CONSTRUCTION IN SPACE – A space-suited employee joins two structural beams in the neutralized gravity environment of the Neutral Buoyancy Simulator (water tank) at Marshall Space Flight Center, Ala. The first in a series of large space structure testing activities, the task is typical of basic construction tasks required to assemble structural beams in space.

Two JSC employees receive high awards

Two JSC employees have each received the Exceptional Service Medal, one of NASA's highest awards, for their contributions to the successful Viking program. Recognized for their efforts were Robert R. Frazer, JSC-Palmdale (Calif.) operations manager, and Scott H. Simpkinson, flight safety manager for the Space Shuttle Program.

Frazer was cited “for his outstanding contribution to the conduct of the Viking Landers integrated test program. His experience and professional skills were essential to the eventual success of Viking’s exploration of Mars.”

Simpkinson received the award “in recognition of dedicated leadership as chairman of the Viking Special Critical Design Review Team which contributed significantly to the success of the Viking spacecraft.”

Simpkinson was presented his medal in ceremonies April 19 at Langley Research Center, Va., lead center for Viking. Frazer received his award by mail in Palmdale.

Astronauts Karl G. Henize and Robert A. Parker will be mission specialist and backup mission specialist, respectively, on a 10-day simulation of a Spacelab mission to be conducted by NASA and the European Space Agency (ESA). The simulation, to be held at Ames Research Center, Mountain View, Calif., will use an aircraft packed with Spacelab-type hardware and experiments and a mobile van to provide living quarters to permit isolating the crew as they would be on a space mission.

Called ASSESS II (Airborne Science/Spacelab Experiment System Simulation), the mission will involve four payload specialists from ESA and two from NASA in addition to the mission specialist. The crew will be constrained to the aircraft and the van for the 10-day period. As mission specialist for the simulation, Henize will control and monitor aircraft (spacescraft) experiment support systems, manage Spacelab activities of the payload specialists and provide interface between payload specialists and the Galileo II, a converted Convair 990 four-jet transport on which ASSESS II will be flown. It begins May 16. ASSESS II will test techniques and modes of operation which will be applied to Spacelab, a space laboratory being developed by ESA in a cooperative program with NASA.

Objectives of the simulation, in addition to obtaining basic scientific information, include evaluation of management of payload and mission operations to develop low cost concepts for Spacelab, studies of interactions between experiment operators (payload specialists) in Spacelab and principal investigators on the ground and development of minimum training requirements for Spacelab participants in carrying out experiment operations.

A further objective is to evaluate a plan to include use of principal investigators as payload specialists. The Galileo II will make six-hour flights on each of the 10 days of the simulation and the payload and mission specialists will remain confined throughout the 10-day period to work on the experiment payload and sleep in adjacent living quarters.

Six simulated Spacelab missions of the mission support program began in 1972 – each mission designed to evaluate potential Shuttle/Spacelab concepts in increasing detail. ASSESS II is the second mission to use the Galileo flying laboratory. The first, ASSESS I, was conducted jointly with ESA in June, 1975, and involved five data flights over a six-day confinement period. ASSESS II is a joint effort by NASA and ESA. Of the 10 instrument packages, five are furnished by ESA and five are furnished by NASA. The experiments are generally in the fields of Earth resources, atmospheric pollution monitoring and infrared astronomy.

NASA has designated Robert T. Menzies and David S. Billiu, both of the Jet Propulsion Laboratory, Pasadena, Calif., as prime payload specialists. Leon B. Weaver of Marshall is backup.

ESA has selected Claude Nicollier of Switzerland, Jurgen Fein and Klaus Krampe of Germany and Michael Taylor of England as payload specialists.

The mission will be completed May 26. On May 30, the aircraft will be flown to Paris where it will be cataloged as configured for the ASSESS mission at the Paris Air Show.

Sadie Hawkins’ Day Picnic slated May 7

Dogpawatch comes to JSC Saturday, May 7, with the Sadie Hawkins’ Day Picnic at the Gilruth Recreation Center.

