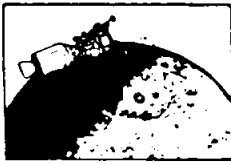


ROUNDUP

NASA MANNED SPACECRAFT CENTER

HOUSTON, TEXAS



Vol. 11 No. 1

November 19, 1971



OUTGOING AND INCOMING officers of the EAA are pictured on election day for the new officers. In the front row are incoming officers (l. to r.) John J. Thiel, Executive VP; Joanne Sanchez, VP for Social Activities; Norma Godeke, VP for Clubs; William J. Forsyth, Treasurer; and James S. Moore, VP for Publicity. The "old" officers are (l. to r.) Stuart D. Lenett, Helon Crawford, Marie Wilmeth, and Lucille Booth.

EAA General Assembly elects five New officers, hears Council report

Twelve of the forty-one EAA districts were without representation at the Employees Activities Association's third and final general assembly meeting of 1971. An agenda and notices of the meeting were sent to every district.

Representatives of the assembly elected five officers to serve from January 1, 1972 through December 31, 1973.

ROUNDUP Marks 10th Anniversary

With this issue, the *Space News Roundup* enters its eleventh year of publication.

The newspaper made its first appearance at Langley Air Force Base in Virginia on November 1, 1961, the same day that the Space Task Group was redesignated the Manned Spacecraft Center.

The "hot stories" of that first issue dealt with the naming of the STG and the upcoming move to Houston. A two-page picture story reassured readers that Houston was not a wild and woolly Western town, but a big city with good schools, churches, and recreational and cultural facilities.

Ivan Ertel, now with MSC's History Office, was the paper's first editor. Bill Taub, now at NASA Headquarters, was the first photographer.

Phonille DeVore, now of the Awards Office at MSC, won a contest to name the new publication. (See MSC, page 3)

The new officeholders are John J. Thiel, Executive Vice-President; Norma Godeke, Vice-President for Clubs; William J. Forsyth, Treasurer; Joanne Sanchez, Vice-President for Social Activities; and James S. Moore, Vice-President for Promotion (Publicity).

John Thiel of the Procurement Operations Office has been with NASA since 1961. An EAA representative for several years, he feels representatives need to be involved in operation of the organization to a greater extent.

Norma Godeke has been at MSC for five years and now works in the Office of the Director. She has been in the EAA for two years.

Bill Forsyth, on the staff of the Director of Engineering and Development, brings much experience to the treasurer's post. His twenty-one years of government work have included budget analysis and other areas of finance. He has been an EAA representative several times in the past.

During the past year, Joanne Sanchez of the Administration and Program Support Directorate filled the remainder of an unexpired term of office as Vice-President for Social Activities. She has now been elected to her own two-year term. Joanne has been at MSC for six years.

Jim Moore, a branch chief in the Space Environment Test Division, transferred to MSC from Kennedy Space Center in 1964. Interested in community programs, Jim has been active in Cub

Scouting, his church, the Houston Orchid Society, and he has even had time for membership in a local flying club.

The five officers who will continue to hold office are Robert LaMere, President; Jeri Brown, Vice-President for Athletics; Kay Anderson, Vice-President for Youth Activities; Jim McBride, Vice-President for Facilities; and Dorothy Rafuse, Secretary.

Preceding the election of officers, William A. Stransky, Treasurer of the MSC Exchange Council, and Roy Aldridge, Supervisor of Exchange Operations, discussed the financial status of the Council with the assembled representatives.

Stransky emphasized that of the Council's three Exchange operations—the cafeterias, Exchange Store, and vending machines—only two are income-producing: the Exchange Store and the vending machines. The cafeterias are self-sustaining, non-profit-making. The money earned from food sales is used for paying cafeteria employees' salaries, maintaining the facilities, and buying and replacing cafeteria equipment.

Over \$500,000 in unencumbered earnings from the Exchange Store and vending machines is available in the Exchange's recreation center fund. Building the center will cost approximately \$250,000; landscaping, paving parking lots, equipping the center, and operating it for the first year (See EAA, page 3)

A STORMY START

Study of Mars begins

A dust storm seeming to cover all of Mars has thus far hindered the Mariner 9 spacecraft in its attempts to secure clear pictures of the Martian surface.

Scientists, however, far from being disappointed with the total results, are fascinated with the weather phenomenon itself. They see signs of the turbulence beginning to let up and believe that by following its progress, they may learn more, not only about Mars, but about Earth's weather systems.

Launched on May 30, Mariner 9 began transmitting pictures to the Jet Propulsion Laboratory—Mariner Mission Control—in Pasadena, California, on November 11 as the craft approached the planet which has so long tantalized man's imagination. With a 15-minute engine firing, the Mariner was placed into an elliptical orbit on November 13, the first spacecraft to orbit another planet in our solar system.

Pictures sent by Mariner 9 are being transmitted over distances up to 240 million kilometers (150 million miles) to the Jet Propulsion Laboratory (JPL).

Mission scientists were aware of the dust storm some two months before Mariner 9 reached the vicinity of Mars. This week, slight changes in the color of the Martian atmosphere from yellowish to gray lead astronomers to believe that the storm is clearing.

A picture taken on Sunday, November 14 showed Mars' south polar cap with what scientists believe to be frozen carbon dioxide. In 1969, Mariners 6 and 7 pictures (taken from within 2,000 miles of the planet) showed a series of ridges in the polar area. Mariner 9 photos confirm the existence of the ridges, still not clearly understood by scientists.

