

ROUNDUP

Lyndon B. Johnson
Space Center

NASA

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Flight engines fire 2 successful runs

The Space Shuttle program reached a major milestone last week as two of Columbia's three flight engines demonstrated their flight readiness in test firings at NASA's National Space Technology Laboratories near Bay St. Louis, Miss.

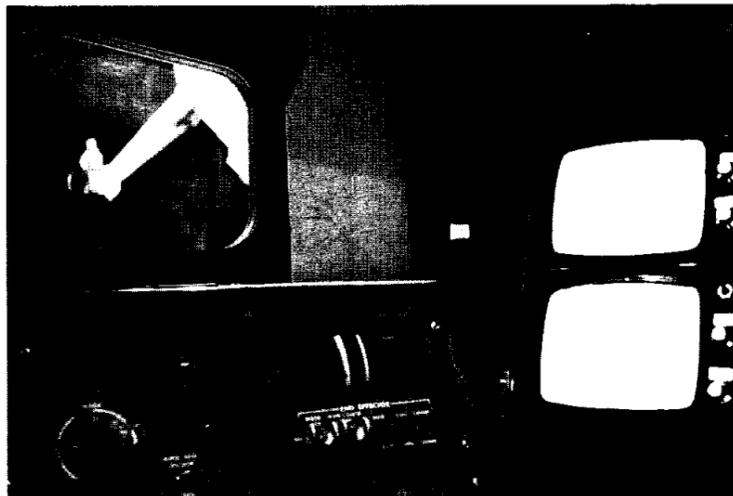
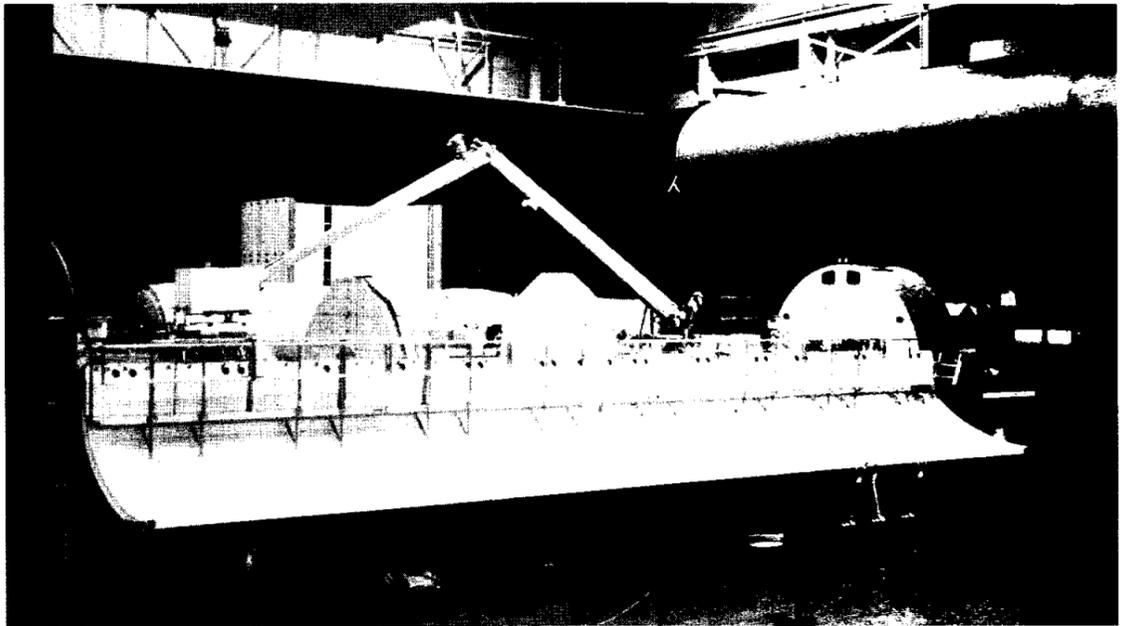
Total test time for the main engine program went over the 80,000-second mark with the successful certification firing of engine &2006 on June 5.

