Space News NASA ROUNDUP!

VOL. 1, NO. 6 MANNED SPACECRAFT CENTER, LANGLEY AFB, VA. JANUARY 10, 1962

Move To Houston Area Is On Schedule

INTERESTED OBSERVERS DURING THE LOADING of their household effects recently was the David Brown family, who prior to their departure for the Houston area lived at 546 Almond Drive, Newport News. Watching the activities of the A. J. Beninato employees are Brown, holding his son, Paul, Mrs. Brown, and their daughter, Penny. —Photo by Coler

Additional Space to be Leased; 70 Personnel Move Recently

The move of Manned Spacecraft Center to Houston, announced last September and started in October with the opening of temporary quarters in the Gulfgate Shopping City by a small cadre of personnel will be completed during the first six months of 1962. Since the move of the original contingent, a total of 133,000 square feet of floor space has been leased in three buildings in Houston near the Gulf Freeway. They are the Farnsworth-Chambers Building, the Lane Wells (Dressler) Building, and the Phil Rich Building.

An additional total of approximately 205,000 square feet will be leased by January 1963, as needed, to accomodate the various MSC activities being moved to the area and the increase in space required by the expanding personnel program.

In all, approximately 700 MSC personnel will be transferred from Langley AFB to the area, and it is anticipated that by July 1 the total complement at Houston will number 1,600.

An intensive recruitment program is underway to secure the additional required personnel to support the expanding MSC programs and the new personnel will be hired at Houston or for duty at Houston.

MSC Director Robert R. Gilruth prescribed a set of basic guidelines concerning the move at the time it was announced.

Basically they are:

(1) That no part of the move would be permitted to interfere withthe Mercury program.

(2) That every section would be operational at one site or the other, with the move planned in order that key people would be in business at all times.

(3) That the Apollo and Gemini projects personnel should be moved at the time when deemed least disruptive to their programs; with the Mercury Project personnel remaining at Langley AFB until after the completion of the manned three-orbital flights.

(4) That the move be completed as soon as possible—consistent with the limitations imposed.

(5) That the move plans be made so as to minimize employee hardship whenever possible.

(6) That the move be accomplished as economically as possible.

(7) That where possible, new employees should report directly to Houston.

The above rules have been closely followed and the move program has been effected with a minimum of confusion.

During the period December 18 through January 2 seventy people completed their permanent change of station.

FLIGHT SYSTEMS DIVISION:

(*Continued to page 7*)

Medical Monitors Are Experienced; Assignments Listed

The medical monitors who will man the consoles during the Mercury-Atlas 6 flight are an experienced team—a team which points up to the fine inter-service, interagency, and international cooperation which is prevalent in the United States space effort.

Following is a list of the monitors scheduled to be on duty at the indicated stations along the Mercury Tracking Network and their home stations or organizations.

CAPE CANAVERAL — Blockhouse—Drs. Dave Morris and Ernest McCutcheon; Emergency Egress — Dr. Robie Hackworth; Mercury Control Center—Drs. Pat Loughlin and Stanley White.

BERMUDA—Lt. Col. Charles A. Berry (USAF), Aerospace Medical Division, USAF Surgeon General's Office, Washington, D. C.; and Lt. Col. Jacques L. Sherman (USA), Research Division, USA Surgeon General's Office, Washington, D. C.

ATLANTIC OCEAN SHIP — Lt. Cmdr. Glenn F. Kelly (USN), Jacksonville, Fla., Naval Air Station; and Capt. Roy J. Kelly (USAF), Carswell AFB, Tex.

CANARY ISLAND STATION —Maj. Juilan E. Ward (USAF), 49th Tactical Hospital, Spangdalen, Germany; and Maj. Robert R. Burwell (USAF), 7310th USAF Dispensary, Rhein Main, Germany.

KANO, NIGERIA—Maj. Clyde H. Kratochvil (USAF), AF Systems Command, European Office, Brussels, Belgium; and Col. Vance Marchbanks, Jr., (USAF), Base Surgeon, George AFB, Calif.

ZANZIBAR—Dr. Sam Fox, U. S. Public Health Service, National Institute for Health, Bethesda, Md.; and Dr. Francis T. Flood, U. S. Public Health Service Hospital, New Orleans, La.

INDIAN OCEAN SHIP—Cmdr. Frank Austin (USN), USN School of Aviation Medicine, Pensacola, Fla.; and Capt. Gordon Benson (USN), USN Acceleration Laboratory, Johnsville, Pa.

MUCHEA, AUSTRALIA—Capt. Edward L. Beckman (USN),

(*Continued to page 7*)

Gilruth and Williams Are Named To NASA Management Council

A Management Council of top National Aeronautics and Space Administration officials responsible for the Agency's manned space flight programs has been instituted to hasten development of spacecraft, boosters and support equipment necessary for the success of these programs.

Formation of the Management Council of the Office of Manned Space Flight was announced by D. Brainerd Holmes. Mr. Holmes is Director of the Office of Manned Space Flight and chairman of the Management Council.

Members of the Council, in addition to Mr. Holmes, are: Robert R. Gilruth, Director of the Manned Spacecraft Center, Langley Field, Virginia; Mr. Walter C. Williams, Associate Director, Manned Spacecraft Center; Wernher von Braun, Director of the Marshall Space Flight Center, Huntsville, Alabama; Dr. Eberhard F. M. Rees, Deputy Director for Research and Development, Marshall Space Flight Center; from NASA Headquarters, Washington, D.C., George M. Low, Director of Space Craft and Flight Missions; Milton W. Rosen, Director of Launch Vehicles and Propulsion; Charles H. Roadman, Director of Aerospace Medicine; William E. Lilly, Director of Program Review and Resources Management; Joseph F. Shea, Deputy Director for Systems Engineering.

Mr. Holmes said the Council would meet regularly once a month. He said special meetings would be called as required and that other members may be added later.

"The purpose of the Council is to spot and identify problems as early as possible and to resolve them quickly," Mr. Holmes said. "The Council will enable us to establish clear understandings on such matters as goals, schedules, pacing items and the so-called interface problems—matters that are not solely the concern of either the Manned Spacecraft Center or the Marshall Space Flight Center.

"Regular meetings of the key field center and headquarters people," Mr. Holmes added, "will bring about closer cooperation and enable us to exercise the best judgement in reaching the important decisions that lie ahead in Project Mercury, the advanced Mercury program and Project Apollo."

HOUSTON SITE HAS ANSWERING SERVICE

In an effort to make things easier for those persons transferring to Houston a telephone answering service has been established. The number is CApitol 8-7428, and may be used between the hours of 4 pm and 8 am during the normal work week, on weekends and on holidays.

Newly arriving personnel are urged to call this number during the aforementioned periods in order to obtain information concerning motels, restaurants, emergency repairs, medical services, etc.

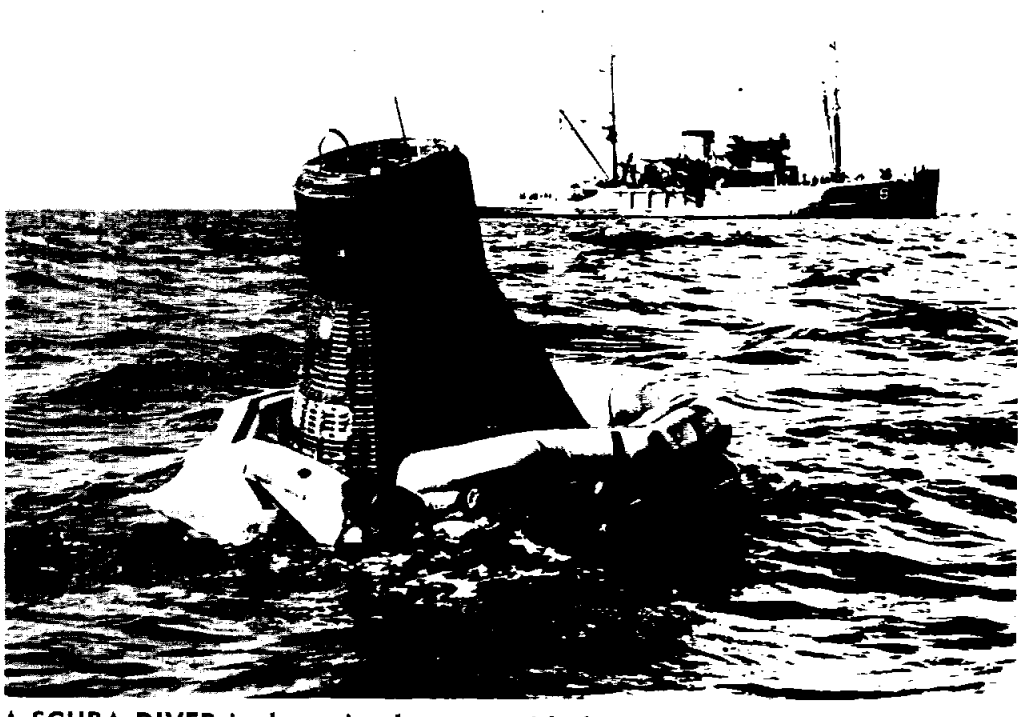
Recovery Assignments

Six personnel of Flight Operation's Recovery Branch are scheduled to be aboard the prime recovery vessels in the three impact areas during the MA-6 flight.

