

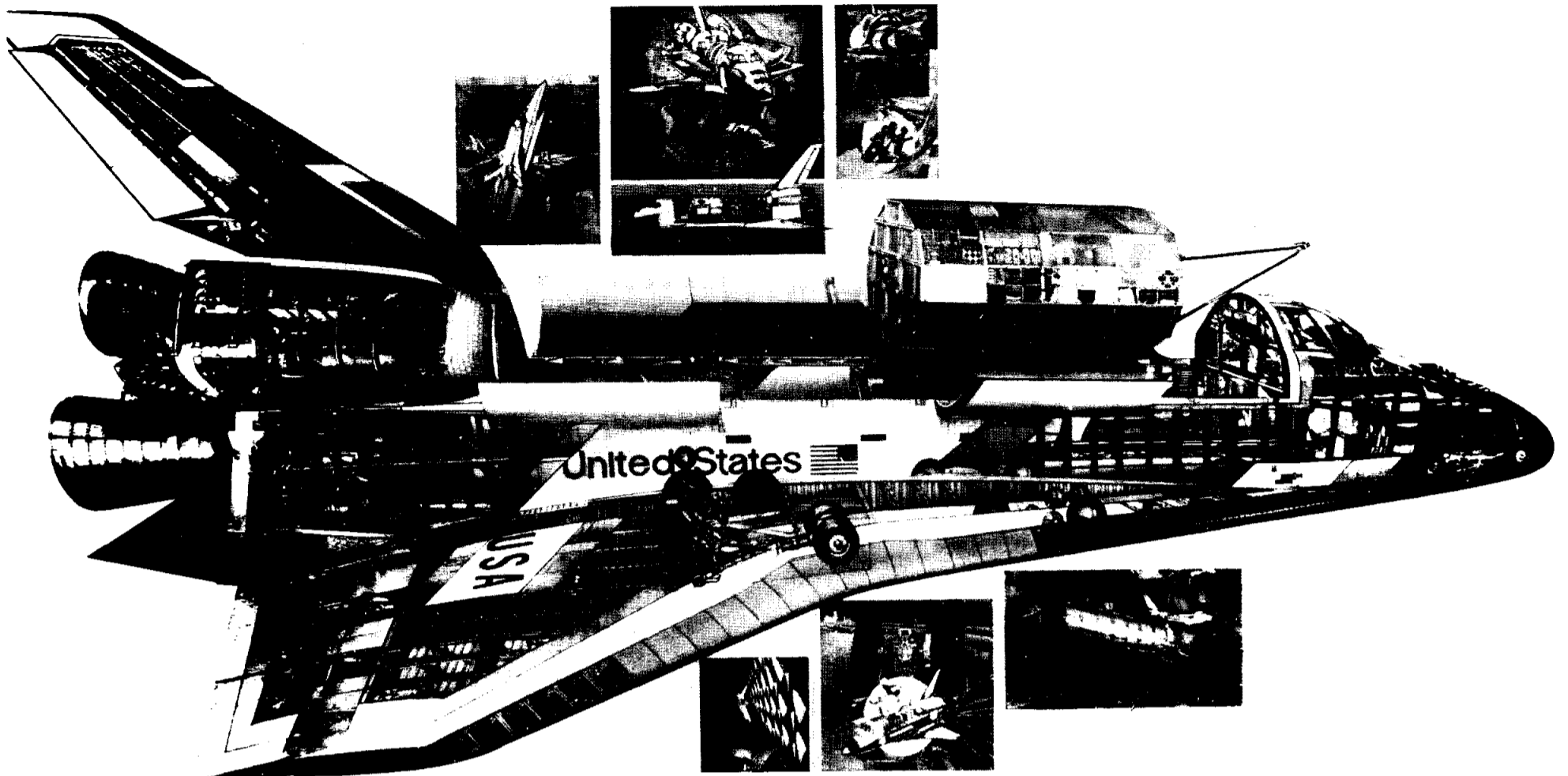
ROUNDUP

Lyndon B. Johnson
Space Center

NASA

June 1, 1979 Houston, Texas

Vol. 18, No. 11



STS Update: Tests, training, and review

Crew Training Activities Up

Two days a week integrated simulations are taking place, with ground support crews in the Mission Operations Control Room linked to instructors and astronaut crews in Building 5 simulators. Another group of instructors sit at consoles in a separate room in the MOCR. They insert malfunctions which the controllers must identify and then respond to, giving instructions to the crew.

These sims should continue until the first launch, ironing out crew procedures for any anomalies that may occur during the mission.

Crew training also continues in Building 5, with two to three sessions a week of simulations that are not integrated with the control center.

First Formal 1-G Trainer Exercise Last Week

Prime crews walked through an ejection

seat session last week in the 1-G trainer in Building 9A. It was the first formal session in the trainer which arrived last January.

The crews drilled in strapping in, turning on the power, and performing an egress.

