



ROUNDUP

NASA LYNDON B. JOHNSON SPACE CENTER

HOUSTON, TEXAS

VOL. 16 NO. 8

Friday, April 15, 1977

First manned Orbiter test flight nears

Haise, Fullerton to test systems on Captive Active 1

At Dryden Flight Research Center in California, systems are being activated aboard the Space Shuttle Orbiter Enterprise in readiness for the first manned captive flight.

On May 26, if all continues as scheduled, Fred Haise and Gordon Fullerton will be the first to ride in the vehicle on a "piggy-back" flight atop the 747 carrier aircraft.

A total of five manned captive flights are scheduled, although the last may be cancelled if the first four are successful. Haise and Fullerton will alternate with Astronauts Joe Engle and Richard Truly who will crew the Orbiter during even-numbered test flights.

"That's really going to be a thrill to be up there in the cockpit of that beauty for a landing," Approach and Landing Test Manager Donald K. "Deke" Slayton told members of the news media April 5. "I'd love to be there. The 747 is awfully high in the air by itself."

Slayton spoke during two days of press briefings on Shuttle and ALT which ended with a short news conference by the four ALT crew members.

Purpose of the manned captive (or captive active) flights, Slayton said, "is to get up to launch altitudes and launch airspeeds and do

Orbiter flight tests of the Orbiter systems. Primarily on the first two flights. 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.

"Assuming that all goes well," he said, "we've got three flights that we'll go up and go through the launch envelope ... primarily to train the Orbiter crew and the 747 crew to work together and get into the proper launch environment for free flight."

Looking forward to the Orbiter's first free flight, now scheduled for July 22, Slayton said, "we only have one purpose here — that is to get off the 747 safely, do a preflare at altitude, come back around and land on the lakebed.

"We'll obviously get a whole lot of byproduct testing in the process of systems, handling qualities and manual handling, nose wheel steering, all these good things; but our prime purpose is just to park that beauty back on the lakebed nicely," he said.

The manned captive flights and the five scheduled manned free flights will all be performed with the tailcone on the Orbiter.

Following the last free flight, Slayton said, a captive flight will be attempted with the tailcone off to

test the buffeting effect over the tail of the 747.

"The wind tunnel results indicate that this buffet may be severe enough that we can't fly (the 747) at all in that configuration," Slayton said. "I'd give you 50-50 odds that we're going to make that."

If launch conditions can be reached safely, they will proceed with the final three tailcone-off free

flights, he said. If not, the flight tests will end.

The ALT manager noted that the tailcone-off configuration is the one which will be flown during orbital flights. It produces twice the lift-over-drag ratio as with the tailcone and causes a glideslope at landing of 22 degrees as opposed to 11 degrees with the tailcone.

In response to a reporter's question, Slayton said that even if the

tailcone-off flights cannot be made, enough will be known about how the Orbiter handles subsonically to safely fly orbital missions.

Referring to the unmanned captive (captive inert) flight tests during Phase 1 of ALT, Slayton said:

"All these flights went exactly as scheduled. We were blessed with perfect weather when we needed it and it was lousy when we didn't. Somebody was looking out for us."



ORBITER SEPARATION — Approach and Landing Test crew members, l to r, Joe Engle, Richard Truly, Gordon Fullerton and Fred Haise demonstrate with a model how the Orbiter will separate from the 747 carrier during this summer's "free" flights. "From all we can gather so far," Engle

said, "the separation itself is going to be rather straightforward. The airplane is sitting at a high enough incidence angle that when the separation air speed is achieved it's going to come off pretty fast."



SPINNING SEAT — Frances Barbee, right, a volunteer for the recent Astronaut Medical Selection Exercise, sits in the rotating chair used to measure vestibular function and susceptibility to motion sickness. Checking on her progress is Dr. Joseph Degioanni, physician administrator for the exercise.

JSC's medical team practices astronaut applicant screening

JSC medical personnel completed a week of practice April 1 in applying standards and conducting tests which will be used this summer for medical screening of 150 Shuttle astronaut applicants.

With the help of twenty volunteer test subjects, the medical team worked out logistics for the comprehensive evaluation during the Astronaut Medical Selection Exercise directed by Dr. Sam L. Pool.

Medical testing of Shuttle pilot and mission specialist applicants is scheduled to begin July 16, and run through September, according to Dr. Joseph Degioanni, NASA physician administrator for the exercise. At least 30 astronaut candidates will be chosen from that group.