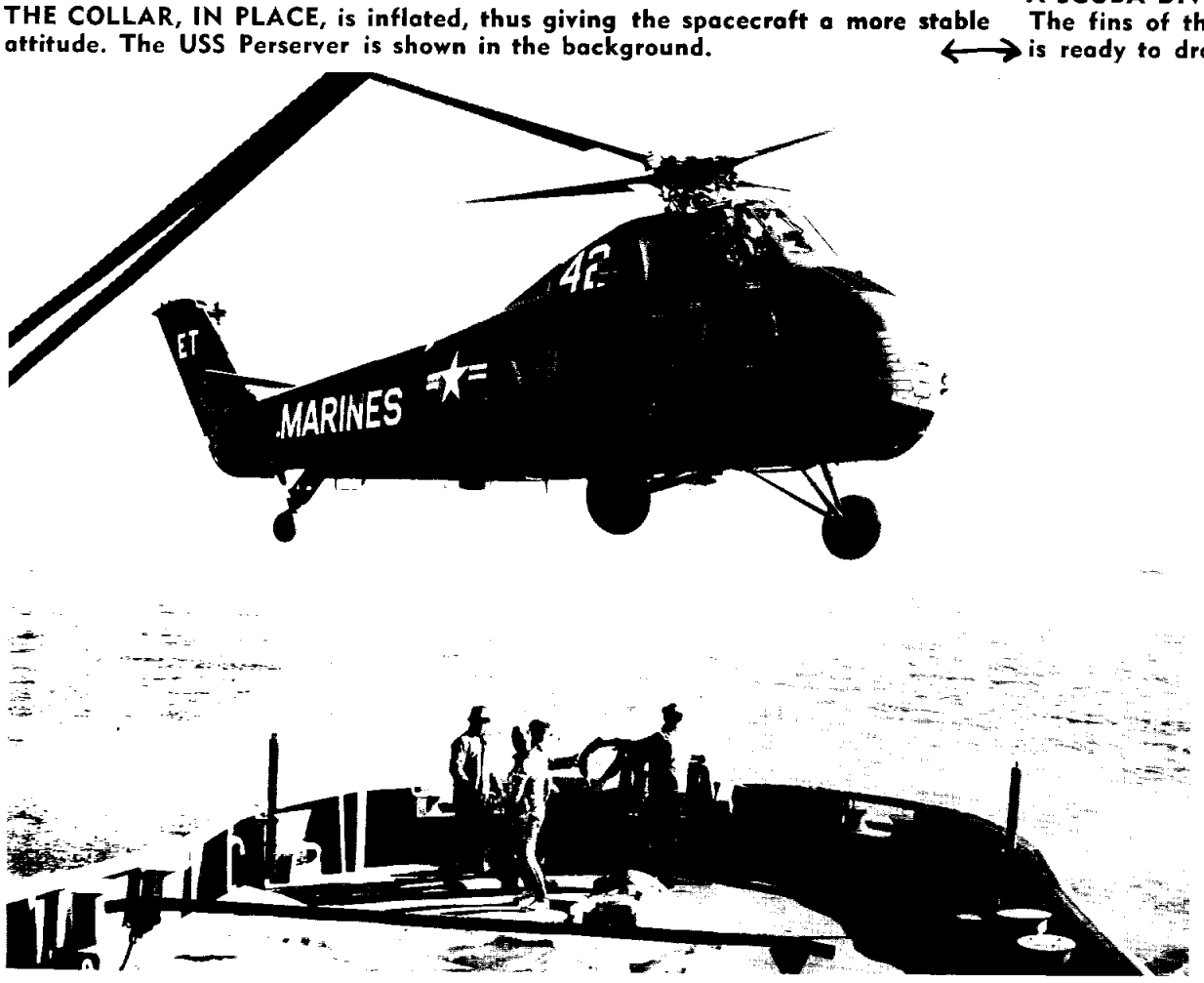
C. I. Tynan, Jr., and W. C. Hoggard will be on the USS Wasp in the first orbit impact area; J. B. Graham, Jr., and L. R. Foster will be on the USS Enterprise in the second orbit impact area; and W. C. Hayes, Jr., and E. N. Harrin will be aboard the USS Randolph in the third orbit impact area.

SHOW AT THE LEFT PRIOR TO THE START of the flotation demonstration are Bob Thompson, Chief of the Recovery Branch, Astronaut Alan B. Shepard, Jr., and Dr. Donald E. Stullken, who developed the Mercury Auxiliary Flotation Collar. Above, Shepard dons his helmet before entering the MR-2 spacecraft.

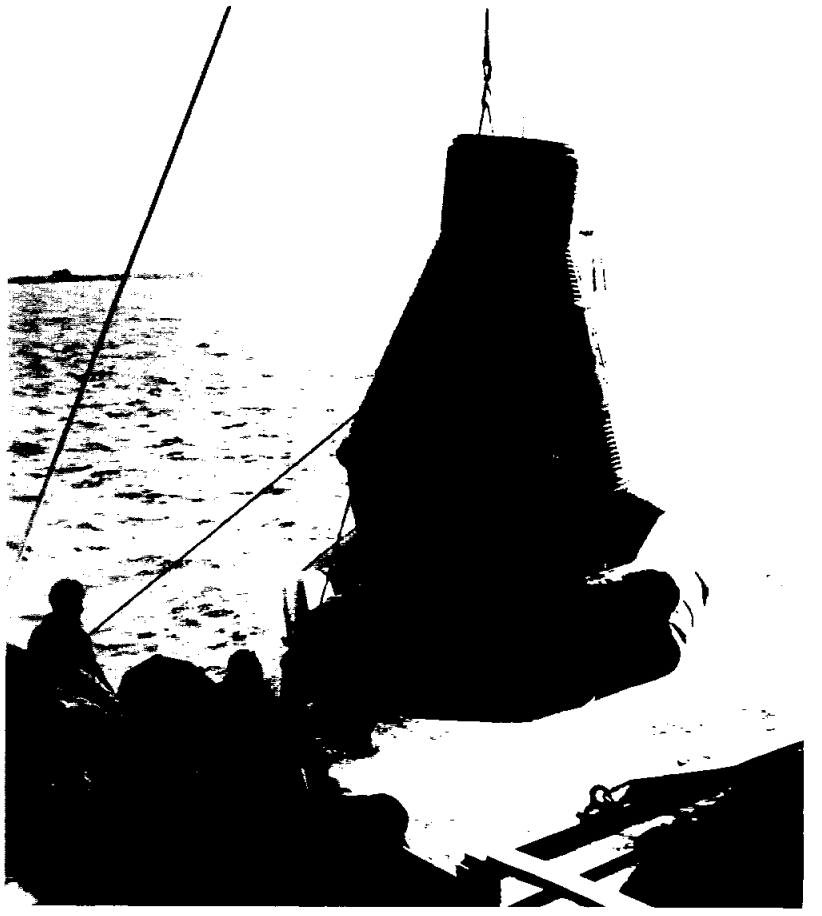
THE COLLAR, IN PLACE, is inflated, thus giving the spacecraft a more stable attitude. The USS Perserver is shown in the background.



A SCUBA DIVER is shown in the water with the collar just after it was dropped. The fins of the other diver are shown on the far side of the helicopter as he is ready to drop into the water.

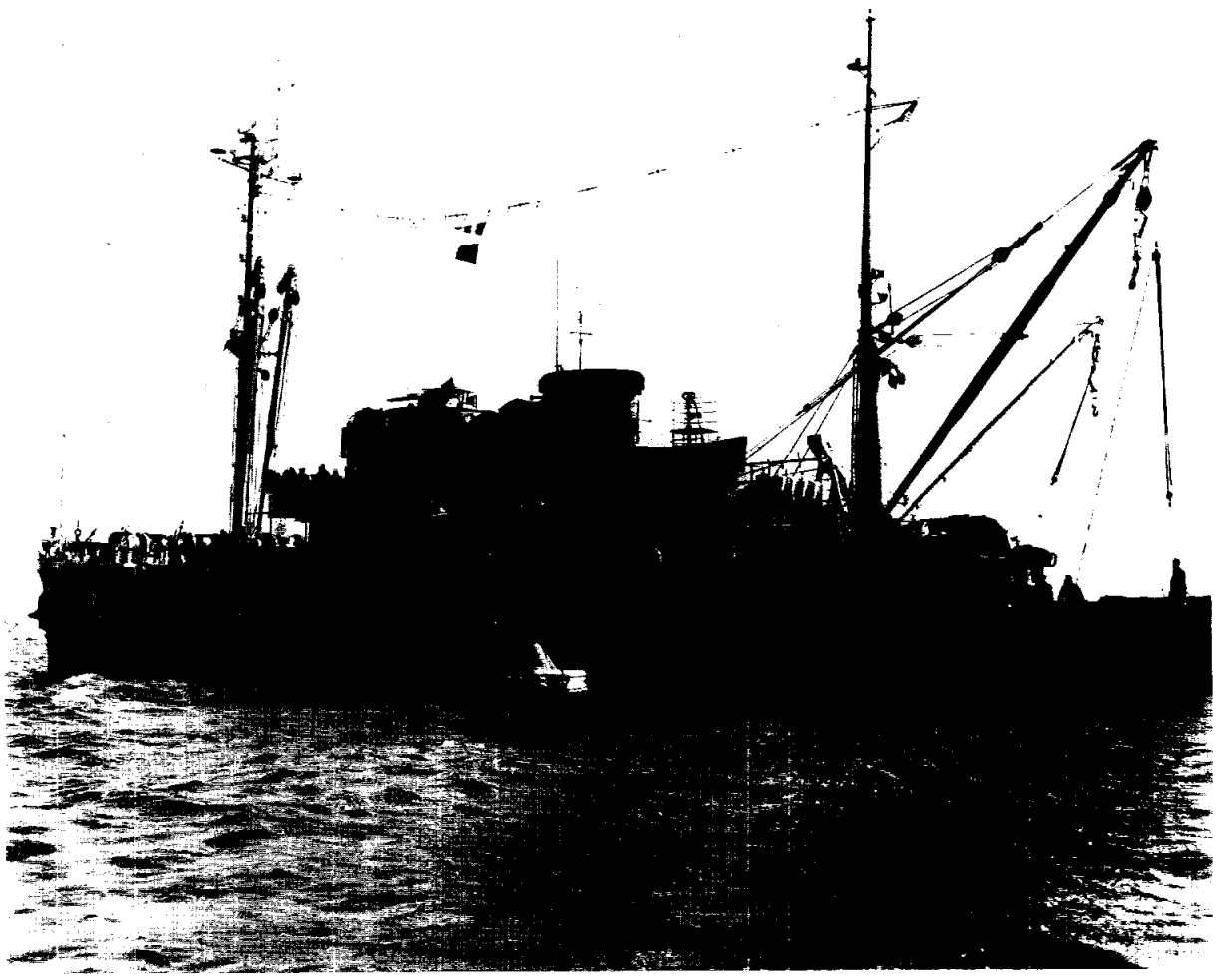


SHEPARD IS RETURNED to the fantail of the Preserver by the helicopter assigned to the operation from Mariine Air Group 26 from New River, Jacksonville, N. C.

