

## Vol. 11 No. 22

September 15, 1972

## "Election 72" Campaign Climaxes

## With Food and Fun Next Saturday

To most Americans, Election ' 72 is a month and a half off, but to MSC and contractor personnel and their families it's just around the corner.

Next Saturday, in fact, a week and a day away, Camp Manison in Friendswood becomes the scene of the Election '72 rally that really is the Employees Activities Association's annual MSC
picnic.
The only thing that costs the voters in this election other than the admission ticket is the dunk tank (look below: it's worth it!), and those proceeds go to the Harris County Boys Home
A schedule of picnic activities and a map of the midway appear n pages 2 and 3 -- it might be good idea to clip the infot
mation and bring it along to the picnic

Last year's event drew some 5000 personnel and their families and expectations are that this year's show may run even more. Betty Cornett and Jim Rayl are co-chairman of the EAA picnic committee. The picnic's theme -Election '72- was submitted by Pat Nobles.


CALLING ALL CARS-Cars full of MSC and contractor personnel and their families, that is, to attend the annua MSC picnic where this quartet of lovelies will grace the dunk tank. Not too unhappy, apparently, over the prospects of a soggy Saturday, the dunkees are Linda Trippodo, Joanne Naponic, Mary Yarbrough, Phyllis Cline and Sue
Newton. One more mermaid,Connye Lenczewski, and astronauts Joe Allen, Joe Engle, Karl Henize, Bob Parker and Rusty Schweickart also will serve as targets.


COMPETES WITH SMEAT-The work is just as tough, but the schedule's lot better. That's one big difference between the Skylab mission simulation that began last week and ends Wednesday at 2 p.m. and the Skylab Medical Experiments Altitude Test that will end a 56 -day run at 7 Wednesday morning. Dr Joe Kerwin and Paul Weitz run over their check list as they bly Then Kerwin ioins Pete Conrod in the orbitol workshop trainer assem to stow equipment and supplies during the activation of that unit

## Skylab Crews Conduct

## 11 Days of Simulation

The prime backup crews for the first manned Skylab mission last week began an 11-day simulation during which they will duplicate flight tasks in Skylab simulators and trainers.
Prime crew members Pete Conrad, Dr. Joe Kerwin and Paul Weitz and backup crew members Rusty Schweickart, Dr. Story Musgrave and Bruce McCandless will work alternately in the command module and Skylab simulators and five trainers-orbital workshop, multiple docking adapter, airlock module, Apollo telescope mount, and command module 1-g trainer-which are located in the Building 5 Mission Simulation and Training Facility.

The realistic trainers represent the elements of the total Skylab spacecraft.

The Skylab assembly will be launched unmanned aboard a Saturn V in the spring of 1973, and will be visited three times by three-man crews over an eight month period.
Twenty-four hours after the Saturn V launch, the crew of Conrad, Kerwin. and Weitz will be launched aboard a Saturn 1B, and will rendezvous and dock with the orbital assembly for a stay of 28-days.
The orbital workshop, which has approximately 9,555 cubic
feet of working and living area, houses most of the Skylab experiments, has two solar array panels for power generation, and the complete crew quarters and commodities for sleeping, eating and housekeeping during all mission operations.
The OWS is the third stage of a Saturn V launch vehicle which has been modified for Skylab.
The multiple docking adapter provides facilities for docking the (Continued On Page 4)

## Good News, Guys:

## You Get Out Soon

While the Skylab crews break for another free weekend in their 11-day simulation, the beleaguered SMEAT crew enters the final weekend of the 56 -day run. They are due to rejoin the world-to the cheers of any MSC personnel who want to be on hand outside Crew Systems' 20 -foot vacuum chamber-at 7 a.m. Wednesday Life Sciences Director Dick Johnston, commenting on the final days of the Skylab Medical Experiments Altitude Test, says "It has been a very successful test . . ., although not 100 per cent successful, we have learned valuable lessons

## Roundup Swap-Shop

Swap Shad advertising is available to MSC an on-site contractor personnel. Article or services must be offered as advertised, without regard to race. religion sex or national orgin. Ads should be 20 words or less including home telephone number. Name and office code must accompany, but need