The same medical evaluation will also be applied in the selection of

Shuttle payload specialists, Degioanni said.

The medical testing involves 24 different procedures, including a general examination by a NASA flight surgeon.

"We want to make this the best of all health screenings because it's for astronauts," Degioanni said.

Also included in the evaluation are psychological, psychiatric, ophthalmological, neurological, dental, musculoskeletal, biochemical and ear, nose and throat examinations.

In addition, a battery of NASA special tests is administered using the Lower Body Negative Pressure device, rotating chair (cupulogram), treadmill, Holter monitor and the Shuttle Personal Rescue Sphere.

In charge of the recent exercise

were Drs. George Behaine, Michael Berry and Jerry Hordinsky of NASA; Joseph Harasimowicz of the U.S. Air Force, and Charles Pickett of the U.S. Navy.

They received what Degioanni termed "tremendous staff support" from personnel, including outside consultants, working in Buildings 7, 8, 32 and 37.

Volunteers undergoing the evaluation were: John Arnold, Frances Barbee, Linda K. Bromley, Gil Chisholm, James L. Cioni, James B. Costello, Roger W. Ellsworth, Paul O. Ferguson, Virginia Gibson and Thomas J. Graves.

Also Kathleen Hosea, Samuel E. Jones, Gary Kane, Ronald R. Lanier, Stella Luna, Julie Mattheaus, Mary Lee Meider, Judy Olson, Dale Sauers and David K. Stoughton.

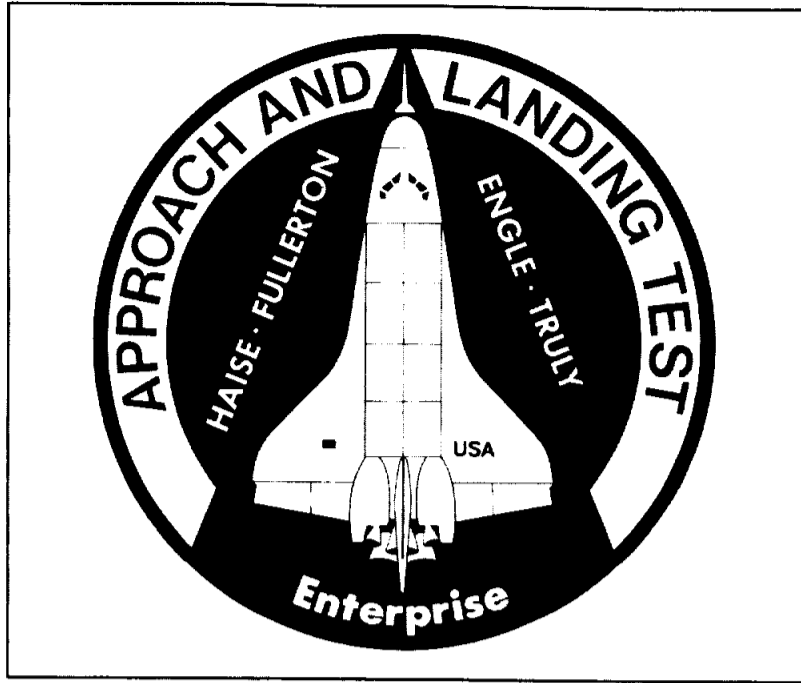
Treat your secretary to lunch

National Secretaries Week, April 24-30, will be observed by the NASA Clear Lake chapter of the National Secretaries Association (International) with a Secretaries Day Luncheon, April 27.

The luncheon will be held from 11 a.m. to 1 p.m. at the Old Swiss House on NASA Road 1.

It is open to all area secretaries and bosses. The idea is for the boss to treat his secretary to lunch.

Cost is \$5, including gratuity, per person. Reservations should be made by April 22. At JSC, contact Rachel Windham, X-3741.



ALT PATCH — This crew patch for the Approach and Landing Test was first displayed April 5 at a crew press conference here. Fred Haise, commander of the first crew, commented: "The patch is sort of an indication when you're ready to fly. When you finally figured out and argued out what the spacecraft names were in Apollo and you had your patch, you knew you were about there. Actually, our name came easy in this program so we only had to fuss about what our patch looked like." The patch is red, white and blue.

Mattingly opens space exhibit at Indiana museum for children

Astronaut Thomas K. Mattingly II and JSC co-op student Brad Perry opened a new space exhibit March 29 at The Children's Museum, Indianapolis, the largest museum for young people in the world.