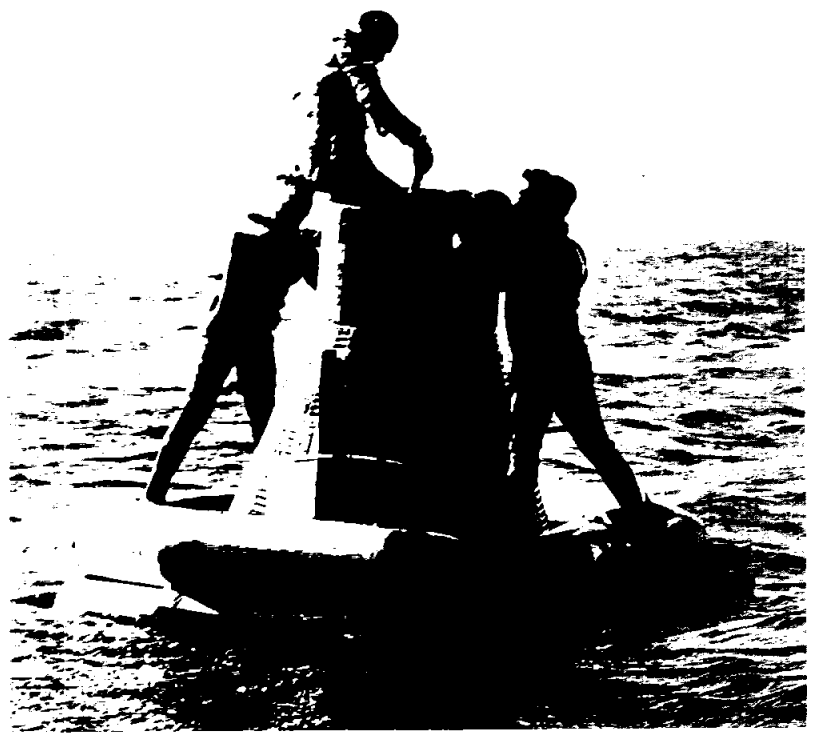


A GOOD VIEW of the Mercury Auxiliary Flotation Collar is available as the spacecraft is raised to the deck of the USS Preserver.

A SCUBA DIVER scales the side of the spacecraft, above to tell Shepard that the collar is in place and inflated. Shepard is shown performing top egress in the picture immediately below; and in the picture at the bottom he is shown just after being picked up by the helicopter. Photos by Gene Brown.



THE USS PRESERVER is pictured as it moved in to recover the spacecraft following the top egress phase of the operation.



Mercury Auxiliary Flotation Collar Test Proves Successful - Provides Additional Recovery Aid

A group of key personnel from MSC's Recovery branch, Astronaut Alan B. Shepard, Jr., technicians and observers walked up the gangplank of the Navy's USS Preserver, an Auxiliary Recovery and Salvage vessel last Wednesday morning, at the Navy's Little Creek Amphibious Base.

Shortly later the Preserver steamed toward an operational area in the Lynnhaven Roads area for a flotation demonstration. Participating, in addition to the MSC and Preserver personnel were two US Marine Corps helicopters and several teams of scuba divers.

Although the sky was clear and the water smooth, the temperature was low enough that the Preserver had to break ice leaving the dock, thereby spoiling the antics of a number of sea gulls which were gingerly walking on the unaccustomed surface.

The purpose of the demonstration was to evaluate procedures developed for use of the Mercury Auxiliary Flotation Collar. The collar was designed by Dr. Donald E. Stullken of the CNATRA Staff at the Pensacola, Fla., Naval Air Station. Dr. Stullken was aboard Wednesday to observe the demonstration.

Stullken said that he and other members of his staff started working on the collar two years ago when it became apparent that the 20-man life raft could not be used to buoy the spacecraft. The Mercury collar used in last weeks demonstration is composed of five-ply life raft fabric and is attached to the spacecraft by cables fastened around the impact skirt before the collar is inflated. The inflated collar is capable of keeping a spacecraft afloat for hours after impact, and is being considered for use in planned landing areas for the Mercury-Atlas 6 flight and future missions.

Although the use of the collar is in some respects a more conservative approach to the completion of the recovery operation than that used in past manned space flights, it has the following distinct advantages.

(1) It permits a team of two scuba divers to enter the water in the impact area to give the Astronaut any assistance needed during the egress operation.

(2) It alleviates the necessity of transporting the heavy spacecraft by helicopter over what at times might prove to be long distances.

(3) It enables the more rapid transport of the Astronaut to a recovery vessel and, consequently, speeds up the de-briefing program.

(4) The proximity of the scuba divers to the Astronaut following the space flight is presumed to provide a strong psychological advantage for the Astronaut in the spacecraft.

During last weeks demonstration, Shepard and others watched as personnel of the Preserver lowered the oft-used MR-2 capsule, which carried Ham on his historic flight, into the water and raised it again in a practice run. It was the first exercise for personnel of the ship, using other than a boilerplate model, and the crew handled it as carefully as though it were a crate of eggs. (If it had been, it seems a certainity that none would have been broken, as the crew of the ship's captain, Lt. Cmdr. Robert F. Graves, Jr., performed yoeman service.)

This action was followed by Shepard's entry into the spacecraft and he was lowered into the water and set adrift. Approximately five minutes later, two scuba divers dropped into the water near the spacecraft from a Marine helicopter with the collar and fastened it in place and inflated it before Shepard performed his side hatch egress. Several minutes later the Astronaut was picked up and returned to the deck of the Preserver by the helicopter and a short debriefing session was held while the spacecraft was being recovered by the ship, lifted aboard, and the collar removed.

A short time later, the operation was repeated with Shepard performing a top egress this time.

Recovery personnel pointed out that the demonstration offered valuable training for several reasons.

First, it enabled an Astronaut to get a first hand view of the use of the collar.

Second, it gave an Astronaut the opportunity of becoming familiar with the type of noises which would be heard inside a spacecraft as the Scuba divers were attaching the collar.

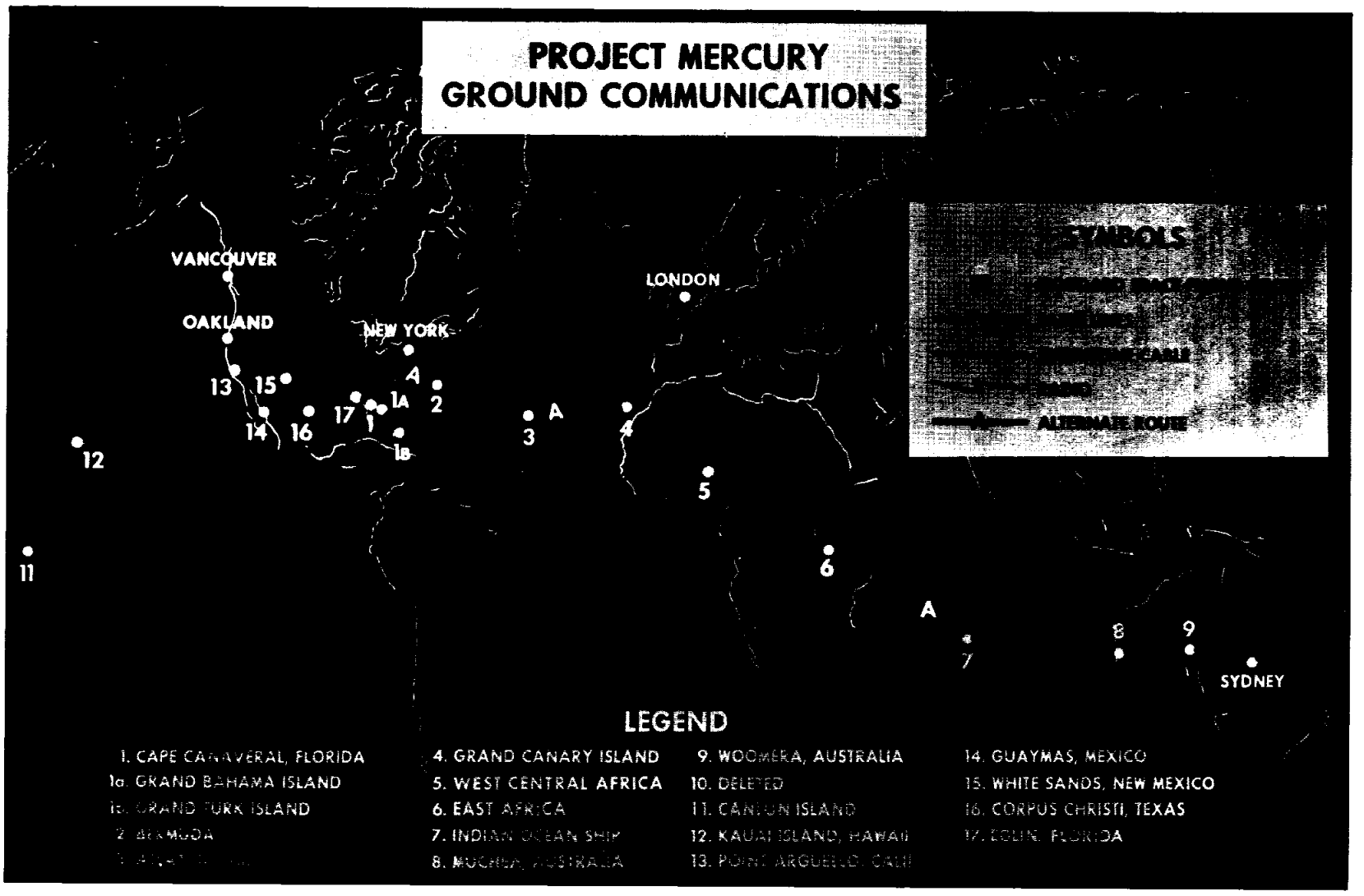
Third, it offered an opportunity for Marine pilots scheduled for deployment to impact areas to work with both the Scuba teams and with the Astronaut.

Fourth, it was the first live training for the Scuba divers who participated in the demonstration. These divers, too, will be deployed to impact areas for the MA-6 flight.

