Spacelab simulation ends at JSC, another continues in California

One Spacelab simulation ended at JSC Monday while another was still under way in California.

Three life sciences specialists ended their seven-day ground-based simulation at 1 p.m. Monday. Life Sciences Spacelab Mission Development III (SMD III) was conducted at JSC’s Bioengineering and Test Support Facility.

Dr. William E. Thornton, Carter Alexander and Bill A. Williams lived aboard the high-fidelity mockup of the Spacelab and Shuttle Orbiter crew deck throughout the week-long test.

Thornton, an astronaut-physician, was mission specialist. Alexander and Williams were payload specialists. Thornton and Alexander are from JSC while Williams is from Ames Research Center, Calif.

Spacelab is under development by a consortium of ten European nations and will be carried into space in Shuttle Orbiter’s 15 x 65-foot payload bay. A wide range of scientific, medical and engineering experiments will be flown aboard each Spacelab mission.

Spacelab life sciences payloads, similar to the developmental experiments in the week-long simulation, will be aimed toward determining the effects of the space environment on living organisms and improving space crew health care during future space exploration missions.

Additionally, the payloads will be used to develop life support systems for people living and working in space and applications of space technology toward clinical research and health care on Earth.

Medical monitoring and health services for the SMD III crew was provided by Dr. Thornton.

A "rack" of 20 life sciences experiments was developed and built at Ames and shipped to Houston for the simulation. An additional six SJC experiments were run during the test.

As the SMD III crew neared the end of its simulation last week, they conducted human cardiovascular and respiration tests and measurements of tolerance to motion sickness.

SMD I and II were held at JSC in October 1974 and January 1975.

At Ames Research Center in California, a ten-day Airborne Space/Spacelab Experiment System Simulation II (ASSESS II) was scheduled to end Thursday.

Astronauts Karl Holzmeister and Robert Parker, both of JSC, were mission specialist and backup mission specialist, respectively, for that joint NASA-European Space Agency simulation.

The ASSESS II mission was flown in the Galileo II, a Convair 990 four-jet transport converted to a sophisticated flying laboratory.

Four payload specialists, two from NASA and two from ESA, performed experiments gathering data in the fields of Earth resources, medicine, atmospheric pollution monitoring and infrared astronomy.

Spacelab is one of the major payloads being developed to fly aboard Shuttle flights in the 1980s.

United States, Soviet Union agree to more space effort cooperation

NASA and the USSR Academy of Sciences have agreed on further cooperation in the area of manned space flight.

The agreement was signed May 6 by Dr. Alan M. Lovelace, acting admnistrator of NASA, and May 11 by Anatoly P. Aleksandrov, president of the Academy of Sciences of the Soviet Union.

The agreement is designed to provide continuity of the joint technical, scientific and operational capability developed through the highly successful Apollo-Soyuz rendezvous and docking mission conducted in July 1975.

Three joint working groups will prepare recommendations for two new programs, one dealing with orbital manned flight activities and the other with a possible future international space station.

The first working group will begin studies soon on scientific and applications programs that may be conducted in joint operations of the American Space Shuttle and the Soviet Salyut space station in the early 1980s. A second working group simultaneously will develop plans for these joint operations.

The two groups will seek to define projects which might benefit from the flexible delivery capability and large capacity of the Space Shuttle and the capability for longer stay-time in orbit represented by the Salyut.

The emphasis will be on a "science first" program which will take advantage of these capabilities and fully justify the contemplated joint operation.

It is anticipated that the studies of the Shuttle/Salyut program will be completed within 18 - 24 months, producing recommendations for consideration by both sides.

The agreement also establishes a third joint working group to conduct a series of phased studies of an international space platform, or station.

If such studies develop consensus on the objectives of future space stations, further studies would be undertaken to explore possible agreement on the conceptual design of the stations.

Neither side is committed to steps beyond the initial studies and each reserves the right to proceed with its independent national space station interests.

Agency decides to purchase 6 satellite-launching upper stages

NASA has decided to purchase six spinning solid upper stages (SSUSs) to permit delivery of spacecraft from an orbiting Space Station to higher Earth orbits.

This marks initiation of the agency’s first procurement action following agreements earlier this year to launch space stations, permitting them to design, test and manufacture the upper stages and market them independently.

A request for proposals was issued May 13 for six SSUS-A vehicles to place Intelsat V type spacecraft into stationary orbits, with an option for purchasing an additional two.

The “A” designation indicates the vehicle’s capability to deliver payloads of the size now being launched by expendable Atlas Centaur rockets.

Bids on the procurement action will be limited to two firms, McDonnell Douglas Corp., Huntington Beach, Calif., and Boeing Aerospace Co., Seattle.

Both companies entered into agreements with NASA, committing them to build the upper stages with private funds. This is the first time NASA has procured rockets or rocket stages in this manner. Nonetheless, the agency incurs development and production costs as part of the procurement agreement.