MISCELLANEOUS
A.No. 1 saddle $\$ 35$. Green 331-3001. Amm Browning 13 -shot automatic, xtra
clip, partial box ammo. Ik new $\$ 110$. clip, partial box ammo. Ik new $\$ 110$. Wood
482 -3055. 482-3059.
Camper/trailer supplies: refrig, stove; Camper/traler supplies: refrig. siding \& roofing, lights and more, all new, priced below wholesale. Wood 482-3059. French Horn used but gd ondn, Conn 4-D \$225. 482-7030 after
Breda-Brescia 12 ga auto shotgun wi ven
tilated rib bbl, 2 chakes tilated rib bbl, 2 chokes, case $\$ 95.941-0201$
Allied amp. FM tuner. Garrard 4HF turntbl 12" triax Wharfdale spkr. sep cabinets. working, needs adjust, cheap. 471-0066. Criterion telescope
eyepieces. 488-4043.
Shearred raccoon coat looks ik shearred beaver. xlnt cndn, pfct for northern colfege girl. make offer. 488.4043.
135 mm telephoto, pentaprism \& waist leve finders, filters \& leather cases, bargain $\$ 90$ Handley 482-7041.
Beretta $20-\mathrm{ga} \mathrm{AL}-2$ auto shotgun S 135 , Rem-
ington 552 BDL auto ington 552 BDL auto .22 rifle \$40. Price 471-3314.
King-size bed $\$ 75$. Harmon Kardon Mod
$5-30$ AM/FM stereo 5-30 AM/FM stereo receiver/amplifier S125.
Peterson $488-4176$ or $333-3774$ after 5 Peterson $488-4776$ or $333-3774$ after 5 .
Air conditioning unit 4 -ton Rheem, brand new. still
474-4386.
Combination stereo record player \& stereo AM/FM radio console, xint cndn. 1st $\$ 75$ takes it. Stewart 585-2698 Alvin.
new $\$ 15$ ea, $22^{\prime \prime}$ self-propelled wimpost new $\begin{aligned} & \text { Briggs \& Stratton eng } \$ 35 \text {. Peacock } 554-4458\end{aligned} . \begin{aligned} & \text { self-propelled wi }\end{aligned}$.54h Cornet, Ambassador wi case. gd beginner horn, bargain. Eaton 482-3161.
Eico 4-channe! converter \$15, Epiphone Ensign guitar amp \$200 Peterson 488-4176 or $333-3774$ after 5
Short platinum wig hardly ever worn, reg
S 20 . sell for $\$ 10$. 70 Ford VEHICLES
pwr. clean. 8 -ton pickup 360 V8, auto, air S2475 XLT Ranger. 733-7667.
huntingbuggy xint mech cndn, front 68 Pontiac Gran Prix. pwr, air, etc. $\$ 1200$ 68 Pont
474-4315.
66 VW 49502.1 usual miles $\$ 550$. 474-4315. 67 Ford sta wgn 390 10-pass, all pwr.
new tires, gd cndn $\$ 250$ below list willis new tires, gd cadn $\$ 250$ below list. Willis
$944-3647$ $944-3647$.
65 VW 65 VW van. vry gd mech ondn, some rust
but not bad first $\$ 300$ takes. Stewart 525 . 2698 Alvin.
71 Ford pickup xint cndn, air, pwr. auto. Schneider 426-4749.
Sears 4hp minibike 11: y yrs $\$ 50$. 474-4386.
68 Pontiac Executive 68 Pontiac Executive sta wgn, air, pwi 1 owner S1425 Kinzler 334-2449.
1 owner S S 425 Kinzler $334-2449$.
Green to-spd bike under 1 yr old, ridden
approx 6 times, approx 6 times, bought for riding to work,
$\$ 88$ new. S60. xint cndr. Everett $747-4203$ after 5 .
70 Mustang 6 cyl . std. xint cndn, yellow wi black trim \& black vinyl top \$1900. Gar-
land $334-3152$. 68 Holiday Rambler $27^{\prime}$ trailer, hitch 8
many xtras. Recke.r $643-4: 51$. 69 Buick LeSabre gd cndn $\$ 1000$ firm. 488 $22^{\prime}$ self-contained travel trailer, 1 owner, 1 k new, air, hitch incl. 488.3377 after 5 .
70 Honda 350 lnt cndn, $7600 \mathrm{mi} \$ 500$. 88-1596.
22' Airstream 66 Safari sleeps 5. fctry air, 71 Honda Trail 90 pfct cndn 1500 mi S295.
$944-6213$.

