## MSC Seeks Proposals On 1-Man Lunar Flyer

(1) ams to submit proposats for a tudy 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 mis-
sions, indicates a potential need for a lunar flying vehicle on early lunar landings.
The lunar flying vehicle would ignificanty increase man capability to investigate a num ber of seientifically interesting tes on the moon and would provide a rescue vehicle for cer-

## PLSS Contract Mods Awarded

Hamilton Standard Division United Aircraft Corporation, of Windsor I ocks. Connecticut has heen awarded a $\$ 10.651 .200$ contract modification by MSC
The cost-plus-incentive-fee contract is for development. qualification. and flight phatses of the Apollo Portable I ife Support System and Oxygen Purge Sys tem. The Apollo Portable I ife Support System will be used during earth orbital Apollo flights and ultimately on the moon to sustain crew life while outside the spaceecraft.
(Contimued on pase 4)

## Lovell Replaces Collins On Third Apollo Crew <br> James A. I.ovell. Jr. last week <br> Borman and lunar module pilot

was named to replace Michael Collin, as prime command module pilot for the third manned Apollo mission. Collins is $r$ cuperating from the July 23 successful spinal surgery. Iovell was command module pilot on the missions backup crew
In wher Apollo crew assignments. Fulwin E. Aldrin Jr. has module pilot to hackup command module pilot on the third mission. module pilot on the third mission.
I ovell and Aldrin were crewmen on the Gemini XII mission. Fred W. Haise. Jr. is now lunar


Backup co
Haise is the first member of the astronaut group selected in April 1966 to be named to a flight crew. He had been a memher of the second manned Apollo astronaut support team special izing in the lunar module.
With lovell on the prime crew for the third manned Apollo mission are commander Frank
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 reconnais ance. exploration and traverse over rough terrain in a minimum of time.
Preliminary studies by NASA indicate that the lunar flying veh cle should have an approximate dry weight of 180 earth pounds which could be delivered to the unar surface on single or dual launch missions. and a propel lant weight of approximately 300 pounds. The vehicle would have a range of up to 10 miles, with a maximum payload, for shorte ranges. of 370 pounds. which could be scientific instruments additional propellant supply, an inactive suited astronaut
The vehicle is to be capable of operation for several weeks including at least 30 sorties. It is o utilize Lunar Module descent tage propellants. must withtand at least three months dormant storage on the lunar surface and should, whereve 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 scheduled for the first quarter of 1969.


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 space craft has since been mechanically mated to the Saturn IB launch vehicle on Launch Complex 34. With Cunning ham on the Apollo 7 mission will be commander Walter $M$. Schirra, Jr. and command module pilot Donn . Eisele. The mission is scheduled for a fourth-quarter launch.

## ROUNDUP



## hoUston texas

AUGUST 16, 1968

## Apollo 7 Hauled to Pad 34 For Mating With Saturn IB <br> Apollo spacecraft 101 and its <br> Apollo 7 flight controllers this <br> the Manned Spacecraft Opera-

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

## NASA Tightens Fiscal Belt To Live Within '69 Means

NASA last week announced a fiscal year 1969 interim operat ing 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.

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
dil support contractor strength 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.

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 earth orbiting Saturn V workshop missions will be limited to studies to be conducted by support contractors. Saturn V launch vehicle
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 weight NERVA nuclear propulsion 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 develop ment in FY 1970. Meanwhile, back 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.
tions Building where lunar module 3 ancent 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 .

## 2TV-1 Readied For 2nd Apollo Manned Runs

Spacecraft 2TV-1 command and service modules August 910 underwent two days of manned checkout in preparation for a five-day manned thermalvacuum test at MSC in Septem ber.
Three crewmen from MSC's Flight Crew Support Division. Air Force Majors Turnage R. Lindsey, Lloyd Reeder and AIfred $H$. Davidson. manned the vehicle during the series of tests in chamber A of the Space Environment Simulation Laboravory.