The polar cap, probably shrunk by Mars' summer, also appeared to be separated into two

parts. Scientists hope that the polar area and some 130 million square kilometers (50 million square miles) of the planet will be more clearly photographed after the dust storm clears during Mariner 9's ninety-day mission. Predictions are that the craft's two television cameras will take over 5,000 pictures.

In addition to photographs returned, JPL has received data from other scientific equipment onboard—the infrared radiometer, which measures surface temperatures, and the infrared interferometer, which measures composition and structure of the surface and atmosphere.

One surface area spotted was 12 degrees Fahrenheit warmer than the terrain around it. There is speculation that the "hot spot" is a mountain peak which might pierce the haze, permitting more direct exposure to the sun.

The infrared interferometer detected some areas covered with small particles of material con-

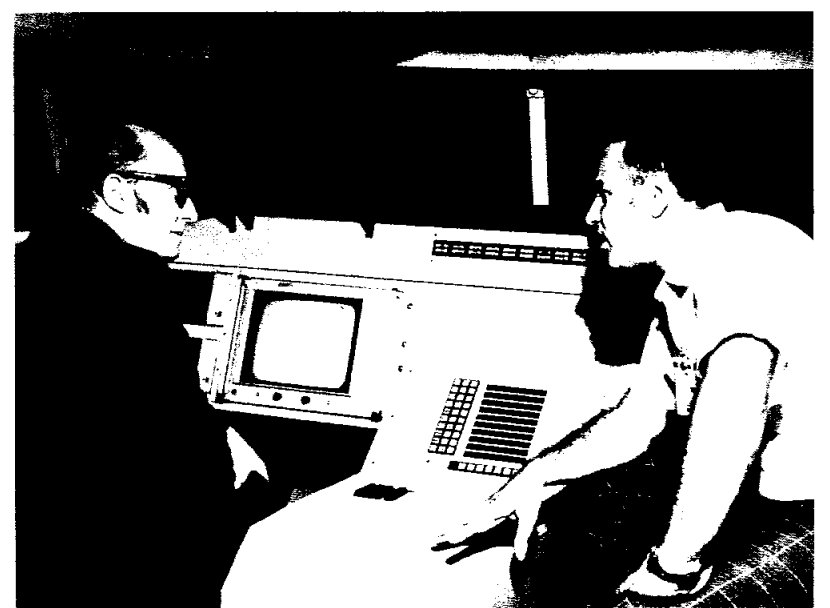
(See SECRETS, page 2)

Moon Specimens Sent to Scientists

NASA has begun to distribute to U.S. and foreign scientists the largest and most varied collection of rocks and soil yet returned from the moon.

More than 2,200 Apollo 15 samples and polished thin sections weighing a total of about three kilograms (6.6 pounds) will be distributed to 201 principal investigators for study by them and their co-investigators during the next year.

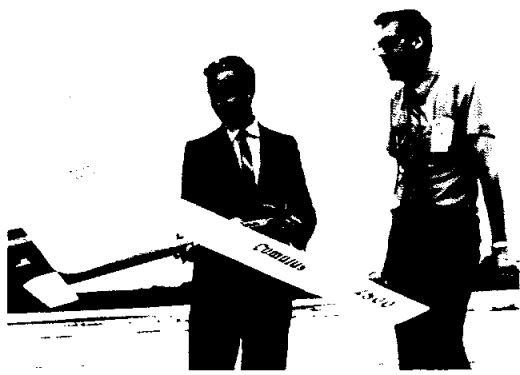
Approximately 700 scientists in the United States, Virgin Islands, 15 foreign countries and one international body (European Space Research Organization) will take part in analyzing the material collected by Astronauts Dave Scott and Jim B. Irwin near Hadley Rille and the Apennine mountain (See Scientists, page 3)



A LOOK AT THE FUTURE—European space electronics expert Siegfried Hieber (left) is briefed by Tom McChesney, Information Systems Division, on the way Shuttle crew station displays are likely to look. Hieber was shown the evaluator for Shuttle conceptual displays and controls during a visit to MSC last week. Representing the European Space Vehicle Launcher Development Organization (ELDO), he was host to a tour of European electronics manufacturing facilities last month by MSC Assistant Director of Engineering and Development for Electronic Systems Robert A. Gardiner.

WILL IT FLY? . . .

The MSC Radio Control Club recently invited Apollo Spacecraft Program Manager James A. McDivitt to try a new form of flying. Here he admires the "Cumulus," a sailplane built by John Kiker (right) of the



Structures and Mechanics Division. The 50-member club meets the second Tuesday of each month. Call Saverio (Mike) Gaudiano, Club president at x2297 for more information.

IT SURE WILL!

What's New in the Tech Library?

A number of new NASA Special Publications (SP Series) have come into the Technical Library in recent months. Some may be of general interest to MSC readers; others are highly specialized and technical.

In the first category are *Astronautics and Aeronautics, 1969* (SP-4014), a chronology on science, technology, and policy; *NASA Aircraft Safety and Operating Problems* (SP-270); *Third Conference on Sonic Boom Research* (SP-255); and one that sounds straight out of Jules Verne, *The Pioneer Mission to Jupiter*.