Weekly Flights With Shuttle Training Aircraft

Every week the first orbiter crew and their backups fly the Shuttle Training Aircraft (STA), developing proficiency for the first orbital flight (STS-1). In air space over White Sands, New Mexico, they start at a high altitude and do a steep descent and approach practicing maneuvers they would perform in the Shuttle vehicle. At approximately 10,000 feet they simulate a landing.

The STA is specially reconfigured to perform like a Space Transportation System orbiter.

Chamber B Testing

A simulated separation of the External Tank from an orbiter will take place in June in the Space Environmental Systems Laboratory in Building 32. The umbilical separation will allow lab workers to study environmental and gas dynamic effects of released cryogenics on heat shield tiles, hinges, latches, and other system components.

Main Engine Testing at NSTL

Shuttle Main Engine #2007 passed flight acceptance tests Saturday May 12 when it was successfully fired for a 520-second endurance test run simulating a launch into space.

The engine is now undergoing detailed electrical and mechanical checkouts. Formal acceptance follows a final review in late May at National Space Technology Labs in Bay St. Louis, Mississippi.

Columbia's other engines are now at the Mississippi center when they are being tested in the same stand. Flight engine #2005 underwent a 100-second firing at NSTL and has one more full duration (520-second) firing as of *Roundup* press time before completing its flight acceptance.

A third engine, #2006, will undergo acceptance tests in June. Following formal acceptance, the engines will be trucked to KSC to be installed on Columbia.

Special Staff to Aid Shuttle Assessment

NASA management has requested special senior staff support to assess management of the Space Transportation System.

The staff consists of Dr. Richard C. McCurdy, former NASA Associate Administrator; Willis H. Shapley, former Associate Deputy Administrator; Maj. Gen. James

Abrahamson, F-16 Program Director, USAF; A. Thomas Young, Deputy Director of Ames Research Center; and John E. O'Brien, Assistant General Counsel for Procurement at headquarters.

The staff will aid in the study of Space Shuttle funding problems, uncertainties of program predictions, and information flow and control processes.

Deputy Administrator Alan Lovelace said: "With the assistance of this special staff, I feel we can develop a thorough assessment of major management issues."

At the top of the page is a composite of 10 drawings using cutaway techniques to depict all on-board Shuttle systems. The poster can be ordered by sending \$1.60 to Documents, Government Printing Office, Washington, D.C. 20402. Ask for the "Space Shuttle Wall Sheet," Stock Number 033-000-00743-4.

RMS Contract Award

NASA has signed a letter of contract with the Canadian Commercial Corporation for follow-on production of three remote manipulator systems for the Space Shuttle. The work is to be performed by Spar Aerospace Limited of Toronto.

Bulk of the work is to be performed at Spar's facilities in Canada with a portion subcontracted to other Canadian and U.S. firms.

The manipulator system is a 50-foot arm-like device that will allow astronauts in the Shuttle orbiter to deploy or retrieve payloads in space. Delivery of the three systems to KSC is planned between 1982 and 1984.

Remote medicine film June 13

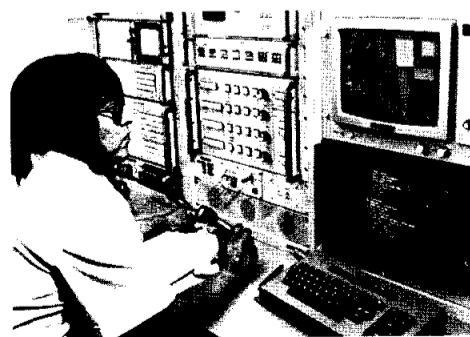
JSC's Health Education Program will show the film "STARPAHC" (Space Technology Applied to Rural Papago Advanced Health Care) in Building 30 auditorium on Wednesday, June 13 at 10 a.m. and again at 1 p.m.

STARPAHC is not only a space program spinoff, but also a rebound.

Medical treatment on a spacecraft is similar to treatment for a remote population on Earth. STARPAHC was developed as a "test bed" system, a simulation for health care delivery during spaceflight.

As a result, the Papago Indians on a reservation in Arizona benefit from slow-scan television links, voice communications with a Phoenix hospital, computerized data links, and telemetry relays of vital signs—telemedicine—through visits from a Mobile Health Unit.

The telemedicine kit was developed from Skylab medical monitoring design. The experiment with the Papago Indians will help NASA determine the best way to



treat patients in remote locations—on Earth or on a manned interplanetary mission.

The film shows a patient stricken at a remote village. It follows the patient through progressive health care stages leading to diagnosis and treatment, giving the audience an understanding of how the health care delivery system works.

A JSC Clinic physician will be on hand to answer questions after the showings.

Your conference call is ready

— — — See Page 4

Bulletin Board

Please limit announcements to 10 lines, double-spaced copy

Visitors Welcome at Retired Employees' Meetings

The National Association of Retired Federal Employees (NARFE) will meet on **Friday, June 1, 6 p.m.**, at the **Clear Lake Park Building**. This is one of four dinner meetings held during the year. Visitors are welcome. (Federal employees 50 years of age or over, with at least five years of service, are eligible for membership in NARFE.) For information, call Dick Hervig at 488-3618, Jack Kinzler at 334-2449, or A. B. Olsen at 334-3270.