Program officials had established 80,000 seconds as the minimum needed to assure the reliability of the liquid fuel main engines.

Earlier, on June 2, engine &2005 was test fired for 520 seconds. The third of the flight engines (&2007) will undergo an identical test in about two weeks after it is installed in a test stand.

On May 30, a firing of the Main Propulsion Test Article met all test objectives. The test article consists of three engines, an External Tank, and associated parts of the orbiter. The three-engine cluster firing lasted 9 minutes, 17 seconds. Thrust ranged from 100% to 65% of rated power level.

Next static firing of the Test Article will be July 10.



Alternate heat protection to be studied by Rockwell

NASA has selected Rockwell International Corp., Downey, Calif., to conduct a design study of alternate thermal protection systems for the Space Shuttle orbiter.

The nine-month study will begin in late June and is expected to cost approximately \$900,000.

The major goal of the study will be to determine if a more durable system, requiring less maintenance and a lower life-cycle cost, is or can be made available, based on improvements in thermal protection system technology. Alternate systems to be studied will include, but are not limited to, metallic, ablative, and reinforced carbon/carbon concepts.

The present orbiter insulation has low mass and can withstand the extremely high heating that occurs during entry into the Earth's atmosphere, but it has low strength and is brittle in nature.

The ceramic system was selected in the early 1970s as the best then available. No detailed assessment of alternate systems,

however, has been conducted since that time.

The contract will be managed by NASA's Langley Research Center, Hampton, Va. Boeing Aerospace Co., Seattle, Wash., also bid on the project.

Report out on recent backpack fire

A NASA board investigating the April 18 flash fire in a spacesuit backpack found where the fire started and recommended 11 ways to improve safety and reliability of the system.

While the exact cause was not found, the four most probable causes of ignition were cited in the board's report to JSC Director Christopher C. Kraft, Jr., after five weeks of engineering detective work that included more than 2,000 unsuccessful attempts to reproduce the fire.

The accident destroyed an unoccupied Space Shuttle spacesuit and life support backpack. A Hamilton Standard technician, Robert A. Mayfield, was

severely burned but is recovering and has been released from the hospital.

The fire apparently started when the technician switched the secondary oxygen pack to the "spacewalk" position during a performance test in a clean room in the Crew Systems Laboratory. The secondary pack is attached to the bottom of the main backpack and provides 30 minutes of emergency oxygen for breathing and to maintain suit pressure if the main oxygen source fails.

Ignition took place in a V-shaped passage which serves to restrict the flow of oxygen between a shut-off valve and a chamber in the pack's regulator

module, the investigating board determined. It said the four most probable causes were:

1. Heating by compression or shock of a thin section of aluminum between the flow restrictor passage and the adjacent cavity.
2. Heating by compression or shock of contaminants in the flow restrictor.
3. Heating of internal surfaces through mechanical shock of incoming high-pressure oxygen, or heating of particles.
4. Similar heating of shut-off valve o-rings.

The board found that all procedures followed during the April

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RMS tests

Ongoing tests in Building 9A evaluate procedures with the remote maneuvering system. Above engineers test retrieval processes with the RMS using a mockup of the Induced Environmental Contamination Measurement experiment which will fly on early missions. It's all done with video, as shown at left. Tests identify visual perception difficulties and possible obstruction problems cause by other payloads in the bay.

New candidates 3 from JSC among new 19

NASA announced the selection of 19 new astronaut candidates for the Space Shuttle Program May 29. The new group will report to JSC July 7 to begin a one-year training and evaluation program.

Of the 19 selected, three are currently JSC employees, and one is an Air Force Flight Controller/Payload Officer at JSC.

Selected were James P. Bagian, M.D., of the Medical Sciences Division, Bonnie J. Dunbar of Payload Operations, and John M. Lounge of Payload Operations. U.S. Air Force Capt. Jerry Ross is also from Payload Operations. All four are mission specialist candidates.

Two of the mission specialist candidates are women. One pilot candidate is black, and one mission specialist is Hispanic.

Eight of the group are pilot candidates and 11 are mission specialist candidates. Six are civilians and 13 are from the military.