The exhibit focuses on the Apollo 16 mission for which Mattingly was the command module pilot in 1972. The highlight of the museum exhibit is a full-size command module simulator built with exacting detail by Perry at the

age of 16.

For the 11 days the actual Apollo 16 mission explored the Moon, the young Perry piloted a complete ground-based simulation running real-time with the astronauts in space. To prepare for his "flight," Perry participated in some astronaut training sessions.

Perry's command module project involved over three years of dedicated work and planning. Ordinary objects were made to simulate

the appearance of actual equipment.

Perry's interest in space has not declined. He currently attends the Georgia Institute of Technology as a co-op student with JSC. He will return to Houston this summer to complete the last of six quarters of on-the-job training required for his degree.

During the exhibit opening festivities, both Mattingly and Perry spoke of the future of the space program.

Mattingly concentrated particularly on the Space Shuttle. He described the Orbiter as a "truck, a vehicle built by NASA whose accomplishments will be determined by the extent of people's imaginations and their willingness to work."

Perry said, "I would consider it a great privilege to be part of a future manned space mission, perhaps a trip to Mars someday."

JSC picks Kentron for contract

JSC has selected Kentron Hawaii, Ltd., for negotiations which will lead to a cost-plus-award-fee contract for technical information and public affairs support services at the center.

The proposed contract covers technical editing, writing and report preparation; preparation of program, flight and systems operation documentation; library materials processing and documentation retrieval; graphic arts services; logistical library services; publications and forms distribution; microfilming, and public affairs services.

Kentron's proposed cost and fee for providing the services from May 1, 1977, through April 30, 1978, is approximately \$2,600,000.

Amelia Moody chosen Outstanding Secretary

Amelia L. Moody, secretary to William H. Douglas, manager, Test and Ground Operations Office, has been chosen JSC Outstanding Secretary for March.

Moody was selected for her position in 1973 when the office consisted of an initial cadre of five Kennedy Space Center employees, Douglas wrote in his letter of recommendation.

Since that time, the office has grown to include 22 persons with various assignment statuses from JSC, KSC, the U.S. Air Force and contractor firms.

"Due to this variance in types of personnel," Douglas said, "Mrs. Moody's duties as secretary to the manager are ... unique when compared to all other secretarial positions at JSC.

"She must be exceptionally professional and knowledgeable of program content and organizational relationships ... and administrative policies of the parent organizations of the various personnel," he said. "Mrs. Moody has performed these critical duties in a superior fashion.

"The wide variety of forms and administrative procedures which

must be thoroughly understood to provide acceptable administrative support to this unique work force would overwhelm a good secretary," Douglas observed.

"On a daily basis, Mrs. Moody executes these widely varied and complex techniques as routine functions, thus freeing the manager and office staff for accomplishment of their technical duties.

"Mrs. Moody is a highly motivated secretary with a strong sense of personal dedication to JSC, her supervisor and coworkers and (she) has undertaken every assignment with enthusiasm," Douglas said.



Amelia Moody

Georgia Tech to develop better manatee tracker

KENNEDY SPACE CENTER, Fla. — If it's possible to build a better mousetrap, there must be a better way to track a manatee.

Previous manatee tracking experiments conducted by the U.S. Fish and Wildlife Service in waters surrounding the Kennedy Space Center have used sonar "pingers," devices with a number of problems, including range.

KSC recently awarded a contract for \$25,970 to the Georgia Tech Research Institute at the Georgia Institute of Technology in Atlanta to develop a more satisfactory system.

The contract calls for Georgia Tech to develop a workable concept of an automatic tracking system which will enable the Fish and Wildlife Service to determine the location and movements of manatees.

The last manatee tracking experiment at KSC was conducted in October 1975.

According to Blair Irvine of the U.S. Fish and Wildlife Laboratory in Gainesville, the tracking device used at that time was a sonar "pinger" attached by a girdle just

ahead of the large mammal's tail.

The device was not completely satisfactory. Irvine said sonar range is limited and the signals are highly directional, making tracking difficult.