(Continued on page 2)
JSC wins 2 and 4-mile events in intercenter running contest

Johnson Space Center won overall points both in the 2-mile and 4-mile events in the 3rd NASA Intercenter Running Competition. Twenty-seven JSC runners scored among the top 10 NASA-wide in their age groups and took six individual first-place honors. JSC scored 125.5 points in the 2-mile for an easy win over Ames Research Center which took second with 107.5 points.

There was no contest in the 4-mile where JSC recorded 124.0 points while Ames and Lewis Research Center tied for second with 75 points each.

A total of 464 runners took part in the competition when events were run at the individual centers April 24 and 26. JSC had the best participation with 119 joggers.

Astronaut applicants near 3000

The Astronaut Candidate Program Office reported May 20, that 2,996 applications have been received for civilian astronaut pilot and mission specialist candidate positions. Of those, 457 were from women.

Of a total 18,996 applications and announcements mailed out by request, 248 were sent to JSC employees.

Civilian applicants must be postmarked no later than June 30, 1977. For information, write the Astronaut Candidate Office, AOH.

Russian organization honors 20 from JSC

Eighteen JSC employees and two contractor employees have been presented awards on behalf of the USSR Aeronautical Sporting Federation in recognition of their contributions to the success of the Apollo Soyuz Test Project.

Receiving S. Korolev Medals and Thomas Taylor, Structures & Mechanics Division, and John H. Temple, Flight Control Division. The first of the six SSUS-As is to be delivered to NASA for a launch in December 1979 for a demonstration flight. Three other stages will be launched Intelsat V, Comsat advanced communications spacecraft. The remaining two will be held for other mission assignments.

LeBarian Stokes named outstanding June Co-op

LeBarian Stokes, a sophomore aeronautical engineering major from the University of Alabama, has been named JSC Cooperative Education Student of the Month of June.

Stokes has been assigned to the Engineering Analysis Division. Bruce G. Jackson, division chief, nominated him for the award.

During his current co-op period, Jackson said, Stokes’ first task was to analyze the effects of RCS thrusters brought to varied proposed orbiting payloads.

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**Picnic Fun** — Sea-cucumbers, pretty girls, and a clown making before-arrangements for the little ones. These were among the main ingredients of the EAA Picnic held May 7 at the Gilmour Recreation Center grounds. Hundreds of JSC and contractor employees and their families turned out for the event.

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**Roundup Swap Shop**

Swap Shop advertising is open to JSC federal and on-site contractor employees. Goods or services must be offered at advertised, without regard to race, religion, sex or national origin. Commercial non-personal ads should be 20 words or less, and include home telephone number. Typeset or hand copy at cost must be received by 3 PM/Thu. by the week prior to publication.

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**EAA Attractions**

**Tickets**

The following tickets are available at the Bldg. 11 Exchange Store from 10 a.m.—2 p.m., Monday—Friday.

- **Astroworld** — Adult & children tickets available for $6.95 each. That's a $1.20 discount.
- **Dean Gons Dinner Theater** — Comedy production of the Made Me Do It. Tickets $16/couple available for any night except Monday, Saturday.
- **Disney Magic Kingdom Club** — Free membership cards.
- **Funseeker Cards** — Free Six Flags/Astroworld discount cards good for $1 off regular admission price when tickets are purchased at the gate.
- **Sea-Arauna Marineworld** — Tickets on sale. $3.75 for adults, $2.50 for children. Open until dark, year round.

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**Aero Club Adss Skyhawk**

The JSC Aero Club has added a 1975 Cessna Skyhawk II to its fleet. The airplane is IFR equipped, with dual nav-com radials, glide slope, digital ADF, transponder and three-way adjustable front seat. Rate for the Skyhawk II is $18/hr. The Cessna 150 ($14/hr) and the PA-Bonanza ($27/hr) are also available.

Openings are still available in both the Cessna and Bonanza sections of the club. For information, contact Jackie Bohnen, X416.

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**Registration Deadlines**

Sign-up for summer softball leagues continues through June 3. June 6 is registration deadline for beginning oil painting classes, $30/person.

July 1 is sign-up deadline for group tennis lessons, $30/person. Registration for Super Teams competition begins July 18. For further information, contact the Gilmour Recreation Facility, X3954.

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**New Yoga Class**

Due to the success of the current yoga class, a second class will be offered on Tuesday nights, June 7, 14, 21 and 28. Registration will be May 31-June 3. Cost is $30/person. Call the Rec Center for information, X3294.
An automatic Water Monitor System (WMS) was developed at JSC and has been analyzing wastewater since mid-March at the Southwest Houston treatment plant near Bellaire. The WMS, which is called WMS, has operated 24-hours a day, five days a week, while being field tested at the facility. Testing was scheduled to end today.

WMS includes the necessary sensors, sample collection system, and data acquisition and display system to monitor in "real" or "near real time" the discharges from water or wastewater treatment plants and provide water quality data. It was designed to assure compliance to projected high federal effluent quality standards and increase the potential for reclamation and reuse of water.