NASA received 2880 applications for mission specialist positions and 585 for pilot positions. Of these, 121 finalists were interviewed and given detailed medical evaluations at JSC.

After one year of training and evaluation at JSC, successful candidates will become astronauts and enter the Shuttle training program leading to selection for Shuttle flight crews.



The training film shown above in production at Ellington last month will be used to show medical personnel at contingency

landing sites how to handle crews during the delicate period between emergence from the spacecraft and boarding helicopters.



Spacelab One crew in training

The Spacelab One crew spent three days training in France May 27-30. Shown above at Marshall are (standing) Ulf Merbold, Byron Lichtenberg, Michael Lampton, and Claude Nicollier. Forward are JSC's Robert Parker and Owen Garriott and Wubbo Ockels at right.

A watch or a warning both call for preparing

'Beware the eye of the hurricane'

"Hurricane Watch" means there is a real possibility that a hurricane will threaten the area within 24 hours, although it does not mean that hurricane conditions are imminent.

When a Watch is issued for this area, here are some supplies you should arrange to have:

1. Fresh batteries for your radio and flashlights
2. Candles, lamps, and matches.
3. Non-perishable foods, canned goods, and drinking water containers.
4. Materials for boarding up windows and other glass openings.
5. A full gas tank in your automobile.
6. Boat moored or moved to a safer shelter.

Then monitor the progress of the storm. An Emergency Hurricane Information Center operates at the National Weather Service in Galveston to disseminate hurricane warnings and watches

to persons along the Upper Texas Coast. They give the news media up-to-date information on the storms' progress and potential effects to this area.

If a "Hurricane Warning" is issued, it means that hurricane conditions are expected within 24 hours: high tides, winds in excess of 74 mph, heavy rains and flooding, and the possibility of tornadoes.

During a Hurricane Warning if your home is subject to flooding, prepare to leave for higher ground. If you remain at home, stay indoors, on the leeward or downwind side of the house and stay away from windows or glass doors.

Beware of the Eye of the Hurricane. Do not be fooled by a lull in the wind, it could be that you are in the eye. If so, extremely high winds, above hurricane force, will rise rapidly from the opposite direction in a matter of minutes.

April's Secretary

'The quantity of her work is on same level with quality'

"Addressing first Ms. Kliment's job performance on a day-in, day-out basis, I believe she would have to be ranked in the top 5 to 10% of the secretaries at this center," said Henry Flagg, Acting Chief Counsel, in nominating Marie Kliment for the Outstanding Secretary Award for April.

The award was presented to Ms. Kliment on May 23.

"The quantity of work accomplished by Ms. Kliment is on the same high level as her quality and timeliness," Mr. Flagg continued. "She is a virtual glutton for work, and she thrives on demanding jobs with tight schedules competing with other priority work."

"She is, in summary, an extremely proficient secretary."

Ms. Kliment is secretary to the Chief Counsel, and she provides

secretarial support to the three attorneys in the General Legal part of the Legal Office and to four attorneys in the Procurement Law part of the office.

In addition, she maintains the law library, a job that at some centers is considered a fulltime duty assignment. "She has, in this instance alone, enabled this office to function with one less administrative employee," said Mr. Flagg.

"Also, she has developed an understanding of the legal terminology used by our office," Mr. Flagg said. As a result she is able to take on additional assignments, search for and retrieve data, and communicate with outside attorneys who come in contact with the office.

"The busier she is, the more she seems to enjoy her job and



Marie Kliment
Outstanding Secretary

the better her work is," Mr. Flagg said.

It's this degree of excellence that has earned Marie Kliment the Outstanding Secretary Award for April 1980.

ASEE Fellows

Engineering faculty at JSC to collaborate for the summer

Since 1964, NASA has supported a program of summer faculty fellowships for engineering educators. Faculty members, in collaboration between NASA research and development centers and nearby universities, spend 10 to 11 weeks at a NASA center working with their professional peers.

This year 28 educators from 15 different states will take part in the 10-week program at JSC which begins June 16.