Of a more specialized nature are the following: *Spacecraft Charge Buildup Analysis* (SP-276), *Research on Uranium Plasmas and their Technological Applications* (SP-236), *Thermal Radiation Heat Transfer* (SP-164), *Design of Liquid Propellant Rocket Engines* (SP-125, 2nd edition), *Hypogravic and Hypodynamic Environments* (SP-269), and *The Development of Cryogenic Storage Systems for Space Flight* (SP-247).

In Building 45, the Tech Library is open from 9 to 4:30, Monday through Friday.

Logistics Engineers host National President at October SOLE meeting

Gordon Brownlee, president of the National Society of Logistics Engineers (SOLE), outlined future plans and objectives of the organization at a recent meeting of the Houston Chapter.

He emphasized the continuing interest within the national offices of SOLE to achieve professional status for SOLE members. Toward this end, the organization is developing plans to establish academic curricula leading to a degree in logistics management. Also be-

ing considered is a plan to set up an organizational admittance examination and state licensing examinations, which would require negotiations with various states and academic entities.

The Houston Chapter has for some time been considering the possibility of establishing suitable curricula with local colleges for participation of chapter members.

Brownlee spoke to the logistics group during a luncheon meeting at the Nassau Bay Motor Hotel.



SOLE BROTHERS—Pictured at the October meeting of Houston Chapter Society of Logistics Engineers (SOLE) are (l. to r.) E. D. Regan, David B. Homer, Glen Keith, Gordon Brownlee, National SOLE President; Del Howard, Frank Hickey, and Ernie Baumann.

Ye Olde Small World department

This story begins close to 35 years ago within a six-block area in Mobile, Alabama. Here's the way MSC employee Carey Green, Jr., tells it.

Carey began grade school with William Brandenburg as a classmate. The boys went all the way through high school together, sharing many of the same classes and instructors.

Two years behind them was Howard Sands, a neighbor. Parker Carroll, a friend of Carey's older brother, was a few years ahead of Carey and Bill in the same school system. Paul Clyatt, also from the same neighborhood, went to private schools.

Ten years after high school graduation, Carey went to work at Brookley Air Force Base in Mobile. Within a year, old friend Bill Brandenburg came to work there in the same office with Carey, at a desk in the same room.

Howard Sands and Paul Clyatt also worked at Brookley, Howard in the same section with Carey and Bill. Meanwhile, Parker Carroll, after graduation from the University of Tennessee, was working for the Air Force in Memphis.

Carey left Brookley for Kelly Air Force Base. At different times, Bill, Paul, Howard, and Parker joined MSC. Finally, Carey transferred to MSC, and the reunion was complete.

All of the men now work in the procurement area here, Parker Carroll, Bill Brandenburg, and Howard Sands in Institutional Resources and Procurement, and Carey Green and Paul Clyatt in the Program Procurement Division.

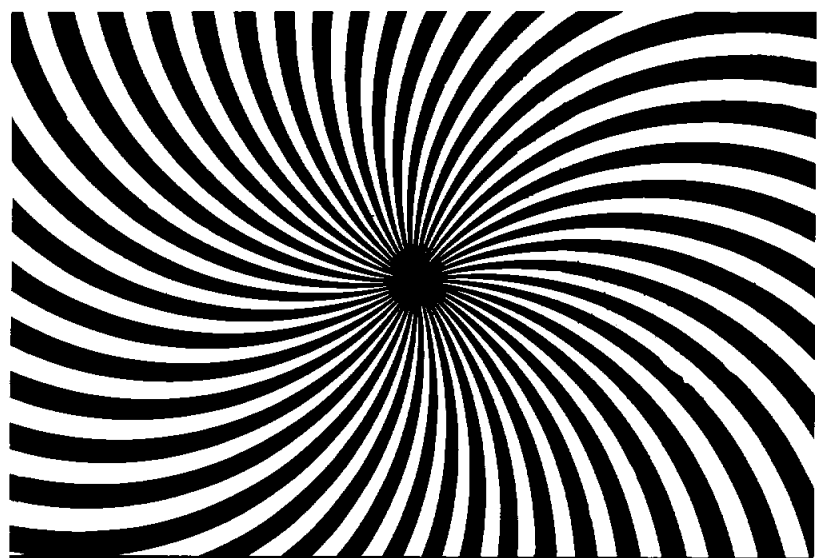
The topping on the "small world" story? Carey lives within a block of Bill Brandenburg. And that's just about the way the story started over 30 years ago.

Center seeks firm to test polymers

NASA this week asked aerospace firms for proposals to develop and test polymer seal materials for application in Space Shuttle propulsion's system. The request was issued by MSC.

In its instructions to industry, MSC notes that although strides have been made in improving seals and seal materials, leakage continues to be one of the primary problems where liquid rocket propulsion systems are used.

Four materials are candidates for additional evaluation. They are HYSTL and Viton A, for use with liquid hydrogen, and polymers identified as AFE-124D and Teflon TFE, for use with liquid oxygen as well as liquid hydrogen.



LOOKS DIZZY DOESN'T IT?

On first thought that's the way some ideas may seem. Straighten them out and come up with a winning idea.

MSC Suggestion Program

Secrets of Mars being unveiled

(Continued from page 1)

taining silicates, which formed of oxygen and silicon, are the major components of Earth rocks.

Mariner will also provide the first pictures showing the surface of Mars' two tiny moons, Deimos and Phobos. They will be photographed and data taken by the spectral instruments from orbit at ranges from 5,000 kilometers to 8,000 kilometers (3,000 to 5,000 miles). Any surface markings should be visible.