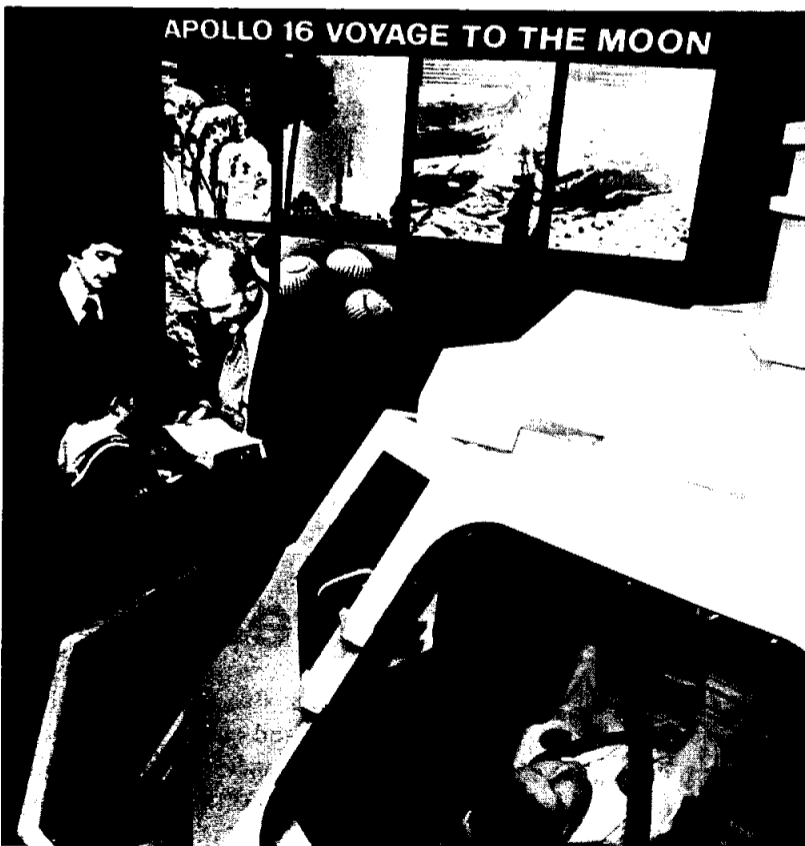
"What we're looking for," he said, "is the best way to track an animal like the manatee. And we'll work very closely with them in adapting it to the animal."

The manatee is an endangered species and the tracking project is designed to pinpoint its roaming patterns and living habits.

The total U.S. population of the Caribbean manatee — one of three varieties in the Atlantic Basin — is estimated at from 1,200 to 1,500 animals, all of them in Florida.

Of this herd, perhaps 100 animals are concentrated in the waters of the Banana and Indian Rivers and Mosquito Lagoon near KSC.

Irvine noted that the past winter had exacted a large toll on the local manatee population and that the 25 dead animals found in local waters represented perhaps 20 to 25 percent of the resident herd.



MUSEUM EXHIBIT — JSC Co-op student Brad Perry, left background, and Astronaut Thomas K. Mattingly II chat with a young visitor at the recent opening of a new space exhibit in The Children's Museum, Indianapolis. At right is Perry's own mockup of the Apollo command module in which, as a teenager in 1972, he piloted a complete ground-based simulation of the Apollo 16 mission running realtime with the astronauts in space. Mattingly was command module pilot for Apollo 16.


Applicants total 2,133

The Astronaut Candidate Program Office reported April 4 that 2,133 applications have been received for civilian astronaut pilot and mission specialist candidate positions. Of those, 277 were from women.

Of a total 14,635 applications

and announcements mailed out by request, 236 went to JSC employees.

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



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.

Editor: Richard Finegan Photographer: A. "Pat" Patnesky



NO SWEAT EXERCISE — Instructor Tamara Molinello, foreground, leads a class in easy exercise designed especially for stretching the muscles and improving circulation in people who sit and stand for long periods during the day. The class will be offered at the Gilruth Recreation Center, beginning April 21, and participants may come straight from work and stay in their work clothes. For more information, see "Yoga, Exercise Changes" under EAA Attractions.

EAA ATTRACTIONS

PICNIC SET MAY 7

Tickets are now available at the Bldg. 11 Exchange Store or from your EAA representative for the Sadie Hawkins' Day Picnic scheduled May 7 at the Gilruth Recreation Center.

Cost is \$1 general admission, \$3 general admission plus barbecue dinner. Either ticket pays for your soft drinks, beer, cotton candy, rides, popcorn, bingo and other attractions.

There will be no rain-out this time. No matter what the weather, the show will go on.

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, *The Lady Who Cried 'Fox'*, \$16/couple. Tickets available 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.