A highlight of the EAA-sponsored event should be the Li’l Abner and Daisy Mae look-alike contest for which prizes will be awarded.

The picnic offers something for everyone. There are carnival rides, arts and crafts displays, bingo, egg toss, log pull and for the kids, a bubble gum contest.

There’s the dunk tank, a band called “Steamboat Willie,” special performing groups and more.

With a $1 general admission ticket you get all that plus popcorn, cotton candy, soft drinks and beer. If that’s not enough for you, buy the $3 ticket and you’ll get a barbecue plate along with every- thing else.

Buses will be running between the parking areas and the picnic site from 10:30 a.m. to 6 p.m.

The picnic begins at 11 a.m. and ends at 5 p.m. The barbecue meal will be served from noon to 3 p.m.

To reserve barbecue plates, you’ll need to get your tickets early. They are available from your EAA representative or at the Bldg. 11 Exchange Store.

Astronaut Henize to fly May 16 on airborne Spacelab simulation

Out in West Texas, where there is nothing but "miles and miles of miles and miles," physicians and nurses have better things to do than to figure out how to "patch" an incoming ambulance radio call into a hospital phone system.

Most attempts at wiring together radio and telephone communications between a central hospital and on-scene ambulance paramedics usually resemble yesterday's spaghetti.

Communications and biomedical engineers at JSC have designed and built a prototype emergency service communications console that can be exhibited at a Spacelab exhibition.

The hospital is one of several medical facilities in the Permian Basin Emergency Medical System, an automatic dialer for special care centers and other facilities in the Permian Basin network, incoming or outgoing electrocardiographic data for cardiology displays and strip recorders between hospitals and a hospital intercom terminal.

After several months of field testing in the Odessa Hospital, NASA engineers will make whatever design changes are needed to the console.

Complete sets of design and manufacturing drawings for the console are expected to be available to EME organizations by May 30, 1977 from the Technology Utilization Office, NASA Johnson Space Center, Houston, Texas 77018.

EME groups would then contract locally for construction of consoles fitting their specific needs.

NASA engineers build radio unit to aid hospital communications

Frazer was cited "for his outstanding contribution to the conduct of the Viking Lander integrated test program. His experience and the medical "control center" for the 17-county system.

The communications console, scarcely larger than an electronic typewriter, was built from commercially-available components and includes all emergency medical system (EMS) communications functions that are needed for a regional hospital.

In the radio section of the console, easy-to-operate controls allow a physician or nurse to contact local or regional ambulance drivers and paramedics, contact other hospitals, receive incoming electrocardiograms, set up a radio-to-telephone patch and page hospital staff members.

The telephone system includes a hotline from the Emergency Medical System’s resource control center.

Two JSC employees receive high awards
Center presents cash awards

Suggestors, inventors writers split $2,721

Twenty JSC employees and retirees shared $2,721 in cash awards presented April 15 in recognition of their outstanding suggestions, inventions or tech briefs.

Charles J. Bauer Jr. of the Public Affairs Office received $616 for his suggestion that public information documents be mailed third class instead of first class. The change is estimated to have saved the center $8,800 per year.

Judith S. Alexander of the Institutional Data Systems Division was given $560 for her suggestion of an information retrieval program which decodes and explains error messages to the terminal user of the Exec-8 computer and significantly reduces time required to resolve error problems.

JSC picks Pan Am for contract

JSC has selected Pan American World Airways, Inc. Space Services Division of Cocoa Beach, Fla., for negotiations leading to award of a contract for maintenance and operations support services at the center.

The contract will cover maintenance and operation of utility systems such as water and cooking, electrical power, potable water and waste disposal; maintenance of buildings, roads, parking lots and drainage ditches; and maintenance of JSC-occupied buildings and utility systems at nearby Ellington AFB. Special-purpose equipment maintenance such as laboratory test, machine shop, photographic processing, cafeteria, printing and reproduction, and elevators and facility emergency and disaster planning.