Automotive Club to Hold Its First Meeting

The newly formed **Space Center Automotive Associates** organization will hold its first meeting on **June 5** at 5:15 p.m. in Room 215 at the Gilruth Center. This organization is designed to appeal to individuals with diverse automotive related interests. Robert Stanley is acting as president during the formative period. Anyone interested in sports cars, antique car restoration, general auto maintenance, etc., should contact Stanley at x-6181, or come to the June 5 meeting for more information.

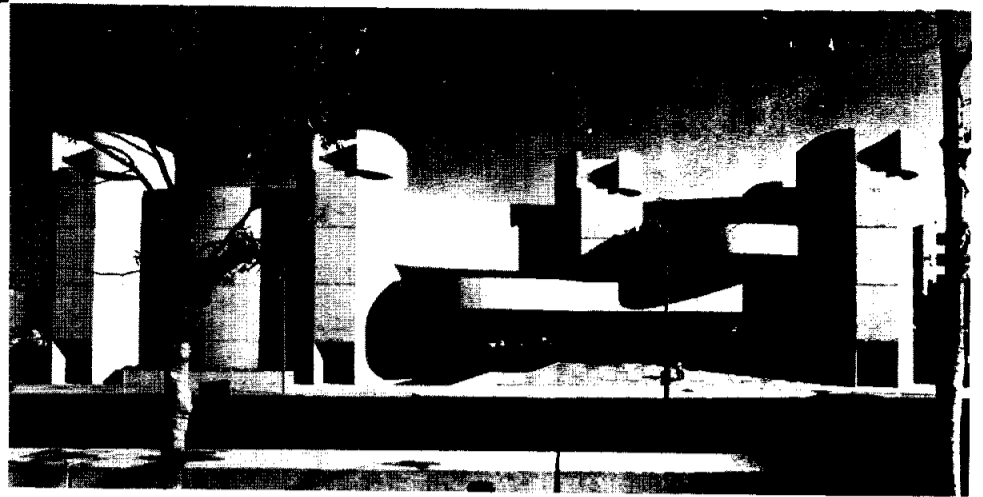
A Special on Alley Theatre Season Tickets

Season tickets are again available for next year's **five performances at the Alley Theatre** for the low price of \$24.50, which may be charged on a variety of credit cards.

See your EAA representative or bulletin board for an Alley Theatre brochure which will explain the program and contains an order form for subscribers. Fill out the form, enclose a check payable to Alley Theater or indicate a charge plan, and send it to Doris Wood, EF-1 (x-2161). Your check will be cashed or charge card **billed in September**. Coupon books will be home-mailed just prior to the opening of the '79-80 season in October.

On Sale at the JSC Exchange Store

(Store hours 10 am to 2 pm)
 Dean Goss tickets - \$10 single
 \$20 couple (Reg. \$14.50)
 ABC Theatre tickets - \$2 each
 General Cinema tickets - \$2.40 each
 Six Flags Over Texas tickets
 \$7.25 for one day (Reg. \$9.25)
 \$9.25 for two days (Reg. \$13.95)
 Astroworld tickets - \$7.25 (Reg. \$9.25)
 Magic Kingdom Cards - Free
 Sea-Arama Marineworld Fun-Time Card - Free



Houston's Alley Theatre

Defensive Driving Course Offered Once Again

The EAA is sponsoring another Defensive Driving course in conjunction with the Safety Council of Greater Houston to be held on **June 18 and 20, or June 19 and 21** from 6-10 p.m.

at the Rec Center. Cost for the course is \$12, including materials. **Sign up before June 15** at the Building 11 Exchange Store from 9-2, or at the Rec Center. A 10% insurance discount certificate will be issued upon completion of the course. Any questions, call x-4921.

NEBA Group Life Insurance Dependent data update

Members of the NEBA Group Life Insurance Plan have the option of obtaining coverage for their spouse and dependent children. Qualified dependents are eligible to convert their coverage to an individual policy when they reach age 19.

It has been the practice to notify the member of the child's conversion option immediately prior to the 19th birthday. As the child may marry, or new children may come into the family, there is a need to update the records of dependent children.

To accomplish this updating, Insurance Data Update Cards are being mailed to each employee that has de-

pendent coverage as of April 1, 1979. This card requests the listing of all children under age 19 and their date of birth.

