# **MSC Seeks Proposals** On 1-Man Lunar Flyer

firms to submit proposals for a study of a one-man lunar flying vehicle

In requesting the proposals, MSC noted that a total overview of the lunar program, including study of payloads and capabilities required on various missions, indicates a potential need for a lunar flying vehicle on early lunar landings.

The lunar flying vehicle would significantly increase man's capability to investigate a number of scientifically interesting sites on the moon and would provide a rescue vehicle for cer-

# **PLSS Contract Mods Awarded**

Hamilton Standard Division, United Aircraft Corporation, of Windsor Locks, Connecticut has been awarded a \$10,651,200 contract modification by MSC.

The cost-plus-incentive-fee contract is for development, qualification, and flight phases of the Apollo Portable Life Support System and Oxygen Purge System. The Apollo Portable Life Support System will be used during earth orbital Apollo flights and ultimately on the moon to sustain crew life while outside the spacecraft.

(Continued on page 4)

MSC has invited 23 aerospace tain failure conditions. It would allow astronauts to reach otherwise inaccessible sites such as the walls of a crater or the top of a central crater peak. And it could be used for reconnaissance, exploration and traverses over rough terrain in a minimum of time.

> Preliminary studies by NASA indicate that the lunar flying vehicle should have an approximate dry weight of 180 earth pounds. which could be delivered to the lunar surface on single or dual launch missions, and a propellant weight of approximately 300 pounds. The vehicle would have a range of up to 10 miles, with a maximum payload, for shorter ranges, of 370 pounds, which could be scientific instruments, additional propellant supply, or an inactive suited astronaut.

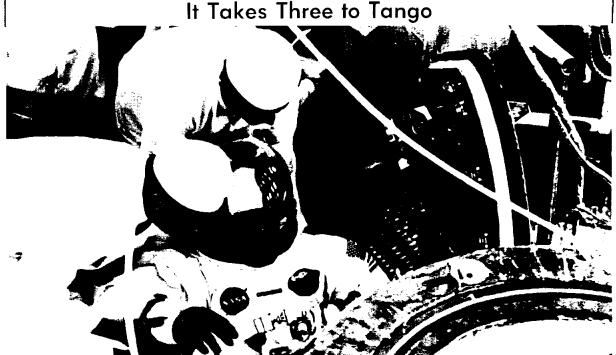
The vehicle is to be capable of operation for several weeks including at least 30 sorties. It is to utilize Lunar Module descent stage propellants, must withstand at least three months dormant storage on the lunar surface, and should, wherever possible, use parts qualified from other vehicles such as LM tanks for propellants.

Industry proposals are to be received at MSC by August 30, 1968.

It is anticipated a six-month, fixed-price research and devel-(Continued on page 4)

William A. Anders. The mission

VOL. 7, NO. 22



HELPING HANDS — Apollo 7 lunar module pilot Walter Cunningham is helped through the spacecraft hatch for one of several late-July manned altitude runs in the Kennedy Space Center altitude chamber. The spacecraft has since been mechanically mated to the Saturn IB launch vehicle on Launch Complex 34. With Cunningham on the Apollo 7 mission will be commander Walter M. Schirra, Jr. and command module pilot Donn F. Eisele. The mission is scheduled for a fourth-quarter launch.

NASA MANNED SPACECRAFT CENTER HOUSTON, TEXAS AUGUST 16, 1968

# Apollo 7 Hauled to Pad 34 For Mating With Saturn IB

Apollo spacecraft 101 and its launch escape tower last week were mechanically mated with the Saturn IB launch vehicle at Kennedy Space Center Launch Complex 34. The spacecraft was mated with the lunar module adapter the previous week after completing manned and unmanned runs in the KSC altitude chamber.

week conducted network and launch simulations in the Mission Control Center with prime and backup crews tied into the simulations from the KSC command module simulator.

The command and service modules for the second manned Apollo mission arrived at KSC Monday and were delivered to

Apollo 7 flight controllers this the Manned Spacecraft Operations Building where lunar module 3 ascent and descent stages are in the polarity fixture for combined systems test.

The Saturn V launch vehicle first and second stages for the second manned mission are mated in the Vehicle Assembly Building high bay while the third stage is in a low-bay work cell. Third stage for the third manned mission is also in a VAB work cell for modifications.

At MSC, a docked modal vibration test of command module 105, service module 102 and lunar module test article 3 was underway in the Spacecraft Vibration Laboratory. The modules were stacked in the translunar docked configuration for the tests in support of the second manned mission.

The first and second manned Apollo missions are scheduled in the last quarter of 1968.

# NASA Tightens Fiscal Belt To Live Within '69 Means

NASA last week announced a and support contractor strength fiscal year 1969 interim operating plan under which the agency will operate pending completion of congressional action on FY 1969 appropriations and apportionment of FY 1969 funds by the Bureau of the Budget.

Congressional cutback of \$362 million in NASA's FY 1969 appropriation request and the possibility of further reductions under the Revenue and Expenditure Control Act of 1968 are reflected in the interim plan. If maintained throughout the year, about \$3.85 billion of new obligational authority would be spent under the plan.

will be cut by more than 2000 at NASA installations. The plan provides safeguards against work force cutbacks which would jeopardize the Apollo program.