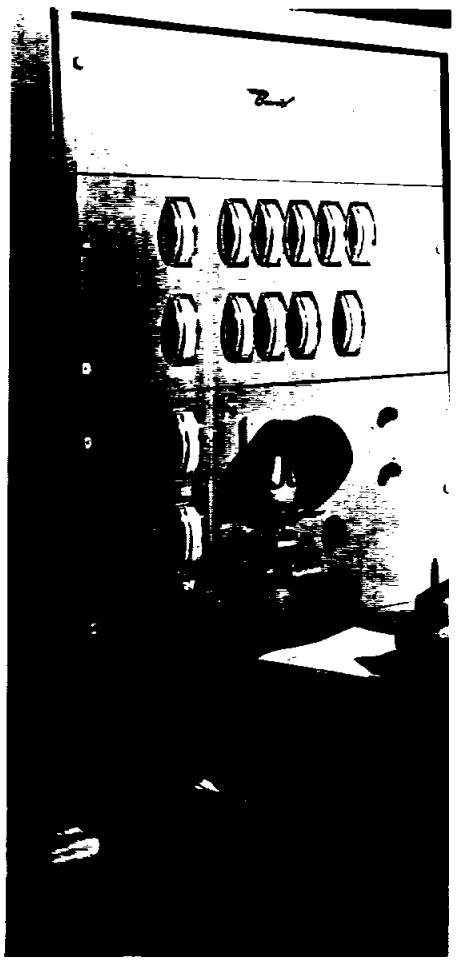
Walt Hoggard of the Recovery Branch said following the demonstration that it had proved the practicality of the use of the collar and provided a more stable configuration for the spacecraft after the impact.

Bob Thompson, Chief of the Recovery Branch, was also pleased by the demonstration. He pointed out, however, that if it is decided to use the collar as an added precaution in the future recovery operations that the method used previously may still be employed under certain conditions.

In all, the demonstration pointed up the fact that MSC personnel are still primarily concerned with two vital problem areas—first, the safety of the astronaut, then, the safety of the spacecraft and the invaluable data secured.



ENGINEERING AND PROVIDING the Mercury network's system of ground communications was a special job of Western Electric, leader of the industrial team that built the world-wide network of tracking and communications stations. From telephone telegraph and radio companies or government services throughout the world, more than 140,000 circuit miles of communications facilities have been leased for the Mercury project. As many as 20 private and public communications services throughout the world participated in providing a single communications belt surrounding the earth in a 30,000-mile circle spanning the continents of North America, Africa, and Australia, as well as the Atlantic, Indian, and Pacific Oceans.



SPACE MEDIC—At the 18 station will keep in touch with America's earth, key members of the earth "areomedical observers". Shown (a built by The Bendix Corporation fo "space medic" has instruments tha of the astronaut such as body temp and pulse rates, oxygen supply in th cardioscope (shielded instrument at beat. The doctor also can listen to t

NASA's PROJECT MERCURY brings two cultures face-to-face across a span of 10,000 years at Kano, Nigeria, a remote site in the globe-girdling tracking and communications system built by the Western Electric-led industrial team for the National Aeronautics and Space Administration. Perched on the tower in readiness for an orbital mission is an antenna used to pick up the spacecraft as it rises above the horizon. Kano is one of 18 sites in the ground instrumentation network that will monitor the Mercury spacecraft and relay vital information back to the Mercury Control Center at Cape Canaveral.

Project Mercury Trac To Support Schedul

The world-wide Project Mercury tracking network which will support the one, two, or three-orbital flight of Astronaut John Glenn, Jr., or M. Scott Carpenter is one of the most advanced and powerful computer-communications systems ever developed. Its assignment: To compute and predict the flight of spacecraft from launch through orbit to impact.

The network's global complex of computers, radars and communications equipment, tied together in a vast unified system at Goddard Space Flight Center near Greenbelt, Md., produces its calculations automatically in real-time, that is, on a split second basis as the mission is being flown. As a result MSC's mission controllers continually get more than 30 instantaneous displays depicting the flight of the spacecraft and predictions of its future course.

In addition, a special launch subsystem within the tracking system has been designed under NASA direction. This enables information to be gathered and transmitted quickly to the flight dynamics officer to decide if the launch vehicle's trajectory can lead to a successful orbit. To achieve the rapid and complex flow and presentation of information required to both launch and tracking sub-systems, engineers have combined computers with high-speed communications lines, data converters, transmitters and receivers and the display devices which the Manned Spacecraft Center's scientists watch.

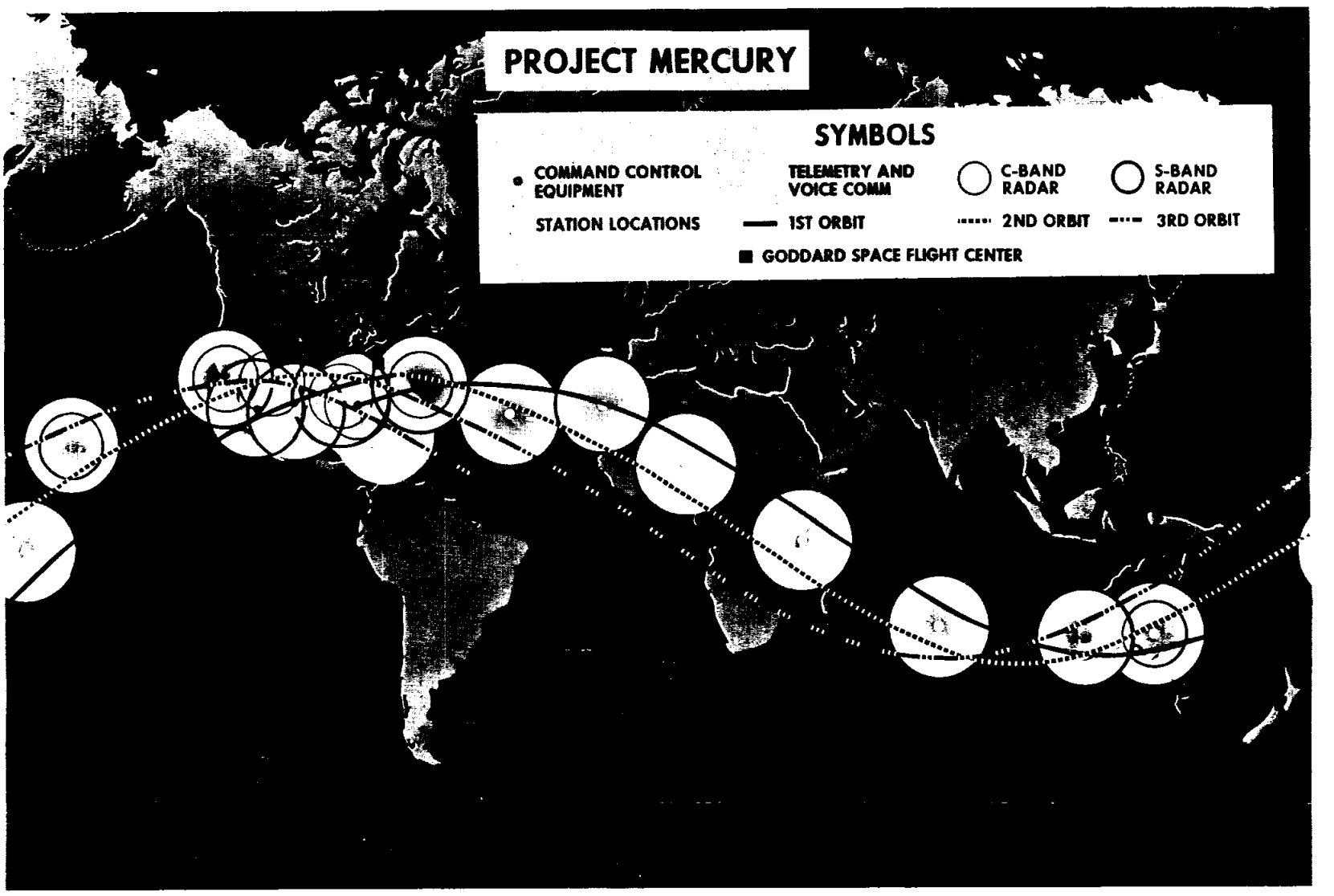
From the instant of launch at Cape Canaveral until a spacecraft is recovered, a high continuous stream of raw data on the vehicle's position, velocity and performance flows into the computing system at Goddard from many remote tracking sites and the vehicle itself. Seconds after each bit of flight data is picked up by the distant radar and telemetry receivers, powerful interconnected computers automatically combine it with masses of stored and other incoming information and, making millions of calculations a minute, display the mission's up-to-the-second status to flight controllers on electronic wall maps, plot board, clocks and console display devices.

To generate the information ground control officers want during the nearly five hours planned for three-orbit flight, hundreds of millions of calculations will be made by the linked IBM computers at Cape Canaveral, Bermuda and at the Goddard Space Fight Center.

As an indication of the complexity and sophisitication of both the computers and the instructions IBM scientists have prepared for them the 7090's have been programmed:

1. To recognize where data is coming from
2. To determine what kind of data it is (e.g. radar, telemetry, manually inserted)
3. To assess the "reasonableness" of new data on the basis of programs stored in the computer memory
4. To shift automatically from one computational method to another as the mission dic-

the global tracking network that rcury astronaut as he orbits the d team will include doctors or) at the main operations console e world wide network, a Mercury e him a complete physical profile ure, suit temperature, respiration in and emergency systems, and a r) charting the spaceman's heart-eartbeat on his headset.



AMERICA'S MAN-IN-ORBIT PROJECT will use the global tracking and communications network engineered and built for the National Aeronautics and Space Administration by a Western Electric-led industrial team. The 18-station system reaches into remote corners of Africa, and at sea aboard instrumented ships in the Atlantic and Indian Oceans. Mercury's ground network links the range stations to the Mercury Control Center at Cape Canaveral through the Goddard Space Flight Center at Greenbelt, Maryland, computing and communications hub of the network.

king Network Is Set d Orbital Missions

tates (e.g. shifts from launch to orbital to re-entry calculations)

5. To take in raw data, compute and deliver results—simultaneously and continuously
6. To accept up to 32 interruptions one on top of the other (e.g. incoming and outgoing data, manual interrogations, timing information) and then, on a priority basis, go back and pick up where work was left off
7. To digest all incoming data into output, which operates the Mercury Control Center display at Cape Canaveral, and tells the world-wide tracking stations where to look for the spacecraft.