Two other scientific experiments carried aboard Mariner 9 are expected to measure variations in Mariner's radio signal to study the Martian atmosphere

and to measure the planet's orbit around the sun, the orbit of its two moons, and its gravitational field.

At press time, Mariner pictures were showing improved quality.

Basketball Tickets Now Available

Houston Rockets fans can buy discount tickets for basketball games through the EAA.

Regularly \$4.50 field box and \$3 mezzanine box tickets are available for \$1 for the Rockets vs. Los Angeles Lakers game on December 8 and Rockets vs. Atlanta Hawks match on December 10. Both games are in the Astrodome beginning at 7:30 p.m.

To purchase your tickets, see Kay Anderson, Building 2, Room 157A; Jeri Brown, Building 2, Room 452; Verna Brown, Ellington, Building 135; Barbara Bulot, Building 30, Room 2011; Bud Roos, Building 12, Room 225; Linda Williams, Building 30, Room L215; and Geraldine Taylor, Building 45, x5365.

Buy your gobbler from the Cafeteria

The MSC Cafeteria will cook your family's entire holiday turkey dinner for only \$13.75.

The menu includes a fully-cooked turkey to feed 10 to 12 hearty appetites, two quarts of cornbread dressing, a quart of giblet gravy, one pound of cranberry sauce, and a 10-inch pumpkin pie. You can also order additional dressing, gravy, and pies for very reasonable prices.

For more details and to place your order, call extension 5905.

I would like to express my deep appreciation for all the cards of sympathy sent to me and my family over the loss of my son.

Dorothy A. Rafuse

Scientists will study unusual samples

(Continued from page 1)

front on the Moon last July.

The scientific investigations will provide detailed information on the sample's mineralogy, petrology, chemistry, age and history and on the effects of micrometeorite impacts, solar radiation and cosmic ray bombardment.

Preliminary examination of samples in MSC's Lunar Receiving Laboratory and studies of a small number of selected samples at other laboratories, show the Apollo 15 material to be of three types—dark-colored, iron-rich basalts associated with mare and rille formation; a few basalts enriched in feldspar collected near the Apennine front; and light-colored, fragmental rocks or breccias consisting of soil-like materials which have been cemented together or of rock fragments which have been welded together by partial remelting.

The Apollo 15 material also contains several unique or unusual samples, some of which came from a small area on the Apennine front near Spur Crater. The samples collected at this site include a white crystalline rock called anorthosite, composed almost entirely of calcium-rich feldspar, and preliminary age dating shows it to be about 4 billion years old; a very interesting black-and-white rock containing light-colored fragments composed of feldspar-rich breccias and dark-colored fragments composed of basalt; a 1.1 kilogram (2.5 pound) breccia which has the lowest potassium content of any lunar sample; and several green rocks.

By studying the Apollo 15 samples, scientists hope to be able to characterize lunar rocks which formed prior to the filling of the mare basins. A number of samples, mainly composed of breccias from St. George and Spur Craters, along with several basaltic rocks, may be composed of material which formed before an asteroid-sized

body is believed to have impacted the Moon, blasting out the basin which formed Mare Imbrium early in lunar history.

A total of 176 kilograms (388 pounds) of lunar material has been collected by the four U.S. lunar landing missions through Apollo 15. Of this total, 163 kilograms (359 pounds) are placed in reserve for future studies, for a time when new scientific instruments and concepts might become available.

EAA Assembles

(Continued from page 1)

will take the bulk of the available funds. The Council hopes to have the recreation facility open by next fall.

By the end of this calendar year, Stransky said, the Exchange Council will have approximately \$60,000 in earnings. Of that amount, \$40,000 will have gone to subsidize EAA activities—the picnic, athletic events, nights at the dinner theater, children's Easter and Christmas parties, and the MSC Christmas Dance, among other programs.

New representatives for the Employees Activities Association will be elected by all MSC employees on Tuesday, December 7.

MSC paper now in second decade

(Continued from page 1)

at that time an 8-page newspaper. A native of Texas, Phoncille found many people at Langley coming to her with questions about life in this big state. Knowing the Manned Spacecraft Center would be established here, she decided to incorporate something "Texan" into the name; hence, of course, the *Roundup*.

The name was selected from some 150 entries to the contest. A list of all the suggested names would be unwieldy here, but these are some of the things the *Roundup* might have been:

A-O-K, *Astro-Jets!*, *Apollo Apothegems*, *Asteroid Beep*, *Astro-vox*, *Blastoff*, *Celestial Times*, *Cat and the Fiddle*, *Das Capsule Flugelabout Propagandischer Blatt*, *Green Cheese Gazette*, *Lunar-Tics*, *Meteorwrite*, *Moon Shiner*, *Stairway to the Stars*, *Outerglobe*, and *Vacuum*.

John Goad dies

John W. Goad, an engineer in the Apollo Test Division, died on November 4 of a heart attack at the age of 45.

He worked for the National Advisory Committee for Aeronautics (NACA) from 1952 through 1955. He joined the Manned Spacecraft Center on December 4, 1961.

His survivors include his wife Charlotte and three children, Leslie, Carolyn, and Cheryl.