Development of the WMS supported an interagency agreement between NASA and the Department of Housing and Urban Development relating to design and development of a Modular Integrated Utility System (MIUS). Work was performed under contract with The Boeing Co., at JSC’s MIUS Integration and Subsystems Test laboratory.

Rick Brooks of Boeing, who has been involved in the WMS field testing, said last week, "We're very encouraged by the results to date. We're helping the city better understand exactly what is going on in their treatment plant."

Reuben Taylor of the E&D Systems Evaluation Office, who has directed the WMS project, was hoping to show off the system to up to 100 potential users who are in town for a Water Federation meeting.

Water parameters monitored by the WMS include general micro-organism detection using automated chemiluminescence and bioluminescence techniques and automated total coliform and fecal coliform detection by sensing evolved metabolic hydrogen.

It also measures total organic carbon, total oxygen demand, residual chlorine, chloride, hardness, pH, turbidity, conductivity, ammonia, nitrate, total nitrogen, sodium, dissolved oxygen and temperature.

WMS provides computer-controlled sample collection and processing of on-line samples, computer- controlled standardized analysis, and computer-controlled data acquisition, formatting, plotting and hard copy report generation.

The biggest advantage of the WMS, Boeing's Brooks said, is its systems approach to water monitoring and the fact that it looks at a number of parameters which most facilities are not monitoring now but which they will be required to monitor in the future by federal law.

The bio-sensors utilized in the WMS are highly advanced. For example, Brooks said, they provide real time data on one particular measure which takes five days by standard laboratory methods.

Results of WMS analysis have been compared with the results of the City of Houston's laboratory during the field testing. Assistance has also been received from the JSC microbiology lab.

Following the field testing here, the WMS will be shipped to California where it will be turned over to Ames Research Center for installation at a Santa Clara water treatment facility.

Scholarship winners named by Exchange

Graduating high school seniors Jean Fulton, Randall Patterson and Mark Riley were recently selected at 1977 NASA Exchange-JSC scholarship recipients. They will join nine students currently studying under the scholarship program.

The daughter of James R. Fulton, Data Systems and Analysis Division, Jean will graduate in class valedictorian at J. Frank Dobie High School. She is a National Merit Scholarship finalist, has received several awards and is recognized in "Who's Who Among American High School Students."

Jean is a member of the National Honor Society and the Junior Engineering and Technical Society. She will major in mathematics at Rice University.

Randall Patterson of Clear Creek High School plans to attend the University of Houston where he will major in Business Administration. He is the son of Earl B. Patterson, Flight Operations Directorate Operations Workshop Director.

Randall has received several awards for maintaining the highest grade point average in the JROTC. He is a member of the National Honor Society, a semi-finalist for the National Merit Scholarship, and co-captain of the Varsity Rifle Team.

Mark Riley, son of David Riley, Institutional Procurement Division, will receive the Joseph N. Kotanchik Scholarship, awarded to students who plan to enter the engineering field.

Mark currently attends Clear Lake High School where he is a member of the National Honor Society and is active in the Junior Engineering Technical Society. He is a National Merit Commended student and has participated in the Greater Houston Science and Engineering Fair and in Close-up, a national government study program in Washington, D.C. Mark will study chemical engineering at Texas A&M University.

Established in 1967, the scholarship fund provides a maximum of $3,000 per student. Allowing for one year of graduate study, the students receive $300 per semester for up to five years.

Hav Hartman, chairman of the Scholarship Committee said this year’s selection was particularly difficult as it was extremely hard to choose three students among such a fine group of applicants. We are, however, quite pleased with the students selected," he said.

Applicants are judged on scholarship, financial need and school or community involvement.

Automatic Water Monitor System ends field tests at Houston plant

This trailer houses Water Monitor System developed at JSC

Cultural Club plans fall trip to Colombia

Travel with the JSC Cultural Club this fall to the beautiful country of Colombia and you can combine South American culture, archeology and history with astronomy.

The tour will visit three major cities: Bogota, the capital and home of the world-famous Gold Museum; Manizales, nestled in the Andes coffee-growing region and directly in the path of the total solar eclipse to be viewed Oct. 12; and Cartagena, "a city of enchantment by the balmy breezes of the Caribbean and filled with the history, sites and sounds of Spanish-era, gold-filled galleons and stalking pirates."

The price of $498 covers round-trip jet fare from Houston and within Colombia. Scheduled departure is Oct. 9, returning Oct. 15. This includes the Oct. 10 federal holiday.

Also included are seven days and six nights at luxury hotels, airport transfers, baggage handling, gratuities and guided tours to points of interest.

The trip will be personally escorted from Houston by a native Colombian who will provide assistance and advice to maximize tourist enjoyment.

For more information, call Tom Gallagher at X-2657 or ask for detailed brochure from Gonzalo Montoya at 337-2406.

Roundup Friday, May 27, 1977