Each fellow works closely with a center researcher who advises and guides his work. Fellows are permitted a second summer period if their first year was productive. In many cases a long-term relationship develops between the center and the university.

The program is administered by the Office of University Affairs at NASA Headquarters. An ASEE committee, in conjunction with

NASA, selects universities to contract with NASA for each center. The university and the center administer the local program through co-directors from each institution.

This year, Nancy Robertson is the co-director representing NASA/JSC, and D. J. Norton, professor of aerospace engineering, is the co-director representing Texas A&M University.

There will be a seminar open to all employees every Friday in the Building 30 Auditorium from 10:30 to 12:30, as part of the program. Watch future editions of *Roundup* for the schedule.

JSC Personnel who want unescorted work access to the KSC Orbiter must have received credit for QG 150, Flight Vehicle Safety. If you have any questions, call John Rosales at x5266.

Cookin' in the cafeteria

Week of June 16 - 20

Monday: French Onion Soup; BBQ Sliced Beef; Parmesan Steak; Spare Rib w/Kraut; Chili & Macaroni (Special); Ranch Style Beans; English Peas; Mustard Greens. Standard Daily Items: Roast Beef, Baked Ham; Fried Chicken; Fried Fish; Chopped Sirloin. Selection of Salads, Sandwiches and Pies.

Tuesday: Split Pea Soup; Meatballs & Spaghetti; Liver & Onions; Baked Ham w/Sauce; Corned Beef Hash (Special); Buttered Cabbage; Cream Style Corn; Whipped Potatoes.

Wednesday: Cream of Tomato Soup; Cheese Enchiladas; Roast Pork w/Dressing; BBQ Link (Special); Pinto Beans; Spanish Rice; Turnip Greens.

Thursday: Beef & Barley Soup; Roast Beef w/Dressing; Fried Perch; Lasagne w/Meat; Chopped Sirloin; Chicken Fried Steak (Special); Whipped Potatoes; Peas & Carrots; Buttered Squash.

Friday: Seafood Gumbo; Fried Shrimp; Baked Fish; Beef Stroganoff; Fried Chicken (Special); Okra & Tomatoes; Buttered Broccoli; Carrots in Cream Sauce.

Week of June 23 - 27

Monday: Cream of Potato Soup; Franks & Sauerkraut; Stuffed Pork Chop; Potato Baked Chicken; Meat Sauce & Spaghetti (Special); French Beans; Buttered Squash; Buttered Beans. Standard Daily Items: Roast Beef; Baked Ham; Fried Chicken; Fried Fish; Chopped Sirloin. Selection of Salads, Sandwiches and Pies.

Tuesday: Navy Bean Soup; Beef Stew; Liver w/Onions; Shrimp Creole; Smothered Steak w/Dressing (Special); Corn; Cabbage; Rice; Peas.

Wednesday: Clam Chowder; Roast Beef; Baked Perch; Chicken Pan Pie; Salmon Croquette (Special); Mustard Greens; Italian Green Beans; Sliced Beets.

Thursday: Beef & Barley Soup; Beef Tacos; Diced Ham w/Lima Beans; Stuffed Cabbage (Special); Ranch Style Beans; Brussels Sprouts; Cream Style Corn.

Friday: Seafood Gumbo; Fried Shrimp; Deviled Crabs; Ham Steak; Salisbury Steak (Special); Buttered Carrots; Green Beans; June Peas.



This multi-body aircraft includes three separate fuselage sections and a payload capacity of 441,000 pounds. Lockheed-Georgia on

contract to NASA-Langley is currently looking into a number of futuristic aircraft configurations including this 1.5 million pound concept.

Bulletin Board

Ski Club to Keep Up Skills On Rafts on Guadalupe River

The Clear Lake Area Ski Club is sponsoring a Guadalupe River guided raft trip on Sunday June 29 at 10 a.m. Many people go up on Saturday to New Braunfels to get a campsite (really best to make reservations ahead) and to go tubing on the Comal River. The price is \$10 for adults and \$8 for children 13 and under. For more information and to sign up (deadline is June 15) call Wanda Jamison at 482-7002 after 5 p.m.

Are You Ready To Take to the Skies?