Another computer at Cape Canaveral has two jobs.

During the first few minutes after a rocket is launched from Cape Canaveral, it converts radar pulses into quick predictions of where the rocket would land if its power cut off during early flight. With this information before him, the Cape Canaveral Range Safety Officer can take corrective action if the rocket strays off course during its climb up to orbital altitude.

Simultaneously, parts of the output of the computer are blended with telemetry signals from the rocket itself and fed into the main computers at Goddard where the data is processed and relayed back to the Mercury Control Center at Cape Canaveral. There it is used to display the physical elements of the trajectory (e.g. velocity and angle of inclination).

A computer at the NASA site on Bermuda has a special assignment. Because the spacecraft will be inserted into orbit about halfway from Cape Canaveral to the Bahamas, the Bermuda radar and computer system can produce data independent of that developed at Cape Canaveral to help NASA scientists decide if an acceptable orbit has been achieved.

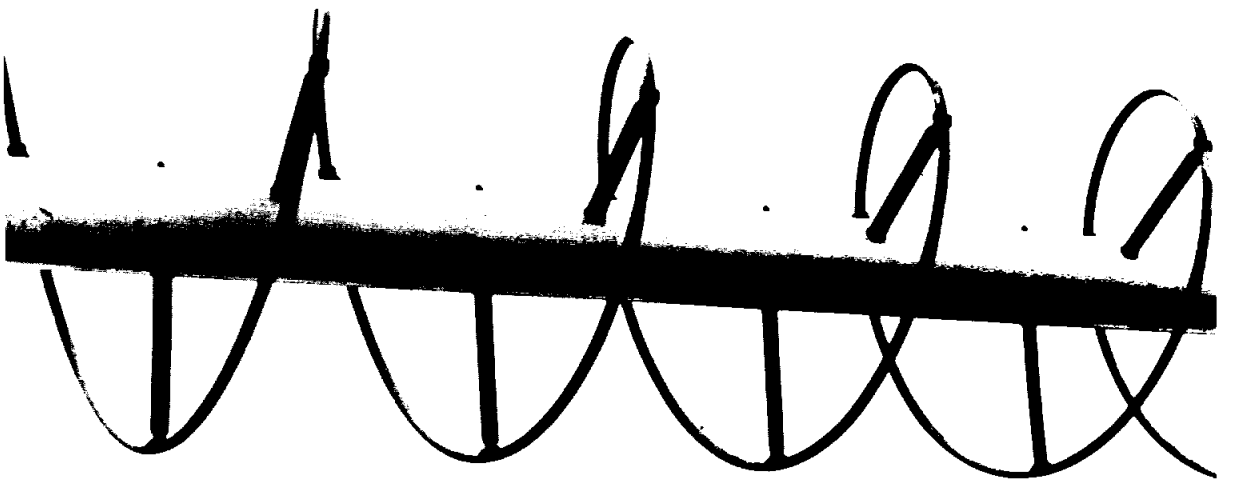
The formulation had to be reduced to computer language, put into the machines and checked under many conditions. Alternate methods of computation had to be discovered and programmed to cover possible variances in the amounts and kinds of incoming data. Finally, a technique to simulate many kinds of space flights had to be prepared so that the computer itself could check out the world-wide system's readiness during count-down.

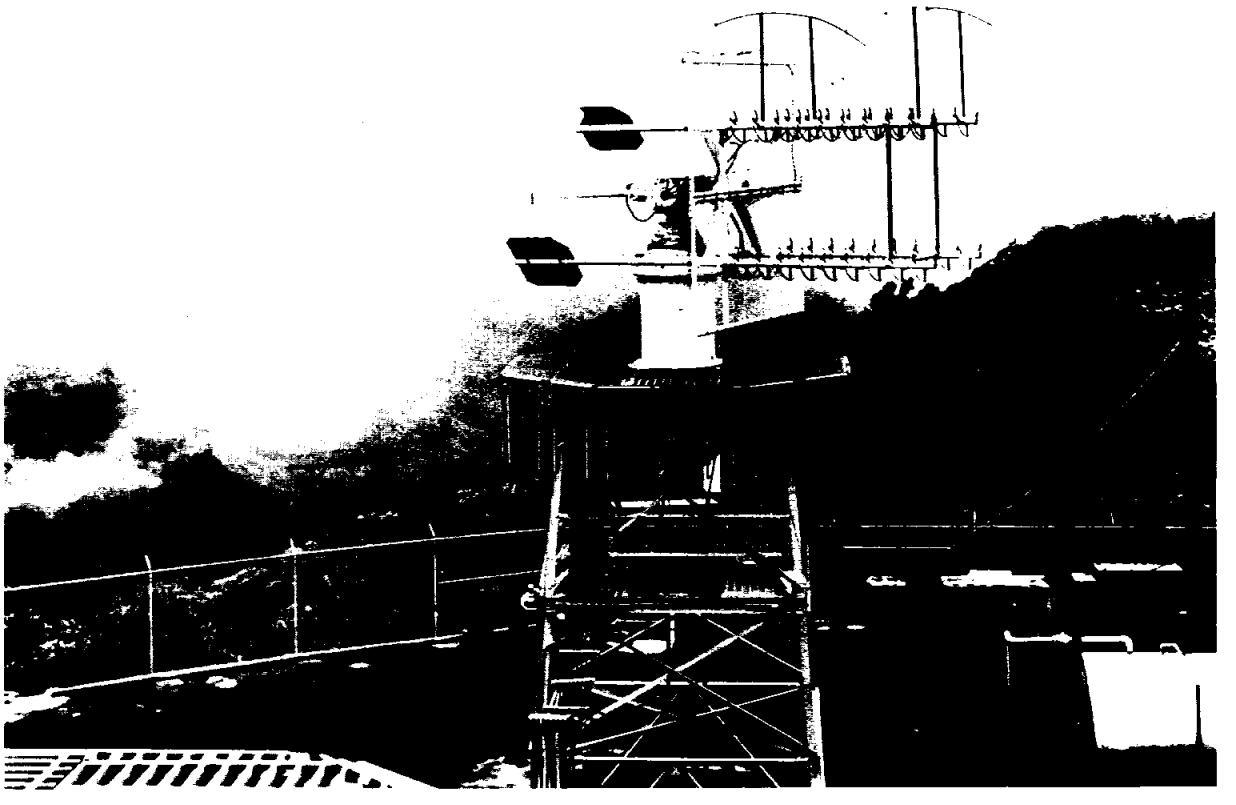
The heart of the computing system is its program monitor. This is a special set of instructions put into the computers to enable them to carry out each missions' very complex computations phase by phase—as automatically as possible.

The monitor causes the machines to check the status of their own work constantly against the progress of the mission—without manual interrogation. For example, the monitor senses when data from one tracking site had ben processed and instructs the computer to pick up data from the next tracking station in line.

Chris C. Kraft, Jr., Mercury Flight Director, said that the value and reliability of the world-wide system were proven during the MA-4 and MA-5 flights.

ANTENNAS SUCH AS THESE at the Kauai, Hawaii station will track round-the-world space filghts of Project Mercury spacecrafts. Kauai is one of 18 stations girdling the globe, ready to track and maintain communications with the orbiting vehicle.





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

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Editor . . . . . **Ivan D. Ertel**
Staff Photographer . . . . . **Bill Taub**

Editorial

1961 is now history. We look forward to 1962 and beyond with confidence.

That confidence is well-founded. It is founded on the knowledge gained during the past three years of back-breaking work on the part of our MSC people and those of our Government and industrial associates. It is founded on the knowledge gained from our early penetrations into space, the spacecraft, and man's ability to perform in the space environment.

We are now about to enter into a year during which we will begin to reap the fruits of past hard work. We will start the year with manned orbital flights of one, two or three orbits; graduate to 18-orbital missions; and by year's end much progress will have been made on Gemini and the Apollo programs.

We have taken necessary precautions in the past to guarantee that the program of Manned Spececraft Center should proceed in an orderly manner—that it should proceed on the basis of facts learned through the tests determined necessary by our scientists and engineers. It is a certainity that all facets of the program will continue to evolve in this way.

During the latter part of 1961 MSC began a recruitment program which will be continued. Through this program we will add many new people to our rolls—people vitally needed to support the growing scope of our future activities. As in the past, volunteers for this program will be closely screened in order that we may continue to have a top-flight team to lead us to success in our ultimate current goal—landing a man on the moon and returning him during this decade.

Many of our activities during this year will be centered around the new home of MSC in the Houston area. Personnel are rapidly accomplishing their move to that area and, although our activities may appear to be more decentralized for a time, careful thought has been given to insure that this move and its accompanying problems will in no way deter the overall goal.

Personnel of MSC can feel rightly proud of the part they are playing in this history making organization. While we need astronauts, engineers, and scientists, our end success will depend on the contributions of all of our people—many in supporting roles—unsung but essential.

We look to '62 with the confidence developed by successful, productive hard work.

On The Lighter Side

The CENTURY 21 EXPOSITION, scheduled to be held at Seattle, Washington, April 21-October 21 will attract a lot of national and international attention.

Miller Dairy Farms, with home offices at Eaton Rapids, Michigan has already forwarded a mailing piece which presents "The Universe's First 21st CENTURY INTERPLANETARY SPACE AGE MENU."

Featured on the menu are Miller's Translunar-Terrestral Suggestions such as 21st Century Sundaes and Sodas, Double Fission Cryogenic Floats for 30 cents (smaller size 20-cent floats are offered for tiny Venitians of Venus and timid earthlings); Miller's Prodigious Astronomical Sundaes such as the Spacenik Sundae, Old-Fashioned Satellite de Cape Canaveral, Saturn Sadie, and Miss Celestial. Perhaps the most unusual of these is the latter—composed of two dips of blueberry ice cream, marshmallow, crushed nuts, whipped cream and a cherry—billed as an interstellar delight!

Their Solarsonic Grill offers the Sandwich of the Century—The TRANQIL-ENERGIZED LUNAR HI-LO-PRO (Old fashioned ham salad and melted cheese, buttered and grilled). This special is also offered at Miller Space Station Stores.

The big special advertised is MILLER'S JUPITERBURGER, formerly the Texasburger but now renamed after the largest planet in the universe.

