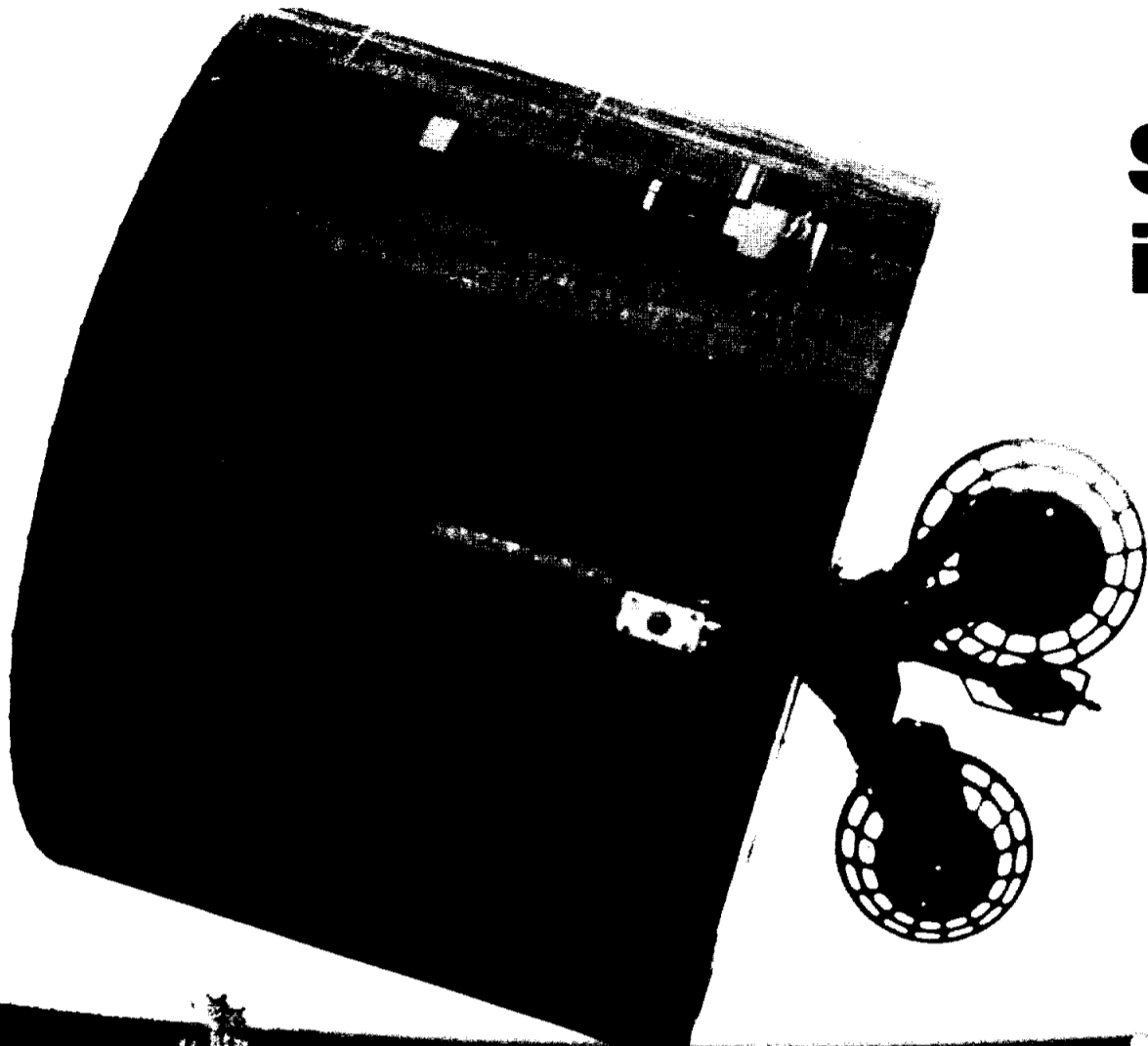


Space News Roundup

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National Aeronautics and Space Administration



Salvage in space



51-I crew pleased with mission results

Members of the 51-I crew debriefed program and mission officials, employees and the press this week in the aftermath of a successful flight to deploy three satellites and repair a fourth.

"It was one of the most fantastic things I've ever been involved with," said Mission Commander Joe Engle. "Five months ago we had no idea we'd be doing this, and four months ago we were not sure it would really happen. The Syncom salvage wouldn't have been possible without the unbelievable effort of the NASA and Hughes team."