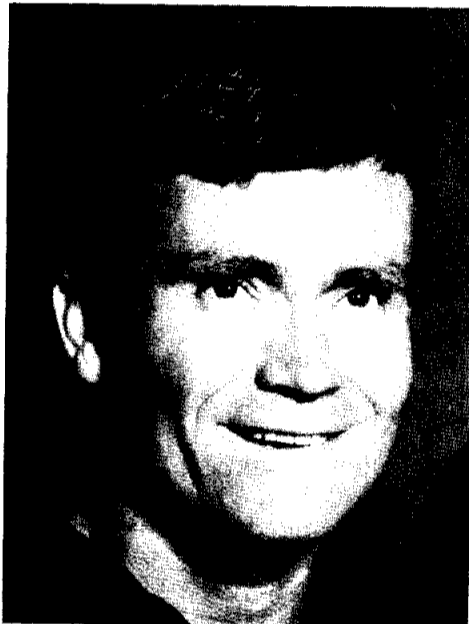
The cards should be returned even though all children have attained age 19, or if only the spouse is insured. The cards, when completed, should be returned promptly to NEBA, BE5, JSC, Houston, Texas 77058.

This updating will allow NEBA to provide more prompt and accurate conversion option information to its members.

For more information, call the NEBA office at x-5410.



Marilyn Bocking



Fred Haise

At the Toastmaster's District 56 Spring Conference in May, JSC's Marilyn Bocking was elected Eastern Division Lieutenant Governor. In this role, she will be involved with management of activities for about 15 clubs in the Galveston, Houston, and Bay Area. Bocking helped establish the Spaceland Toastmaster's Club in 1976. It was one of the first clubs in the organization to accept women as members.

NASA Photo

Astronaut Fred W. Haise is resigning from NASA to join Grumman Aerospace in Bethpage, New York, as vice president for Space Programs. Haise was to be commander of one of the early Shuttle flights. In his career at NASA, he was lunar module pilot for Apollo 13 in 1970, backup lunar module pilot for Apollo 8 and 11, and backup spacecraft commander for Apollo 16. Haise also piloted the Enterprise during ALT in 1977.

NASA Photo



Kudos to tennis winners

The results of the JSC/CLTA singles tournament held May 11-13, are in and kudos go to all the winners. Because of the large number of participants, no consolation rounds were held, but here is

how it all came out:

Men's Championship flight was won by B. Richison (6-4, 7-5) over H. Burris, third place went to D. Brown; Men's A, R. Windham def. S. Warren (4-6, 6-1, 6-4), E. Blakely took third place; Men's B, M. Kingcaid def. S. Young (6-2, 6-1), E. Swann took third place; Men's C, W. Kuehle def. S. Carnes (6-1, 6-2), third place went to L. White.

In the Women's events, K. Sullivan def. B. Jassawalla (5-7, 6-0, 7-5) to capture the Women's Championship flight, third place went to S. Burris; Women's A, M. Roberson def. S. Herbert (7-6, 7-5) L. Gates took third place; Women's B, E. Fekete def. I. Brandt (6-4, 6-0), L. Callner won third place; Women's C, N. Hyle def. M. Goodman (6-2, Ret) and A. Taft took third place. Congratulations to all.

Looking forward to seeing everyone at the JSC doubles tournament to be held at Strawberry Tennis Center on June 15-16-17.

NEBA FACT

The first group life insurance for employees was in 1911.



JUST SEND YOUR COST REDUCTION REPORT ON A JSC FORM 1150 TO COST REDUCTION OFFICE BG-3 NOW!

Cartoon by Russ Byther

What's cookin' in the JSC cafeteria

Week of June 4 - 8

MONDAY: Cream of Chicken Soup; Beef Burgundy over Noodles; Fried Chicken; BBQ Sausage Link; Hamburger Steak (Special); Buttered Corn; Carrots; Green Beans. Standard Daily Items: Roast Beef; Baked Ham; Fried Chicken; Fried Fish; Chopped Sirloin. Selection of Salads, Sandwiches and Pies.

TUESDAY: Beef Noodle Soup; Baked Meatloaf; Liver w/Onions; BBQ Spare Ribs; Turkey & Dressing (Special); Spanish Rice; Broccoli; Buttered Squash.

WEDNESDAY: Clam Chowder; Broiled Fish; Tamales w/Chili; 8-oz T-Bone Steak; Spanish Macaroni (Special); Ranch Beans; Beets; Parsley Potatoes.

THURSDAY: Navy Bean Soup; Beef Pot Roast; Shrimp Chop Suey; Pork Chops; Chicken Fried Steak (Special); Carrots; Cabbage; Green Beans.

FRIDAY: Seafood Gumbo; Broiled Halibut; Fried Shrimp; Baked Ham; Tuna & Noodle Casserole (Special); Corn; Turnip Greens; Stewed Tomatoes.

Week of June 11 - 15

MONDAY: Chicken Noodle Soup; Weiners & Beans; Round Steak w/Hash browns; Meatballs & Spaghetti (Special); Okra & Tomatoes; Carrots; Whipped Potatoes. Standard Daily Items: Roast Beef; Baked Ham; Fried Chicken; Fried Fish; Chopped Sirloin. Selection of Salads, Sandwiches and Pies.