Pan American's proposed estimate cost of the initial one-year contract starting May 1, 1977, is $7,495,000. Two additional one-year extensions are expected to be negotiated.

Applicants total 2,313

The Astronaut Candidate Program Office reported April 18 that 2,313 applications have been received for civil servant pilot and mission specialist candidate positions. Of those, 298 were from women.

Of a total 15,574 applications and announcements mailed out by request, 241 went to JSC employees.

Civilian applications must be postmarked by June 30, 1977. For information, write the Astronaut Candidate office, Code AXX.

NASA satellite tracks sailboat through famed Bermuda triangle

The value of satellites to search and rescue missions for small craft at sea was recently demonstrated by a retired NASA engineer and a Florida family of three who sailed a 10-meter (33-foot) sailboat 965 kilometers (600 miles) through the "Bermuda Triangle" area.

During the 30-day trip, a satellite provided the general location and course data of the voyagers to engineers at NASA's Goddard Space Flight Center, Greenbelt, Md.

Small or medium-sized craft venturing into the open sea usually must rely on marine radio telephone communications. Such systems are limited to about 40 km (25 mi.) line-of-sight range. Other, longer range voice radio equipment is subject to static and is often unreliable.

The principal experimenter for the satellite search and rescue test is James L. Baker, a retired NASA engineer from Naples, Fla., who has delegated to award of a contract for maintenance and operations support services at the center.

Baker, a retired NASA Nimbus-6 data analyst, worked with marine radio relay and W Bondco, his wife Roz and son Peter as crew.

NASA's Nimbus-6 meteorological research satellite was launched into an orbit which permits "shirtsleeve" conditions to be maintained for a period of about 6 months. The satellite's primary mission is to track the position of the Earth's atmosphere during this period.

NASA has been asked to provide the Nimbus-6 data to Baker for evaluation and to develop a method of identifying the position of the satellite as it passes over a particular location.

Within one hour after the data was received at Goddard, a computer program was run to determine the position of the satellite.

About 40 per cent of the satellite positions, as derived from the satellite data, were within 1.8 km (1 mile) of the true positions. The overall accuracy of the derived positions was within 4.8 km (3 mi.).

From its Earth polar orbit, the Nimbus-6 was able to track the sailboat for about three and a half hours around local noon and another similar period of time around local midnight each day.

As a test of the method, Baker evaluated the distress alert system which was connected to the onboard transmitter. Simulated distress messages, craft identification and weather alerting conditions were relayed successfully via the satellite to Goddard with this data.

The pushbutton unit, developed by Baker under contract to Goddard, is designed to repeat its distress message automatically once energized. Thus, a crew confronted with a genuine emergency could initiate the distress message and then turn its attention to meeting the emergency.

Due to the compactness and light weight of the transmitter, its battery and antenna, and the push-button unit, the entire system could be transferred quickly to a lifeboat if necessary.

Baker coordinated the experiment with Goddard through NASA communications research satellite, the Applications Technology Satellite-1 (ATS-1).

"It was a comfortable feeling for us to know that Goddard had our position and our general direction and cruising conditions, particularly since we were in the notorious Bermuda Triangle where many craft have disappeared," Baker said after the voyage.

Aaron Cohen chosen group's Boss of Year

Aaron Cohen, manager of the Orbiter Project, was named 1977 Boss of the Year by the Clear Lake Area Chapter of the American Business Women's Association. Cohen was recognized by his wife, Ruth, right, and revered Susan Gregory, standing left. The awards banquet was held at the Sheraton King's Inn.

JSC, RS sign contract supplement

JSC has signed a supplemental agreement with Rockwell International Corporation Space Division, Downey, Calif., for additional work on the Space Shuttle Orbiter.