The Apollo Applications Program will be funded at about \$140 million – a reduction of about \$300 million from the 1969 budget request. NASA earlier had announced termination of Saturn IB launch vehicle production after vehicle No. 214.

production will halt with the fifteenth vehicle.

Mars 1973 mission plans are being adjusted to the sharplyreduced funding. Instrumentation to be landed on Mars and the scientific return will be substantially less than in the program presented in the FY 1969 budget request.

Development of a flight- 2TV-1 Readied eight NERVA nuclear propul-



James A. Lovell, Jr. last week Borman and lunar module pilot was named to replace Michael Collins as prime command is scheduled for the first quarter module pilot for the third manned of 1969. Apollo mission. Collins is recuperating from the July 23 successful spinal surgery. Lovell was command module pilot on the mission's backup crew.

In other Apollo crew assignments, Edwin E. Aldrin Jr. has been moved from backup lunar module pilot to backup command module pilot on the third mission. Lovell and Aldrin were crewmen on the Gemini XII mission. Fred W. Haise, Jr. is now lunar module pilot on the backup crew.



Backup commander is Neil Armstrong.

Haise is the first member of the astronaut group selected in April 1966 to be named to a flight crew. He had been a member of the second manned Apollo astronaut support team specializing in the lunar module.

With Lovell on the prime crew for the third manned Apollo mission are commander Frank

While work on the Apollo program, aeronautics and space applications will proceed at levels authorized by Congress, the interim plan calls for cutbacks in job spaces, the Apollo Applications Program, Saturn V launch vehicle production, the Mars 1973 mission and nuclear propulsion development.

NASA civil service strength will be reduced by 1600 persons

Apollo Applications flights will be slipped until 1971 and will require five Saturn IB launch vehicles for the three missions: one to orbit S-IVB workshop, one to launch crew, one to launch revisit of second crew, one to launch Apollo Telescope Mount (ATM) crew and one to launch the ATM.

Work toward post-Apollo lunar exploration and earthorbiting Saturn V workshop missions will be limited to studies to be conducted by support contractors. Saturn V launch vehicle sion engine will not begin in FY 1969 but a cadre of design and development people will be retained to preserve an option for flight-weight engine development in FY 1970. Meanwhile. and service modules August 9back in Jackass Flats, Nev., advanced technology work will continue and testing of one experimental engine will be completed.

NASA management has emphasized that the interim operating plan "is being established to permit the agency to go forward with its program until such time as decisions on a final plan are possible." NASA will present its final plans to the appropriate congressional committee before they go into effect.

# For 2nd Apollo **Manned Runs**

Spacecraft 2TV-1 command 10 underwent two days of manned checkout in preparation for a five-day manned thermalvacuum test at MSC in September

Three crewmen from MSC's Flight Crew Support Division, Air Force Majors Turnage R. Lindsey, Lloyd Reeder and Alfred H. Davidson, manned the vehicle during the series of tests in chamber A of the Space Environment Simulation Laboratory

(Continued on page 4)



COST-CUTTING KICKOFF-An employee suggestion on ways to save money has been adopted by the MSC Cost Reduction Program. The plan will encourage each employee to save in government costs the amount of the July pay raise while fostering the image of the federal employee as a prudent user of public funds. It is hoped that the MSC program will snowball into other government agencies. Awards and Cost Reduction coordinators in each area have details of the plan or information may be got from the A&CR office at 7283.

# **Drivers Who Take a Break Usually Get There Intact**

Now that several holidays have been shifted to Mondays, there likely will be an increase in the traffic death rate as more families overextend themselves to make longer trips. All too often, three-day weekend trips evolve into a driving marathon – one day's driving there, one day there, and one day driving home - in which the driver becomes glassy-eyed from highway fatigue.

A momentary doze of 30 seconds while traveling at 60 miles an hour places the car a half mile farther down the road when the driver's eyes snap open again. A driver who allows himself to become fatigued to the point of drowsiness is a prime candidate for a serious traffic accident in which not only he faces injury or death, but members of his family and people in other cars are likewise endangered.

Fatigue symptoms include the lack of precise speed control and tunnel vision which prevents the driver from seeing objects to his right or left. Research has shown that a pause or break in driving, even 10 minutes to stretch the legs, improves driving performance as

KEEP FREEDOM

Bonds,

Shares

much as a 20 or 30-minute break. Pep pills may fend off sleep temporarily, but side effects are more hazardous than the reason for taking a pep pill, for when the effect of a pep pill reaches its limit, the taker collapses.

Taking a stretch break every hour may make the difference between getting there a few minutes late and getting there at all.

# Seven Take Part **In Rice Seminar On Communications** ASPO data manager Herb

Tash and Technical Library Services head Retha A. Shirkey recently conducted lectures and workshops at a week-long technical communications seminar at Rice University. They were among nine seminar guest instructors.

MSC employees attending the seminar were Charles F. Allyn of Apollo Applications Program Office, Rex B. Cline of Management Services Division, Steve Derry of Instrumentation and Electronic Systems Division, Clayton Forbes of Management Services Division and Tommy W. Holloway of Flight Crew Support Division.