YOGA, EXERCISE CHANGES

Meeting days have been changed from Tuesday to Thursday for classes in yoga and "no sweat" exercises for the working person. The latter class was previously described as one for yoga with general exercise and dance.

Registration for either class has now been extended to Tuesday, April 19, with classes beginning April 21. Instructor is Tamara

Molinello.

Both classes are structured so participants can come straight from work and stay in work clothes. Cost is \$30 for 6 hours of yoga, \$17.50 for 4 hours of exercise.

PLANT PROPAGATION

Registration deadline is April 22 and enrollment is limited for this class. Cost is \$20/person with materials provided.

There will be 10 two-hour sessions on Mon/Weds night beginning May 2. Class covers exotic plant selection, care and propagation; tropical landscaping, Bonsai techniques and artistic totems.

SUMMER CLASSES

Other classes to be offered at the Gilruth Recreation Center this summer include basic auto mechanics and beginning oil painting and probably tennis and photography. Watch for details later or call X-3594 for more information.

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

70 Olds Toronado. Pwr brakes, steer, windows, seats; air, 43K mi. \$950. Campbell, X-3486 or X-3926.

73 VW Bug. New radial tires, 52K mi. \$1,295. Campbell, X-3486 or X-3926.

72 Ford Gran Torino Brougham. 351-V8, all pwr, air, AM/FM stereo. \$1,475. Larsen, X-2581 or 334-3432.

77 Plym Voyager Sport Window Van. 127" WB, premium luxury & trim pkgs, 360-V8, sliding door w/vent wndw, under warranty. 474-4663.

76 Chevy Nova. A/T, pwr, rally whls, air, AM/FM tape, V8. \$3,300. Bernardin, X-5536 or 427-1140 Baytown.

71 Ford Galaxie 500. 4 dr sedan, auto, air, pwr, xint cond. \$1,350. 643-4002.

73 Brougham Class A Motorhome. 25 ft, Dodge 440, 6-ton chassis, compl eqpt, low miles, xint cond. \$10,900. 643-4002.

73 Open Road Motorhome. Fully self-contained, good cond. \$8,500. 333-4339.

71 Chevy Malibu. Clean, V8, 4spd, radio, heater air. \$1,350. 534-2633 after 6.

68 Ford Country Squire Sta Wgn. Full pwr, tape deck, steel radials, other xtras. Prince, X-5234 or 991-4537.

74 Blazer. Full eqpt, 4 WD, new tires, low miles, xint cond. 488-0687 after 5.

70 Dodge Polara. 4dr HT, 383 eng, air, pwr, clean, runs good. \$750. Bennett, X-3738 or 482-7020.

Avenger GT (show car or toy). New paint, interior, wires, whls, tires, etc. \$7,595 or trade for 'Vette or '57 Bird. 333-5510.

74 Vega Hatchback. Air, 4 spd, clean. \$1,395. 482-0855 after 5.

67 VW. Good work car, needs muffler & brake lining. \$350. 479-3996 after 5.

76 Toyota Corolla Sta Wgn. 4 spd, air, radio. Thueson, X-2194 or 487-3149.

CYCLES

74 Yamaha 360 MX Trail Bike. Low miles, xint cond, never raced. Make offer. 991-4626.

77 Honda 750K. New, only 500 mi, must sell. \$2,100. Mays, X-4726 or 488-7831 after 5.

75 Yamaha 200 Electric. 1 owner, low miles, lugg rack, very nice. \$750. 488-0427 after 5.

BOATS & PLANES

Boat trailer. 500 lb capacity, xint cond. Disassembled, \$100. Assembled & licensed, \$125. Koons, 333-3019.

Bonanza for rent. 50 hrs/yr minimum. \$30/hr wet. Based Spaceland. C.

O. Lewis, 488-3265.

72 Grumman Traveler. 1040 TTSN, NAV11, COM11, AT50 xponder, King KX 145B NAVCOM, ADF, 3-lite marker beacon. \$13,000. 943-1945 evngs.

PROPERTY & RENTALS

For lease: New 4-2-2 in Kirkwood South on cul-de-sac. Full carpet, drapes, fireplace, detached garage. \$500/mo. Avail May 1. 481-3086.

Lake Rayburn water access lot. Wooded, restricted, utils, rec facils. Must sell, \$4,695. Colton, 488-2962.

Dubl Wide Mobile Home on corner lot in League City. Landscaped w/new cedar fence. Wilson, 332-4956.