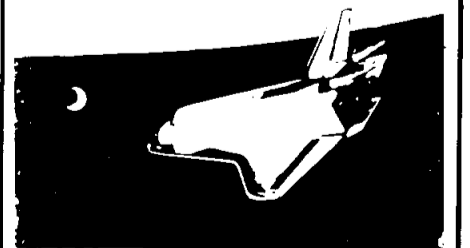
TUESDAY: Beef & Barley Soup; Beef Stew; Shrimp Creole; Fried Chicken (Special); Stewed Tomatoes; Mixed Vegetables; Broccoli.

WEDNESDAY: Mushroom Soup; 8-oz T-Bone Steak; Fried Perch; New England Dinner; Swiss Steak (Special); Italian Green Beans; Cabbage; Carrots.

THURSDAY: Cream of Chicken Soup; Turkey & Dressing; Enchiladas w/Chili; Weiners & Macaroni; Stuffed Bell Pepper (Special); Zucchini Squash; English Peas, Rice.

FRIDAY: Seafood Gumbo; Baked Flounder; 1/4 Broiled Chicken w/Peach half; Salisbury Steak (Special); Cauliflower au gratin; Mixed Vegetables; Whipped Potatoes; Buttered Cabbage.

Roundup deadline is the first Wednesday after publication.



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

Writer/Editor: Kay Ebeling

Vietnam era veterans at work at JSC

Whereas the Nation has never fully expressed its gratitude to those who gave a substantial portion of their lives to serve in such conflict. Be it resolved that the President is authorized and requested to issue a proclamation designating the seven-day period beginning May 28, 1979, as "Vietnam Veterans' Week." (Public Law 95-513, 95th Congress)

"It's interesting to me that something I make might go up to space." Terry Bromley takes time out from his work in the Building 10 heavy machine shop to talk about his job.

Bromley, as an Air Force sergeant, was an aircraft mechanic in a tactical fighter squadron, serving in Southeast Asia in 1966-67. Today he is on a four and a half year apprenticeship for a mechanical engineering technician position at JSC.

"I work as a machinist primarily," he says. "I like the job because of the variety. We take raw materials and use building machines to turn out mechanical parts for the Shuttle or mockup."

He picks up a piece of complicated machinery. "This goes on the nose of a WB-57 (Earth Resources aircraft)." His face fills with pride. "We casted the mount and bracket for it."

He needs to get back to work, he says, to start on another project. Pushing a cart, he heads back into the complex of machinery and noise of the workshop.

In Building 45, Gini Burow sits at her desk amid volumes of computer printouts. Twenty volumes of "control sheets" are on the shelf behind her, "and there are more in the hallways," she says. "It's a very clerical job."

Burow was a flight traffic specialist, "airman second class," she says, flying wounded out of Southeast Asia from 1961-63. "We picked them up at various



Virginia Burow



Terry Bromley



Al Cornelius



Tucker Pierce



Dick Gray

points outside Vietnam after they'd had initial medical treatment, and flew them back to the States," she says.

She was stationed at McGuire AFB in New Jersey with MATS (Military Air

Transport Service), and she served as a crewmember flying C-135s and C-118s. Why did she join? "Because they promised me I could fly," she says.

Her office phone rings regularly, the

staff stops by to ask her questions, and her finger moves carefully down the print-out page as she carries out her work. She's been with JSC for two years.

Continued on Page 4.

Roundup Swap Shop

Ads should be under 20 words, double spaced, typed or printed, one ad per person. Deadline for submitting or cancelling ads is 5:00 p.m. the first Wednesday after publication. Send ads to AP3 Roundup, or deliver them to the Newsroom, Building 2 annex. No phone-ins, please. Swap Shop is open to JSC federal and on-site contractor employees for non-commercial personal ads. Goods or services must be offered as advertised without regard to race, religion, sex, or national origin.

Cars & Trucks

71 Toyota Celica ST, 4-speed, a/c AM/FM stereo, 8-track, Ziebart, 60,000 miles, good cond, Best offer over \$1100. 729-5481 after 6.

77 Plymouth Voyager maxi-wagon van, 20,000 miles, 318 V8 (regular gas), auto, a/c, PS, PB, AM/FM, cruise control, \$5500. McLain x5073 or 452-7095.

78 Regal, maroon, 2-dr, good tires, air, tape, low mileage, clean, \$5000. 488-0412 leave phone number.

70 Cadillac sedan deVille, 4-dr, gold/white, AM/FM stereo, auto air, PS, PB, power windows, power doorlocks, tilt wheel, good cond., 488-2913 after 5.

75 LeMans Sport Coupe, auto, a/c, PS, PB, \$2100. 333-4609.

76 Blazer 4/4, Cheyenne pkg., PS, PB, a/c, CB, AM/FM/8-track, sun roof, tilt rough country suspension ziebart. 487-2278 after 5:30.

77 LTD Landau, 4-dr, a/c, PB, PS, cruise, AM/FM stereo other extras, \$3800. x4634 or 534-4089 after 5.

77 Ford PU, 302 V8, a/c, pwr str, 25K mi, exc cond. Stokes x2557 or 479-9977.

70 Cutlass, 2-dr, vinyl roof, PS, a/c, good cond, \$600 or best offer. 486-1857 after 5.

66 Plymouth, VIP, 4-dr hardtop work car, body poor, power brakes and steering, a/c mechanically sound, \$400 or best offer. 333-2974.

