



ROUNDUP

NASA LYNDON B. JOHNSON SPACE CENTER

HOUSTON, TEXAS

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Friday, May 13, 1977

Orbiter nears flight readiness for first Captive Active test

Orbiter systems were in, the power was on and "hot fire tests" were scheduled to begin at Dryden Flight Research Center, Calif., in preparation for the first captive active flight of the Space Shuttle Orbiter Enterprise and its 747 carrier.

Flight readiness review also began this week and continues next week. Final decision on whether to proceed with the May 26 flight date for Captive Active 1 is expected soon. Success of the hot fire tests will bear on that decision.

If the go-ahead is given, the crew

of Fred W. Haise Jr., commander, and Lt. Col. Charles Gordon Fullerton (USAF), pilot, will be the first astronauts to fly in an Orbiter.

During the captive active flights, the Enterprise (Orbiter Vehicle 101) will remain attached to the top of the modified Boeing 747 jetliner which is its carrier.

At a press briefing last month, Approach and Landing Test Manager Donald K. Slayton said the purpose of captive active flights "is to get to launch altitudes and launch airspeeds and do Orbiter flight tests of the Orbiter systems.

"This is going to be the first we've been airborne with all systems up and we just want to see how they all operate ... we're going to do a fly through of the auto-land glide slope and this is to see how the auto-land system tracks," Slayton said.

The test manager indicated that Captive Actives 1 and 2 should reach altitudes of up to 25,000 feet and speeds of up to 270 knots. The Orbiter should weigh-in at around 150,000 pounds.

Five captive active flights are scheduled, although the last may be eliminated. If this phase of the Approach and Landing Tests is successful, the program will enter the free flight phase, tentatively scheduled to begin July 22.

Haise, 43, and Fullerton, 40, are scheduled to fly odd-numbered flights throughout the manned test series. Even numbered flights will be flown by the second crew: Col. Joe H. Engle (USAF), 44, commander; and Cmdr. Richard H. Truly (USN), 39, pilot.



FIRST ALT CREW — The camera caught pensive expressions on the faces of Charles Gordon Fullerton, left, and Fred W. Haise Jr. as they listen to a journalist's question during a news conference last month. If Phase 2 of Approach and Landing Tests begins on schedule, the pair will fly May 26 on Captive Active 1 — the first manned Orbiter flight. Haise, a civilian, is 43 and commander of the crew. Lt. Col. Fullerton, of the U.S. Air Force, is 40 and the pilot.



PREPARING FOR FLIGHT — Engineers at Dryden Flight Research Center, Calif., spent many weeks on Orbiter systems preparing them for active flight. The Enterprise has now been mated again to the 747 and "hot fire tests" should be underway. Flight readiness review continues through next week. If there are no problems, Captive Active 1 should fly May 26 as scheduled.

Contract let for study of fabrication in space

A contract was recently awarded by the NASA-Marshall Space Flight Center, Ala., for a study that will become part of the groundwork in NASA's long-range plans for industrialization of space for the benefit of man.

A proposed major demonstration of manufacturing and assembling structural beams in space would require an automatic beam fabricating machine mounted in the Space Shuttle cargo bay in 1983-1984. To accomplish such a demonstration, planners must first determine the most economical and efficient design for the fabrication facility, as well as the proper mate-

rial for the structural beams.

The General Dynamics Convair Division of San Diego, Calif., was awarded a \$110,096 contract by Marshall Center to study and define a concept for an automatic fabricating machine that would form structural beams in space using a composite material.

Earlier studies have shown that composites have two characteristics that would be desirable for space structures. Composites would serve as an electrical insulator and their very low heat expansion rate would prevent undesirable warping and distortion in the completed structure.

JSC clinic offers free blood pressure tests

"Know your odds — have your blood pressure checked" is the slogan for National Blood Pressure Screening Month. High blood pressure, (hypertension) affects an estimated 21 million Americans. Most people have no symptoms and consequently are not receiving treatment.

Hypertension puts an additional workload on the heart and arteries. If the condition is left untreated these over-worked parts may cease to function. There is an increased risk of stroke, heart failure, kidney failure and heart attack.

Hypertension is a serious disease. Yet, so much has been learned about the disease that those individuals who are diagnosed and get treatment, can look forward to many years of comfortable, productive living.

The JSC Clinic will provide blood pressure screening clinics at various on-site locations May 16-23. The date, time and location will be published by JSC Announcement (pink sheet). These clinics are available to both Civil Service and contractor personnel.



HOW'S YOUR BLOOD PRESSURE — JSC Physician Dr. Ed Harris has his blood pressure checked by Nurse Ramona White at the JSC Clinic. The clinic is offering free blood pressure screening to all JSC and contractor employees May 16-23. Consult the pink announcement sheet for the times and locations. High blood pressure (hypertension) is serious: detect it, treat it and live.