There are only five slots available in the Aero Club. The club has very advantageous rates: \$15 per hour for the Cessna 150 and \$20 for the Cessna 172. Prices include gasoline and oil. Call Jerry Haptonstall for further information at x5285 or Mail Code BB52.

Aero Club Ground School New Course at Rec Center

The course includes navigation, regulations, weather, flight procedures, and other areas of knowledge required by the private pilot. The course is a prerequisite for the FAA written test. Class consists of 24 hours of audio-visual instruction, and meets on Tuesdays and Thursdays from 7 to 9 p.m. beginning July 8. Cost is \$35 for Aero Club members and \$45 for non-members.

Registration is still being accepted in the following classes: Karate, Women's Exercise, Scuba, Aerobic Dance, Tennis, and Photography. Call x3594 for more details.

Bring a Rocket To Rocket Park

The NASA Houston Section of the National Association of Rocketry announces its Summer Launch Schedule. On Sunday June 22 there will be a "Fun Fly" from 1 to 4 p.m. where NAR members will practice flying for Texas Regional events. On Saturday and Sunday, July 5 and 6, The Tex-Regional '80 meets. This is a NAR-sanctioned contest open to both NAR and non-NAR members.

The Big Event is the Big Demonstration Launch on Sunday July 20, to help NASA celebrate Spaceweek. Time is 1 to 4 p.m.

All launches are held at JSC a half mile behind the Saturn 5 Rocket on Avenue E, and the public is invited. Contact Frank Bittinger at 481-5541 or x2796 for further information.

On Sale at the JSC Exchange Store

- Space Center Dinner Theatre Tickets for *The Fantasticks*: \$10
- Dean Goss tickets: \$10 (regular \$14.50)
- ABC Theatre tickets: \$2
- General Cinema tickets: \$2.40
- Astroworld tickets: \$8 (regular \$9.95)
- Six Flags Over Texas discount tickets
- Magic Kingdom Cards: free
- Sea-Arama/Marineworld Fun-Time Cards: free

Special Program at Next Lunarfin's Scuba Club Meet

A special program featuring two Lunarfin's divers' recent archeological dive trip to the waters of Belize will be presented at the Lunarfin's Scuba Club regular monthly meeting Wednesday June 18 at 7:30 p.m. at the Clear Lake Park Building on Nasa Road One. The expedition was sponsored by DECAM, an international archeological group which successfully located and surveyed

Have You Been Getting Your Credit Union Mail?

The Credit Union has been receiving a number of inquiries lately as to the whereabouts of members' monthly statements. When checking, they noticed that the majority of missing statements are for those members who use their NASA mail code as their Credit Union address.

Although the NASA mail room has always been most cooperative in handling Credit Union mail, they have a limited staff. NASA has requested that all personal mail be sent directly to your home address.

Therefore, the Credit Union urges employees to furnish home addresses. "Since your quarterly statements are coming out in July, we hope you will take this action as soon as possible," a CU spokesman said. "It will be to your benefit."

three ancient shipwrecks. Bernarr Macfadden, president of CEDAM, will be the guest of honor.

Meeting Tomorrow of Regional Flood Task Force

The Regional Flood Task Force will hold its second public hearing at 9:30 a.m. Saturday June 14 at the League City City Council Chambers at 102 West Walker in Galveston County. At the meeting the five subcommittees will report their findings from the past several months of investigations and research. The public is invited and "welcome," says Senator Gene Jones. For further information call his office at 641-0913 or Representative Bill Caraway's office at 486-5353.

Learn the Basics of Running a Small Business

The Active Corps of Executives and the Small Business Administration will sponsor a workshop on the BASICS OF RUNNING A SMALL BUSINESS at the Houston Baptist University, 7502 Fondren, on June 25 and 26 in the evening. For further information call 226-4945.



A laid-back bikeride

Dusty Samouce, CH5, rode his homebuilt and designed 'recumbent bike' in through traffic one day last week. He says it improves posture, safety, and the center of gravity

The Fantasticks

Dinner Theatre opening at Gilruth Center

Performers and theatre buffs from the JSC community are making yet another use of the Gilruth Center this month with the formation of the Space Center Dinner Theatre.