Roundup Swap-Shop

(Deadline for Swap-Shop classified ads is Thursday of the week preceding **Roundup** publication date. Ads are limited to MSC civil service employees and assigned military personnel. Maximum length is 20 words, including name, office code and home telephone number. Send ads, typed or legibly written, to **Roundup** Editor, AP3)

MISCELLANEOUS

- 10' x 13' Coleman deluxe Oasis tent, sleeps six adults, brand new, has never been out of box make offer. Griffin, 333-3512.
- 4' x 8' Sears pool table, good cndn, cue sticks & stand thrown in. \$70. Merrell, 966-2612 (Bacliff).
- Two pair, red & black, size 6B boots. Were \$20 each, sell for \$10 each; worn 3 times. Paletz, 481-2318.
- Shotgun, Remington Model 48, 20 ga, Polychoke, \$75. Weitz, 333-3071.
- Ice chest by Thermos, very large, plastic, like new, \$10. Sun lamp, new, never used, \$10. Boat ladder, 3 steps, \$3. Brizzolara, 333-2509.
- Wonder horse, large size, like new, was \$27, now \$16.50. Fischer, GR2-6910. No calls Fri. night or Saturday.
- Strollee baby stroller, \$11; Cosco infant seat, \$4; Evenflo sterilizer, \$2; other infant items. Arnim, 333-4629.
- 1964 Lionel electric train set w/many extras, \$20; Olympia portable typewriter and case, \$15. Doherty, 488-0182.
- Dyna-Fog Fogger and two 5-gallon jugs. Brenton, 488-4372.
- Ford air conditioning compressor and clutch-York. Brenton, 488-4372.
- 7' aluminum Christmas tree w/11 boxes of blue balls and top ornament, \$25. Avent, 333-3771.
- Mark 10 capacitive discharge ignition system, \$20. Heathkit model 11A depth sounder, \$65. Holloway, 941-0262.
- Airplane, Cessna 180, 375 SMOH, chrome cylinders. Full gyro panel, remote compass, rotating beacon. Two MK 12/360, Narco AT6 xponder, ADF 31A, glide slope. New paint, interior, batter. Oversize tires, \$8500. Giuli, 474-4390.
- Deer rifle, 4-power scope, sling, case. 300 savage lever action, Weaver scope, \$125. WA6-4333.

VEHICLES

- 67 VW, blue, xln cndn, new tires, 42,000 miles, \$850. Driver, 649-0774.
- 70 Ford Cheateue wagon, auto trans., V-8, stereo, xln cndn, travel features, \$3250 or best. Roberts, 479-3929.
- 66 Caprice, A/C, power steering and brakes, radio, automatic, yellow w/black vinyl top, Martin, 932-6202 after 5 p.m.
- 71 hardtop tent camper w/stove, ice box, sink, spare, curtains, screens; sleeps 6, \$995. Huntley, 472-4189 after 5 p.m.
- 68 VW camper, CustomTent, AM-FM, carpeted, new engine, very good shape. Walker, 333-3719.
- 65 2-dr Lemans hardtop, air, power, automatic, xln cndn, will sell reasonable. Sam, 488-0125.
- 66 Mustang, 289, eng, A/C, radio, A/T, new tires. Brenton, 488-4372.
- 61 Corvair. Brenton, 488-4372.
- 63 Chevy II SS, 2 dr, 6 cyl, good cndn, overhauled 71, \$400. Stamps, 471-0770.
- 66 Chevrolet, 4 dr BelAir, air, auto, real clean, \$650. Murrah, 487-3019.
- 65 Rambler Ambassador, 4 dr sedan, fully loaded, 57,000 mi., xln cndn. Williamson, 932-5074.
- 64 Pontiac GTO convertible, new top, \$450. McMurray, 534-3625 after 4:30 p.m.
- 60 Opel 2 dr sedan with air, low mile, 25 plus MPG, \$250. Maas, 488-2965.
- Jeep station wagon, completely rebuilt, 4-wheel drive, lock out hubs, tow bar w/surge brake, \$1050. Hood, 946-8804.
- 70 1/2 Honda 100 cl Scrambler, street-trail bike, very nice, runs great, licensable for 15 yr. old. Cost \$460, must sacrifice for

\$299 with helmet and signals or best offer.

- Horton, 877-4102.
- 69 Ford LTD 4 door hardtop, all power, A/C, stil in warranty, reasonable price. Pearson, 877-2701.
- 69 El Camino pickup, turbo automatic transmission, 350 V8, factory air, PS, PB, vinyl top, low mileage, \$2200. Lindsay, 877-1141.
- 66 Karmann Ghia, low mileage, clean, very good cndn. Bartosh, 488-6052.
- 55 Chevy, V-8, mechanically very good, body good, one owner, \$350. Kuehnel, 474-3358.
- 65 Plymouth Fury, good cndn, auto., V-8, P/S, P/B, new tires, new battery, new tune-up, make offer. Williams, 534-3378.

HOUSEHOLD ARTICLES

- Portable natural gas space heater, like new. Was \$45, now \$23. Fischer, GR2-6910. no calls Fri. night or Saturday.
- Bassinette, folding legs, wheels, and mattress pad, \$4. Fischer, GR2-6910, no calls Fri. night or Saturday.
- Two girls' twin bed headboards, \$4 each. Doherty, 488-0182.
- Sewing machine, Penncrest straight stitch, zig-zag, built-in button holer, portable carrying case plus new sewing cabinet, \$60 (\$140 new cost). Guli, 474-4390.
- Spanish coffee table, \$15; matching end table, \$10. Gibson, 483-3937.
- Duplex bed, sofa by day, bed by night, with 2 bolsters and slip cover, \$20. Erickson, 649-0396.
- Beige sofa, \$35. Gaffney, 534-4186 after 5 p.m.