Contractor selected for tundra inventory

ESL Inc., Sunnyvale, Calif., has been selected by JSC for award of a cost-plus-fixed-fee contract for primary work on a joint NASA-Bureau of Land Management earth resources applications project.

The ESL contract covers May 1, 1977, through April 30, 1978. Contract amount is \$399,600.

The NASA-BLM project involves application of Landsat data to the inventory of wildland vegetation in a representative area of Alaska east of Mount McKinley. The BLM is interested in developing an automatic inventory system for the 474 million acres currently in its custody. The Alaska area represents a tundra ecology.

ESL will be required to develop the vegetation inventory, sampling methodology, and acreage compilations and verify accuracy for the satellites estimates. Complete documentation and technology transfer including training for BLM staff are included in the contract.

NASA will provide Landsat data and contractor supervision for the project. Should this first year effort prove successful, NASA has options for additional work covering representative desert and sagebrush grasslands ecologies.

Landsat is NASA's earth resources survey satellite. There are currently two in orbit.

Astronaut applicants near 2600

The Astronaut Candidate Program Office reported May 2 that 2,591 applications have been received for civilian astronaut pilot and mission specialist candidate positions. Of those, 359 were from women.

Of a total 16,829 applications and announcements mailed out by request, 246 went to JSC employees.

Civilian applications must be postmarked no later than June 30, 1977. For information, write the Astronaut Candidate office, AHX.



RUSSIAN AWARDS — ASTP crewmen Vance Brand and Donald K. Slayton recently presented for the USSR Aeronautical Sporting Federation the S. Korolev Medal and Certificate to Jay F. Honeycutt, Flight Operations Directorate, and Yuri Gagarin Diplomas to John H. Temple, Flight Con-

trol Division, Elvin V. Pippert Jr., Crew Training & Procedures, and Raymond G. Zedekar, Payload-Project Engineering Office. Pictured (l to r) are Brand, Pippert, Temple, Honeycutt and Slayton.

Good participation, fast times raise chances of JSC runners

JSC runners are in good shape to take several first place finishes in the 3rd NASA Intercenter Running Competition. Agency-wide results are still out.

Standout runners from JSC who ran 2-mile and/or 4-mile events April 19-21 were 15-year-old Danya Grieder and 50-year-old Rele Evans. A total of 119 government and contractor employees and dependents participated.

In the Women 29 and Under category, Grieder soundly beat the defending overall champion, Sue Dragich, by running two miles in 12 minutes, 44 seconds compared to Dragich's 13:36.

Evans' 2-mile time of 12:05 in the Men 50-59 category gave him a strong lead in that age group. Run-

ning last fall in the 40-49 category, Evans time of 12:03 was good enough for an overall eighth placement in the faster age bracket.

Fastest JSC time in the 2-mile event was Jim Gilbert's 10:43 in the Men 30-39 category. Fastest 4-mile run was Bruce King's 22:36 in the Men 19 and Under group.

Claud Edmiston, who won NASA-wide in the Men 40-49 group last fall with a run of 10:34, again led JSC runners of his age group with a time of 10:49.

JSC participants ran on the Clear Lake High School track; the 2-mile event April 19 and the 4-mile April 21. Other centers ran the same events on the same days and their times are being sent here for overall standings to be determined.



PRETTY COSMONAUT — The only woman to have flown in space, Valentina Tereshkova, examines the Apollo 17 command module "America" with Apollo and Skylab astronaut Alan Bean who escorted the Russian cosmonaut on a recent visit to the center. Tereshkova is in the United States on a tour for Good Housekeeping magazine. She spent three days in space in June 1963 on the Soviet Nostok mission.

ROUNDUP

NASA LYNDON B. JOHNSON SPACE CENTER

The Roundup is an official 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.

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Photographer: A. "Pat" Patnesky

Janet Pacek chosen Secretary of Month

Janet S. Pacek, secretary to Eugene F. Kranz, deputy director of Flight Operations, was chosen JSC Outstanding Secretary for April. She received a plaque and \$100.

Pacek also serves as secretary to the manager of Technical Operations, Flight Operations Directorate. She was nominated for the award by Kranz.

In his letter of recommendation, Kranz said, "Mrs. Pacek is a key member of the directorate office team ... She deals with all levels within NASA in a timely and outstanding manner.

"Her personal initiative is commendable. She continuously sharpens her already excellent skills through self-study and JSC training courses," he said.

"Mrs. Pacek has been the primary force in developing a plan with Management Services to improve inter- and intra-office procedures. This study reviewed existing procedures, equipment and facilities to recommend means to pro-

vide more cost effective office management techniques," Kranz said.

"She set up a yearly directorate retreat with all clerical personnel to review and discuss common problems and present recommendations for necessary changes."