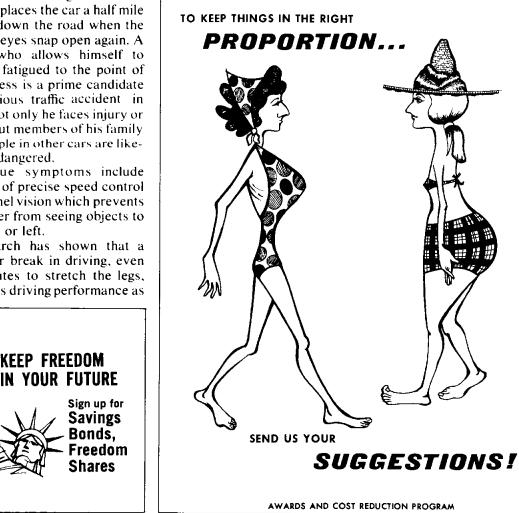
Cosponsored by the university and the Houston Chapter of the Society of Technical Writers and Publishers, the course supplemented the writing and editing training of people with technical backgrounds.

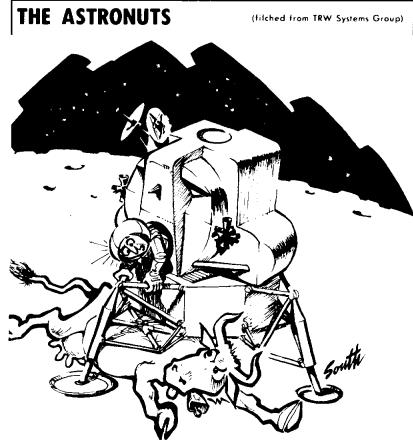
The seminar brought together more than a dozen scientists, engineers, writers and editors for lectures and workshops on problems ranging from information retrieval, graphics, technical illustration and reproduction processes.

Dr. Joe A. Rice of the University of Houston directed the seminar and principal instructors were freelance journalist and U of H journalism instructor Louis Alexander and Esso Production Research Co. supervising editor of technical reports John B. Colby.

### CU Takes T-Bird Bids

Sealed bids for a repossessed 1965 Thunderbird Landau will be accepted at the Credit Union in Bldg 11 through August 30. Bids lower than the \$1770 wholesale value will be accepted.





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Director
Public Affairs Officer
Editor
Staff Photographer

# Your Job in Focus

### **Political activity**

There are certain restrictions imposed by the Hatch Act on partisan political activities. In general, these restrictions prohibit an employee from being a candidate for office in a partisan election or taking an active part in partisan political management or campaigns.

Federal employees have the right to vote and express their political opinions. It is emphasized, therefore, that the restrictions on political activity do not relieve employees of their obligations as citizens to inform themselves of the issues and to register and vote.

Health insurance reps visit

Representatives of the Blue Cross Company and the Aetna Life Insurance Company will visit the Center next month to assist any employee who has a claim or benefit question concerning their health benefits plan.

The Aetna representative will be available on Tuesday, September 10, and the Blue Cross representative on Wednesday, September 11 at the following locations and times: Bldg 331-EAFB-9 am to 11 am.

ing, or participating in a riot or civil disorder; aiding or abetting any person in committing any offense specified in the above, or any offense determined by the head of the employing agency to have been committed in furtherance of, or while participating in, a riot of civil disorder: shall, if the offense for which he is convicted is a felony, be ineligible to accept or hold any position in the Government of the United States or in the government of the District of Columbia for the 5 years immediately following the date upon which his conviction becomes final.

Any such individual holding a position in the Government of the United States or in the government of the District of Columbia on the date his conviction becomes final shall be removed from his position. For purposes of this law, "felony' means any offense for which imprisonment is authorized for a term exceeding 1 year.

Bldg 2, Rm 138-12 noon to 3 pm.

**Riot Act for federal employees** Public Law 90-351 concerning disqualification for employment for engaging in riots and civil disorder, was enacted June 19, 1968. The significant requirements of the statute are: An individual convicted by any federal, state, or local court of competent jurisdiction of inciting a riot or civil disorder; organizing, promoting, encourag-





Bobby J. Wood MSC White Sands

Evinrude four-fifty. Interior stripped for fish-

ing and sport. Complete set ski equipment

and preservers. Extra heavy duty trailer w/

large wheels. Excellent family first boat.

First \$750. Cash offer. Bill LeCroix, 877-2479.

hrs. TT, black and white with orange trim,

absolutely immaculate throughout, full gyro

panel, new annual. Always hangared \$7950.

One Hemisfair Bonus Book plus one par-

Hemisfair tickets: 2 bonus books with 2

Walnut coffee table, modern, excellent

condition, \$20; modern birch desk with 3

Seal-Point Siamese kittens. Templeton

Drake 2B receiver, Ameco TX-62 trans-

mitter, converter, antenna and microphone

plus other accessories, all equipment like

new, \$325. Walter M. Surrency, 488-4094.

Rollaway bed with mattress, \$20. L. D.

Like-new Muntz 4-track auto tape deck.

35 lb. Ben Pearson bow (The Baron), re-

curved limbs, semi-pistol grip, multiple

wood laminations, 62 inches long. Like new.

Original cost \$27.50 - will take \$17.50.

Local honey for sale. \$1 per qt/50c per

19' keel slocp, fiberglas hull, dacron sails,

stainless rigging. Good condition, with

trailer and extras. \$1350. Marvin Williams,

School desk, arm chair type (6), excel.

condition, \$4 each, may be seen at 1407

Blackburn Dr., Pasadena, R. Eason, 944-

King cornet — silver bell, excellent

mechanical condition, \$75. C. Pollard, WI 8-

Toy Puddle puppy, white male, AKC, \$125.