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 marathonone 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 sec onds 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 IN YOUR FUTURE

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 $C$ harles $F$. 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.


SUGGESTIONS!

## THE ASTRONUTS

(filched from TRW Systems Group)


The Roundup is an official publication of the National Aeronautics and Space Administration Manned Spacecraft Center, Houston, Texas, and is published every other Friday by the Public Affairs Office for MSC employees.

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Dr. Robert R. Gilruth
Public Affairs Officer Paul Haney
Editor
Terry White
Staff Photographer
A. "Pat" Patnesky

## Your Job i̊

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 par 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 obli gations 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. Sep tember 10. and the Blue Cross representative on Wednesday September 11 at the following locations and times:

Bldg 331-EAFB-9 am to 11 am .
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 in citing a riot or civil disorder: organizing, promoting. encourag
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 further ance 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 im prisonment is authorized for a term exceeding I year


## 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
for sale/rent-real estate B-month old French Provincial in Bayand living room, large family room w/fire place, kitchen and dinette, utility room and eparate two-car garage with fenced back yard, refrigerator, washer, dryer, and mis heat, located on court, away from mai tratfic and apartments. Cost $\$ 25,000$ equit ofter 5.
Rent by day or week, 1 bedroom furnished Has boat dock in front. Evelyn Huvar, HU 7626 (no home phone).
For rent-2 rooms with house privileges in with teenagers. L. Palmer, 877.1269 after 6 . El Lago-407 Pebblebrook Dr., woode , $3-21 / 2-2$, functional storage, screene porch, Howard swimming pool, beamed eiling family room, fireplace, beautifully draped, brick and white aluminum siding many other extras. Owner day or night GR 2741 or 877 -1051. Immediate occupancy. 4-bdr, 13/4-bath, 2 -car garage, family pets, $\$ 21,000-\$ 2,000$ down, 6 per ce interest, take over payments. 1902 Sunsel 3187
For rent, efficiency new Clear Lake, 2326 nished. J. Gregan, 474-3117
I/2-acre lot in farrifing for $\$ 4250$. Harold Doir dens. Sacrificing 44.6993.

House for lease in Dickinson. Available and of August. 4 bedrooms, $21 / 2$ baths, story
and a half on $1 / 2$-acre wooded lot. Dick Mayo, 534-3114. 18 Lake Marble Falls, exas $\$ 1100$ for both. Magie Taylor, 649. 1593. 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, builtplace, 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
Neor 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.

Slock from rent: Lakeside, 2 bdrm cottage $\$ 125$; price $\$ 9500$. C. H. Perrine, 877-2165 fairmont Park, 3-2-2, full brick, air/heat. try and all built-ins, panelled den, living room, ceramic tile baths, clay tile foyer, hardwood floors, all venetian blinds. Matuie
trees and shrubs, fenced backyard, high trees and shrubs. tenced backyard, high walking distance ro school, corner store, and free pool. Community services include back
yard garbage pickup, police patrol, etc yard garbage pickup, police patrol, etc.
Total price $\$ 15950$. $\$ 3400$ for equity and assume balance of $51 / 4 \%$ FHA loan. Pay ments $\$ 131$ a month. Frank Miceli, GR 1-0723 Farm : n Brenham, 63 acrew. Old house,
needs repairs. Good barns, electric well, stock tank. Land all cleared, has native fig trees. Good fences. Rolling terrain with a beautiful view. About 15 minutes drive to the new Somerville lake. $\$ 450$
Briggs, 946.5849 after 5 .
4 bedroom, 2 bath, 6 cedar fence, 400 sq. ft. potio, $\$ 2,800$ equity, assume $\$ 17,000$ note, $\$ 162 /$ month. Cliff Phillips, HU 7.2044. fortral livingroom \& Irg paneled den gas built-ins, dishwasher. Walk to schools.
Security deposit, $\$ 200 / \mathrm{mo}$., available Oct. 5 . Kathleen Braz, 482.7650 atter $5 \&$ week ends.
$100^{\prime} \times 150^{\prime}$ wooded lot in Baywood, pri vate pier, 1 block from Bay, $\$ 4500$. M. S.
Larson, GR 1.0068. Bayou Vista. Contemporary two-bedroom
year round residence. 40 foot pier; con creted yard; screened porch; carpeted, hanging balcony. Membership for pool golfing, and recreation for remainder of year included. Dorothy Baker, La Marque
WE $5-3912$ after 5 or anytime weekends. WE 5-3912 after 5 or anytime weekends. sq. ff, $21 / 2$ baths, Lot $250^{\prime} \times 130^{\prime}$. Asking $\$ 750$ sq. $\mathrm{H}, 2 \mathrm{~L}, 2$ borhs, Lor $250 \times 130$. Asking $\$ 750$ for equity, payments $\mathbf{~ e v e r y t h i n g . ~ S e p t e m b e r ~ 1 . ~ R . ~ I . ~ B r o w n , ~} 534$. everything. Sep
3474 Dickinson.