The advertisements on the back of the menu have some unusual bargains too.

If you need a baby sitter, handyman, fishing companion, or new sales manager you are invited to call BERTZ Rent-A-Robot Service, in business since 1997. All Bertz Robots have the latest Gestinghouse Ultrasonic Computors.

Happy Harry's Used Space Car Bargains include a 1999 model space jeep, A-1 shape, with rebuilt Dynasonic Reactor; a Corvalcon Aerocar—like new, owned by elderly couple, built-in ice cream bar; and for the Antique Collector—a 1973 Chevy-Rambler and a 1971 Lightning Bird, both real old-timers. Your credit is good at Harry's and you pay no money down with the first payment due in 24 months—take up to 16 years to pay—but please bring the children as they must also sign the contract.

The R. C. W. Corporation of the World claims they can save you costly visits to your psychiatrist. If you are nervous, tense and irritable you need a new R. C. W. PSYCHO-UNIGRAFT-ANALYST in your home—portable or built-in—slightly extra for models with marriage conucilor units.

EDITORIAL EXCERPTS

WHY GO TO THE MOON?

by: Edwin Diamond
Space and Atom Editor
Newsweek Magazine

At this moment in Washington, and no doubt, in Moscow, blueprints have been drawn up for the most ambitious single endeavor in human history: The exploration of the moon. In aspiration, it surpasses the adventurous odyssey of Columbus. In size, it dwarfs the wartime enterprise that produced the atomic bomb. The A-project cost $1 million a day over four years. The U.S. lunar project will spend $10 million a day—over the next decade.

Outside the technical community, however, there is little appreciation of the grandeur of this program. Only children and science writers appear enthusiastic, perhaps because their taxes are minimal. Taxpayers—58 per cent in a Gallup survey—still ask: Is this trip necessary? And while others accept the space age, they usually do so for the wrong reasons.

The United States, and I would guess the Soviet Union, are not going to the moon for reasons of military superiority. It is much easier to send a hydrogen warhead 5,000 miles across the ocean than it is to hurl one 230,000 miles through space. The drive is not for economic or scientific reasons, even though there are valuable mineral resources and geologic treasures to be mined on the moon. Nor is it all a big moondoggle, intended to provide status for a scientific caste like the Egyptian priests who presided at the ancient pyramids. Finally, the U.S. has not committed itself to the exploration of the moon in order to beat the Russians there. We have no guarantee that we will be first. In fact, it is certain that in the next year or two we will continue to trail behind Red man-in-space achievements.

While all these factors play some part in the thrust to the moon, the pre-eminent reason why the U.S. is going is that, stated in the simplest of terms, we must do so to remain a first-class nation. And precisely because the program is a matter of national pride, there is good reason to believe the U.S. can be first—despite the Soviet lead.

What happened in the wake of the sputnik challenge was simply this: The U.S. went into orbit. Social values, the schools, the governmental structure were subjected to scrutiny; the issues, if indeed not the outcome, of the 1960 Presidential campaign and election were sharply defined. The U.S. has successfully put up 62 satellites compared with thirteen for the Russians. An now this great nation is committed to going to the moon.

What if we hadn't responded? One scientist says: "We'd be four years closer to becoming a second-rate nation."

Many, of course, would question this statement. They hold that the U.S. can find other worthy challenges to meet here on earth. Most Americans, nuclear physicist Alvin Weinberg says, would rather belong to the society that first gave the world a cure for cancer than to the society that put the first astronaut on Mars. One reply is that the exploration of the moon—as well as the conquest of disease, amelioration of poverty, and all the goals science now makes possible—is a challenge worthy of a prideful, humane, adventurous nation.

MSC PERSONALITY

Dr. Stanley C. White Is Chief Of MSC's Life Systems Division

Dr. Stanley C. White of Lebanon, Ohio, is the Chief of the National Aeronautics and Space Administration's Life Systems Division for MSC.

A specialist in aviation medicine, Dr. White is best known for contributions leading to the development of life-support systems for Project Mercury, the NASA's effort to successfully launch and recover a manned orbital spacecraft.

STANLEY C. WHITE

Dr. White and his staff are responsible for the development, testing, and flight of the Project Mercury environmental system, acceleration couch and restraint system, full-pressure suit system, emergency survival gear, panel and calibration station layout for manned space flight.

In 1960, for his achievements in these and related projects, Dr. White received the Melbourne W. Boynton Award for Space Medicine Research. He is the author of numerous technical papers which explore, in depth, the many problems man may encounter in his flights beyond the Earth's atmosphere. In 1961, Dr. White received the Louis G. Bauer Founders Award from the Aero-Space Medical Association for his efforts in bringing together the total medical, human engineering and man-support system efforts in Project Mercury.

Dr. White is a member of the American Rocket Society, the Aero-Space Medical Association, the American College of Preventive Medicine, the American Medical Association, and the Association of Military Surgeons.

In 1943, he graduated from the Mason Village School, Mason, Ohio, and later attended Miami (Ohio) University, where he took his AB degree. Subsequently he studied at the University of Cincinnati College of Medicine, where he received his MD degree, and Johns Hopkins University School of Public Health and Hygiene, where he received a master's degree in Public Health.

Dr. White received the rating of flight surgeon following training at the USAF School of Aviation Medicine in 1952. The following year he undertook post-graduate training in Preventive Medicine at Johns Hopkins.

In 1953, he entred residency training at Headquarters Tactical Air Command Surgeon's Office at Langley Field, Virginia. Following a one-year assignment at TAC Headquarters, Dr. White moved to a two-year assignment as Chief of the Respiration Section, Physiology Branch, Aero-Medical Laboratory, Wright-Patterson Air Force Base, Ohio. His broad certification in Preventive Medicine (Aviation Medicine Section) was granted in 1956. At Wright-Patterson, Dr. White took an active part in the development of altitude protective suits, oxygen requirement for man at both low and high altitudes, equipment for man's support in a closed environment as seen on space flight vehicles, and criteria for the selection of crewmen for rocket flights.

Dr. White was transferred, on detached duty, to the National Aeronautics and Space Administration's Space Task Group at Langley in October of 1958.

He is married to the former Miss Helene Rae Ross of Lebanon, Ohio. The couple has four sons: Stephen, Stanley II, Scott and Stuart.

WELCOME ABOARD

During the period December 18 through January 2, 30 additional people joined the MSC staff.

ENGINEERING DIVISION: Norman R. Schulze.

RELIABILITY AND FLIGHT SAFETY OFFICE: Harvey L. Curlee, Jr.

PERSONNEL OFFICE: Shirlene Valigura and Bernice P. Slaughter.

SUPPLY OFFICE: Walter C. Brewer and Cecil J. Raines, Jr.

FLIGHT OPERATIONS DIVISION: William O. Armstrong and Edgar C. Lineberry, Jr.

PRE-FLIGHT OPERATIONS: Thomas A. Wright.

FLIGHT SYSTEMS DIVISION: Joseph N. Kotanchik, William G. Dean, Jr., Carlton L. Creech, and Ulys E. Ward, Jr.

TECHNICAL SERVICES: Gordon B. Ferrall

DIGITAL COMPUTER GROUP: Mitchell P. Rubin

CONSTRUCTION OFFICE: Ralph C. Workman

ADMINISTRATIVE SERVICES: Edith J. Winsett

PUBLIC AFFAIRS OFFICE: Andrew R. Patnesky

LIFE SYSTEMS DIVISION: Richard E. Mayo, Ernest P. McCutcheon, and Larry E. Bell.

TRANSPORTATION: Geraldyne L. Lawrence

BUDGET AND FINANCE OFFICE: Judith C. Guy

STENOGRAPHIC SEVICES: Helen V. Patterson, Inez L. Brazil, Elizabeth H. McVickers, and Mamie S. Hall

PROCUREMENT AND SUPPLY: Nancy B. Gray, Richard D. Stewart, and Ruth D. Alexander.

APOLLO SPACECRAFT
CIRCUMLUNAR CONFIGURATION

COMMAND MODULE:
- MISSION CONTROL
- CREW QUARTERS
- LIFE SUPPORT
- RE-ENTRY

SERVICE MODULE:
- MIDCOURSE CORRECTIONS
- ABORT PROPULSION
- ELECTRIC POWER
- EXPENDABLE SUPPLIES

- GUIDANCE & NAVIGATION
- LUNAR RECONNAISSANCE
- HIGH SPEED RE-ENTRY & RECOVERY

Medical Monitors

(*Continued from page 1*)

USN Research Institute, Bethesda, Md.; and Squadron Leader Warren J. Bishop (RAAF), Commanding Office of the Royal Australian Air Force School of Aviation Medicine, Pt. Cook, Victoria, Australia.

WOOMERA, AUSTRALIA — Lt. Col. Edwin L. Overholt (USA), Department of Medicine, Walter Reed Army Hospital, Washington, D. C.; and Dr. John C. Lane, Director of Aviation Medicine, Department of Civil Aviation, Melbourne, Victoria, Australia.

CANTON ISLAND—Maj. Fritz M. G. Holstrom (USAF), Chief, Aeromedical Indoctrination Division, U. S. School of Aviation Medicine, Brooke AFB, Tex.; and Capt. Duane Graveline (USAF), Aerospace Medical Laboratory, Wright-Patterson AFB, Ohio.

HAWAII—Maj. Robert H. Moser (USA), Department of Medicine, Trippler Army Hospital, Honolulu, Hawaii; and Maj. William H. Hall, Chief of Reval Branch, Surgical Research Unit, Fort Sam Houston, Tex.

POINT ARGUELO, CALIF.—Maj. Harry Bratt (USAF), Human Factors Division, Edwards AFB, Calif.; and Capt. Carl E. Pruett (USN), Bio-Science Office, Pacific Missile Range, Point Magu, Calif.

GUAYMAS, MEXICO — Dr. Thomas R. A. Davis, Director of Environmental Medicine Division, US Army Medical Research Laboratory, Natick, Mass.; and Dr. William Turner, Manned Space Operations, NASA Headquarters.

TEXAS—Maj. George B. Smith, Jr. (USAF), US Air Force School of Aviation Medicine(to join the MSC staff and report to Houston this month); and Capt. Richard D. Hansen (USAF), 32d USAF Hospital, Minot AFB, N. D.