The 51-I mission, originally intended as a typical satellite deploy flight, took on new characteristics when Syncom F3 (Leasat 3) failed to activate after its deploy last April on STS 51-D. During that mission, an extensive inflight effort to activate the satellite was not successful, but even before the flight was over, planners began to consider how a repair might be accomplished later.

What followed was an intensive study effort which resulted in an equally intensive scenario whereby Syncom would literally be plucked out of space by hand and refurbished with a space age form of electronic bypass surgery. Moreover, after a complicated repair, it would then be spun up by hand and released.

Going into the flight, officials from Hughes Communications and NASA gave the repair scenario a high chance of success. But because the satellite has been

dormant in the cold of space for so long, with the possibility that frozen propellant may have cracked fuel lines, they were not prepared

is under full control by Hughes' ground command, and telemetry data continues to confirm the good health of the satellite. The liquid

more remarkable for the degraded condition of the *Discovery's* remote manipulator arm, which apparently had a short in the elbow drive and

Mission Specialist Mike Lounge had to pilot the degraded arm within very close tolerances. The extra time involved in that type of operation made it necessary to rewrite the flight plan and do two EVAs instead of one. "Pulling the repair off with the need for single joint ops was a tremendous accomplishment in itself," Engle said.

Handling the massive 15,000 pound satellite was simulated on the ground, and both James "Ox" van Hoften and William Fisher said the task in space turned out about like they expected. "It was about like we expected," van Hoften said. "It was difficult to move around. It's a big satellite. I would say it was difficult but achievable."

Fisher said he was surprised that even holding the satellite motionless "was a more dynamic task than I thought." The bottom line, he said, "was to keep the rates low, because each rate you put in you knew you would have to take out sooner or later."

The mission also saw the successful deploy of three satellites: Aussat-1 for the Australian government, ASC-1 for the American Satellite Corp., and Syncom (Leasat) F4, for Hughes Communications. The first two satellites were reported in good shape at geosynchronous orbit this week, although Syncom F4 was reported to have lost its UHF communications link. A team of technical experts was investigating the problem as the *Roundup* went to press.



Ox van Hoften does a Charles Atlas pose after sending Syncom on its way.

to be as enthusiastic that the repair would be enough. At week's end, however, the news was good.

"The jump start of Leasat 3 has been a complete success," a Hughes statement said. "Leasat 3

propulsion systems are intact and the solid propellant perigee kick motor temperatures appear to be rising gradually toward acceptable levels."

The repair effort was all the

had to be operated, for the most part, in the single joint drive mode. Technicians at Kennedy Space Center were still trying to isolate the arm problem at *Roundup* press time, but the upshot was that

Space News Briefs

INTELSAT V-A 11 on station

The powerful new INTELSAT V-A model 11 satellite, launched by a Delta rocket June 29 from Cape Canaveral Air Force Station, is now on station over the Atlantic Ocean. It will serve as an on-orbit spare for INTELSAT V-A F-10, and will allow movement of another satellite, V F-8, to an on-orbit spare slot over the Pacific. The satellites are part of the International Telecommunications Satellite Organization's network, which provides services to 165 countries.

ICE comet encounter is Sept. 9-13

The International Cometary Explorer, ICE, will rendezvous with Comet Giacobini-Zinner next week in the first such encounter in history. The probe will come within 6,200 miles of the nucleus while the comet is 44 million miles from Earth. The close encounter period extends from Sept. 9 to 13. ICE was launched in 1978 as the International Sun Earth Explorer.

Bulletin Board

JSC to host Satellite Services Workshop

A workshop will be held Nov. 6-8 at JSC to survey experience to date and explore all aspects of future servicing of satellites in space. The workshop is being sponsored by the Offices of Space Flight and of Space Science and Applications at Headquarters, and by the Goddard and Johnson Centers. A final program agenda will be distributed in mid-September. No pre-registration or fees are required. For more information, call workshop organizer Gordon Rysavy at x4407 or Jay Robertson at x2263.

MAES to hold scholarship banquet

The Houston Chapter of the Mexican American Engineering Society will hold its second annual scholarship banquet at 7 p.m. Sept. 19 at the Four Seasons Hotel. The keynote speaker will be Dr. Owen K. Garriott and the master of ceremonies will be Sylvan Rodriguez of KTRK-TV. The distinguished guest for the program will be astronaut Dr. Franklin R. Chang-Diaz. The event's honorary co-chairmen are Eugene Holzer of Texas Eastern Corp. and Bob Minor of Rockwell International. For more information, call Carlos Ramirez at x4831.