## Environment Talk

## Reservations Due

Reservations are due by Tues day for next Thursday's jointly sponsored "Environmental Protection Today and Tomorrow" dinner program at the NASA Holiday Inn.

Five area professional societies are presenting Region 6 Administrator Arthur Busch, Environmenta! Protection Agency, in a discussion of environmental protection problems.
For reservations: Jackie Blanchard at 488-1270, ext 448.

71 MGB, air, radio, radial tires etc, Ik
new, 11.600 mi , Leonard $944-4997$
70 Triumph TR6 xlnt cndn, gd tires white 70 Triu
$488-1024$.
69 Toyota Corona, air. 4 -spd, radio, xtra 69 Opal sta $485-1515$ or $485-118$
${ }_{8}^{69}$ ' cabal sta wgn \$995. 485-1181.
beds, table, storage $\$ 300.333-4875$ ext 310 69 MGC blue wi black top, gd cndn. 534 6481 after 4:30.
69 Buick Wildcat 4-dr hdtp, all pwr, air,
FM stereo, new tires FM stereo, new tires 82250 . Cobb $333-4109$. mi. 946 -2563.
Cleanest $16^{\prime} 6^{\prime \prime}$ Larson Shark in town w
55hp Johnson, trailer. walk-thru windshield,
full canvas, side windows, many tras $\$ 2100$
firm. Thompson $332-2229$.

Webster. Paula 483-3923.
AC reg champ-sired 4 -mo-old show and pet quality collies, perm shots and wormed.
332-1909 332-1900.
Palomino stud colt 1 -yr-old, halter broke,
Mike $935-6546$ LaMarge Beautiful black and white kittens free 482-3989.
15 and 20 -gal aquariums wi equip and fish \$45. Peres 471-1443.
Dalmation 6 -mo female, beaut marking,
AKC. shots $\$ 30$ or AKC, shots $\$ 30$ or trade for dachshund of
like qual. Leger $482-3978$ like qual. Leger 482-3978.
wks-old wi shots $\$ 35$ and $\$ 40$ retrievers 925-2139.
Unusual pet, beat the Christmas rush, 4 boa constrictor incl $10^{\prime}$ showcase and smal ler retaining cage $\$ 70$. Rubenstein $334-2354$.


ROVERS VS. REBELS TONIGHT - The MSC Lunar Rovers take on the tough Houston Rebels at 6:30 tonight on the Ellington field to help celebrate the program, the Rovers are Pat Brown, Jo Ann Birchett, Barbie Bonney, Erna Charba and Debbie Wilkerson in the tront row, and Rita Smith, Carol Haley, Chris Milner, Jo Ann Anderson, June Hensley and Gay Williams in back. Three other Rovers missed the picture: Dee Norris, Cindy Siegfried and Shirley Cortright.