Sailboat winch. Merriman, #1, bottom

drive, with handle, Cost \$72 new. Sell one

for \$35, two for \$60. Jay Legendre, 591-

Almost new yellow Westinghouse deluxe

electric stove. Sacrifice for \$200. Bob Law,

Sears Coldspot window air conditioner,

Excellent condition. \$40. Curt Laetz, 944-

tially complete book, all for \$10. Faye

gate admissions, \$9 each. 1 bonus book with

1 gate admission, \$5.75. Barbara Humphrey,

Ron Stevens, Pearland, 485-9417.

drawers, \$25. High, 591-3254.

OX 4-9013 between 1 and 7 pm.

Godejohn, 932-4625.

McBride, 488-0686.

Burns, GR 1-1488.

944-0167 after 5.

8756 Texas City after 5.

A. J. Collom, HU 2-7120.

pint. Mason, MI 5-2887.

HU 3-4713 (no home phone).

6074

4052.

2976.

7596.

7596.

944-7596

453-4484.

65 Cessna Skyhawk, 300 NAV/Com, 720

# Roundup Swap-Shop

(Deadline for classified ads is the Friday preceding Roundup publication date. Ads received after the deadline will be run in the next following issue. Send ads in writing to Roundup Editor, AP3. Ads will not be repeated unless requested. Use name and home telephone number.)

### FOR SALE/RENT-REAL ESTATE

B-month old French Provincial in Bay brook: 4 bedrooms, separate dining room and living room, large family room w/fireplace, kitchen and dinette, utility room and separate two-car garage with fenced backyard, refrigerator, washer, dryer, and miscellaneous furniture included, central air/ heat, located on court, away from main traffic and apartments. Cost \$25,000 equity and assumption. Dave Peterson, GR 4-3681 ofter 5.

Rent by day or week, 1 bedroom furnished beach house, all electric kitchen, at Bolivar. Has boat dock in front. Evelyn Huvar, HU 3-7626 (no home phone).

For rent-2 rooms with house privileges in quiet residential section. Male or couple with teenagers. L. Palmer, 877-1269 after 6.

El Lago - 407 Pebblebrook Dr., wooded lot, 3-21/2-2, functional storage, screened porch, Howard swimming pool, beamedceiling family room, fireplace, beautifully draped, brick and white aluminum siding, many other extras. Owner day or night GR 4-2741 or 877-1051. Immediate occupancy.

4-bdr, 1¾-bath, 2-car garage, family room, electric kitchen, central heat/air, carpets, \$21,000-\$2,000 down, 6 per cent interest, take over payments. 1902 Sunset Court North, League City. R. Langnau, 932-3187.

For rent, efficiency new Clear Lake, 2326 Lidstone, Seabrook, \$100 month, unfurnished. J. Gregan, 474-3117.

1/2-acre lot in Friendswood, Imperial Gardens. Sacrificing for \$4250. Harold Doiron, 944-6993

House for lease in Dickinson. Available end of August. 4 bedrooms, 2½ baths, story and a half on 1/2-acre wooded lot. Dick Mayo, 534-3114.

2 lots for sale at LBJ Lake, Marble Falls, Texas. \$1100 for both. Maggie Taylor, 649-1593.

Brick, 3 bdrm, formal dining and living rm, central air/heat, 2000 sq. ft. \$21,500, located at 1008 Dusky Rose Lane, Pasadena, R. Eason, 944-4052.

2 bedroom, 2 bath, carpets, drapes, builtin kitchen-utility room, wood-burning fireplace, flagstone floors and wet bar in den. Large swimming pool, patio, fenced yard. League City—(Corner of Houston Ave. & Crystal Street) 4 miles from NASA. Equity \$5,000; payments \$159. Total price \$23,000. Betty Wheeler, 932-2956.

Near new Foleys-Almeda, \$2500 equity, 51/4 % FHA, \$117 a month, brick 3-11/2-2. Family room, air units, R. E. Sterken, 944-2820.

Sale or rent: Lakeside, 2 bdrm cottage block from South Shore of Clear Lake, rent \$125; price \$9500. C. H. Perrine, 877-2165.

Fairmont Park, 3-2-2, full brick, air/heat, roomy eat-in kitchen with much wood cabinetry and all built-ins, panelled den, living room, ceramic tile baths, clay tile foyer, hardwood floors, all venetian blinds. Mature trees and shrubs, fenced backyard, high ground. 20 min. to NASA, 10 to shopping, walking distance to school, corner store, and free pool. Community services include back yard garbage pickup, police patrol, etc. Total price \$15950. \$3400 for equity and assume balance of 51/4 % FHA loan. Payments \$131 a month. Frank Miceli, GR 1-0723. Farm in Brenham, 63 acrew. Old house, needs repairs. Good barns, electric well, stock tank. Land all cleared, has native pecans, good peach trees, wild grapes, and fig trees. Good fences, Rolling terrain with a beautiful view. About 15 minutes drive to the

# Briggs, 946-5849 after 5

Lone Star 16 sailboat with galvanized tilt FOR SALE-AUTOS trailer, 4 life jackets, masthead fly, bottom 54 Pontiac Tempest Custom 4-door sedan, 326 V-8, automatic, air-conditioning, new paint, tarpaulin, 31/2 hp outboard, all in excellent condition. Ed Simon, 488-4043.

brakes, new shocks, 2 new tires, original owner, \$1,250, J. O. Covington, 487-3066. Chevelle, 67 2-dr hrd. top, air, power, \$200 and take over payments, like new. Holeman, 944-2314.