MUSICAL INSTRUMENTS

- Kimball Artist Console piano, like new. Compare at \$1100, asking only \$700. McMurray, 534-3625 after 4:30 p.m.

CAMERAS

- Konica 35 mm SLR camera, F1.8.TTL light meter, extra 2-X teleconverter Kenko lens w/camera, \$150. Merrell, 966-2612 (Bacliff).

SOUND EQUIPMENT

- Panasonic 7" reel-to-reel tape recorder. Needs repair. Tapes thrown in. Merrell, 966-2612 (Bacliff).
- Westar combination bar/stereo, AM/FM/SW/phonos. 6-speaker, walnut, xln cndn. Davis, 482-7820 after 5 p.m.
- Heath MP-1 xistor pwr supply, Mult-Elmac AF-67 xmitter, Gonset G-66 mobile rcr. All manuals, \$75. Trebes, 649-2897.

The Case of the Missing Pecans

There will be no traditional pecan harvest this year for MSC employees because someone has absconded with the goods.

When EAA officers checked in mid-October, the pecans weren't ready to be picked. When they checked again three weeks later, the pecans were gone. The only clue was a set of tire tracks.

Any information you may have in solving this nutty crime will be much appreciated.

Films stress safe driving practices

"Anatomy of an Accident" and "DWI Phoenix" are safety films available through next week for showings to groups of ten or more people.

The first film runs 28 minutes and explains the steps which contributed to a fatal automobile accident. The second, 27 minutes long, relates what the city of Phoenix has done to alleviate the problem of drinking drivers.

You supply a viewing room and ten or more viewers. The Safety Office provides the film, projector, and operator. Call x5210 or 5219. If the films are available, they can be shown on short notice.

BOATS

- Larson "SeaWolf" 18' 3" Centerline, 75 HP Chrysler, Shoreline 1700 trailer, xln cndn, many xtras, \$1495. Brunenmeister, 481-3558.
- Speedboat, 16', 120HP outboard, trailer and all 1971 gear, pro ski bar, mint cndn, \$3795. Bland, 333-4580.
- Tri-hull, fishing and skiing boat, 17', 120-HP outboard, trailer and all gear, \$2495. Bland, 333-4580.

WANTED

- Good used Conn Strobe-tuner and piano regulating tools. Bates, 944-4687.
- Interested in car pool using Gulf Fwy from vicinity Broadway-Park Place Circle, Bldg. 2, hours. 8:30-5:00. Johnson, 483-3258.

REAL ESTATE & RENTALS

- El Lago, 3-2-2, contemporary, lots of trees, carpets, drapes, fireplace, top notch, real clean, 4-years old, 6 1/4% loan. Stull, 877-1114.
- For lease, remote cabin deep in Sam Houston National Forest, ideal for campers or hunters. Leonard, 944-4997.
- For rent, 3-1-1 just off Reed Bluff Rd. in Pasadena, storage room, large bedrooms, new paint, \$140. Murrah, 487-3019.

PETS

- AKC reg. miniature Schnauzer pups, \$85. Holman, 774-6527.
- AKC collie puppies, blue merles, tri, and sables; shots and wormed; \$65 and up. Arndt, 482-3989.
- AKC beagle at stud, \$25; hunting stock. Boykin, 946-1794 after 5 p.m.

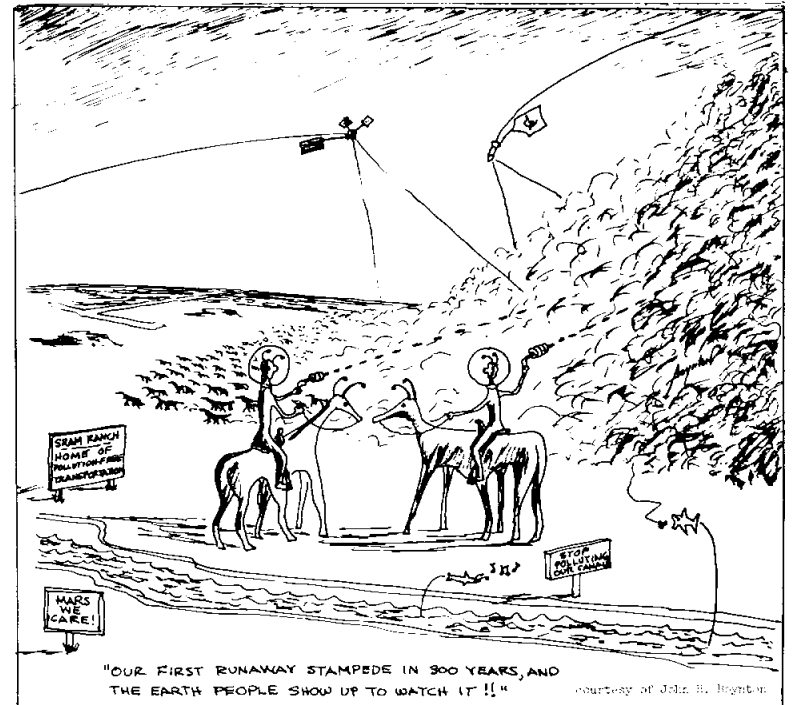
Local Jaycees set Boxing Night

The League City Junior Chamber of Commerce is sponsoring a series of twelve boxing matches.