PROPERTY AND RENTALS
Friendswood $3-2-2$ large traditional, xint
interior design, cathedral en, formal interior design, cathedral en, formal living, covered patio. $\$ 3000$ equity $\$ 217 \mathrm{mo}$. immed Leancy. 482-1026
arge trees, fenced. on Clear Lake $\$ 350 \mathrm{mo}$ Easter 334+1564.
CLC 5 -brm 3000 sq ft on $100 \times 200$ corner lot 539.500 , assume $7 \% / 2$, by owner. $488-0112$. Lake Livingston Nugent's Cove. 2 wooded lots, 100 front $\times 150$. gd roads, water and
elec, $\$ 3000$. $554-5074$. Houston Tropicana 3-2-2 brick wi den and cent air, near schoois, 1o down. 643-5384. CLC 4 -ddrm 974 Wavecrest for sale or
lease wi option to buy. $333-4375$ ext 310 . housshold articles
Mattress. ixtra-firm innerspring or firm
Nimbus foam xtra-long twin, Ik new, either 550 value $\$ 25$. Spivey $488-0369$.
Rollaway
Rollaway bed gd cndn \$15. Klotz 488-1514 Round Spanish table wi 4 chairs $\$ 70$. hew 10 -spd bike S70, mischievous puppy any GE top-load-300
GE top-load auto washer needs minor
3-pc Frenceasdale 482-7801.
${ }_{\text {wi }}$-pc French Prov bdrm set white and gold r 6 .
Sofa and chair $\$ 90,3-\mathrm{pc}$ table set $\$ 25$,
buffet $\$ 45$, $5-\mathrm{pc}$ dinette $\$ 60$. 883.6978 . buffet \$45, 5-pc dinette \$60. 488-6978. No-vent elec Frigidaire dryer $\$ 35$. Schulze 422-5636.
Dbl-oven gas stove lk new $\$ 150$. 481-354
Whirlpool white 8 -yr-old washer, new pump, nsdr trade for golf clubs or mini-bike \$40. 488 -6701
Rollaway
Rollaway dbl bed Ik new $\$ 30$. 534-3665. 2 sets bunk beds wi mattresses, priced
to sell quick, x!nt cndn. Eaton 482-3161.

LATE ENTRIES
61 VW , gd engine, tires, transmission all hooked together, looks bad, runs good, \$175
minimum for quick sale. Muhly $471-3762$ 71 Datsun $240 Z$, blue, auto and air $\$ 379$ 554-3969

67 Buick LeSabre 2-dr hdtp, custom inter ior. tilt steering wheel, At cond, powe Sullivan 944-5033.
${ }^{70}$ Pontiac Catalina $400 \mathrm{cu}, \mathrm{pwr}$ steer and brakes, turbo-hydramatic, deluxe heat and air. Vinyl top, XInt cndi $\$ 2225$. 482-7757.
72 Honda SL-125, 72 Honda SL-125, spotless, 500 -plus mi
buddy pegs, fork brace and covers S 415 buddy pegs, fork brace and covers $\$ 415$
$474-4662$ atter Sep 25 72 Vega 7700 mi
player wi rear speakers $\$ 2775$. Cornett 649 6377. 68 Buick Skylark Custom 2-dr hdtp, auto air, pwr brakes and steer, bucket seats pfct cndn. 649-1297 after 5:30. 66 Honda 565 motorcycle runs gd $\$ 125$.
Glenn $482-3662$. Glenn 482-3662.
Found: watch in Bldg 29 parking lot. MSC
Ludwig snare drum wi case, stand, practice
pad, marimba stix and Franz metronome \$55. Seimer alto sax wi case. lyre and stand gd cndn S75, white band shoes size
8 S2. Wilson $333-3886$, 8 52. Wilson 333-3886.
Bernzmatic propane camp stove 2 burner
Ik new $\$ 8$, Schwinn $24^{\prime \prime}$ boys bike $\$ 10$. Ik new $\$ 8$, Schwinn $24^{\prime \prime}$ boys bike $\$ 10$
giris $26^{\prime \prime}$ bike $\$ 10$. Wilson $333-3886$. 9805.

3 matched armless sofa-chairs 2 brown green, $x$ Int upholstery 510 ea. 944.8717.
54 15 54 15' fiberglass boat wi 75hp motor, small
wheel tilt trailer and spare tire, anchor wheel tilt trailer and spare tire, anchor,
life jackets. skis, shrimp net $\$ 1095$. $935-3921$ life jackets.
LaMarque.
Bass boat and trailer 71 15' Tidecraft w 50 hp Johnson motor, fully equipped $\$ 1600$ Copeland $332-3571$ or after $54277-1880$. Timber Cove $4-2-2$ contemp 2300 sq ft , den,
fire, fence, big pines and oaks, mid-30's. fire, fence, big pines and oaks, mid-30's.
Holley $332-2561$ day or $334-2382$ nite Rent new Reseda twnhs 2-2-2 all-ele