2 adjacent lots near water, Lake Livingston, Shelter Cove. Lovely wooded, utilities. Low equity, low paymts. Patnesky, X-5111 or 353-4313.

Lease in Friendswood. 3-2-2, fenced yard, dining room, fireplace. Avail Apr 15. \$390/mo. Jeff, X-6355 or 482-5393 after 5.

For lease: Kirkwood South, new 4-2-2, lg cathedral den w/fireplace, lg master bdrm, drapes, cul-de-sac. \$500/mo. Campbell, X-3486 or X-3926.

Golfcourse lot, World of Resorts. Class A level on Lake Travis near Austin. Low equity plus paymts. Fair price. Jacobs X-3561 or 777-2173.

Beach lots for sale on Bolivar Reasonable price. Schneider, X-5281 or 426-4749.

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

MUSICAL INSTRUMENTS

Barney Kessel Gibson guitar, Bixby tailpiece, 2 pickups, hard turtle-shell case; \$500. Shobud steel guitar, 3 pedal, 10 string, w/case; \$350. Keyboard electric organ, portable; \$150. 928-3595 after 4.

STEREOS & CAMERAS

Fisher X-101-C 60-watt stereo amp. Walnut case, spare tubes, manuals, etc. Mint cond. \$50. 488-3966.

Sony TC-127 stereo cassette player/recorder, xint cond; \$80. Microphone, \$10. Cassette tapes, \$1.50-\$3. Marsha, X-3774.

Have camera, will sell. Polaroid Clincher, new, never used, won as prize, will sacrifice. 488-2822.

HOUSEHOLD ARTICLES

Estate sale: Antique furniture, appliances, toys. April 16 & 17, 10 to 6.

Shore Acres, 3523 Southbrook off Oakdale. 925-3662.

Antique cylinder desk w/bookshelf top, mint cond; \$1,200. Antique kidney-shape iron fireside bench, ornate; \$100. 488-5564.

Washer/dryer. Reid, 488-3187.

Apt-size Kenmore washer. Reg/perm press/delicate cycles, 2 water levels, like new, used twice. \$100. Campbell, X-3486 or X-3926.

Handmade macrame items of natural jute. Lg owl, \$10. Lg plant hanger, \$15. Choice of 4 styles hanging tables, reasonable, glass optional. 482-6750.

MISCELLANEOUS

Reg 21-mo-old Poodle. White, male, good house pet, loves children. Charlie, 455-7671 after 6.

Lawnmower, Toro 19" Whirlwind, good running cond. \$40. Welch, 474-2654.

Ham Radio: HW 101 w/PS & 18 AUT/WB vertical. \$295. 334-5792.

Belt vibrator, \$45 or best offer. Waist slimmer machine, \$15. 946-1683 after 6.

Lawnmower, 20", 3.5 HP, good cond. \$25. Dave, 488-2554 after 5:30 & wkends.

50' chain-link fence w/poles. \$35. 482-0855 after 5.

WANTED

Overhaul & maintenance book for 69 Pont Catalina. Buy or borrow. Eubanks, X-6161 or 534-3651 after 5.

Back issues of all models airplane magazines. Trying to build set of reference materials for modelers of all ages. Warren, X-4471 or 331-3225.

Transit level wanted. 474-2081. Needs parts for Gemini SST mini-bike. Reid, 488-3187.

Want male Siamese or Burmese kitten. Willing to pay up to \$15. Cordiner, X-2074 or 944-2373.

Want Lionel or American Flyer trains & accessories, working or not. 334-3182. Need riders for carpool from W Loop, SW Fwy, Bellaire area. 8-4:30. McLaughlan, X-3771 or 661-2974.

LATE ENTRIES

CREDIT UNION REPOS: 73 Olds SW, 75 Vega HB, 75 Hornet SW, 75 Chev Nova V8, 75 Malibu Classic, 74 Olds (for sale), 73 Maverick (for sale), 75 Honda, 75 Datsun. Shown by appointment only, 10-2, Apr 18-20. Bids close 5:30, Apr 20. We reserve right to refuse all bids. Call Collection for appointment, 488-7070.

For sale: 52.5 acres, Henderson. Water, paved road, wooded, 1/2 minerals. \$525 acre. 946-4458.

Portable metal bldg on skids, 8'X12". \$300. 946-4458.