The agreement includes design changes in the Orbiter airlock and utilizes "docking" maneuver of crewmen between the Orbiter and the European-built Spacelab in Orbiter's cargo bay. Rockwell performs the bulk of the Orbiter work at the Downey plant and at field offices in Palmdale, Houston, Florida, and Kennedy Space Center, Fla.

The $3,076,250 supplement brings the estimated value of the Orbiter cost-plus-award-fee contract to approximately $3.04 billion.

ROUNDUP

NASA LYNDON B. JOHNSON SPACE CENTER

The Roundup is a monthly publication of the National Aeronautics and Space Administration Lyndon B. Johnson Space Center, Houston, Texas, and is published every other Friday by the Public Affairs Office for JSC employees.

Editor: Richard Firestone
Photographer: A. "Pat" Patowski

ROUNDUP

Friday, April 29, 1977

TOP ROSS - Orion Project Manager Aaron Cohen receives a plaque naming him 1977 Boss of the Year at the April meeting of the Clear Lake Area Chapter, American Business Women's Association. Cohen is flanked by his wife, Ruth, right, and revered Susan Gregory, standing left. The awards banquet was held at the Sheraton King's Inn.

Assignment

Applicants total 2,313

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Setting it straight

In the front page article on the Nimbus-6 data relayed (Roundup, April 15) the statement was made that the satellite-off configuration of the Orbiter will provide approximately 70-km (44-mile) sighting ratio as with the onileo.

Actually, as was brought to our attention, that should have said one-half the lift-over-drag. It was our mistake.

The Nimbus-6, a communications research satellite, was launched into an orbit which permits "shirtsleeve" conditions to be maintained for a period of about 6 months. The satellite's primary mission is to track the position of the Earth's atmosphere during this period.

NASA has been asked to provide the Nimbus-6 data to Baker under contract to Goddard, is designed to repeat its distress message automatically once energized. Thus, a crew confronted with a genuine emergency could initiate the distress message and then turn its attention to meeting the emergency.

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TICKETS

The following tickets are available at the Bldg. 11 Exchange Store any day through May, which allows day nights. The pool is open from May 9 through July 30.

1. Disney Land Passport, good for admission to the park.
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**Roundup Friday, April 29, 1977**

**AIAA**

A gigantic iceberg nearly the size of Rhode Island is being tracked by satellite during its 2,000-kilometer (1,200-mile) journey along the Antarctic coast toward the open sea east of South America.

The iceberg — one of the largest ever recorded — appears to be temporarily grounded near the tip of the Palmer Peninsula and later is expected to drift slowly out of Antarctic waters toward South America and into the South Atlantic. There, after being exposed to warmer water, it should slowly disintegrate.

Working closely with NASA's Goddard Space Flight Center, Greenbelt, Md., Navy weathermen have been tracking it since 1971, when it broke off from the Princess Martha Coast of Antarctica.

They say it is 74 km (45 mi.) long, 40 km (25 mi.) wide, 230-345 meters (750-1,000 feet) thick and if it could be towed to California, it would supply Los Angeles and the state with enough fresh water to last 1,100 years.

Although the idea of towing icebergs for use in arid regions of the Earth has been discussed often in the past, no one has come up with a practical, economical way of doing it.

The huge iceberg isn't expected to be a serious danger to navigation because it is so large. However, if it does break into smaller chunks as it moves into open water, they too will have to be monitored closely via satellite by U.S. Navy Fleet Weather Facility (FLEWEAFAC) forecasters in Suitland, Md.

FLEWEAFAC has responsibility for weather forecasting and ice field routings in the polar regions for the Department of Defense and other agencies.

Goddard Center helps provide satellite analyses during the six-month polar night using the center's microwave radiometer on board the Nimbus-5 satellite. It not only can "see" through the dark, but through clouds over the ice caps.