First production will be the magical musical comedy *The Fantasticks* which is currently in a record-breaking off-Broadway run and has played to repeat audiences around the country since 1962.

For \$10 a ticket a person will have a buffet dinner and drinks and a performance by a professional theatre crew made up of space center employees and their families.

Tickets are on sale at the Building 11 Exchange Store. The show runs June 26, 27, and 28 for dinner with a matinee and brunch Sunday the 29th.



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Editor..... Kay Ebeling

Roundup Swap Shop

Ads must be under 20 words total per person, double spaced, and typed or printed. Deadline for submitting or cancelling ads is 5 p.m. the first Wednesday after publication. Send ads to AP3 *Roundup*, or deliver them to the Newsroom, Building 2 annex. No phone-in ads will be taken. Swap Shop is open to JSC federal and on-site contractor employees for non-commercial personal ads.

Property & Rentals

Rent: Friendswood, 3-1 1/2-1, drapes, very clean, \$425 month. 482-7546.

Lease: CLC, Baywind II condo, lg 2-2-2, fp, w/d, wet bar, balcony, lots windows, open view, ice maker, tennis, pool, etc, \$395. Wright x4105 or 643-8944.

Rent: Lake Livingston, Cape Royale, 3 br waterfront cottage by marina. Tennis, pool, golf, boat ramp, 3 day min. 488-3746.

Galveston, West End, 2 bdrm, By-the-Sea condo, furn, \$210/wk off, \$300/wk in season. Clements 474-2622.

Sale: Two rental houses with tenants, 3-2-2 on cul-de-sac. Needs cash, priced to sell, 8 1/2% VA assumption. Jeff 484-1514 evenings.

Rent: Vacation at Lake Livingston, Cape Royale custom furnished home, 3-2-1; fish, ski, tennis, pool, golf, etc. Reserve early. 488-4487.

Sale: 2 wooded lots. Lake Shadows (Lake Houston), invest/build, \$5,500 each, \$10,000 for both, possible owner financing, L. Briscoe x5841.

Cars & Trucks

74 AMC Hornet hatchback, A/C, AM/FM, X package, 46,000 mi, exc cond. 486-0512.

71 Eldorado Cadillac, AM/FM radio, a/c, pwr windows, \$1000. Esther x4653.

56 Mercedes Benz 190 SL. Best offer above \$4000. Bob Colvin x4235 or 645-8416.

69 Buick Wildcat, runs good, \$250. Paul x3061 or 486-1179.

70 VW bus, only 130,000 mi, since new, engine O.K. Dec 79. \$1250. Byrns x6247 or 337-4984.

79 Thunderbird, Town Landau, T-top, power windows/seats, cruise, CB, AM/FM/8-Track, loaded, like new, 5100 miles. 486-6204 or 488-3173.

75 Chevrolet Impala, 2 dr. sport Landau, one owner, cream puff, A/C, P/S, V-8. 482-7546.

76 AMC Pacer, loaded, 39,000 miles. 488-1502 after 5.

74 Mazda, RX-4, 4 speed, AC, 4 door, mint condition, \$1675. Costello x3441 or 488-4370.

80 Chevy Sport Stepside A LOOKER. 13,000 miles, standard, A/C, AM/FM, mags and more, \$7500. Don't need. Cingy x2246.

68 Chevrolet, \$95. 333-4669.

71 Mercury Marquis, 4 dr, exc cond, good gas mileage, 15-16 mpg. Day 675-1097, nights 686-9381.

76 Cadillac Seville, leather, wire wheel covers, blue/white, new Michelins, \$6500. x6450 or 482-5536.

Wanted

Portable 2-way radio, 2-5 watt, multi-channel, squelch control. Cullen x4105 or 643-8944.

Volkswagon (bug) 1965 or newer. 488-5031.

Scout uniforms for summer camp at Philmont. Shorts — 34 and 38 waist, shirts 15 1/2 and 17 1/2 neck. Pat x2918.