78 Ranchero GT Ford V8-351, a/c, PS, PB, AM/FM radio. 482-4594.

73 Chevelle SW, very good cond, needs minor work. 488-4372.

77 Chevrolet Impala 4-dr, 20 honest mpg, 6-cyl, a/c, auto, PS, AM/FM. Haines x3831.

27' Holiday Rambler travel trailer, very good cond, \$4250. 487-4142.

Pets

AKC reg collie puppies, 1 male and 1 female, born April 4. Sauer x2759 or 554-6290 after 5.

Peke-a-poo puppies, healthy, intelligent, adorable, \$45. 488-8143.

Birds for sale, blue and gold macaw, \$1200; Blue fronted Amazon, \$125. 481-2222.

Lost & Found

Lost: tuning fork (A) in field at Gilruth Center. Ben x5348 or 1-925-5152.

Wanted

Girl to share two bdrm marina condo, pool, tennis, sauna, clubhouse, laundry room, security, utilities included. Joan x2216 or x3665.

Male intern needs residence for summer. Brian Perry 515/292-1034, call collect evenings.

Ladies, small (1-speed) bicycle. x6470. Nice 4 or 5 drum set for first set, fair price. V. Marks 488-3354.

Canoe: Fiberglass/Aluminum and/or accessories, extras. Stavinoha x4281 or 331-1275 after 6.

Household Articles

Contemporary LR sofas w/love seats, end table, chairs, console TV, queensize BR suite, exc cond. x4541.

Early American solid maple bdrm suite, double bed w/bookcase headboard, mattress, box-springs, 5-drawer chest, double dresser w/mirror, \$550. Reeves 482-7233.

Drexel Woodbrier Dining Chairs (8) and Wellington Park Table. Good as new. 1/2 retail price. 471-2523.

Pair brass hanging light fixtures, \$25; Antique oak china cabinet, very nice \$850; Antique large brass wood box, \$100. 488-5564.

Beautiful large multi-bulb table lamp, \$50; Twin bed w/solid walnut bookcase headboard, \$60; Trundle bed, \$60. 946-7028.

Tuxedo sofa, \$30. 333-3801 after 6.

Modular bookshelves, walnut grain finish, may be arranged in many configurations. x6470.

Solid oak antique buffet and 2 chairs, \$200. 41" portable b/w TV, \$30. 482-7546.

Contemporary dinette set. 42" round table with 18" leaf and 4 chairs, exc cond. 486-5790 after 6.

Miscellaneous

Four 195 x 14 Bridgestone radial tires on Datson 260Z rims, reasonable. Crow x4441.

8 HP Riding mower, 36" cut, runs and cuts good but burns oil, \$110. 474-2906 after 6.

Slalom water skis, "Maharaja", \$50; "Taperflea", \$30; Three tow ropes/handles, \$5 each. 333-3601 after 6.

Anyone interested in firewood for Franklin cook stove. Are a stove like this one. Please call Ms. McCarty at 477-2229 after 5. IT'S FREE.

Cassette audio recording tapes, C-120, exc quality x6470.

Day lilies for sale, 902 Clover Ridge, Friendswood. 482-7042.

Desk-top computer, HP9810A, maximum memory, magnetic card read-write, printer, all one unit, supplies, \$800. 474-3621 after 5.

Carpools

Would like to form or join car pool from Gulfgate to JSC, 8-4:30. Kathryn x4660.

Cycles

Boys 20" Raleigh Mounty bicycle, \$25. 482-5255.

75 Honda GL-1000, full dress, exc cond, 13,000 miles, many extras, CB radio, etc, \$3700, will not haggle. Jack Cotton, Onalaska, TX 646-5488.

73 Penton 175 cc motorcycle exc cond, seat needs upholstery, \$375. Pierce x2611 or 482-4918.

Bicycle, man's, 26" 3-speed, exc cond, best offer. 333-2974.

2-CT70 trail Hondas overhauled and ready for fun, \$200 each. Engine speed equipment for 75-76 Honda XR75. 474-2214.

100 cc Hodaka Dirt Bike, real clean, \$200 or trade for Honda Trail 70. Lausten x5495 or 488-5192 after 4:30.

Property & Rentals

Lease: CLC Camino South, 3-2-2, fireplace, fenced yard, near school, no free pets, \$435/mo. Jack x2637 or 488-1411 after 7.

Rent/Lease: Heritage Park, 3-2-2, separate dining room, fireplace, draped, patio, large fenced yard, immaculate throughout, \$450/month. 474-4991 or 474-3887.

Rent/Lease: Cocoa Beach, Florida, Oceanfront condo, near space center, Disneyworld, heated pool, fully furnished, \$175/week. 488-2206 after 6.