Goddard also routinely supplies the atmospheric entry vehicle would be the probe component of NASA's planned Jupiter Orbiter

**NASA has awarded two $350,000 contracts to two industry teams for the development of specifications for a space vehicle to plunge deep into Jupiter's atmosphere.**

McDonnell Douglas Corp., St. Louis, Mo., and the team of Hughes Aircraft Co., El Segundo, Calif., and General Electric Co., Philadelphia, have received parallel contracts for design studies of an entry vehicle which would reach the giant planet in November 1984 and make detailed measurements of its atmosphere and clouds.

The atmospheric entry vehicle would be the probe component of NASA's planned Jupiter Orbiter HL&P official to address AIAA section

The outlook for electrical energy in Houston will be the program topic for the May 10 meeting of the Houston section, American Institute of Aeronautics and Astronautics.

Jim Parsons, manager of public relations for Houston Lighting & Power, will be guest speaker at the meeting to be held at the Gruith Recreational Center.

Social hour begins at 6 p.m., dinner is served at 7 p.m. and the program begins at 8 p.m. A barbeque dinner will be served. Cost is $4.50.

The meeting is open to both members and nonmembers. Make reservations by noon Monday, May 9, by calling Lillian Hudson, X-4991.

**Manage to discuss 747 carrier project**

Shuttle carrier aircraft development and in-flight test flights will be the topic of the May joint meeting of area chapters of the Institute Society of America, Association for Computing Machinery and the Institute of Electrical and Electronics Engineers.

Carl B. Peterson, manager of the Shuttle Carrier Aircraft Project, will be guest speaker at the May 19 luncheon meeting to be held at the Gruith Recreation Center.

**Free BP screening offered**

The American Heart Association recommends that everyone have their blood pressure checked at least once a year.

**Landset** (Earth resources satellite) imagery to FLEWEAFAC Suitland for 100 m (300 ft.) resolution visualization pictures. The National Oceanic and Atmospheric Administration (NOAA) weather satellites provide operational visible and infrared imagery on a year-round basis.

Lt. Cmdr. Tom Nelson of the Fleet Weather Facility says although the "big berg" was first noticed on polar orbiting weather satellite in 1971, inspection of previous pictures found it first showing in March 1967 photographs taken an ice tongue extending out from the Princess Martha coast of Antarctica. Still seen on some maps, but actually no longer there, was broken off the ice shelf either by winds or by collision with another large iceberg.

Over the years during its 2,000km (1,200-mile) journey along the coast, the FLEWEAFAC watched it. In August 1975, it was estimated the Jensen Ice Shelf calving (breaking off) another huge iceberg nearly 22 by 58 km (13 by 36 mi.). This berg is also temporarily grounded and is near James Ross Island, Antarctica.

**NASA awards 2 developmental contracts for probe to explore Jupiter atmosphere**

With Probe (JOP) mission, requested as a new start in space agency's budget for fiscal 1978.

The design studies will continue for 10 months, with a second-phase competition for hardware development planned for the spring of 1978 if Congress approves the project. Total project cost is estimated at $285 million.

The JOP mission offers the first opportunity to make on site as well as remote measurements of the planet, its environment and its satellites from various orbiting positions.

The basic mission as now envisioned will involve probe separation from the orbiter while the two spacecraft travel approximately 55 days away from the planet. The two spacecraft will continue on separate flight paths until the probe enters the jovian atmosphere and relays its data back to Earth via the orbiter.

Subsequent propulsion adjustments of data will be transmitted to the orbiter during the high speed descent.

After termination of the entry probe phase, the orbiter will be inserted into its initial jovian orbit by an onboard retro propulsion system. Subsequent propulsion adjustments will permit the spacecraft to fly close to the jovian moon Ganymede and to make more distant encounters with the other large-Galilean satellites of Jupiter.

A single launch by NASA's Space Shuttle is planned for late 1981 or early 1982, and flight time to Jupiter will be just under three years.

The orbiter will be operated in orbit around Jupiter and near its moons for at least a year.

NASA's Office of Space Science has assigned 30 minutes of the JOP project to the Jet Propulsion Laboratory, Pasadena, Calif. Ames Research Center, Mountain View, Calif., will manage the probe system.