Kranz added, "Mrs. Pacek is a secretary of outstanding skills who has an excellent sense of priorities and continually uses proper judgment in dealing and scheduling the varied tasks within Flight Operations Directorate.



Janet S. Pacek

Small Business Week observed May 22-28

President Carter has proclaimed the week of May 22-28 as Small Business Week and asked "all Americans to join me in expressing the pride we take in our nation's small business sector."

The proclamation states: "Our nation's small businesses employ 100 million Americans and produce nearly half of our gross business product. Small businesses remain healthy in an economic environment that equates size with success because they take an active interest in the customers and communities they serve.

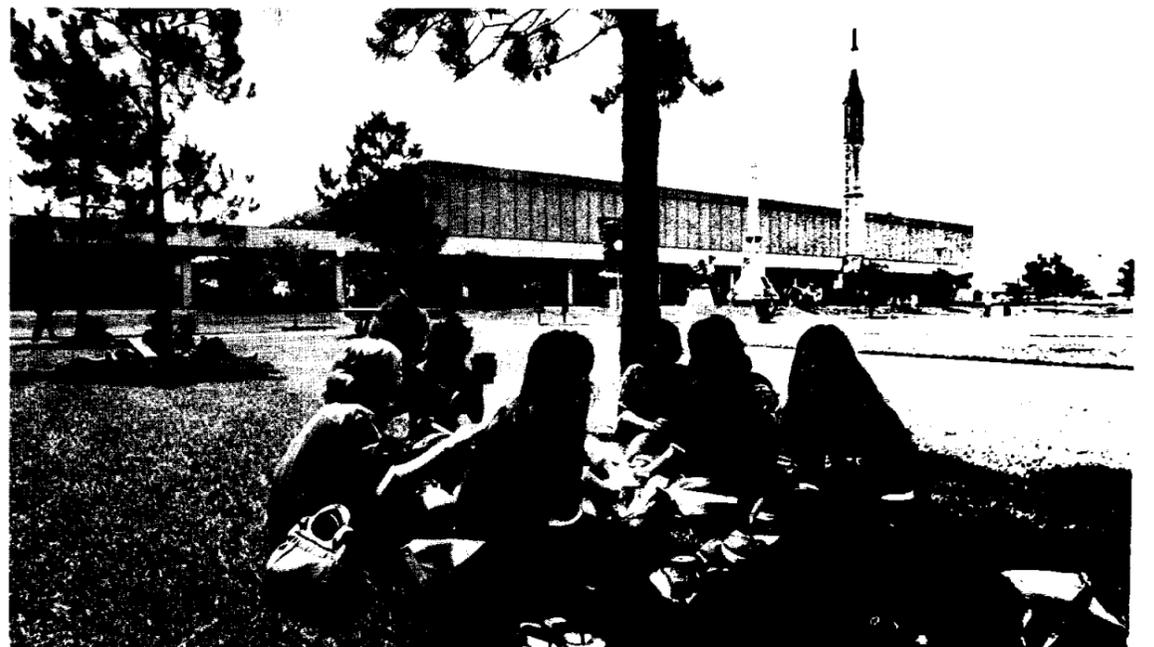
"A successful small business is evidence of the independence, initiative and hard work of the man or woman who owns and operates it. Their spirit has been, and will continue to be, a major factor in our nation's growth."

H. T. Christman, chief of the

Small Business and Industry Affairs office at JSC, said, "It is especially fitting that all of us properly recognize the important contribution of small business to this country's economic strength and leadership in science and technology."

Christman quoted a March 1976 memo to managers from Center Director Dr. Christopher C. Kraft Jr. in which Kraft said, "I am seeking improvement in the Johnson Space Center's awards to small business concerns. Your strong backing in this effort is essential to accomplish the objective."

Christman concluded, "We feel Dr. Kraft's expressed concern ... along with the Presidential Proclamation, should foster the necessary incentives required to stimulate efforts to accomplish the small business objectives. Think Small Business for your requirements."



TAKING A BREAK — These students from Highlands Junior High School near Baytown take a break during their recent visit to JSC to eat lunch under the trees near Bldg. 2. Unlike

some groups in the past who have littered the area, these students brought garbage bags and left the grounds clean after their meal.

National Space Club opens essay contest

The National Space Club has announced the opening of the Robert H. Goddard Historical Essay Award competition for 1977.

James E. Oberg of the Spacecraft Software Division won last year for his essay, "Koroley, Khrushchev and Sputnik."

This annual nationwide competition, with a \$500 prize, is open to any U.S. citizen.

Essays may deal with any significant aspects of the historical development of rocketry and astronautics and will be judged on their originality and scholarship.

Entries should be submitted by Nov. 1, 1977, to the Goddard Historical Essay Contest, c/o National Space Club, 1629 K Street, N.W., Washington, D.C. 20006.