67 Volkswagen camper, dealer air conditioned, pop-up top, side tent, icebox, water pump, radio, heater, whitewalls, sleeps 4 adults and 2 children easily, 19 miles per gallon, sold for \$3800 last September, will sell for \$2800. L. J. Corcoran, 944-9902.

66 Mustang convertible, V-8, four on floor. radio, air, excellent condition, \$1400. A. J. Collom, HU 2-7120.

59 Ford, good body, good tires, upholstry not the best, radio in good working order, need use of until Sept. 7, will let go for \$90. Ross Radley, ext. 4258 (no home phone). 66 L.T.D., vintage burgundy with black

vinyl top, 390 cu. in. engine, radial tires, A/C, AM/FM, 33,000 miles, \$1895. Al Shannon, 591-4595. 68 Impala sports sedan, 5,000 miles, 327

engine, Turbo Hydramatic, full power, air, AM/FM. Paul Weitz, 591-3071.

66 Opel Kadett wagon, air conditioned. \$1300. John Lottinville, HU 8-3128.

68 Corvette (bronze) 3500 miles, hard & soft tops, AM/FM radio, 427, 3 dual carbs, firestone 215 radials, automatic transmission, power. Dick Gordon, 591-2389.

Too hot for me! 1968 Plymouth GTX. 440 HP. All power and accessory options, incl. stereo tape unit. Like brand new. Only 2600 miles. Cost new \$4,600, sell for \$3,200. Dolores Briggs, 946-5849 after 5.

67 Toyota - 4-door white, blue interior, radio, air. Original cost \$2200 will sell for \$1650. Gets 25-30 mpg. Excellent condition. Will consider trade for a station wagon. "Dutch," 591-4163.

67 Chevelle, automatic, air, 283/V-8, \$2000. Claudia, 944-7750 after 5:30.

Ford Fairlaine 500, 1963, 260 V-8 overdrive, vinyl upholstery, air, good tires, extra clean. \$700. J. White, GR 4-3992.

59 Ford Country Sedan Station Wagon, clean, no rust, excellent mechanical condition, V-8, WSW tires, air-conditioned, radio, automatic transmission. See and drive to appreciate. \$350 including complete shop manual. Ed Stelly, League City, 932-4727.

61 Buick Electra 4-door, clean, loaded, good rubber, extra nice looking car, drives like a new one. Sacrifice \$395 cash. (Some trade considered.) W. Whitehall, 877-4355.

62 Plymouth Valiant, air, automatic, good work car, \$350. Ted Guillory, 472-8208.

Chrysler, 1966 Newport sedan, loaded, sequoia green, excellent condition, original owner. Best offer over \$2,000. Kennedy, 944-9023.

65 Ford Country Squire station wagon, black, good tires, full power, air conditioned, original owner. Mike Johnson, GR 2-7445, after 5.

68 Corvette, red convertible, 427 engine, 4-speed transmission, AM/FM radio. \$4400, Alan Bean, HU 8-0191.

60 pickup Ford 6 cylinder, standard shift, excellent tires, heavy-duty bumpers, trailer hitch, etc, turquoise and antique white, must sell \$365. E. Wright, 877-3059.

### FOR SALE-MISCELLANEOUS

Mobile home for lease, furnished, air. Will relocate to your choice area, if on a long-term lease. Reasonable rent. Floyd A. Turner, RE 3-7667.

1964 Corvette Positraction rear axle asnew Somerville lake. \$450 per acre. Dolores sembly, complete w/traction bars, suspension assy wheel hubs, brakes, etc. \$115.

151/2-foot fiberalassed wooden boat and trailer, (no motor) you can get afloat for \$79 cash-worth \$150 or more. W. Whitehall,

23" Silvertone TV UHF-VHF, black & 5028 League City.

after 7.

La Coruna Mauser, 8 mm NRA excellent, Uel S. Clanton, HU 2-7187.

Western Auto sewing machine, needs 877-4866

Wurlitzer organ, late model, like new.

Blonde bedroom furniture, double bed with foam mattress, bookcase headboard, 2 night stands, vanity-desk with mirror, \$100 total or will sell separately. Elvin Pippert, HU 7-0196.

Deer rifle cal. 264 with 4X scope and ammo \$80. Model 98 Mauser military 8mm \$20. Craftsman electric drill press and 1/4" Thor drill, \$17. 1/4-hp electric motor, \$4. Kodak Pony 135 with flash, \$10. C. E. Hopkins, 944-2838.

Moving to new house with built-ins, etc. Selling an assortment of drapes, 11/2 ton Friedrich air conditioner, apartment-size gas range, playpen, double bed. Killingworth, Dickinson 534-2055.

Slide projector, Argus 500 watt, for 2 x 2

Riders or join car pool from Baytown, 7:30 to 4:00 shift, Bldg. 4, Carolyn Pillow, 422-2133.