This year's third card will get underway at 8:00 p.m. on Saturday, November 27 in the Galveston County Park Pavillion in League City.

Tickets, sold at the door, are \$1.00 for adults, \$.50 for children. Plan on arriving early to get a ringside seat.

THE NOVEMBER-December holiday season is rapidly nearing. Next Thursday, the Nation celebrates Thanksgiving. The Pilgrims' voyage brought them to the Atlantic shores of America three and a half centuries ago. Today, we journey to the moon and one day, perhaps, beyond. Let us all be thankful for mankind's never-ending search for new worlds and finer ways of life.



ROUNDUP

NASA MANNED SPACECRAFT CENTER HOUSTON, TEXAS

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.

Editorial Staff: Sydni Shollenberger, A. "Pat" Patnesky



ENERGY ABSORBER INVENTORS Clarence Wesselski (left) and William Keathley (right) are pictured with their invention which may have very practical application in automobile bumpers. The absorber is used in astronaut couches aboard the Apollo command module. In the center here is Ralph E. Drexel, Subsystems Manager for Couch Attenuation Systems.

MAY BE USED ON AUTOMOBILES

Inventive MSC Engineers design New method of impact absorption

Beginning with Apollo 11, astronauts have had the protection of a device built into their couches' ZZ struts which gives the command module an emergency landing capability.

Designed by William H. Keathley and Clarence J. Wesselski, engineers in the Spacecraft Design Division, the device is called an energy absorber. The men were granted a patent in September for their invention which may be assembled to produce any desired rate of onset of deceleration as well as any desired force level.

The energy absorber consists of a set of washers tightly fitted on a rod. Pressure against the end of the line of washers pushes one after another along the rod until all the washers are moving. The rate of onset may be controlled by the spacing of the washers, and the force level is controlled by the number of washers.

Presently, the absorber is a one-time disaster avoidance device and

must be replaced after impact. During the Apollo 15 splashdown, the absorbers came into play when one of the parachutes failed causing the descent rate of the command module to increase. There was no danger to the crew since the entire system was designed to operate under these circumstances.

NASA, owner of the patent, will grant royalty-free, non-exclusive licenses to organizations interested in the device for commercial use, Keathley said. The patent counsel's office at MSC has already received several inquiries about the energy absorber. One inquiry was for the possible use of the device in Air Force troop seats. Another was related to the packaging of sensitive equipment.

The most promising use of the energy absorber appears to be in automobile bumpers. Federal law requires that beginning in 1974, all cars have bumpers which can withstand a 5 m.p.h. impact with a fixed structure without damage. The strut energy absorber could be arranged on bumpers to absorb the energy of a 10 m.p.h. impact with only a six-inch stroke.

The energy absorber could also be arranged so that it resets itself after an impact, but this method would be more expensive than the one-time absorber. The one-time device would be the most practical, Keathley believes, and could be replaced by the owner or a filling station mechanic.

In addition to protecting the bumpers from damage in a minor impact, the energy absorber would help minimize injuries in a major collision. Although the most important devices for preventing injury in an accident are by far the seat and shoulder belts, the energy absorbed by the bumpers might be just enough to prevent serious injury or death.

Zero In On Safety

Jimmy Warren Memorial Bowling League BOWLING STANDINGS

Alley Oops	25	15
Chokers	25	15
Bit Pickers	24	16
Achievers	22	18
Spoilers	21	19
Mixers	21	19
Team 14	21	19
Pin Pounders	20	20
Fabricators	19	21
Hertz	19	21
Hexes	19	21
Ball Busters	18	22
Splitters	15	25
Leftovers	11	29

To date, the Pin Pounders have the high team set and game (handicap): Set, 3215; game, 1095. Belair of the Leftovers has had the high handicap set thus far (3 games - 703); Burghdoff of the Hertz has had the high handicap game (288). Al Shields, Bill Moon, and Jim Grimwood took high individual (scratch) set and game honors last week.

Brad achieves "impossible dream"

Anyone who feels that the younger generation is a disappointment to its elders doesn't know teenager Brad Perry of Albemarle, North Carolina.

If you watched television during last summer's Apollo 15 mission, you may already recognize his name. He and his amazing project appeared on nationwide TV with newscaster Walter Cronkite.

Brad, with assistance from his father and grandfather, has built an actual-size mockup—complete with display panels, switches, and a small computer—of the Apollo command module. The capsule is in the basement of the Perry home.

Shortly after Apollo 11, the first lunar landing mission, Brad obtained a small scale-model of the Apollo spacecraft. Working from that, he scaled-up the dimensions

until his design reached the size of an actual command module.

At first he found all of his information on the spacecraft in the library or in other public sources. Two years ago, he met Bob Ernull of the Flight Operations Directorate, who, with his wife Judy (a former MSC employee), was visiting in Albemarle, Judy's hometown.

Bob became interested in Brad's enterprising project and agreed to send him certain MSC documents—flight plans, operational trajectory notes, and systems handbooks.

Using the new material, Brad became busier than ever designing and constructing his own command module. His father and grandfather built the wooden outer-structure to take the exact specifications (as Brad had scaled

them up from a small model) of the real module. Most of the elaborate interior work Brad himself has done.