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

JSC crossword

(See answers, page 4)

ACROSS

- Rocky projection
- Jumping stick
- Lewis Research Center is there
- Describes DFRC & White Sands landscapes
- California tracking station
- Small spot
- Named for canebrake by explorer Menendez in 1513
- Scend
- Ascend
- Tindall's directorate (acronym)
- Opposite of "yep"

DOWN

- Tooth
- 17th Greek letter
- To be ill
- Rocketry pioneer
- Form, configuration
- Spanish gold
- Martini ingredient
- Poem
- Shut-off Valve (acronym)
- Piland's directorate or type of fish
- Swap Shop items
- Free from taboo (Hawaiian)
- Big River; _____ Grande
- Egyptian snake
- KSC Dir. _____ Scherer



ALT SIMULATION — Astronaut Fred W. Haise Jr., commander of the first crew for Approach and Landing Tests, sits in the cockpit of the Orbiter Aeroflight Simulator (OAS) in Bldg. 5 during recent ALT simulation activity. The OAS pro-

vides a moving base, high fidelity, man-in-the-loop simulation of the Orbiter and the flight environment to satisfy training requirements for the approach and landing flight tests, orbital launches and aborts.

Tom Stafford to discuss B1 flight test program

Maj. Gen. Thomas P. Stafford, former astronaut and now commander of the Air Force Flight Test Center, Edwards Air Force Base, Calif., will discuss the B1 flight test program April 19 at the Gilruth Recreation Center.

Stafford's presentation is being sponsored by the American Institute of Aeronautics and Astronautics, Houston Section, in cooperation with the Society of Experimental Test Pilots.

Movies of the flights will supplement Stafford's discussion of the B1 test results from the program conducted at Edwards and Palmdale.

As an astronaut assigned to JSC, Stafford flew on Gemini 6, Gemini 9, Apollo 10 and the Apollo-Soyuz Test Project.

Guests are welcome at the Tuesday night presentation. Social hour begins at 6 p.m.; a veal cutlet dinner is served at 7 p.m. and the program follows at 8 p.m.

Cost is \$4.50 for members, \$5.50 for nonmembers. There is a \$2 student discount.

Make reservations by noon Monday, April 18. Call Lillian Hudson, JSC X-4991, or Julie Sorrels, 488-0910, X-208.

Last chance for CPS mock exam

Candidates preparing for the Certified Professional Secretary Examination are being given a chance to take a "mock exam" April 23 covering Parts I, II, III, IV and VI.

The mock exam is being offered by the NASA Clear Lake chapter of the National Secretaries Association (International).

It will be held in Room 2-515 of the Bayou Bldg., University of Houston at Clear Lake City, beginning at 8:30 a.m. and ending at 3:45 p.m.

Deadline for registration is tomorrow, April 16. Contact Helen Cooper, CPS, 488-5806 after 5 p.m.



Maj. Gen. Thomas Stafford

New aircraft-to-satellite system provides real-time weather data

CLEVELAND, Ohio — Quick and accurate information on weather conditions around the world is being provided by a unique 70-pound weather data unit designed and built by engineers at NASA's Lewis Research Center.

Called the Aircraft to Satellite Data Relay System, it is carried in the belly of a wide-bodied Boeing 747 aircraft and relays weather data from the aircraft's existing instru-

mentation to a communications satellite.

The satellite transmits the information almost instantaneously to ground processing stations. Aircraft carrying these systems will fly primarily in the tropics and the Southern Hemisphere because these regions present the data-sparse areas of the globe.

The program was first proposed by NASA-Lewis in 1975 and is sup-

ported by Goddard Space Flight Center and the National Oceanic and Atmospheric Administration.

"We are providing the capability for real-time data on the world's weather. This information is important for aviation use and for formulating coordinated world weather maps for use worldwide," explains Robert R. Lovell, whose Flight Projects Branch developed the data transmission system.

Over an 18-month period beginning in July 1975, NASA-Lewis performed intensive design, fabrication and testing, both in research laboratories and on the Lewis-owned C-47 aircraft, on various components of the data relay system.

Engineers subjected the power system, micro-computer, transmitter and receiver to stringent vibration, shock, humidity, thermal and electrical testing.

Once installed on aircraft, the relay system records weather data at 7½-minute intervals. The information is transmitted to ground stations via one of the synchronous meteorological satellites in orbit some 35,900 kilometers (22,300 miles) above the equator over South America and the eastern Pacific Ocean. The entire transmission takes only 37 seconds.