## MSC Pienic Schedule

11:00-2:00 Ping Pong 11:00-5:00 Kiddie Ride 11:00-4:30 Hay Rides
12:00-3:00 Food Service
2:30 Oriental Band 12:30-4:30 Carnival Booths
1:00 Special Teenage Hayride GoCarts and Motorcycles
1:00-3:30 Dunk Tank
1:00-4:00 Band, The Aquarians
2:00 Shooting Exhibition Egg Tossing Contest (teenagers only) Oriental Band Special Teenage Hayride
2:30 Treasure Hunt (children only)
2:30-5:00 Bingo
3:00 GoCarts and Motorcycles Tricycle Race (teenagers only)
4:00 Shooting Exhibition
4:00 Oriental Band
Facilities and equipment will also be available for volleyball, softball and horseshoes.

Think Picnic!

Accountants Open New Year Tuesday With FBI Talk
The Federal Government Ac countants Association opens it new year Tuesday evening with a dinner program and a new slate of officers.
FBI agent Joe Dooling will outline the role of the accountant and auditor in the FBI in Tuesday's program at the El Chico Restaurant at Almeda Mall.
New officers presiding ove that first program of the year are Institutional Planning Office Deputy Chief Com Johnston president, CSM Contract Engineering Branch's E. Ray Walker vice president, and Resources and Program Support Assistant Dircctor James E. Bone program director.
Guests are welcome to attend and can get information or reservations by now Tuesday the 19th from Henry Fancher, MSC extension 5051

## Masquerade Ball <br> Set October 28

## In LC Legion Hall

MSC masquerade buffs can shake the mothballs from their costumes-masquerade dance time is almost here again at American Legion Post 554 in League City. Supporting the VA hespital program, Christmas for Needy Familics, and the auxiliary's Children and You: a program, the dance is set for October 28, with the six-place Swinging Strings providing the music.
For information or tickets Marilyn Hartman, MSC exten sions 5861 or 5827 , or the Legion Hall 554-9931.

## Pin Oaks Benefit <br> Set September 22

Another big event for MSC horse-lovers comes up next weekend in the Delta Gamma sorority sponsored benefit for the Society for the Prevention of Blindness at the Pin Oaks Stables September 22-24.

The second-largest horse show in Houston, the benefit will feature six performances, matinee and evening, with door prizes to be awarded and hox seats with club privileges available.
For information or tickets: Joanne Naponic at MSC extension 4303 , or John Boynton at 4091

## ROUNDUP



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.
Photographer: A. "Pat" Patnesky


MORE SKYLAB SIMS-Dr. Joe Kerwin checks out the experiments area in the orbital workshop, left, as part of the 11 -day simulations of the first Skylab mission. That unit off to his right-front is the lower body negative pressure device used to measure cardiovascular deconditioning. Paul Weitz above top, assembles another medical experiment device, the bicycle ergo meter, used in the vectocardiogram and the metabolic activity experiments. floorplate, pulls the curtain up around him and fastens it to the ring above Weitz and Crew Commander Pete Conrad sample some of the food they'll be eating, above, not only during the current simulation but on their 28-day
orbital flight as well.

NASA FACTS: TRACKING AND COMMUNICATIONS
Flight Control Teams Speak Bits and Pieces to Spacecraft

This is the second and last installment of the NASA Facts brochure on Tracking and Communications. In the last issue, the Manned Space Flight Network and the NASA Communications ( NASCOM) network were introduced. This installment tells bow the networks are used.

The people who need the data for manned flight are the flight controllers at the Manned Spacecraft Center.

These are experts in their field, whether conduct of the mission in general or a specialized area such as spacecraft guidance systems.
Teams of equally skilled personnel support each controller.
Their prime tool, the data from the spacecraft, comes via NASCOM into the Real Time Complex in Houston.
Here the telemetry and tracking signals are processed through computers, which use the data to perform tasks such as comparing actual position and velocity figures with predetermined parameters, or predicting spacecraft position at any future point in the mission; they also evaluate spacecraft and astronaut status to determine that they are functioning properly.

The language in which information from space is presented is a train of clectronic pulses representing "biis" (from "binary digits"); in the binary system, any number can be represented by a sequence of ones (pulses) and zeroes (nonpulses).
Communications stations for the Mercury and Gemini programs were geared to handle data at a rate of some 120 bits per second.