BAPCO to meet Sept. 17

The Bay Area PC Organization, BAPCO, the local IBM-PC users' group, will hold its next monthly meeting at 7 p.m. Sept. 17 at the Sheraton Kings Inn on NASA Road One. BAPCO meets regularly on the third Tuesday of each month. For more information, call Earl Rubenstein at x3501.

Erickson to address Space Roundtable

Dr. Jon D. Erickson, Chief of Artificial Intelligence and Information Systems at JSC, will address the Space Business Roundtable during a noontime meeting at the Houston Club Sept. 18. Erickson will address NASA's role in encouraging and expanding the growth of robotics and expert systems. Guests are welcome on a space available basis. The Houston Club is located on Travis at Rusk in the Capitol Suite, Eighth Floor. For more information, call Nancy Wood at 332-0779.

Astronomy brown bags scheduled

Upcoming sessions in the JSC Astronomy Brown Bag Seminar series will include a presentation Sept. 18 by STS 51-F Mission Specialist Karl Henize, who will discuss astronomy conducted on Spacelab II. On Sept. 25, Paul Maley of Ford Aerospace will show a video tape of a Comet Halley sighting. On Oct. 2, STS 51-D Mission Specialist Jeff Hoffman will discuss astronomical observations from the Space Shuttle using a small hand held camera system. Don Bogard of the Solar System Exploration Division will survey planetary atmospheres during two sessions, Oct. 9 and 16. On Oct. 23, Jim Oberg of McDonnell Douglas will discuss anti-satellite technology. The seminars meet Wednesdays from noon to 1 p.m. in Bldg. 31, Conference Room 193. For more information, call Al Jackson at 280-2285.

Rowing Club invites new members

The thrill of slicing through the still waters of Forest Lake in the world's fastest human-powered watercraft. The aerobic benefits of slide-seat rowing for fun and fitness. Instruction by world class rowers. These are some of the offerings of the Clear Lake Rowing Club, which will be offering a day of instruction and fun each Sunday from Sept. 1 to Dec. 29. Special weekend trips to various Texas lakes also will be offered. The experience costs \$65 plus \$10 for materials. For more information, call Joe Towner at 474-7100, or write to the Clear Lake Rowing Club, P.O. Box 623, Seabrook, 77586.

Gilruth Center News

Call x3594 for more information

Beginning French — Learn basic words and phrases in this class, which meets from 7:30 to 9:30 p.m. beginning Sept. 23. The class duration is 6 weeks, and the cost is \$40 per person.

Intermediate Spanish — Learn vocabulary and phrases in group conversation through this course, which will meet from 7:30 to 9:30 p.m. beginning Sept. 26. The class duration is 6 weeks and the cost is \$40 per person.

Word Processing — The production of such documents as legal letters and resumes, using Wordstar, will be covered in this course, which meets from 5:30 to 8:30 p.m. beginning Oct. 21. The duration is 6 weeks and the cost is \$190 per person.

Yoga — Study classic yoga exercises in this 6-week class which begins Sept. 10 and meets from 7 to 8 p.m. on Tuesdays. The cost is \$25 per person.

CPR — Learn the basics of cardio-pulmonary resuscitation in two days in this class which meets from 7 to 10 p.m. Oct. 29 and 30. The cost is \$10 per person.

Defensive Driving — Learn safe driving techniques and qualify for a 10% reduction in insurance rates for the next 3 years. This is an all day class, meeting from 8 a.m. to 5 p.m. Oct 5. The cost is \$20 per person.

Ladies weight training — This class meets from 7 to 8 p.m. Mondays and Wednesdays starting Sept. 9. The duration is 4 weeks and the cost is \$20 per person.

Dancercise — With the goal of toning the body, this class will gradually get you into shape. The 6 week course meets Tuesdays and Thursdays from 5:15 to 6:15 p.m. starting Sept. 10. The cost is \$25 per person.