Owner must sell one-acre wooded lot near Lake Somerville. 8% assumable loan, \$32/month payments. Schmidt x4063 or 333-4379.

Lease with option to buy, 3-2-2, League City, Newport, immediate occupancy. 925-6480.

Rent: Waterfront vacation retreat by marina at Cape Royale on Lake Livingston, new 3 bdrm, tennis, pool, golf, boat launch, by week. 488-3746.

Rent: Beat gasoline shortage. Galveston Island Jamaica Beach Cottage, \$175/week or \$30/day. 334-1640 after 6 for reservations.

Sale: Like new, 3-2-2 home in Dickinson, brick with all built-ins (incl. refrig.), 333-3279 after 5.

Rent: Lakehouse, 1 hour north of Austin, Texas, on Lake Buchanan. 334-3069 after 5 weekdays.

Sale: Investors, exc equity buy, assumption of 1/2 of CLC duplex priced below market for quick sale by individual. No agents. 334-5746 after 5.

Rent: 9907 Old Orchard, LaPorte (Fairmont Park), 3-2-2, \$369/month, first and last month rent + deposit, Available June 1. 471-3762.

Boats & Planes

6 HP Johnson outboard motor, exc cond, \$275. x4395 or 482-7081.

32' Trojan Express Twin, flybridge, sleeps 6, new marine electronics, 25 amp charger, \$12,500 or home equity. Ed x2216 or 334-1177.

Gulf Coast 15' sloop-rigged sailboat with sails, trailer, 1.5 HP outboard, exc cond, new mast, rigging, and painting, \$2400. x2408 or 334-1448 after 6.

Cessna 300 solid state nav-pac including 1-720 nav-com, G.D., A.D.F., MKR, BCN., transponder and switch panel, \$3950; installation available. Laurentz 488-2537.

Stereos & Camera

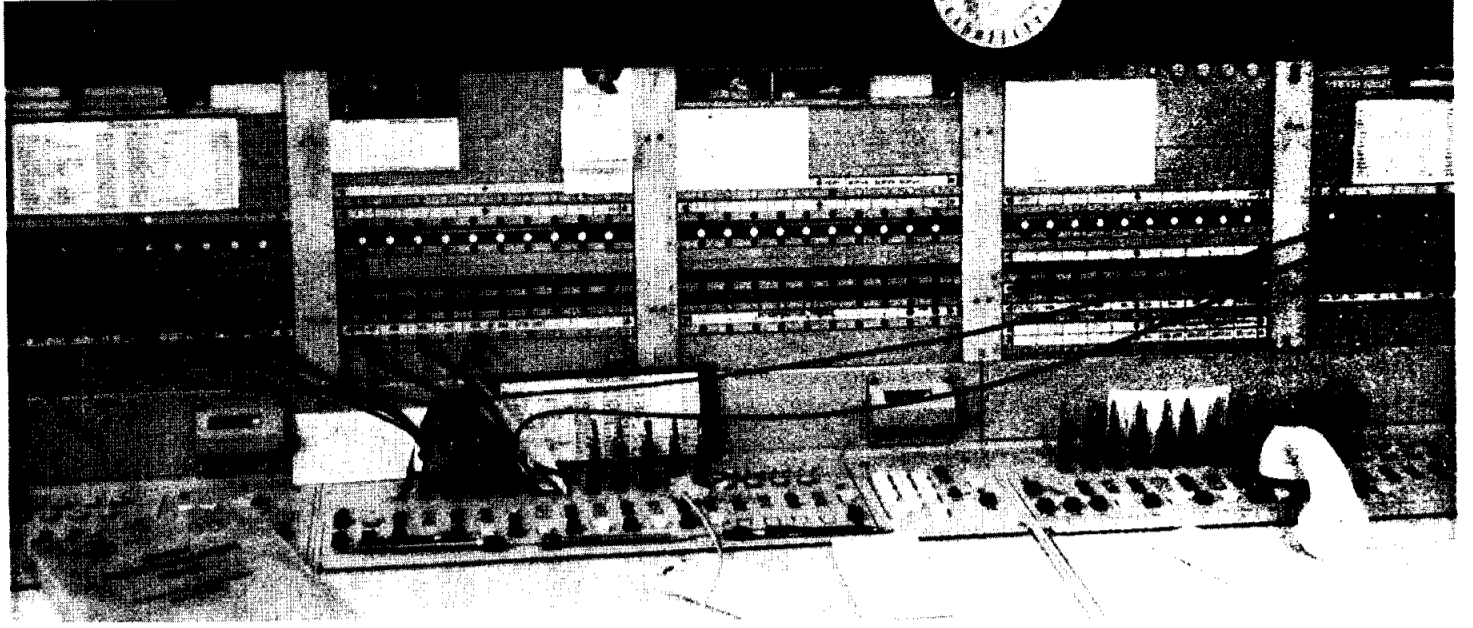
Philco AM car radio, \$15; Juliette AM/FM stereo 8-track, phono, \$40. Delay x2353 or 946-6296.