Current high-speed circuits take 2400 to 50,000 and more bits per second.
The data processing and computing equipment, which understands this language, easily translates it into temperature readings, heartbeat rates, or even positions

## MSC Golfers Get

Call to 1st Annual

## FBA Tournament

MSC golfers have been called to the first annual Federal Business Association golf tournament scheduled for Saturday September 30 at the Bear Creek course, but they'll have to act fast-entries are due by Monday lice 1sh.
Trophies, prizes and refreshments worth $\$ 250$ are up for grabs, with the promoters hoping for four to six flights and promising no double winners except for pitching and driving contests.
Information on entry fees for FBA members and non-members and on tournament procedures can be obtained from Gordon McEntire at 226-4345. U.S. Government Printing Office 1972-779-577/5
of spacecraft control switches. This same language is used on the communications uplink to send coded commands to the spacecraft systems

Thus ground controllers in Houston, using tracking data generated halfway around the world, can tell a computer a quarter of a million miles away in space just when and how long to fire the rocket engine that will bring the
language is that spoken in his own tongue by the human voice, and conversation between man in space and man on Earth probably is the most familiar application of spacecraft communications.
In earth-orbital flight, communication between crew and controlers depends on the spacecraft's range from a ground station, and often a period of up to 45 min utes of radio silence will be ex
to and from the moon-commun ication is constant, for the spacecraft is always in view of at least one antenna on Earth

Conversation from the ground usually comes from a fellow astronaut who has gone through the training for that specific mission and, therefore, is familiar with procedures followed by the crew during the flight
This CapCom (capsule com
are lighthearted exchanges be tween the crew and the CapCom tween the crew and the CapCom, but mainly they deal with the serious business of space flight: visual observations, problem areas flight procedures, and the like.

Although CapCom is the officially designated spokesman for Mission Control under its call sign "Houston," the flight director or other officials may use the line as

astronauts home safely.
This capability backs up the crew's onboard activities, or it can serve to free them for other duties.

To people, however, the easiest understood and most reassuring

## Skylab

(Continued From Page 1)
command and service module and crew working areas for operation of the Apollo telescope mount, earth resources and space manufacturing experiments.
The MDA, which has 1,140 cubic feet of working space, also provides transfer of personnel, equipment, power and electrical signals between CSM and OWS.
The airlock module has a special hatch compartment and services for supporting extravehicular activity by astronauts who will leave the vehicle to replace and retrieve the film in the telescope mount.
The airlock module also provides the main power distribution control and atmosphere supply and conditioning equipment for the entire orbital assembly.
The Apollo telescope mount provides a mounting structure, electric power system, the pointing system, and environmental control system for the six solar experiments.
The simulation, on consecutive days exclusive of weekends, will operationally test 11 selected days of the first Skylab mission
perienced even in orbits of only 100 miles.
In lunar orbit, similar silent periods are encountered when the spacecraft is behind the Moon.

But during translunar and transearth flight-the three-day trip
municator, so named during the Mercury program when the word "capsule" rather than "spacecraft" was used) relays comments and instructions from the flight director.

The conversations occasionally
appropriate.
The most distinguished communicator to date, for instance, has been President Richard Nixon, who talked directly to Neil Arm strong and Edwin Aldrin shortly after they had become the first humans to set foot on the moon

Not only is communication between space and ground necessary, but the crew members must be able to talk back and forth

In a shirtsleeve or unsuited environment, of course, conversa tion is no problem

When the astronauts are suited and their helmet faceplates closed, an electronic intercommunications system is employed; crew members can talk between themselves, cr can carry on a conversation with the ground.

Radio communication also is provided between spacecraft, as the Apollo command module and lunar module when they are flying separately, or even when the LM is on the lunar surface.

Extravehicular astronautswalking on the Moon, for example -are similarly linked: with each other, with the orbiting command module, ano with Mission Control.
A battery-powered sending and receiving set is built into the back pack worn during surface exploration.

Space communication and tracking today is done electronically, but experiments are underway to use beams of light