Roommate (s). I will have large 2 bedroom apt. near airport on freeway, available in August. Also interested in moving in with others. Mike Thomas, MI 5-7492.

Surfboard - Rick - UFO 9'10", very good Rocks for surfboard. Phyllis Morton, 946condition, white, blue stripe. Bertha Corbett, 4752.

> Want to join or start carpool from Baytown, 8:30-5:00, Norman R. Schulz, ext. 2901

Port-a-Crib and Stroller, in good condition. James L. Neal, 471-3119.

Bowlers for fall Moon Shot Couples Bowl ing league at Mimosa Lanes, Tuesdays at 6:30 p.m. Shirley Yeater, 946-2390 for information.

Yankee will buy two cowboy hats, sizes 71/4 & 7, ten-gallon variety preferred but will accept conventional kind. New or used.

Ross Radley, Ext. 4258 (no home phone). Back issues of Aviation Week; Space Tech nology; Armed Forces Management; Space/ Aeronautics; or similar publications; Eliot P. Tucker, HU 3-2441 (no home phone).

Want to buy trampoline. Bill Johnson GR 4-3120.

A 28-inch ladies bike in good condition, will pay according to condition. Arminta Yanez, HU 3-7771 (no home phone).

Wicker dining table and 4 wicker chairs with arms and backs. Good condition. Sandy Cooper, 944-9026.

One copy of the December 1965 special issue of the "Proceedings of the IEEE" for use in office. Jim Bates, 3816 (no home phone).

Want to rent transportation car for six

# **Aero Club Sets Licensed Pilot Member Drive**

The Aero Club has launched a membership drive called "Operation Sky Check" aimed at pilots who have earned their licenses but have found that owning an airplane or commercial rental rates for weekend flying are too rich for their blood. Pilots who make cross-country flights with their families or make business trips are especially sought by the Club.

Formed four years ago, the Aero Club hangars three aircraft at Spaceland Airpark in League City-Cessna 150, Cessna 172 and Bonanza-K. The Cessnas are used as time-builders for pilots to grow into the retractable-gear 196-mph Bonanza "Jellow Bird." At least 100 hours total time and 10 hours as pilot-in-command in the Bonanza are required by the Club for checking out in the airplane. The Club has no night-flying restrictions.

Membership dues are \$50 initially and \$10 a month for use of the Cessnas only, and \$100 and \$20 a month for all three aircraft. Hourly wet rental rates are Cessna 150 \$7, Cessna 172 \$9 and Bonanza \$16. Half of the initial and monthly dues is refundable when a member leaves the Club, the amount depending upon member share worth.

For additional membership information, call Aero Club president Bob Ward at 4667 or John Boynton at 4908.

### Men's Bowling League **Starts September 9**

The MSC Men's Bowling League September 9 will hold a brief organizational meeting before throwing the first ball down the alleys at the Ellington AFB lanes. The League will bowl each Monday at 5:30 pm.

The League has an opening for one five-man team with two registered substitutes. Call Al Spivey at 4063 for League information.

# **Geologists Give Technical Papers** At Prague Meet

Two technical papers by MSC geochemists will be presented at the August 19-28 XXIII International Geological Congress at Prague, Czechoslovakia. Lunar Receiving Laboratory curator Dr. Elbert King and coauthor Vladimir Bouska of Prague's Charles University will present a paper entitled "Electron Microprobe Analysis and Petrology of Two-Colored Moldavite from Lipi-Slavce, Bohemia (Czechoslovakia)." A second paper, "Multiple Deformation and Associated Progressive Polymeta Orphism in the Beltian Rocks of the Idaho Batholith," by Dr. Bill Greenwood of the Lunar and Earth Sciences Division Geology and Geochemistry Branch and Roland R. Reid of the University of Idaho will also be presented at the Congress.

6.500 BTU's. Like new, \$100. Bob Law, 944 Stud service—Basset hound, top show quality AKC reg, tri-color. Bob Law, 944-

305 cc Honda, 1962 Superbawk, excellent condition. Best offer. E. Beck 946-3702. Simmons king-size bed. Includes twin box

springs and king-size mattress. 3 yrs old \$75. M. R. Wash, 482-1031.

Chevrolet 283 Power-Pack V-8 engine, dismantled and vat-boiled, \$45. Ed Pavelka, HU 2-7461

Hemisfair Bonus Book - 1 adult book with 2 admissions, \$15.85 value, and 2 tickets to most of the major rides, 4 children's books \$4.50 value, all for \$20. Zelton Eubanks,

877-4355. Sixteen feet of boating pleasure. Glass covered ply with hardwood ribs powered by

white, contemporary console, 2½ years old, excellent condition, \$95. John Hyams, 932-Maple end table, one drawer with maga-

zine rack, \$18. W. G. Weppner, 944-6130

matched numbers complete with cleaning rod. Ideal for deer hunting as is for conversion, \$42. Ammo, Canadian mfg., boxer primed \$6 for 100 rounds to go with gun.

new belt. In working condition. \$15. Rogers,

Kennedy, 944-9023.

slides, in good shape, does not have magazine capability; \$15. 20" rotary mower, 21/2 horsepower, used three summers, starts and runs well, \$15. Swing set w/slide, old but durable, \$5. Rabbit cage, free. W. Speier, 591-2263

### WANTED

4 bedroom, 2 bath, 6' cedar fence, 400 sq. ft. patio, \$2,800 equity, assume \$17,000 note, \$162/month. Cliff Phillips, HU 7-2044.