Contest rules may be read at the Roundup Office, Bldg. 2, Room 147, or at the office of Jim Grimwood, Bldg. 4, Room 1050.

EAA ATTRACTIONS

TICKETS

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

ABC Interstate Theaters - \$1.50 admission tickets now available.

Dean Goss Dinner Theater - Comedy production, *Agatha Made Me Do It*. Tickets \$16/couple available for every night except Monday, Saturday.

Sea-Arama Marineworld - Tickets on sale, \$3.75 for adults, \$2.50 for children. Open until dusk year-round.

Astroworld - Tickets available at \$6.95 for adults and children. That's a \$1 discount.

Six Flag - Adult and Children tickets, \$6.75 each.

Disney Magic Kingdom Club - Free membership cards. Also available is Disneyland passport, good any day through May, which allows unlimited use of all Disneyland attractions. Adults, \$7.50; juniors, \$7; children, \$6.

and 29. Competition will be held beginning Aug. 14.

MIXED VOLLEYBALL

Competitive and recreational division play begins June 6 through Aug. 12. Register May 18-27, NASA and contractor teams only. EAA-subsidized, \$30; non-EAA, \$60.

REC CENTER CLASSES

May 18 is registration deadline for the class in basic auto mechanics, \$15/person. June 6 is sign up deadline for beginning oil painting, \$30/person, and July 1 is deadline for beginners group tennis lessons, \$30/person.

For further information, consult April 29 issue of the Roundup or contact the Gilruth Recreation Center, X-4921.

SOFTBALL FOR EVERYONE

Men's Softball: A, B & C Leagues, June 13-Aug. 12. Sign up May 23-June 3. NASA and contractor teams only. A League, \$72.50. B League, \$65. C League, \$62.50. All EAA teams pay \$30 less.

Women's Softball: June 20-Aug. 12. Sign up May 23-June 3. NASA and contractor teams only. EAA teams, \$35. Non-EAA, \$65.

Mixed Softball: June 20-Aug. 12. Sign up May 23-June 3. NASA and contractors only. EAA teams, \$35. Non-EAA \$65.

SUPER TEAMS SIGN UP

Teams interested in participating in this year's Super Teams competition must sign up between July 18

SCUBA CLASS BEGINS

The JSC Lunarfins have scheduled a 6-week course in SCUBA diving, beginning June 7. It will meet twice a week, one night for lecture and one night for pool instruction.

The roster is filling quickly so call Doug Cooke at X-5557 or 534-2226 to sign up or for details.

Roundup Swap Shop

Swap Shop advertising is open to JSC federal and on-site contractor employees. Goods or services must be offered as advertised, without regard to race, religion, sex or national origin. Non-commercial personal ads should be 20 words or less, and include home telephone number. Typed or scribbled ad copy must be received by AP3/Roundup by Thursday of the week prior to publication.

CARS & TRUCKS

71 Merc Marquis Colony Park Sta Wgn. Loaded, clean. 1 owner. Faber, 482-7877.

73 Cutlass Supreme. Lt green, dk green vinyl top, auto, bukt seats, console, stick, AM/FM, 4 bbl, 8 cyl, 51K mi, xInt cond. 482-7012.

77 Cordoba. Loaded, pwr incl windows, seats, sun roof, AM/FM stereo tape, 11K mi. 334-3410 or 488-7432.

72 Ford Gran Torino Brougham. 351-V8, all pwr, air, AM/FM stereo, vinyl top. \$1,295. Larsen, X-2118 or 334-3432.

74 Vega Wagon GT. Air, 4 spd, AM/FM, 32K mi, very clean. \$1,900. Sanders, 481-6928.

70 Olds Cutlass Supreme. XInt cond inside & out, engine perfect. \$1,200. Norbraten, X-3459 or 488-1146 after 5.

73 Saab. 2 dr, Model 99LE, good cond. \$2,100. 482-3742.

72 Pinto Hatchback. Air, auto, good tires. \$850. 482-7029 after 5.

73 Capri. 4 cyl, 4 spd, air, AM/FM stereo, xInt cond. \$2,400. Bostick, 474-4991.

72 Pont Grand Ville. Vinyl top, stereo, steel radials, pwr incl windows, seat, tilt whl, cruise. Orig owner, wife's car. \$2,000. Sterling, X-4524 or 488-1380.

66 Excalbur 2-pass sport roadster. 18,226 actual mi, formerly owned by Lynn Anderson, super perfect. \$11,200. Santa, X-6456 or 488-7570.

56 Corvette. Removable HT, 283 HP, 3 spd, 66,183 honest mi, all orig but paint, seats, carpet. Snow winner. \$8,500. Santa, X-6456 or 488-7570.

31 Ford 6-wheel Roadster. Only 27 mi since body-off, grnd-up restoration. Absolutely showroom fresh. \$13,500. Santa, X-6456 or 488-7570.