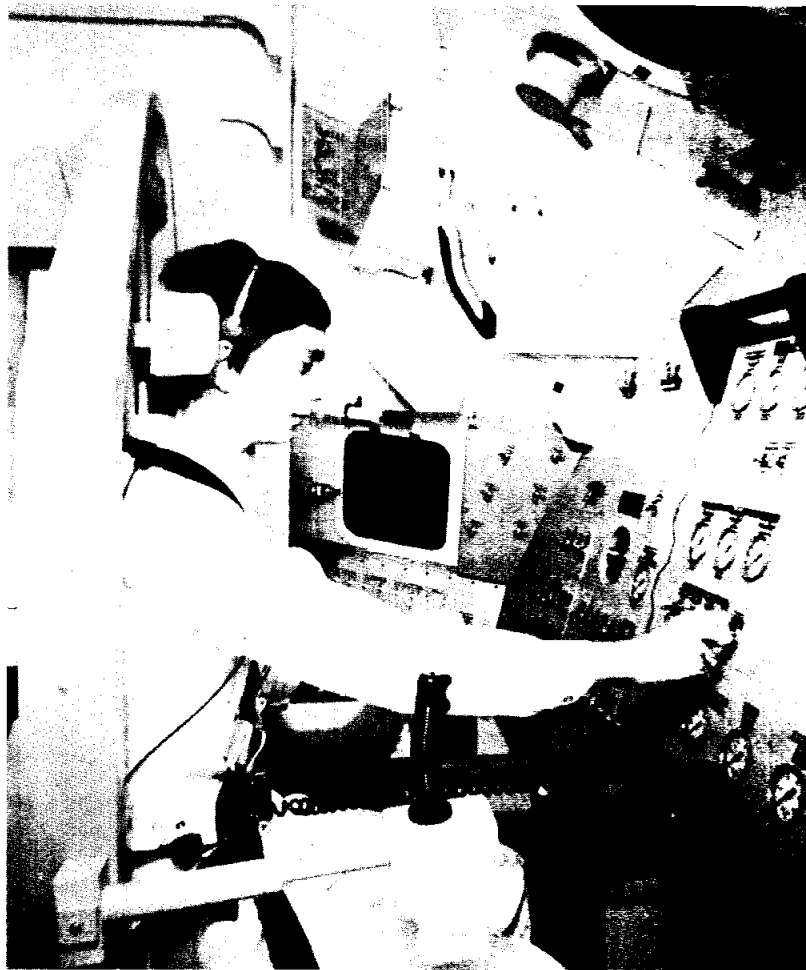
The module has a "digi-comp" computer, designed to teach young people the basics of computer operation. Brad has developed programs for this small, simulated computer which parallel the sophisticated Apollo programs.

Originally, Brad had planned to simulate the entire Apollo 15 flight. An exhausting drive to complete the module in time for Apollo 15 liftoff, demands for his appearance on local and national TV, and the many phone calls resulting from his public appearances prevented his simulating the whole mission.

Somewhat disappointed, Brad, however, understands the great importance within the space program placed on training. Therefore, he considers the last mission as additional training for the Apollo 16 flight next March, which he does plan to simulate in entirety.

A year ago, Brad and his family visited Kennedy Space Center where he toured the crew simulators and trainers. He also had the pleasant surprise of meeting Astronauts Alan Shepard and Ed Mitchell, who were at that time preparing for the Apollo 14 mission. Brad hopes to visit MSC in December of this year.

The next time you read some of the discouraging headlines about young people and their troubles, remember this remarkable young man from North Carolina.



Brad Perry is shown here at the controls of the command module mockup which he designed and built. The photo was taken during the Apollo 15 mission.

LOOKING for a new sport the whole family can enjoy? Dick Siler of the Weather Office would like to form a Go-karting club. If enough people are interested, the EAA may sponsor it. Call Dick at x5630.

REMEMBER TO VOTE

December 7
EAA Election

EAA Calendar

● Children's Christmas Party will be held on December 4, 1971 in the MSC Auditorium. Tickets will go on sale November 22 for \$1.00

● MSC Christmas Dance scheduled this year for December 11 at the Shamrock-Hilton's Grand Ball Room. Tickets are \$5 per person and includes a Midnight breakfast. Music will be by the Don Cannon Orchestra and Thursday's Children. No bottles, please. Group reservations can be made through Joanne Sanchez, ext. 4303. Tickets went on sale November 15.

You must purchase your tickets by Monday, December 6. EAA representatives are asked to turn in money and any unsold tickets by noon on Tuesday, December 7, to EAA Treasurer Marie Wilmeth, Building 45, Room 758.

DON'T DELAY; BUY YOUR TICKET TODAY!



GOLF TOURNEY RESULTS ARE IN—Three of the big winners at the Atascosita Country Club in one of the 1971 MSC Golf Associations final match play tournaments of the season were (l. to r.) Dick Hart, Cecil Jackson, and Bob Liounis (making a putting shot). Liounis and Hart took first place in their respective flights. Liounis shot an 83 with a net of 70 to win the first flight and Hart, with a 19 handicap, shot a 95 for a net of 74 to capture top honors for the second flight. Other first flight winners were Bill Nunnery second (84-73), Chuck Laird third (89-74), and Daryl Chilcutt fourth (90-75). Cecil Jackson took second place in Flight 2; Harry Kolkhorst and Norris Taylor tied for third. Brock Golf Course will be the scene tomorrow for the final MSC "scramble" tournament. The final match play tournament is set for Astascosita on December 4.