## FOR SALE-AUTOS

## 54 Pontiac Tempest Custom 4-door sedan,

 326 V.8, automatic, air-conditioning, new brakes, new shocks, 2 new tires, origincowner, $\$ 1,250, \mathrm{~J}$. O. Covington, 487-3066. Chevelle, 672 -dr hrd. top, oir, power Holeman, 944-2314.

## 67 Volkswagen camper, dealer air cond

 tioned, pop-up top, side tent, icebox, wate pump, radio, heater, whitewalls, sleeps adults and 2 children easily, 19 miles per gallion, sold for $\$ 3800$ last September, wil sell for $\$ 2800$. L. J. Corcoran, $944-9902$ 66 Mustang convertible, $V-8$, four on floo radio, air, excellent condition, $\$ 1400$. A. 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 tire A/C, AM/FM, 33,000 miles, $\$ 1895$. Al Shan on, 591-4595.
68 Impala sports sedan, 5,000 miles, 327 engine, Turbo Hydramatic, full
AM/FM. Paul Weitz, $591-3071$.
AM/FM. Paul Weitz, 591-3071.
66 Opel Kadett wagon, air co
66 Opel Kadett wagon, air cond
1300 . John Lottinville, HU 8 - 3128.
$\$ 1300$. John Lottinville, HU $8-3128$.
68 Corvette (bronze) 3500 miles, hard soft tops, AM/FM radio, 427, 3 dual carbs. firestone 215 radials, automatic transmi sion, power. Dick Gordon, 591-2389.
sion, 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
Dolores Briggs, 946.5849 after 5 .
67 Toyota-4-door white, blue interior radio, air. Original cost $\$ 2200$ will sell for $\$ 1650$. Gets $25-30 \mathrm{mpg}$. 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 over clean. $\$ 700$. J. White, GR 4-3992
59 ford Country Sedan Station Wagon clean, no rust, excellent mechanical cond rion, V-8, WSW tires, air-conditioned, radio, automatic transmission. See and drive to appreciate. $\$ 350$ including complete sho manual. Ed Stelly, League City, 932-4727 61 Buick Electra 4 -door, clean, loaded,
good rubber, extra nice looking car, drives good rubber, extra nite looking car, drives
like a new one. Sacrifice $\$ 395$ cash. (Some rade considered.) W. Whitehall, 877-4355. 62 Plymouth Valiant, air, autamatic, good work car, $\$ 350$. Ted Guillory, 472-8208. Chrysler, 1960 Newport sedan, loaded sequoia green, excellent so, owner. Be
$944-9023$.
65 Ford Co black, good tires, full power, air cond 7445, after 5.
68 Corvette, red convertible, 427 engine
-speed transmission,
60 pickup ford 6 cylinder, standard shift
xcellent tires, heavy duty bumpers, shift