67 Olds Cutlass. 4 dr, auto, new tires, runs great, clean in & out, no rust. \$695. Yeo, 944-8186 evngs.

73 Olds Cutlass Supreme. Air, AM/stereo tape, vinyl top, xtra clean. \$2,800. Bomnskie, X-3281 or 485-5744 after 5.

66 Chevy 1/2 ton pickup. 40" high camper top. XInt cond. 482-7546.

76 Diplomat II 28' Motor Home. Full loaded, sleeps eight, 5,776 mi. Galveston 737-2280.

CYCLES

74 Yamaha DT 100. Good cond. \$300. Baillie, 482-7491.

72 Yamaha 250cc DT1. \$350 or best offer. Larson, X-2181 or 482-3920 after 5:30.

Honda Trail 70, \$150. Suzuki 90, new tires, overhauled, \$215. Both good cond. 481-0046.

Motorcycle trailer. 4 bike capacity, good paint, tires, lights. Stuckey, X-4202 or 481-2784.

Motorcycle trailer. "Little Dude." Good cond. Bean, 333-3814.

Bicycle. Girl's 20" Spyder. \$20. Sampson, X-2161.

BOATS & PLANES

1972, 21' I/O ReInell Cabin Cruiser. XInt cond, Incl trailer & ship-shore. Czerwonky, X-3681 or 488-1358.

23' Coronado Sailboat. Head, galley, sleeps 4, CB, stereo, xInt cond. \$6,800. 474-4336.

Sunfish Sailboat. Reconditioned, good for learner, with or w/out trailer. 471-3303.

Sailboat, Irwin 28. XInt inventory, must sell. 488-0971.

16' Larson fiberglass boat w/trailer &

two 50 HP Evinrudes, needs work, \$750. 14' Baymaster boat w/Dilly trailer & 20 HP Evinrude. \$450. 941-0489.

Gulf Coast 20 Sailboat w/trailer, race equip, xInt race record \$2,800. Windmill sailboat w/trailer, old but active racer, \$375. 333-4609 after 5.

16' Fabugas Tri-hull. 55 HP Evinrude, Big Wheel trailer. \$1,395. 334-3461.

Trailer for up to 14' boat. Good cond. \$75. 482-7029 after 5.

25% share in 1972 IFR equip Grumman Amer Traveler. Nieder, 474-3517 evngs.

Membership avail in LaPorte based Aero Club. C-182, C-172, Traveler, PA-12. Wetterstroem, 485-2647.

PROPERTY & RENTALS

For rent: Lake Livingston, Cape Royale, compl furn home, 3-2-1. Fish, hunt, tennis, golf, etc. Reserve early. Wk/mo/yr rates. 488-4487.

Sale, Middlebrook/CLC. 4-2-2, 2170 sq ft, xtra lg bdrms & family rm, fenced, fireplace, 2 atriums, skylight, Mex tile entry. \$69,900. 474-2081 or 488-0346.

Galveston West End. 2 bdrm By-the-Sea condo apt, full furn. \$180/wk off season, \$260/wk in season. Clements, 474-2622.

Caney Creek waterfront lot. Access to canal, creek & Gulf near Sargent, Tx south of Freeport. \$3,000 or best offer. Billi, 946-8695 or 921-7212.

Lease Forest Bend Townhouse 2-2-2. Lv rm, fam rm, pool & rec area. \$295/mo avail after June 1. 488-2289.

For sale: Islander East Condo, top floor efficiency unit. XInt Gulf view, balcony. Tennis, beach, swim pool. Furnished. 481-3397 after 6.

Sale: Lake Travis World of Resorts. Just compl 3-2-1, million dollar view, close to airstrip, high school, golf, shopping. Haptonstall, X-5449 or 554-3600 after 5.

Sale: Roomy Gulf Meadows home, 4-2-2, game rm, great for hobbyist, xInt cond, new outside paint, must sell. 991-4537.

Reserve for summer vacation now. Jamaica Beach, Galveston. New 2 story. \$175/wk. 334-1640 after 5.

ANIMALS

1977 Galveston County Fair Reserve Grand Champion Brahman Bull. 14 mos old, approx 800 lbs. \$600. 332-4865. Free: Male barn kittens. 534-4900.

HOUSEHOLD ARTICLES

Maytag gas dryer. Good oper cond. \$45. Baillie, 482-7491.

Dinette set. 42x48" oval table, 12" leaf, 4 chrs, wood w/woodgrain Formica top. \$40. Sampson, X-2161.

Norge lg capacity gas dryer. Avocado, all features, very good cond. \$75. Wendler, 488-2912.

Ugly comfortable old convertible couch. \$30. 534-4900.

Sears regulation size pool table. 4x8 (middle of line) w/plng pong cover, balls, cues, wall rack, etc. Needs new felt. \$140. 332-4865.