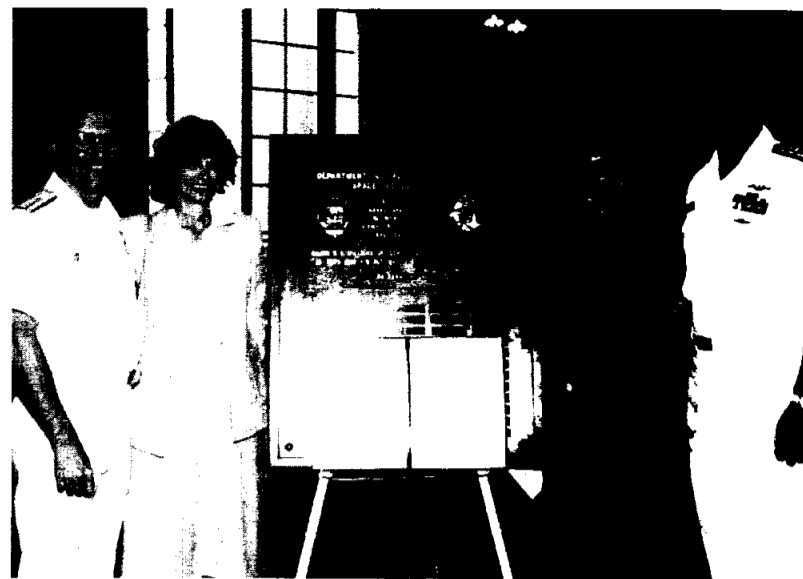
Naval space research chair named for astronauts Chaffee and Williams

A new Space Systems Research Chair at the U.S. Naval Academy, designed to enhance space education programs for the Navy, was named in memory of two naval astronauts — Roger B. Chaffee and Clifton C. Williams — during ceremonies recently at the Academy.

Williams was a Major in the U.S. Marine Corps and Chaffee was a Lt. Commander in the Navy. The astronauts' widows, Jane E. Williams and Martha Chaffee, joined Rear Admiral Charles R. Larson, Academy Superintendent, and Commodore Richard H. Truly, Commander of the Naval Space Command, for the plaque unveiling ceremony.

Both Williams and Chaffee were among the third group of astronauts named by NASA in October 1963. Williams served as backup pilot for the Gemini 10 mission. He was killed in a T-38 crash on October 5, 1967. Chaffee was assigned as one of the pilots for the first three-man Apollo flight. He was killed in the Apollo 1 spacecraft fire at the Kennedy Space Center on January 27, 1967, along with astronauts Virgil Grissom and Edward White.

The Naval Space Command and the Naval Academy signed an initial agreement to establish the Space Research Chair earlier this year. The principal objective of the new Academy professorship, as stated in the agreement, is to provide a means for future officer candidates at the Academy to further their understanding of space systems and their naval applications. "It will provide the mechanism by which midshipmen and faculty members will become exposed, involved, and committed to scientific activities at the forefront of the technologies



A Space Research Chair, named in memory of "the vision, pioneering effort and sacrifice" of Maj. C. C. Williams and Lt. Cdr. Roger B. Chaffee, was dedicated recently at the U.S. Naval Academy. On hand were (from left) Commodore Richard H. Truly, Jane Williams, Martha Chaffee and Rear Admiral Charles R. Larson.

related to space systems," the agreement said.

Naval Space Command's sponsorship of the new Space Research Chair at the Academy is in keeping with the Command's mission to help develop educational programs that will provide the specialized training needed to increase the number of space-qualified naval personnel.

Also participating in the Space Chair dedication ceremony was Rear Admiral William E. Ramsey, Director of the Naval Space Systems Division. He presented the Defense Superior Service Medal to three Navy astronauts present at the dedication ceremony—Commodore Truly, Captain Robert L. Crippen, and Commander Robert L. Gibson.

The Navy officers were each commended for "exceptionally superior achievement" as astronauts. Truly served as Pilot on STS-2 and Commander of STS-8. Gibson served as the Pilot for STS 41-B, while Crippen has flown on STS-1, STS-7, STS 41-C and 41-G.

Other awards presented by Ramsey during the ceremony were the Navy Commendation Medal to Lt. Commander W. T. Aldinger, USN, and the Navy Distinguished Flying Cross to Captain Frederick H. Hauck, USN.

Aldinger was commended for service as the Navy Oceanography Committee Liaison Officer at JSC from November 1983 through May 1985. Hauck was cited for extraordinary achievement as Pilot on STS-7 and Commander of 51-A.