## must sell \$365. E. Wright, 877-3059

FOR SALE-MISCELLANI:OUS
Mobile home for lease, furnished, air. long-term lease. Reasonable rent. Floyd $A$. Turner, RE 3-7667
1964 Corvette Positraction rear axle as embly, complete w/traction bors, suspen sion assy, wheel hubs, brakes, etc. $\$ 115$ except radio) \$45. Ron Hagood, WI 8-2870 Texas City.
Antique gold wrought-iron table with
Champagne glass top and four matching Champagne glass top and four matching chairs with apple green leather cushions.
Original price $\$ 200$. Used 2 mo. Sell $\$ 150$. Original price $\$ 200$. Used 2 mo. Sell $\$ 150$.
Evelyn Huvar, HU 3.7626 (no home phone)) 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 $3-76.26$ (no home phone).
Black female - miniature toy poodle AKC, 30 champio
HU 2.7012 after 5.
HU 2.7012 after 5.
Martin Busine Bb clarinet. Needs some work. $\$ 40$. Also, Geizen Bb bass clarine, One music stand throw in free Linda One music stand throw in free. Linda Gen day and Sunday

## day and Sunday

Rent my 1966 Cessna 150 or 1967 Skyable. Earn your private Pilot $C$ ertificate for as little as $\$ 450$. N. Tilton, GR 9.1176.

Lone Star 16 sailboat with galvanized tilt railer, 4 life sackts, wasthead fly, bottom paint, tarpaulin, $31 / 2 \mathrm{hp}$ outboard, all in excellent condition. Ed Simon, 488-4043. Sixteen feet of boating pleasure. Glass covered ply with hardwood ribs powered by
Evinrude four-fifty. Interior stripped for fishing and sport. Complete set ski equipmen and presenvers. Extra heavy duty trailer w lorge wheels. Excellent family first boat First $\$ 750$. Cash offer. Bill LeCroix, 877-2470 65 Cessna Skyhawk, 300 NAV/Com, 720 hrs. TT, black and white with orange trim,
absolutely immaculate throughout, full gyro absolutely immaculate throughout, full gyro panel, new annual. Always hang
Ron Stevens, Pearland, 485-9417. Ron Stevens, Pearland, 485-9417 tially complete book all for $\$ 10$. Faye Godejohn, 932-4625.
Hemisfair tickets: 2 bonus books with 2 gate admissions, $\$ 9$ each. 1 bonus book with 1 gate admission, \$5.75. Barbara Humphrey 453-4484.
Walnut coffee table, modern, excellent condition, $\mathbf{\$ 2 0}$; modern birch desk with drawers, \$25. High, 591-3254

## OX 4.9013 between 1 and 7 pm ,

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. McBride, 488-0686

## McBride, 488-0686

Excellent condition $\$ 40$ track auto tape deck 6074.

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 $\$ 17.50$ Burns, GR 1-1488.

\section*{| Local honey for sale. |
| :--- |}

## pint. Mason, M1 5-2887

ainleel slop, liberglas hull, dacron sails, stainless rigsing. Good condition, with HU $3-4713$ (no home phone)
School desk, arm chair type (6), excel condition, $\$ 4$ each, may be seen at 1407 Blackburn Dr., Pasadena, R. Eason, 944 4052.

Surfboard-Rick-UFO $9^{\prime \prime} 10^{\prime \prime}$, very good condition, white, blue stripe. Berrio Corbeti, $944-0167$ after 5.
mechanical sondition $\$ 75$ bell, excellen 8756 Texas City after 5
Toy Puddle puppy, white male, AKC, \$125 J. Collom, HU 2-7120.

Sailboat winch. Merriman, \#1, bottom for $\$ 35$ to $\$ 60$, lay lege den 591 for $\$ 3$.
2976.
Almost new yellow Westinghouse deluxe electric sto
$944-7596$.

## 44-7596.

6,500 BTU's. Like wind $\$ 100$ air conditioner 6,500 BTU's. Like new, $\$ 100$. Bob Law, 944 7596.
Stud quality AKC reg, tri-color. Bob Law, 944 . 7596.