5 pc Colonial dinette in maple. Filler leaf incl. Open hand grip type chairs. \$150. Baker, X-2161 or 986-5009.

MISCELLANEOUS

Set 4 delux Monza/Starfire/Skyhawk wheel covers. \$20. Lake, X-5271 or 523-2137.

Assorted mix US mint commemoratives, 1 cent over face value. \$20. Jeff, X-6355 or 482-5393.

Artist's studio easel. Anco Glendale

pro type. Used very little. \$85. 488-4005.

2 roof turbo vents. \$25. Relna, 488-1326.

1972 Prower travel trailer, 24', self cont, air, good cond, sleeps 6. \$3,500. 941-0489.

1970 Coleman camp trailer. XInt cond. \$1,400. Baillie, 482-7491.

Arnold Palmer golf clubs. 3 wds, 10 Irons & putter. \$90. House, 333-5797.

Rapid reading kit: 2 visualizers (timed slides) for adults & children to improve reading & compreh. \$15. Ice hockey skates: size 5, new cond, \$9. 488-4005.

CB antenna for base station. Half-wave w/3.75 Db gain, xInt range, 12" wall mounts, 10' mast. All 20% under cost. Wayne. 488-4158.

WANTED

Need riders for carpool from W Loop/SW Fwy/Bellaire area. 8-4:30. McLaughlan, X-3771 or 661-2974.

Firefighters needed. Men, women adult CLC residents to join CLC Volunteer Fire Dept. Will be trained & equip. 488-0023 anytime.

Want Lionel or Amer Flyer elec trains & access, working or not. 334-3182.

LOST AND FOUND

Reward for return of Fred Perry Etonic white athletic shoes (blue lining) taken from Gilruth Center locker room Apr 27. No questions asked. Pavlosky, X-5589.

LATE ENTRIES

70 Buick LeSabre. 4 dr, air, auto, pwr steer, new carb, radials, good cond. \$1,095. 946-7587.

Wooded waterview lot at Point Lookout on Lake Livingston. 75x137, utils, restrictions. \$3,295. 946-7587.

3-ton sealed air cond. Compressor, 220V, 3 yrs old, xInt cond. New \$350, sell \$150. Brady, X-5326 or 334-1773.

JSC crossword

(See answers, page 4)

ACROSS

- Astronaut ___ Grissom
- May or may not have preceded chickens
- Prefix of opposition
- Negative
- Name associated with electronic music synthesizer
- Astronaut ___ Shepard
- Conductor for transmission/reception of radio waves
- Street (abbr.)
- Doctor (abbr.)
- What "C" stands for in "MOCR"
- Activated
- Ball ___ hammer
- River of N. Italy
- Work for
- Rarefied
- Galled

DOWN

- Leg (colloq.)
- One (Span.)
- Greek portico
- Flight limits, parameters
- Start

1	2	3			4	5		6
7			8		9			
10							11	
		12						
13	14						15	
16						17		
18					19		20	21
		22			23			
24							25	

- Electromagnetic energy
- Combustion begins
- Article
- Flew on one Gemini, two Apollo missions

- Approx. 0.9 megagrams
- Norman or King
- Age
- Compass point
- 16th Greek letter

NASA asks bids for Space Spider study

MARSHALL SPACE FLIGHT CENTER, Ala. — A Request for Quotations (RFQ) has been issued to industry by the NASA-Marshall Space Flight Center for a "Design Study of the Teleoperator Space Spider for Building Large Space Structures."

Engineers at Marshall have formulated a concept for a device called "Space Spider" that would be capable of constructing large structures such as satellite power systems and antennas in space.

The concept would use basic techniques of the common spider to "spin" structures in space. Carry-