For lease — Friendswood: 4-2-2, carpeting, central-air, livingroom & Irg. paneled den, gas built-ins, dishwasher. Walk to schools. Security deposit, \$200/mo. , available Oct. 5. Kathleen Braz, 482-7650 after 5 & week-

100' x 150' wooded lot in Baywood, private pier, 1 block from Bay, \$4500. M. S. Larson, GR 1-0068.

Bayou Vista. Contemporary two-bedroom year round residence. 40 foot pier; concreted yard; screened porch; carpeted; central heat. Beamed, vaulted ceilings; overhanging balcony. Membership for pool, golfing, and recreation for remainder of year included. Dorothy Baker, La Marque WE 5-3912 after 5 or anytime weekends.

5 bedroom, airconditioned (central), 2000 sg. ft, 2½ baths, Lot 250' x 130'. Asking \$750 for equity, payments \$140 mo. includes everything. September 1. R. L. Brown, 534-3474 Dickinson.

Also Corvette dashboard (all instruments except radio) \$45. Ron Hagood, WI 8-2870, Texas City.

Antique gold wrought-iron table with Champagne glass top and four matching chairs with apple green leather cushions. Original price \$200. Used 2 mo. Sell \$150. Evelyn Huvar, HU 3-7626 (no home phone)) 1 pair \$18 dark men's dress slacks, waist

size 44, length to fit 6' man. Cleaned once. Sell \$10. Evelyn Huvar, HU 3-7626 (no home phone).

Black female - miniature toy poodle -AKC, 30 champions, 5 generations, \$75. HU 2-7012 after 5.

Martin Busine Bb clarinet. Needs some work. \$40. Also, Getzen Bb bass clarinet, excellent condition. \$150. Both for \$175. One music stand throw in free. Linda Gennett, MI 9-3576 after 8 pm. Anytime Saturday and Sunday

Rent my 1966 Cessna 150 or 1967 Skyhawk. Attractive rates! Instruction also available. Earn your private Pilot Certificate for as little as \$450. N. Tilton, GR 9-1176.

Dickinson 534-3651.

Transportation to LSU-Rice game. Bus leaves Clear Lake Country Club at 6 pm, Saturday, Sept. 28. Go direct to the game and return, \$2.25 per person. Cocktails at 5 pm. Jeff Adams, HU 8-0250 for reservations and dinner.

Black and white Dystrom Dining table, 4 captains chairs, end table, end table, lamp. Mary Duckett, HU 8-1496.

Puppies, Dachshund, \$25 each. L. P. Estes, 591-3286 anytime.

1966 Honda, 300 cc Dream, new tires,

\$3500. L. Coyle, Alvin 658-4864.

2 Hemisfair Child's Books, \$2.50 ea. James Blumentritt, 932-4220.

Girls 20" bicycle, \$10; Wonder horse, \$5. William Lindsey, 591-3917.

Labrador Retrievers: 7 weeks old AKC registered, excellent field trail or hunting stock. Blaine Murray, 944-6584 after 5.

23 ft. Chris-Craft fiberglassed cabin cruiser, 130 hp inboard radio, head, running water, very clean, perfect shape, ready to go, \$1500 cash. Everett Dorman, 644-7192.

weeks starting August 24. Kathleen Braz, 482-7650 after 5.

Girl's 24" bicycle, good condition. Kathleen Braz, 482-7650 after 5.

Cars to wash and wax while you work. only \$8. Pick up and delivery at MSC. Mark Johnson, GR 4-2422.

Light-weight double-barreled 20-gauge shotgun. Good condition and reasonably priced. Paul Thomas 534-5354, Dickinson or Bob Abel 946-8254, Houston.

15 or 16-foot fiberglas ski rig, no junk. E. Wright, 877-3059.



# Apollo VII Crew Draws a Half Day of Sea Duty



RUB-A-DUB, DUB - Three men in a spacecraft went to sea August 5 as the Apollo VII prime crew trained for water egress in the Gulf of Mexico south of Galveston. In left photo, Apollo crewmen Walter Cunningham, Walter M. Schirra, Jr. and Don F. Eisele are briefed on the afterdeck of the MV Retriever by Larry Bell of Landing and Recovery Division before entering the spacecraft. Behind Schirra are Flight Crew Support Division training coordinator Tex Ward and observer astronaut Ron Evans. In the tradition of the sea, Schirra was the last

to leave the ship (right photo) as the crew climbed into the liferaft to await Coast Guard helicopter pickup. The spacecraft was first placed in the water apex down, or in the Stable II position. Uprighting bags flipped the spacecraft to Stable I before the hatch was opened for crew egress and pickup. The backup Apollo VII crew repeated the exercise the following day.



Lawrence D. Hemmert

MSC White Sands Test Facility

# Spanish Club Seeks More Members

The MSC Spanish Club plans speakers and social events. The classes in conversational Span- members. ish to begin in the fall. Also planned are programs of films, for details.

beginning and intermediate Club hopes to recruit additional Call Estella Jackson at 3193

# **Feathered Outpatient**



# **Country Theater** Stages 'Rainbow'

The Clear Creek Country Theater of League City August 22 will open an eight-performance run of the musical comedy "Finian's Rainbow."