305 ce Honda, 1962 Superhawk, excellen 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 Pow dismantled and vat-boiled. \$45. Ed Pavelka HU 2-7461.
with 2 admissions, $\$ 15.85$ value, and 2 tickets to most of the major rides, 4 children's book $\$ 4.50$ value, all for $\$ 20$. Zelton Eubanks 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 a 5 pm . Jeff Adams, HU 8.0250 for reservaBlack and white Dystrom Dining table 4 captains chairs, end table,
lamp. Mary Duckett, HU $8-1496$.
Puppies, Dachshund, \$25
Estes, 591-3286 anytime.
\$3500. L. Coyle, Alvin 058 -486
2 Hemisfair Child's Books,
James Blumentritt, 932-4220.
Girls $20^{\prime \prime}$ bicycle, $\$ 10$; $W$
William Lindsey, 591-3917.
Labrador Retrievers: 7 weeks old AKC registered, excellent field trail or hunting stock. Blaine Murray, 944-6584 after 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.

151/2-foot fiberglassed wooden boat and trailer, (no motor) you con get afloat for $\$ 79$ 877.4355 .

23" Silvertone TV UHF-VHF, black \& white, contemporary console, $21 / 2$ years old,
excellent condition, $\$ 95$. John Hyams, 932 . 5028 League City.
Maple end table, one drawer with maga
zine rack, $\$ 18$. W. G. Weppner, 944 -6130
after 7.
matched mad. Ideal for deer hunting as is for conversion, $\$ 42$. Ammo, Canadian mfg., boxer primed $\$ 6$ for 100 rounds to 90 with gun. pel S. Clanton, HU 2.7187.
Western Auto sewing machine, need

## 877-4866.

Wurlitzer organ

## Wennedy, 944.9023

Blonde bedroom furniture, double bed 2 night stands vanity-desk with miror $\$ 100$ 2 night stands, vaniy desk will hiror, $\$ 100$ HU 7.0196 .
Hell separately. Elvin Pippert,
HU
Deer rifle cal. 264 with 4 X scope and $\$ 20$. Craftsman electric drill press and $1 / 4^{\prime \prime}$ Thor drill, $\$ 17$. $1 / 4$ hp electric motor, $\$ 4$. Kodak Pony 135 with flash, $\$ 10$. C. E. Hopkins, 944-2838.
Selling an assor of buit-ins, etc. Friedrich air conditioner, apartment-size gorth, Dickinson 534.2055.
Slide projector, Argus 500 watt, for $2 \times 2$ slides, in good shape, does not have magazine capability; $\$ 15.20$ " rotary mower, $21 / 2$
horsepower, wsed $\$ 15$. Swing set $\mathrm{w} /$ slide, old but durable, \$5. Rabbit cage, free. W. Speier, 591-2263.

## WANTED

Riders or join car pool from Baytown, 7:30 ० 4:00 shiff, Bldg. 4, Carolyn Pillow, 4222133.

Roommate (s). I will have large 2 bedroom
August. Also interested in moving in with
August. Also interested in move
others. Mike Thomas, MI 5-7492.
Rac
4752.
Want to join or start carpool from Bay-
rown, 8:30.5:00, Norman R. Schula, ext.
2901.
Port-a-Crib and Stroller, in good condi-
Bowlers for fall Moon Shot Couples Bowl-
ing league at Mimosa Lanes, Tuesdays at
p:30 p.m. Shirley Yeater, 946-2390 for in
formation.
Yankee
$71 / 4 \& 7$, ten-gall 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).
Ross Radley, Ext. 4258 (no home phone).
Back issues of Aviation Week; Space Jech-
nology; Armed Forces Management; Space/
Aeronautics; or similar publications; Eliot $P$.
Tucker, HU 3-2441 (no home phone).
GR 4-3120
A 28 -inch ladies bike in good condition, will pay according to condition.
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).
weeks tar rent transportation car for six 482-7650 after 5
Girl's $24^{\prime \prime}$ bicycle, good condition. Kath
leen 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
Wright, 877-3059.