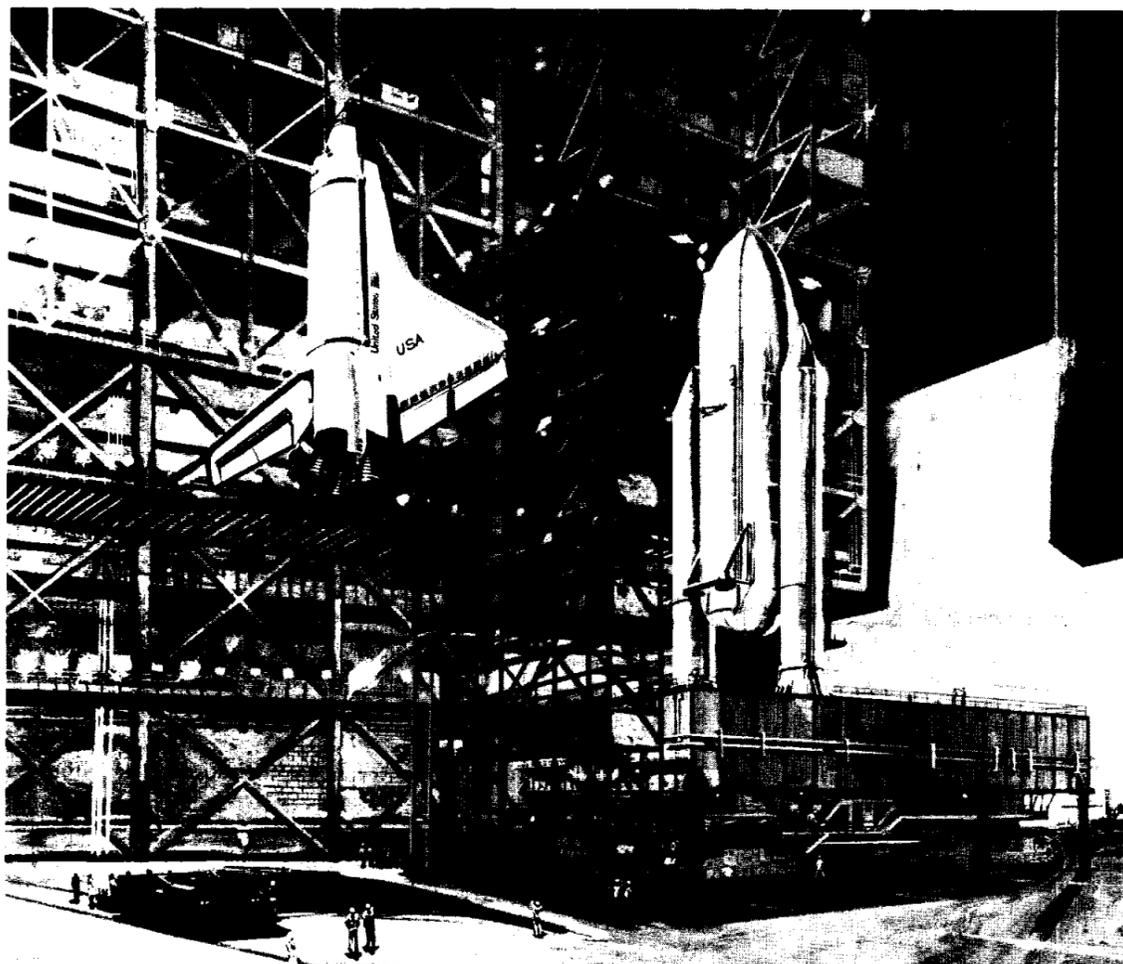
ing a roll of prestamped material, the Spider would attach itself to the rim of an established core and, traveling by means of a crawler-type drive, would attach a newly-formed ribbon of material to the established rim. The technique would continue until a desired diameter was reached.

The RFQ calls for a design study of the "Space Spider" and development of information and data for building various size and shape space structures. The study should provide data on the maximum size Spider that could be transported aboard the Space Shuttle.



SPIDERS AT WORK — Two proposed Teleoperator Space Spiders are depicted in this artist's concept building a structure for a Solar Power Satellite onto a Space Shuttle External

Tank. The Spider has been proposed as a self-contained system with rolls or spools of coded, prestamped building materials. It could form and assemble a structure in one operation.



LAUNCH ASSEMBLY — Assembly of the Space Shuttle for launch begins, as shown in this artist's concept, with the stacking of the Solid Rocket Boosters on the mobile launch

platform at Kennedy Space Center. Next, the External Tank is attached to the boosters, followed by the mating of the Orbiter to the External Tank.

Malcolm Jones chairs 1977 Sunfish regatta

Control Systems Development Division employee Malcolm E. Jones will be regatta chairman for the 1977 Sunfish North American Singles Championship to be sailed on Galveston Bay Aug. 8-12.

Jones said there are no prequalifications and several NASA and contractor employees are expected to participate in the international event along with entries from across the U.S. and Canada.

The Seabrook Sailing Club was selected to host the races by AMF Alcott and the Sunfish Racing Class. Plans are being made to accommodate 100-150 participants. Deadline for registration is July 25.

For additional information, contact Jones, 1015 N. Country Club Drive, LaPorte, TX 77571 (713/471-3303) or the Seabrook Sailing Club, P.O. Box 36098, Houston, Tx 77036.

Martin Marietta signs vibration test contract

The NASA-Marshall Space Flight Center, Ala., has awarded a contract to Martin Marietta Aerospace, Denver Division, for construction work on a test stand to be used in the Space Shuttle test program.

The \$978,217 contract calls for revitalization of the hydrodynamic support system used in the 1960s for Saturn V dynamic testing. The

giant stand is being modified to hold the entire Space Shuttle for mated vertical ground vibration testing.

The start of tests in 1978 will see all elements of the Space Shuttle joined for the first time. The complete vehicle consists of the Orbiter, External Tank (ET) and two Solid Rocket Boosters (SRB).