Phys Ed sessions available

At the end of September, the JSC Physical Fitness Course will have been in continuous operation for two years. Since the origin of the course, 349 of 454 students (77% have completed the 12-week course. Physiological performance records show that the graduates experienced a 10% reduction in relative fatness and improved in

If 80 JSC employee applications have not been received within 6 weeks of each session start date (see table), the remaining spaces will be filled by applicants in the successive priority groupings. Applicants who are not JSC employees will be notified by a member of the Physical Fitness staff and given a letter of referral and a list of medical

improvements in physical fitness in the components of cardio-respiratory endurance, relative body fatness, muscular strength, and flexibility, and (3) acquire an understanding of the role of exercise on health.

It is the philosophy of the program staff that the accomplishment of each of the objectives is valuable for motivating graduates to adopt a lifestyle of physical activity for the promotion of health and fitness.

To apply, complete Form 1285 and mail to Code AW or deliver to the Physical Fitness staff at the Gilruth Recreation Facility between the hours of 8 a.m. and 5:30 p.m. After applicants have been medically cleared, they will be scheduled for an in-processing consultation which will last approximately 1 hour.

At the consultation, they will be assigned to one of the Education Classes (3 days per week, 11 a.m.-12 noon or 4 p.m.-5 p.m. or 7 a.m.-8 a.m. for the July-September class).

JSC employees are advised that participation in this program is a nonduty activity. Therefore, all civil service personnel must make appropriate arrangements with their supervisor for the time involved, such as changing their tour of duty or using annual leave.

For more information about the Physical Fitness Program, call the Physical Fitness staff at x3531.

1985-86 Schedule for the JSC Physical Fitness Course

| Class | Start Date | Finish |
|-------|--------------------|--------------------|
| 4-85 | September 30, 1985 | December 20, 1985 |
| 1-86 | January 6, 1986 | March 28, 1986 |
| 2-86 | April 7, 1986 | June 27, 1986 |
| 3-86 | July 7, 1986 | September 26, 1986 |
| 4-86 | September 29, 1986 | December 19, 1986 |

cardio-respiratory endurance by 15%, situp scores (abdominal strength) by 29% and sit-and-reach scores (low back-hamstring flexibility) by 7%

Openings now exist in classes being scheduled for fiscal year 1986. The priority order for processing applications is as follows: (1) JSC employees, (2) JSC employee dependents, (3) JSC retirees, (4) JSC retiree dependents, (5) JSC contractors, and (6) dependents of contractors. The size of each class cycle is limited to 80 participants.

facilities capable of providing an acceptable physical examination. The examination must include a treadmill stress test to maximum or near maximum capacity. Although such an examination is furnished for JSC civil servants at the clinic, non-JSC applicants (i.e., contractors or dependents) must obtain the examination at their own expense.

The initial 12-week education phase of the program is designed to (1) develop skills needed for participating in a safe and effective exercise regimen, (2) achieve im-

Atlantis readied for 51-J

The new Orbiter *Atlantis*, now at Launch Pad 39A at the Kennedy Space Center, will make her maiden voyage next month when STS 51-J launches Oct. 3.

Mission 51-J, a Department of Defense dedicated Shuttle flight, will liftoff between 2:20 and 5:20 p.m. EDT. The date and time of the return to Edwards Air Force Base, Calif., will be announced 24 hours prior to landing.

The Commander of the mission will be Karol J. Bobko, Col., USAF, who will be making his third spaceflight. Bobko last flew as

Commander of Mission 51-D in April and was Pilot on STS-6 in April 1983.

The Pilot will be Ronald J. Grabe, Lt. Col., USAF, who will be making his first spaceflight. Grabe is a member of the Astronaut Class of 1980.