'Rainbow's' plot centers around a pot of stolen gold Finian attempts to make grow by planting it near Fort Knox. His efforts are foiled by the leprechaun Og.

The role of Finian is played by Clear Creek High School principal Art Goforth, and his daughter Sharon by Carolyn Detmore of Flight Support Division. Other MSCers in the cast are Morgan Redmond of B&R-Nand Don Wiseman of AV Corp.

Reservations for the production can be made at 932-3714.

# Lunar Flyer

(Continued from page 1) opment study contract will be awarded for analysis, cost study and preliminary design of a lunar flying vehicle-one of several possible lunar mobility approaches being considered by NASA. However, a follow-on hardware development project will not begin until specific post-Apollo lunar surface missions and mission support systems have been approved.

## 2TV-1 Tes

# **PLSS Modifications**

(Continued from page 1)

The modification definitizes fication testing, and the configucontract changes incorporating ration changes necessary for the use of non-flammable materi- integrating these modifications. als based upon Apollo flammability test results, component development and qualification of replacement, redesign, and quali- the Oxygen Purge System.

The modification also includes

# **UofH Course Sign-Up** Set for September 6

The University of Houston ployee Development Branch at has announced a list of twenty Extension 7311. proposed courses to be offered at the Clear Lake Graduate be offered at Clear Lake is Center during the 1968 fall semester. The list includes ten 9 to 11:30 am and to 3:30 pm in courses in the College of Engineering, nine courses in the registration is scheduled for College of Arts and Sciences, and one course in the College of am at the same location. MSC **Business Administration**.

employees, who are on the cur- courses, either at Clear Lake or rent mailing list to receive infor- at the main campus, are being mation concerning the graduate asked to submit MSC Form 75, program, will be sent a schedule Application for Training, to the and description of the courses Employee Development Branch, to be offered at Clear Lake. BP3, by August 26. Other MSC employees who decourses should notify the Em- cludes the following: College of Arts and Sein

Registration for the courses to scheduled for September 6 from Building 30, Room 1025, Late September 13 from 9 to 11:30 employees who plan to enroll Approximately 1000 MSC for any University of Houston

The list of proposed courses sire information regarding these to be offered at Clear Lake in-

M-W

T-Th

M-W

	Conege of Arts and Sciences	
Department of	Mathematics (MTH)	
MTH 439	Selected Topics in Mathematics	
	(Suitable for Engineering Students)	3-4:30 pm
MTH 477	Advanced Linear Algebra	3-4:30 pm
MTH 633	Theory of Functions of a Real	
	Variable	4.30-6 pm

SQUARE NEEDLE - A small-scale drive to stamp out botulism is underway at MSC after an unknown source of the disease killed several members of the duck colony. Dr. Malcolm C. Smith of the Biomedical Research Office is shown injecting vaccine into a somewhat apprehensive duck held in a hammerlock by Lawrence Clement of LTV Aerospace Corporation. An embargo on employees' feeding the ducks has been called until the source of the botulism has been found. Botulism is not directly contagious to humans but can be got by eating an improperly-cooked diseased duck. Nighttime ducknappers, beware!

21 V-1 1 ests	MTH 683	Selected Topics in Analysis	4:30-6 pm	T-Th.	
(Continued from page 1)	MTH 685	Selected Topics in Applied			
The manned checkout was		Mathematics	Arrange	Lime	
		f Physics (PHY)			
aimed at verifying test proce-	PHY 390	General Astronomy	3:30-5 pm	M-W	
dures and spacecraft systems	PHY 661	Methods of Mathematical Physics	7:30-9 am	T-Th.	
prior to manned thermal-vacuum	PHY 667	Quantum Mechanics	3:30-5 pm	T-Th.	
testing.	•	Political Science (POL)			
	POL 389	Topics in Public Administration	4-5:30 pm	M-W	
The crew boarded the space-	College of Business Administration				
craft inside the 120 foot high, 65		Management (MGT)			
foot diameter chamber A at 1	MGT 672	General Management Theory	3-6 pm	Thu.	
p.m. They wore the latest model		College of Engineering			
Apollo pressure suits and re-		Electrical Engineering (E E)			
• . •	E E 575	Control Engineering	4-5:30 pm	T-Th.	
mained in the vehicle for a total	E E 632A	Statistical Communication Theory	4-5:30 pm	M-W	
16 hours in two runs.	E E 735	Communications and Radar Systems	4-5:30 pm	T-Th.	
The 2TV-1 test vehicle has		Industrial Engineering (1 E)			
undergone modifications to the	I E 363	Engineering Statistics 1	7-8:30 am	T-Th.	
forward and side hatches and		Mechanical Engineering (M E)			
	M E 571	Vibration Analysis	7:30-9 am	T-Th.	
the forward heat shield and has	M E 630	Radiant Heat Transmission	4-5:30 pm	T-Th.	
been equipped with a docking	M E 690	Engineering Analysis 1	7:30-9 am	T-Th.	
probe since completing CSM	M E 730	Selected Topics – Spacecraft			
101 support testing at MSC in	M E 730	Temperature Control Systems	7:30-9 am	T-Th.	
	M E 730	Selected Topics-Astrodynamics 1	7:30-9 am	M-W	
June.	M E 730	Selected Topics-Optimization Theory	4-5:30 pm	M-W	