This experienced team of medical monitors received a two-weeks training course at Cape Canaveral and Langley AFB in May 1960 and additional training at Langley in December of that year.

Since that time they have received periodic training at Langley, working with astronauts and other tracking station personnel in order to more effectively operate as a team.

Flight Controllers Are Briefed And MA-6 Assignments Listed

An updating briefing for Flight Controllers was held at MSC Headquarters last week in perparation for the Mercury-Atlas 6 flight. The meeting was attended by MSC personnel, representatives from Goddard Space Flight Center, and DOD representatives from Patrick AFB.

Included on the agenda were the Mission Review, Changes to Mission Rules, the Flight Plan, Communications, the Environmental Systems, Capsule Systems, Documentation Procedures Changes, Net Status, Publicity, and Administrative and Travel Problems.

Flight Controller assignments for MA-6 are as follows.

CAPE CANAVERAL: Chris Kraft, Tecwyn Roberts, Carl Huss, Eugene Kranz, William Scallion, Richard Hoover, John Koslosky, Richard Koos, and Harold Miller, all of the Flight Operations; Astronauts John Glenn, M. Scott Carpenter, and Alan B. Shepard; Donald Arabian and Walter Kapryan, Engineering Division; Morton Schler, Life Systems; and R. Cross and H. Stenfors, both of Philco.

BERMUDA: John Hodge, Glenn Lunney, and Frank Simonski, all of Flight Operations; Astronaut Virgil I. Grissom; Donald Hughes of Life Systems; and J. Temberlin and J. Strickland of Philco.

ATLANTIC SHIP: James Prim of Flight Operations and L. DeLuca, Philco.

CANARY ISLAND: John Llewellyn, Flight Systems, and M. Rosenbluth, Philco.

KANO, NIGERIA: Eugene Duret, Flight Systems, and C. Rumbaugh, Philco.

ZANZIBAR: John Langford, Flight Systems, and R. Rembert, Philco.

INDIAN OCEAN SHIP: David Beckman, Flight Operations, and H. Hopp, Philco.

MUCHEA, AUSTRALIA: Astronaut Gordon Cooper, Stanley Faber, Flight Operations, and L. White, Philco.

WOOMERA, AUSTRALIA: Frank Volpe, Flight Systems, and W. Wafford, Philco.

CANTON ISLAND: Rodney Higgins, Flight Operations, and W. Huber.

HAWAII: Robert Ernull and Charles Olasky, Flight Operations, and J. Longan, Philco.

CALIFORNIA: Astronaut Walter Schirra, Arnold Aldrich, Flight Operations, and T. White, Philco.

GUAYMAS, MEXICO: Thomas Moore, Flight Systems; Paul Brumberg, Flight Operations; and D. Hunter, Philco.

TEXAS: George Guthrie, Flight Systems, and A. Barker, Philco.

Helmut Kuehnel, Flight Operations, will be assigned to relay aircraft.

The entire group of medical monitors were at Langley December 6-9 for a de-briefing on the MA-5 flight and for simulation missions for the MA-6 flight.

Personal Property Laws Are Cited

Personal property—automobiles, TV's, other electrical appliances, furniture, etc.—purchased on a deferred payment plan are generally covered by a chattel mortgage or conditional bill of sale. Generally the chattel mortgage applies to automobiles and the conditional bill of sale to all other personal property. Conditional bills of sale generally provide that purchaser is not authorized to move the property without permission of the seller.

It is therefore recommended that all MSC personnel contact the seller, bank, or finance company to which payments are made and obtain written permission to move such personal property to Texas.

In the situations involving a chattel mortgage on an automobile, a car cannot be registered in Texas without a certificate of title which is generally not available until the debt secured by the chattel mortgage is paid.

Houston Move Is Progressing

(*Continued from page 1*)

Francis W. Casey, Jr., Benjamin Chereek, Ewald R. Diemer, Ralph E. Graham, John P. Hughey, Jr., Paul F. Horsman, Earl W. Hicks, Carl Keppler, III, Curtis LeBlanc, Kenneth L. Lindsay, Orval P. Littleton, Jr., Samuel P. Miller, William C. Moseley, Jr., Ellsworth Phelps, Jr., Curtis K. Riddick, Richard J. Sachen, Charles S. Schneider, Rexford H. Talbert, Jimmy W. Usry, Hugh D. White, Jr., Francis E. Barry, E. John Brock, Jr., David Brown, Thomas J. Dunn, Robert F. Fletcher, Witalij Karakulke, Daniel L. Knight, Robert M. Mason, Thomas G. Price, C. Howard Robins, Jr., Wililam F. Rogers, Marie M. Seals, Paul R. Spencer, Edward E. Shumilak, John W. Small, Jr., Robert K. Stanwood, Anne F. Wilson, and Claude M. Wooten, Jr.

APOLLO PROJECTS OFFICE: J. Thomas Markley, Raymond R. Clemence, Ausley B. Carraway, Jr., and William Dean.

LIFE SYSTEMS DIVISION: Virginia B. Hughes, Charles C. Lutz, Harold J. McMann, Jr., Emory J. Meeks, and Joseph J. Kosmo.

PROCUREMENT AND SUPPLY OFFICE: James W. Epperly, James M. Hollis, Pinkney P. McGathy, Billy D. Bennett, Leslie E. Hayes, James L. Neal, and Joseph L. Superka.

FINANCIAL MANAGEMENT OFFICE: Neisel M. Hayes, Vivian G. Walker, Russell C. Connelly, Sally J. Yschek, and Harriet E. Lathe.

DIGITAL COMPUTER Group: James L. Long, and Thomas H. Kent, Jr.

TECHNICAL SERVICES: Norwood J. Smith, and Frederick E. Stockum.

ADMINISTRATIVE SERVICES: John J. Thiel, and Ellsworth G. Lathe.

PERSONNEL OFFICE: Henry M. Hughes.

SECURITY OFFICE: Joe M. Pirtle.

FLIGHT OPERATIONS DIVISION: James F. Dalby.

Automobile Liability Insurance Policies, Practices Are Discussed

Questions have arisen regarding the liability of NASA employees operating private or Government-owned motor vehicles in connection with their work for NASA. Each operator should be familiar with State and local regulations, accident reporting requirements, and should understand the functioning of a motor vehicle sufficiently to recognize and prevent vehicle abuse. There are additional requirements for the issuance of U.S. Government Motor Vehicle Operator's Identification Card.

For personal protection, it seems desirable for Government employees who drive vehicles during the course of employment to obtain asurance from their insurers that such use is covered. For any who drive their own cars for such purpose, an additional insurance premimum to include use of the vehicle for business purposes does not appear prohibitive in light of the risks assumed.

Those who own a car but drive Government vehicles may wish to consider "extended non-owned automobile" or "drive other automobile" type insurance policies where the premium rate is reasonable. The Government cannot assume either type of insurance. An employee not carrying insurance on a private vehicle may find it difficult if not impossible to secure annual liability insurance for his use of his employer's car.

The possible needs for insurance referred to above occur because an injured third party may decide to sue the individual employee due to his negligence, even through the Government also could be sued. This situation changes late in March, 1962, when a new law becomes effective, dealing with the defense of suits against Federal employees arising out of their operation of motor vehicles in the scope of their employment. The new law is designed to make a suit against the United States the exclusive remedy of the third party in such cases. Procedures under it are to be announced later by the Department of Justice.

Under present law, the Department of Justice usually defends Government employees in most of the civil suit situations, where the amount of damages involved is substantial and the Government's interests may be materially affected unless it does so. This does not include minor traffic violations or other relatively trivial matters, which may be brought in state or local courts. Minor civil claims against the Government are frequently settled through the administrative procedures available, without litigation. When any important incident involves the Government, the Office of General Counsel, NASA Headquarters, is contacted.

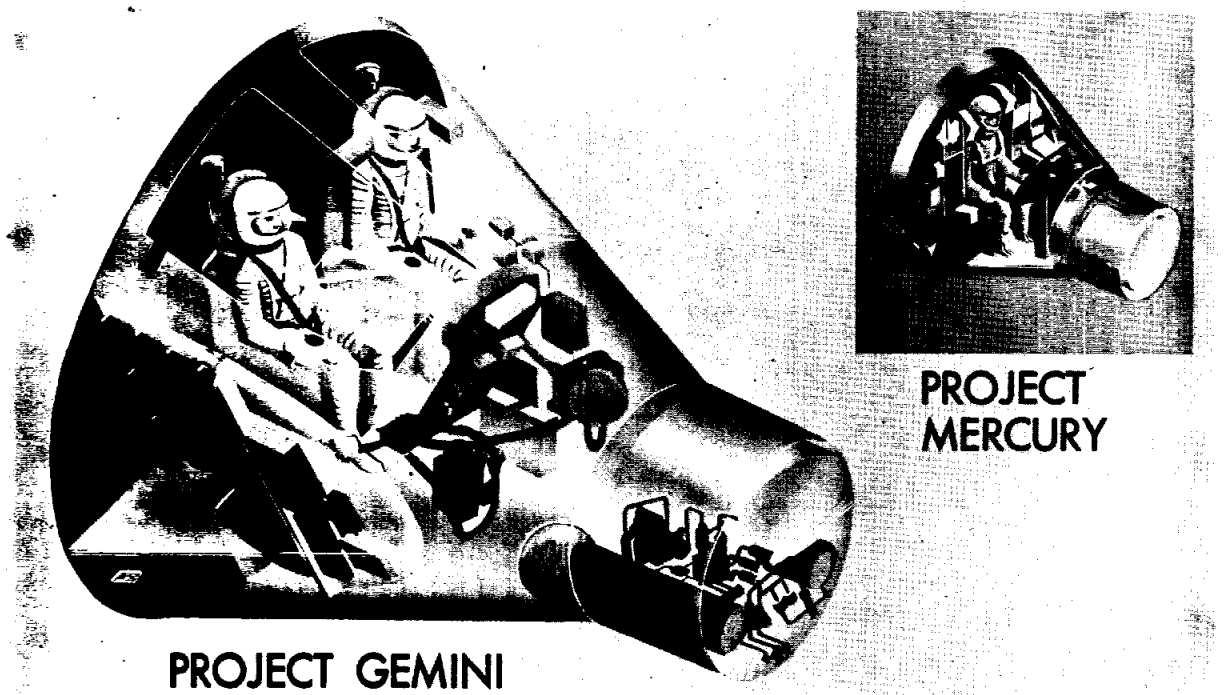
Government employees injured on the job, of course, have recourse to the Federal Employees Compensation Act.