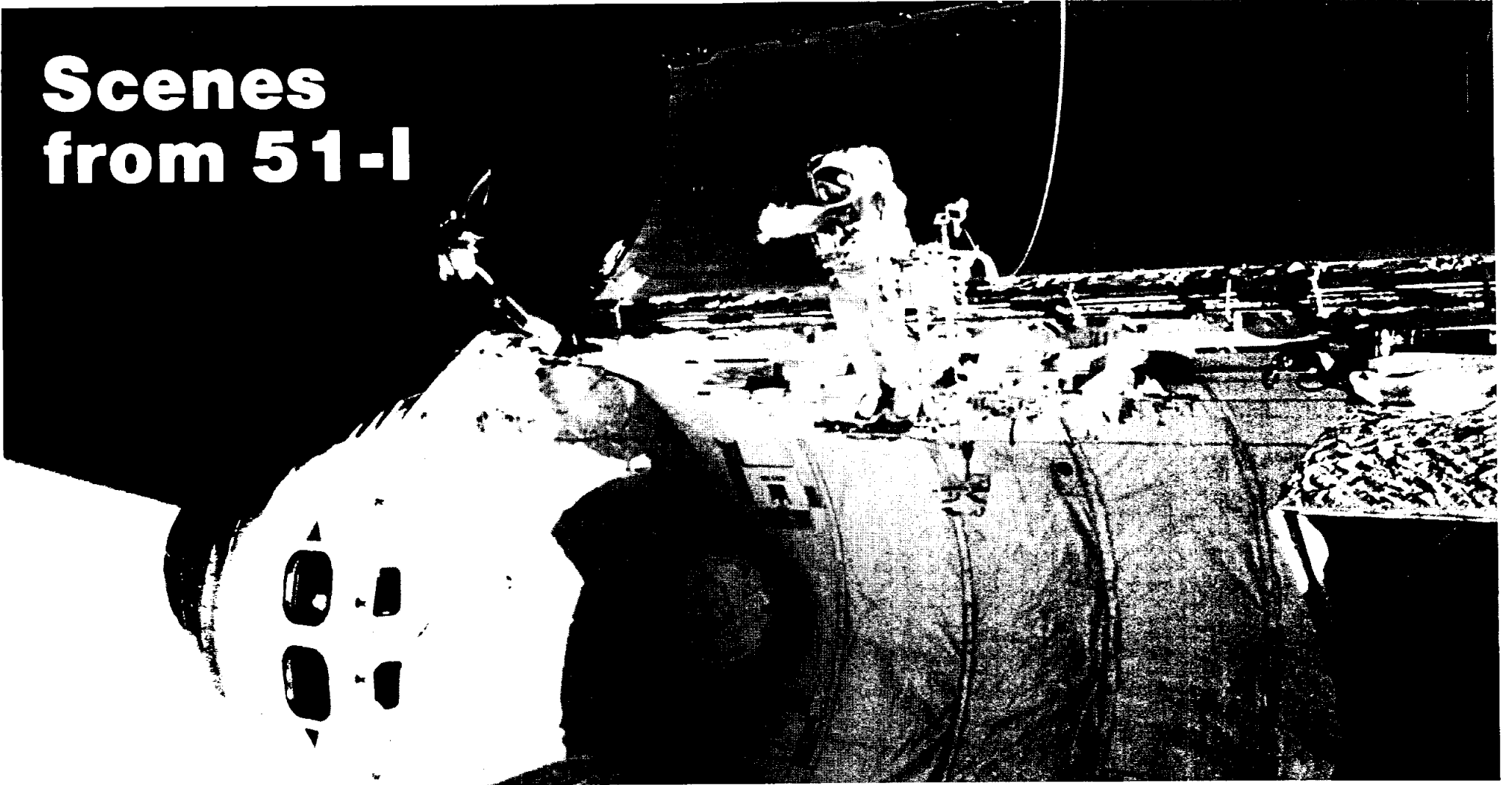
Mission Specialists will be David C. Hilmers, Maj., USMC, and Robert A. Stewart, Col., USA. Hilmers, who will be making his first spaceflight, is a member of the Astronaut Class of 1980. He has served as capsule communicator on several Shuttle missions.

Stewart, a member of the Astronaut Class of 1978, will be making his second spaceflight. He last flew as a mission specialist on STS 41-B and participated in the EVA which certified the manned maneuvering unit for operations.

The Department of Defense Payload Specialist on 51-J will be Air Force Major William A. Pailles.

At *Roundup* press time, *Atlantis* was being prepared for a Flight Readiness Firing. After her return to KSC following 51-J, the ship will be readied for the late November launch of Mission 61-B.

Scenes from 51-1



Bill Fisher waits to do his part on Syncom F3 in this view taken from above by Ox van Hoften.



Syncom rolls slowly away as van Hoften watches from his lofty perch.



Fisher steadies Syncom while, out of the field of view, van Hoften attaches the spinup bar.



The crew, like most residents along the Gulf coast, also kept an eye on Hurricane Elena, here seen from an altitude of about 200 miles.



Crew members Fisher, Covey, Lounge, Engle and van Hoften pose with a friend of many parts during spacesuit checkout day.

