands of acres of land that have been practically without commercial development. Here, in the heart of this undeveloped area, the Center and its employees will form an economic stimulus similar to that of the downtown business district of a city. It is probable that space-oriented private industries will ring the Center, each adding the economic weight of its own employees who could well exceed, in total, the employment of the Manned Spacecraft Center.

Guide Lines

"This report was prepared to help establish guide lines and goals for those persons interested in supplying the demands being created by Manned Spacecraft Center employees. It takes facts and personal preferences obtained by a questionnaire survey from present employees and projects them to the full employment strength planned for mid-1963."

Some 584 questionnaires filled out by MSC employees last May furnished basic material which was compiled, analyzed and evaluated by the Houston Chamber of Com-

merce Research Department under Howard M. Martin, manager and editor of the report.

At that time, the 584 represented more than half of the total 1,100 employees. Anticipated full employment of the Center by the end of fiscal '63 will be 2,760. Of these 1,004 will have annual salaries of \$5,355 and below; 1,020 salaries of from \$5,356 to \$8,955; and 736 salaries of \$8956 and above.

Percentages Weighted

Since the number of questionnaires returned in each of the salary range groups did not correspond percentage-wise with the anticipated number in each group, all percentages in the tables of the report which present data by salary ranges were weighted accordingly.

About 75 per cent of MSC employees will be married, according to the report. They will represent 2,194 family groups, averaging just over two children per family, and will have a total of nearly 4,500 children. Some 83 per cent of the children will be pre-teenagers.

Ninety-five per cent of employees in the top salary range will come from outside metropolitan Houston, as will 85 percent of those in the middle range and half of those in the lowest salary bracket.

Manned Spacecraft Center employees and their families will total about 9,300 persons.

Housing

Of 2,760 employees, 639 will want to live in apartments; 48 percent of these will want those apartments furnished; and 44 percent will be willing to pay \$110 a month or more for rent.

The other 2,121 employees will want to purchase single-family houses. A composite house, based on the most frequently chosen features, would be a new ranchstyle brick with between 1,600 and 2,000 square feet of floorspace, including three bedrooms and two baths and costing between \$16-19 thousand.

Air conditioning, a range, an oven and a double-garage, in that order, are considered essential by the most employees; a screened porch and waterfront lot are considered the least important.

Swimming pools, recreation centers and playground areas are community facilities which will be used most often, and public transportation and nurseries will be used least often.



THE APOLLO ESCAPE ROCKET motor case prototype is inspected by J. W. Thompson (left), North American Aviation's resident representative for material at Lockheed Propulsion Company, and Robert F. Hurt, LPC president. The prototype case is for the Apollo launch escape rocket motor. The Redlands, Calif., rocket firm is developing escape rockets under subcontract to North American, prime contractor to the National Aeronautics and Space Administration for the Apollo lunar spacecraft.

WELCOME ABOARD

Manned Spacecraft Center acquired 146 new employees between Aug. 19 and Sept. 12, all but three of them stationed in Houston.

Mercury Project Office: James E. Downs, Frank B. Newman, James L. Blemert.

Gemini Project Office: Edward B. Sheffel, James H. Alphin, John W. Smith, Frederick T. Burns, James A. Caudel, Floyd A. Turner.

Apollo Project Office: Raymond E. Smith, William H. Simmons, David G. Wosley, Arthur R. White, James E.

Bryan, Jr., John W. Duttonhofer, Jr., John R. Sevier, Jr., Jean R. Peoples, Harry S. Linder, Alfred D. Mardel, Elinor E. McCain, Donald K. Vaughn, William B. Wilson, William L. Swingle, John A. Schliesing, Joseph D. Haulbrook, Melvin E. Dell, Leo E. Wourms, Donald J. Mayhew, James C. Church, Robert C. Hood, David H. Shelton, Norma A. Deorio, (Downey, Calif.), Charles O. Colson, (Downey, Calif.).

Spacecraft Research Division: Rene A. Berglund, James W. Blackmon, Lynda F. Proctor, Dorothy B. Lee, Leo E. James, George Strouhal, Thomas P. Lins, Barbara A. Troublefield, Jack H. Byrns, Noel C. Willis, Lillie E. Critzos.

Life Systems Division: Benny R. Baker, Joseph C. Lill.

Systems Evaluation & Development: Edward H. Cawley, Salvador Villarreal, George D. Curtis, Shirley P. Cox, Jr., Robert B. McLees, Jerome Grayson.

Preflight Operations: William P. Deason, Wilburn S. Hicks, Charlotte E. King, Thomas Black, John H. Campbell, II, Richard F. Porter.

Flight Crew Operations: Myrtle A. Richard, Lee R. Nichols, Jess N. Beberstein.

Procurement and Contracts: Raymond A. LaPlante, Jack H. Goldstein, Hannah L. Thornton, Richard A. Perkins, Normand J. Beauregard, Jesse L. Wilkerson.

Facilities: Margaret L. Moore, Jerry F. Reel, Lowell E. Newsom, James T. Arnold, Herman R. Burnham, Marvin Cohn, Marjorie J. Heinlein, Janice C. Hatler, James T. Blanton, Clarence O. Standish.

Technical Services: J. D. Higginbotham, Richard W. Bradshaw, Sr., Floyd L. Harrison.

Administrative Services: Sherry A. Jackson, Mary A.

Worthington, Oneta L. Nelson, Joan Clemons, Lonnie Edwards, Dorothy A. Skeen, Troy D. Caruthers, Barbara J. Thompson, Lecie A. Scott, Joyce L. Newgent, (Cape).

Flight Operations Division: Neil B. Hutchinson, Thomas E. Holt, Ronald Carr, Ollie M. Reaves, Eileen M. Hillje, Kenneth R. Yenni, Georgie M. Benavides, Jones W. Roach, Albert L. Kirk, Anna W. Ellis.

Public Affairs Office: Glenda S. Tubbs, Jack Jacob, Sandra J. (Continued on Page 6)

Philco Western Lab Moves Forward On Control Center Study

Flight Operations personnel visited Western Development Laboratories recently relative to progress on the Gemini/Apollo contract awarded to Philco by MSC. Flight Operations Division has the responsibility for the design of the integrated mission control center and the definition of operational performance requirements of the world-wide ground operations support system.

To support Flight Operations' requirements, Philco effort includes the integrated mission control center building operational design requirements and specifications. Work has progressed to the extent that the architectural and engineering efforts have already begun. The building will be constructed at the new MSC site in Houston by the U. S. Army Corps of Engineers.

Philco is also working with the Manned Spacecraft Center in developing the detailed performance requirements for the ground operational support system. These performance requirements will be based upon the continuing detailed studies and development for the overall mission flow plan.

(Continued on Page 6)