Under both present law and the new law, a most important circumstance to preclude responsibility by the Government would be that the act of the employee is not within the scope of his employment. Ordinarily, of course, an employer is not responsible for conduct of employees when on personal trips and the same is likely to apply if an employee, even when operating a Government vehicle, deviates from the trip for purposes of his own.

Driver's Handbooks of the State of Texas have been made available at the Relocation Information Center. In Houston or elsewhere, local traffic rules should also be carefully observed.

In connection with rental vehicles, informal information from a national car rental firm indicates that with some of these firms the regular rental of an automobile covers the renting driver with approximately $100,000 and $300,000 third party bodily injury liability insurance, $25,000 third party property damage and with one hundred dollar deductible collision insurance. Also, complete collision coverage is available for an additional fee of $1 per day or $5 per week. While large rental firms may have similar insurance provisions, this matter should be verified at time of rental. The $1.00 fee will not be reimbursed by the Government.

COMPARISON OF MANNED SPACECRAFT



MSC's Two-Man Spacecraft Project To Be Called Gemini

The two-man spacecraft program of Manned Spacecraft Center was officially designated as Project Gemini last week in Washington, named for the twin stars, Castor and Pollux. The spacecraft, to be built by the McDonnell Aircraft Corporation, will have approximately 50 per cent more volume than the Project Mercury spacecraft and weigh two to three times as much. James Chamberlin has been designated Gemini Project Manager for Manned Spacecraft Center. Jerome B. Hammack is acting Project Engineer for the preliminary planning phase.

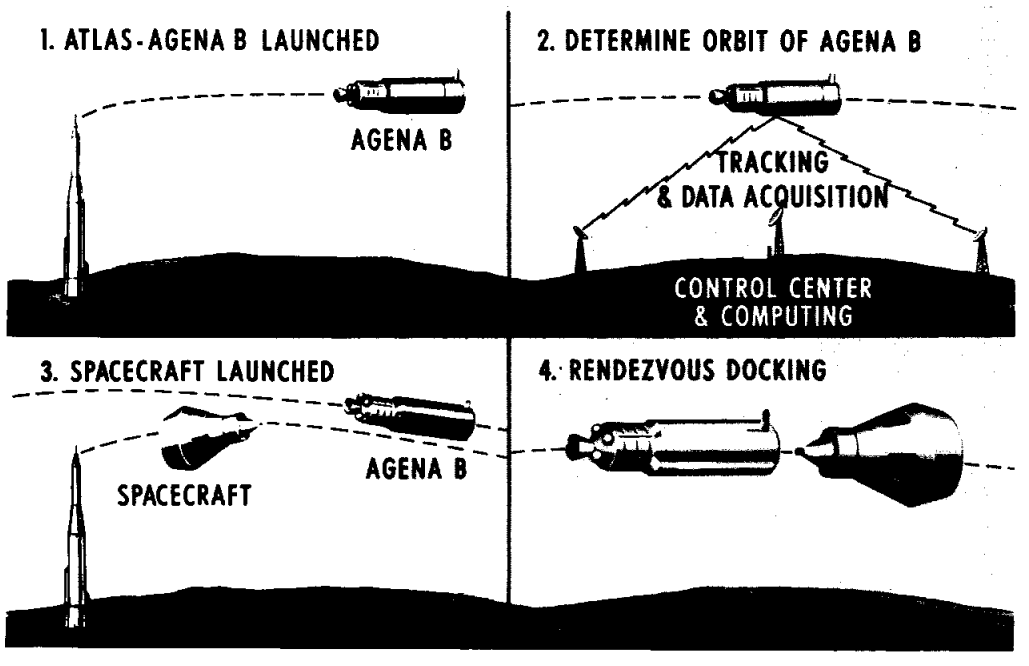
Hammack said the the primary purposes of the project now are to develop and to demonstrate the feasibility of the rendezvous technique at the earliest practicable date. He pointed out that much theoretical study has been made on the rendezvous technique at the Langley Research Center during the past several years and that Manned Spacecraft Center engineers will take full advantage of LRC's theoretical and research work.

Ultimately, after experimental work is completed, the Geminii spacecraft will be used to further develop space rendezvous techniques and for extended earth orbit missions lasting a week or more.

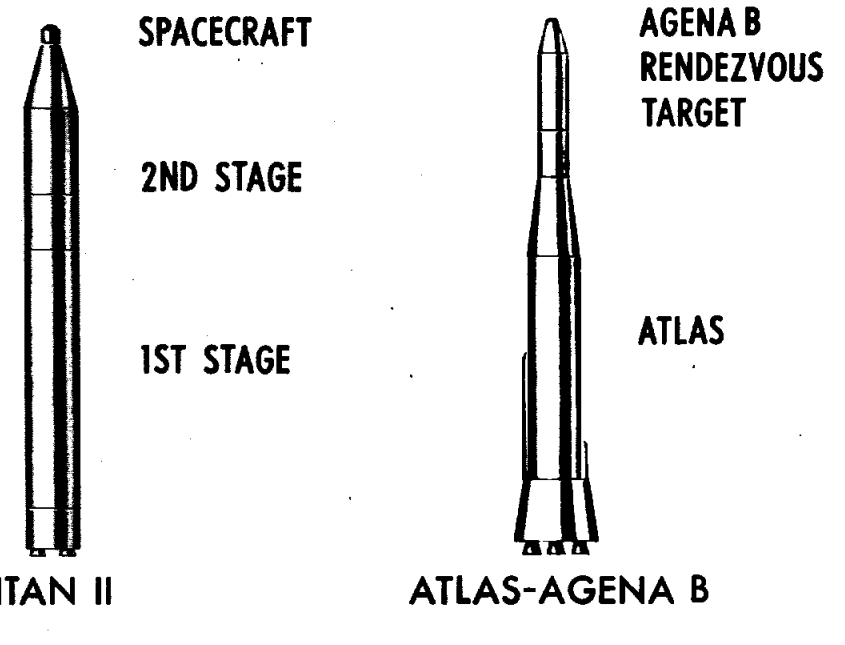
It is planned that the two-man spacecraft will utilize a parawing device for earth landings and that the craft will make its return to earth in the same general pattern as the conventional aircraft, rather than being returned by parachute as is the Mercury spacecraft. Innovations to be used in the Gemini spacecraft will include docking equipment to aid the two men to dock on the target, the use of either solar cells or fuel cells for power, a translational jet engine for terminal and docking phases, and the craft will be designed to accentuate a simple and direct checkout procedure which will drastically cut down the long count-down procedures used in the Mercury program. Hammack explained that this will be necessary because of the close schedule which must be followed in order to successfully complete the rendezvous mission.

Current plans call for the Atlas-Agena B to launch the Agena B Rendezvous target into orbit and the spacecraft will be launched into the same orbital path the following day by the Titan II launch vehicle. Adjustments as to orbital path will be made by control from the earth as far the Agena Target is concerned and similar adjustments will be made by the spacecraft, either manually or by earth-control in order to successfully complete the rendezvous.

PROJECT GEMINI
FLIGHT MISSION



PROJECT GEMINI
LAUNCH VEHICLES



Space News ROUNDUP!

SECOND FRONT PAGE

Grissom Named by Jaycees To Outstanding Young Men List

Astronaut Virgil I. "Gus" Grissom was signally honored December 31 when he was named as one of America's Ten Outstanding Young Men of 1961 by the U. S. Junior Chamber of Commerce. Grissom was chosen from among thousands of nominees submitted by Jaycee organizations throughout the country. The Hampton Roads Junior Chamber of Commerce submitted his name soon after he made his 15-minute penetration into space aboard the "Liberty Bell 7" Mercury spacecraft on July 21.

The U. S. Junior Chamber of Commerce instituted the "America's Top Ten Young Men" program in 1938, and has conducted it annually. Its purpose is to honor 10 young men of Jaycee age—21 to 36—whose exceptional achievements exemplify the oportunities available in the free enterprise system.

In announcing the top ten list, Bob Conger, national Jaycee president, cited Grissom and the others as men "who reflect the strength of America in Washington, at Cape Canaveral and on every main street from coast to coast."

In addition to Grissom others named to the current list were Dr. Harold Brown, Director of Defense Research and Engineering; John Diebold, president of Diebold Group, Inc., international network of management consultant firms; Gov. F. Ray Kyser, Jr., of Vermont; Dr. A. Edward Lilley, Director of the Agassiz Station Radio Astronomy Facility, Harvard University; Newton M. Minow, Chairman of the Federal Communications Commission; Peter G. Peterson, President of Bell and Howell Co.

Also Dr. David E. Rogers, head of the Department of Medicine, Vanderbilt University; Theodore C. Sorensen, Special Counsel to the President; and Dr. Stanley G. Sturges, Banepa, Nepal, Director of the Himalayan Medical Mission, only doctor to 500,000 Nepalese as a medical missionary.

The Jaycees plan to honor the 10 men at an awards congress in Santa Monica, Calif., January 19-20.

Judges for the contest included atomic scientist Dr. Edward Teller, UCLA Chancellor Dr. Franklin Murphy, Red Cross President General Alfred M. Gruenther, clergyman Dr. Norman Vincent Peale, BBD&O President Charles H. Brower and *Look* Magazine President Gardner Cowles.

Past winners include such well-known men as John F. Kennedy, Richard M. Nixon, Dr. Thomas Dooley and Leonard Bernstein.

Dr. Joseph F. Shea Gets Appointment

Dr. Joseph F. Shea has been appointed Deputy Director for Systems Engineering, Office of Manned Space Flight, NASA Headquarters, Washington. He reported January 2, 1962 to Dr. Brainerd Holmes, NASA's Director of Manned Space Flight.

Dr. Shea comes to NASA from Space Technology Laboratories, Los Angeles, California, where he was Space Program Director.

Born September 5, 1926, in New York City, he attended Dartmouth College, Massachusetts Institute of Technology and the University of Michigan and received a Ph.D. Degree from the latter university.