Cost reductions show operational efficiency

The ability to reduce costs without sacrificing quality during implementation of a program or project is a mark of good management.

Such cost-effective improvements can be made through redirection of manpower saved in one area to other important tasks. Or, it may

involve elimination of requirements for unnecessary hardware or readjustment in scheduling.

However the cost reductions are made, and whoever is responsible — whether program manager or key-puncher, government or contractor employee — these cost reductions should be reported.

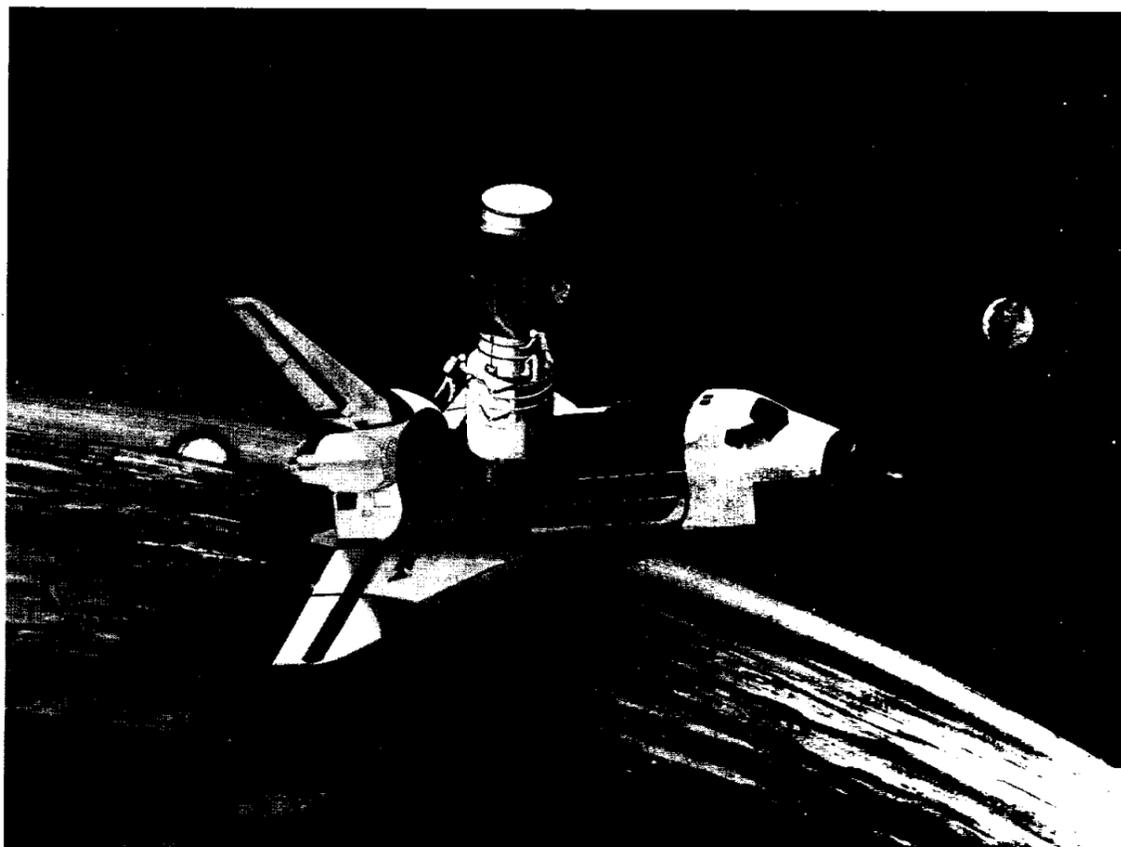
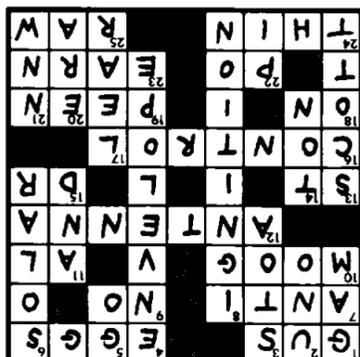
The reports provide one measure of management efficiency — visible evidence of economy in operations.

JSC Cost Reduction Officer H. Mervin Hughes points out that the difference between a suggestion and a cost reduction is that a cost reduction must already be implemented and at a measurable savings to the program.

Every employee is encouraged to report cost reductions using NASA Form 1105-A available from Distribution or the Cost Reduction Office. Turn them in to Hughes at BH23.

JSCrossword answers

(See puzzle, page 3)



SPACE TELESCOPE — The Space Telescope, planned for development by Marshall Space Flight Center and associated contractors for launch in 1983, is shown being readied for separation from the orbiter. Once in orbit, the telescope will

perform deep space astronomy detecting objects 50 times fainter and looking seven times farther into space than the best ground-based telescope.