Sears AM/FM car stereo with 8-track, \$100. Mectron 40 channel CB transceiver with magnet base antenna, \$65. 921-7212.

Musical Instruments

Kimball Piano, Console: Provincial cabinet, cherry/fruitwood finish, \$1000. 332-5667 after 6.

Cornet, A-1, gold King w/case, \$175. Forsyth 534-3113.



It's just another week of conference calls and unusual queries for JSC's operators

"Good morning, NASA Johnson Space Center. One moment, I'll give you the tour office."

"I can't get the Cape for anything this morning."

"What's that sir? You what? I'll give you the information office" She turns to the operator next to her. "He wanted to know why jets leave all that heavy smoke when they take off in the mornings."

"I can't believe I got through to L.A. in one try."

It's a quiet morning in the telecommunications office in Building 1. Helen Ragsdale uses the time to catch up on employees' changing phone numbers at the Information (x3111) Roll-o-dex. At one point she gets up to plug in a cord beneath a blinking light across the room. "See that flash? We're supposed to answer that above everything. Someone's transferring a call." How did she know it was flashing? "You've got to have eyes in the back of your head for this job," Ragsdale says.

June 4 - 9 is International PBX Operators' Week, another week of conference calls and unusual queries for Charlene Black, Mildred Lillpop, Drue Stubbs, Lella Harding, Virginia Gibson, and Chief Operator Helen Ragsdale.

"Are you through?" She pulls a plug. "Are you through?" She pulls a plug. "Are you through?" She pulls a plug.

"Mr. H—, JSC with a conference call. Mr. N—, hold the line please for a conference call. Mr. M—, your conference call is ready."



Ragsdale—keeping up with changing numbers



Lillpop and Black—"Your conference call is ready."



"Good morning, NASA Johnson Space Center"—Stubbs

Vietnam veterans at JSC

Continued from Page 3

Dick Gray is a research pilot at Ellington. He is an instructor pilot for astronaut proficiency on T-38s. "I fly in the front seat while the astronauts are doing instrument checkouts in the back," he says.

Gray also flies the Gulfstream, and when he completes the checkouts, he'll be flying the Super Guppy and B-57.

"When I came here in December, I'd never flown any of the planes they have here," he says. "I flew F-4s and F-14s in the Navy."

Gray served in Southeast Asia in 1972. "I was a brand new guy, just checked out in the F-4, when I joined the VF-111 squadron overseas.

"We were the first wave to go into North Vietnam in four years," he says.

An aircraft thunders overhead and Gray runs to the window. "There goes an F-111," he says with enthusiasm. He says he was flying F-14s in the Navy until December when he was hired by NASA.

In Building 4, Tucker Pierce pours over flight manuals and documents. He has been with NASA two years, in the Flight Activities Branch. His job: writing checklists for orbiter crews.

In the Vietnam war, Pierce was an Air Force captain, piloting a KC-135 refueling tanker. He flew "just about everywhere in the Pacific: Thailand, Vietnam, Japan, Okinawa, Hawaii. On a refueling tanker, the other plane flies up behind you, a crewman drops a boom down, and you transfer the fuel in flight."

Pierce is an engineer who recently received a masters in business administration. "I love working here," he says. "I like crunching numbers, I like working on the simulator. And I like the space business."

He says writing crew checklists is "a cooperative effort. The biggest thing is keeping it up to date. It's a continuing effort: The thing changes so much. People find better ways of doing things."

He is soon pouring over another list of software changes.

In Building 1, Al Cornelius sits at his desk in the Procurement Division. He is a contract specialist, currently negotiating Rockwell contracts.

Cornelius was on an aircraft carrier in Southeast Asia in 1963, loading aircraft before they flew anti-submarine missions.

After leaving the Navy, he got a teaching certificate, taught high school speech and debate, then worked as a salesman for Proctor & Gamble. He took the Civil Service exam, and came to NASA where his first job was negotiating contracts for the Apollo command service module and then the lunar module.

Today he is in the Navy Reserves, and he says he is "looking forward to when the missions start flying and we get the program definitized."

Five veterans were selected at random for this story. Numerous others who served in Southeast Asia now work on the space program.

Think Tank

An electrical cable containing 100 identical small insulated wires has been laid from a mountain peak to the valley below. You are given 200 tags, a pencil, a wire stripper, and a simple continuity tester; and you are asked to tag both ends of each wire with a unique identifier. How should you proceed to minimize your round trips to the summit?

Send your answer to AP3 Puzzle Editor by Thursday, June 7. Winners get their choice of Roundups dating back to 1962.

HELP! Think Tank needs puzzles. After laboring over the last set of solutions, our puzzle editor was struck by benign confusion. He is currently in the Building 8 clinic where they are trying to wrench his tongue out from the corner of his mouth.

If you have a brain twister that will challenge the genius of your average JSC employee, submit it to the Roundup office. Note: He or she whose puzzle is used acts as puzzle editor for that issue.

We need your help to keep Think Tank a regular Roundup feature.