Weather data normally enter international weather agencies through manually prepared reports from aircraft and the standard observation network.

three lunar missions, nearly half of those in color.

Atlas of Surveyor 5 Television Data (NASA SP-341), 1974, is a compendium of television mosaics using 18,873 views. However, it is not a picture book but an index for locating particular lunar features so photographs can be ordered. It is mostly tabular.

Copies of these publications may be obtained by submitting completed JSC Forms 614 to JM86/Distribution Operations. No more than one copy per publication may be requested on each form.

Lunar atlas publications available to employees

Limited numbers of three NASA publications relating to the Moon are being made available to JSC employees on a first-come, first-served basis.

Atlas and Gazetteer of the Near Side of the Moon (NASA SP-241), 1971, is a photographic and tabular compilation of named lunar features. Names of each feature are annotated on the photos along with location data.

Lunar Photographs from Apollo 8, 10 and 11 (NASA SP-246), 1971, is an atlas containing more than 150 photos from the first

Northrop to negotiate aircraft care contract

JSC has selected Northrop Worldwide Aircraft Services, Lawton, Okla., for negotiations leading to award of a contract for maintenance and modification of aircraft assigned to the center.

These include 15 Northrop T-38A's for astronaut spaceflight readiness training; two T-38's for Space Shuttle program support; one T-38A for aircraft research and development test projects; one Martin WB-57F, one Lockheed NP-3A, one Lockheed NC-130B, one Bell 206B helicopter and one Bell 47G helicopter for the airborne instrumen-

tation research program; one Grumman G-159 for administrative transportation; one Boeing KC-135A for the reduced-gravity program; and two Grumman G-1159 Shuttle Training Aircraft.

Northrop will provide servicing, maintenance, modification, and related engineering and logistics support for these aircraft.

Proposed estimated cost and award fee for the initial one-year contract is \$4,789,000. The contract will begin May 1, 1977, and two additional one-year periods are expected to be negotiated.

USCG Auxiliary offers boating safety course

The U.S. Coast Guard Auxiliary's Flotilla 68 will conduct a seven-week course in boating safety and seamanship beginning May 4.

Classes will be held every Wednesday at 7:30 p.m. at the Cruise Arrow Marine Corp., Watergate Yachting Center, FM 2094, Kemah.

Only cost is for textbooks and student worksheets.

Subjects include sailor's language, motorboat handling, legal requirements and navigation aids.

For more information, contact Jim Bailey, 334-1623; Sharon Colligan, 482-3875, or Cruise Arrow Marine Corp.

The Coast Guard Auxiliary is offering free safety examinations of boats from 9:30 a.m. to 5:30 p.m. April 17 at Boat Town on NASA Road 1 and April 30-May 1 at Cruise Arrow Marine.

Kansas exes set meeting

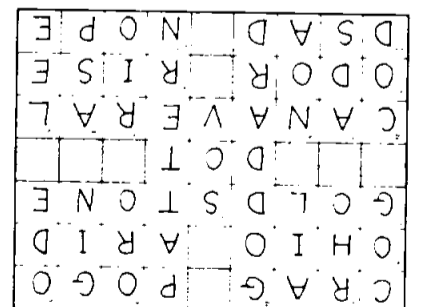
Kansas University Houston Area Alumni will hold a dinner meeting April 27 at the Gilruth Recreation Center.

Social hour will begin at 7 p.m. followed by the meal at 8 p.m.

Reservations may be made by contacting "Gil" Gilkison, 658-1971.

JSC crossword answers

(See puzzle, page 3)



Approach & Landing Test schedule

(SUBJECT TO CHANGE)

DATE	EVENT	DATE	EVENT
May 26, 1977	1st Manned Captive	Oct 5, 1977	4th Manned Free
June 6, 1977	2nd Manned Captive	Oct 15, 1977	5th Manned Free
June 15, 1977	3rd Manned Captive	Nov 17, 1977	1st Tailcone Off Captive
June 24, 1977	4th Manned Captive	Dec 5, 1977	1st Tailcone Off Free
July 3, 1977	5th Manned Captive	Dec 21, 1977	2nd Tailcone Off Free
July 22, 1977	1st Manned Free	Jan 13, 1978	3rd Tailcone Off Free
Aug 16, 1977	2nd Manned Free	March 9, 1978	Tailcone On Free
Sept 12, 1977	3rd Manned Free	March 14, 1978	Tailcone on Ferry
		March 17, 1978	Ferry to MSFC