## Aero Club Sets <br> 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


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.

## 20-Year Men



Raymond F. Hale

## Spanish Club Seeks More Members

The MSC Spanish Club plans speakers and social events. The beginning and intermediate Club hopes to recruit additional classes in conversational Span- members.
ish to begin in the fall. Also Call Estella Jackson at 3193 planned are programs of films, for details.


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!

## 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.
"Rainbows" plot center 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-N and Don Wiseman of AV Corp.

Reservations for the produc tion 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 postApollo lunar surface missions and mission support systems have been approved.

## 2TV-1 Tests

The manned checkout was aimed at verifying test proce dures and spacecraft systems prior to manned thermal-vacuum testing.

The crew boarded the spacecraft inside the 120 foot high, 65 foot diameter chamber $A$ at 1 p.m. They wore the latest model Apollo pressure suits and re mained in the vehicle for a total 16 hours in two runs.

The 2TV-1 test vehicle has undergone modifications to the forward and side hatches and the forward heat shield and has been equipped with a docking probe since completing CSM 101 support testing at MSC in June.

## PLSS Modifications

The modification definitizes contract changes incorporating the use of non-flammable materials based upon Apollo flam mability test results, component replacement, redesign, and quali
fication testing, and the configu ration changes necessary for integrating these modifications, The modification also includes development and qualification of the Oxygen Purge System.

## UofH Course Sign-Up Set for September 6 <br> The University of Houston ployee Development Branch a

 has announced a list of twenty Extension 7311. proposed courses to be offered Registration for the courses to at the Clear Lake Graduate be offered at Clear Lake is Center during the 1968 fall se- scheduled for September 6 from mester. The list includes ten 9 to $11: 30 \mathrm{am}$ and to $3: 30 \mathrm{pm}$ in courses in the College of Engi- Building 30. Room 1025. Late neering, nine courses in the registration is scheduled for College of Arts and Sciences. September 13 from 9 to 11:30 and one course in the College of am at the same location. MSC Business Administration.Approximately 1000 MSC employees, who are on the current mailing list to receive information concerning the graduate program, will be sent a schedule and description of the courses to be offered at Clear Lake. Other MSC employees who desire information regarding these to be courses should Department of College of trts and Science
MTH 439 of Mathematio MTH,
MTH 439 Selected Topics in Mathematios
ITH 477 (Suitable for Engineering Students) MTH 477 Advanced I.inear Algehra
MTH 633 Advanced Linear Algebra Variable
-4:30 pm $3.4: 30 \mathrm{pm}$ 430.6 pm
$4: 30-6 \mathrm{pm}$

Arrange 3:30-5 pm
MTH $685 \quad$ Selected Topies in Applied Mathematic)
Department of Physics (PHY)
PHY 390
PHY 661
PHY 667
QHY 667 Quantum Mechanics
Department
Department of Political Science ( POL )
Topics in Public Administration
College of Business Administration
Department of Management (MGT)
MGT 672 General Management Theory
College of Engineering
Department of Electrical Engineering (E. E.)
E E 632A Statistical Communication Theory $\quad 4-5.30 \mathrm{pm}$ E E 735 Communications and Radar Systems $\quad 4.5: 30 \mathrm{pm}$
Department of Industrial Engineering (1 E)
E 363 Engineering Statistics 1
Department of Mechanical Engineering ( M F )
ME 571
ME 630
ME 730
11 E 730
ME 730
ME 730 Vibration Analysis Radiant Heat Transmission Engineering Analysis 1 Selected Topics - Spacecraft Temperature Control System:
1TH 683

Selected Topics-Astrodynamics Selected Topics-Optimization Theory $\quad \begin{aligned} & 7: 30.9 \mathrm{am} \\ & 4.5 .30 \mathrm{~nm}\end{aligned}$