Borrow/buy European voltage converter kit. Dave Dunn x4671 or 486-0808.

Boats & Planes

Airplane, Luscombe 8A restored 65hp. Bob Colvin x4235 or 645-8416.

32' Trojan Sea Raider Express, (2) 327's slps 6, B.S. #1/The Landing-68, \$10,950. 334-1177.

78 Wellcraft Sunhatch 196. low hours, garaged, exc cond, \$7000. 334-1175 after 6 pm or weekends.

Pets

Free kittens. Come from a good mousing family. 482-3989 evenings.

Personals

Riders to share expenses to Ashville, N.C. or point nearby. Private aircraft departing July 13. Millican x4372.

Cellist at JSC for the summer, looking for chamber music action. Blackburn x5874 or 333-2581.

Roundup deadline is the first Wednesday after publication.

Carpools

Want carpoolers from South Loop at Scott Street to JSC, hrs 7:30-4:30. Esther x4653.

Cycles

75 Honda CB360T Honda. Needs head gasket, \$375. Doherty 488-0182.

20" Boy's bike, sturdy, good condition, \$10. Sear's best cassette taperecorder like new, \$40. x2262 or 946-7028.

Stereos & Cameras

Electric bass & Peavey amp w/15" speaker, 1 yr old \$300/offer; w/mike and stand, approx 20 hrs use \$150/offer. Pace x2337 or 337-1436.

Super system. Hugh electrostatic speakers with two power-amps. Holman pre-amp. Pioneer tuner. Sacrifice at \$2,500. 484-1514.

AM/FM AB-29 Heathkit 35-watt receiver, 4 years old, \$125. T. J. Cash x4065 or 474-2319.

Miscellaneous

Kenmore sewing machine/cabinet with buttonhole maker and decorative stitches. Exc cond, \$120. Sandra x4361 or 938-4893.

Sears window A/C, 6,000 BTU, 110V, exc cond, \$125. Sanders x3458 or 481-6928.

3/4 size roll-a-way bed frame, no

mattress, \$20. Shumilak 482-7723.

10 hp Sears lawn tractor, 3-speed, 42-inch mower, used 3 yrs, \$575. Byrns x6247 or 337-4984.

Camper top/Imperial model 30/Aluminum exterior/Mahogany interior/exc cond/\$200/534-3385 after 5.

New turntable \$50. Single bed (box-spring and mattress) \$50. Skis-head standard 160 cm \$25. Ladies ski boots, size 7 \$20. Gunter x4366 or 471-1914.

Tow bar, fits Toyota Celica, \$60. Ward 110V (adjustable to 100A) welding machine, all accessories, used 1 hr, \$100. Underhill x2138 or 334-1303.

Backyard metal storage shed, you haul it, \$50. 12 string Alvarez guitar \$175. Andy 488-4366.

Chrome auto roof rack, front and rear bars adjustable, new \$125, sell for \$20. Shumilak 482-7723.

40 hardback Nancy Drew and Hardy Boy books, \$1.30 each. Four place swing set frame, 10 feet high and 14 feet long. John x4393 or 488-0559.

Sears 8 x 10 cabin tent with external frame. Stained but no broken canvas, \$35. 488-5954 after 5.

Typewriter, Manual, Smith-Corona, old style, 15-inch carriage, "Super-Speed Model" \$30. Germany x3338 or 643-4456 after 6.

58 Chev starter, rebuilt in exc cond, \$35. 458-3468 or 921-7212.

Over 80 JSC employees active in Reserve or National Guard

'We recognize the National Guard and Reserve as essential to the strength of our nation and the maintenance of world peace.'

Once a week Terry Hart will spend the night in a hangar at Ellington next to an F101. He is part of an Air Guard unit that provides an alert commitment for defense of the Gulf Coast.

If radar detects uncleared aircraft, Mr. Hart and other pilots along the Coast are ready to "scramble."

"If they blow the horn, we need to be airborne within five minutes," he says.

Mr. Hart, one of the 35 astronauts selected in 1978, is among the over 80 NASA employees who are ready Reservists or members of the National Guard. They spend one weekend a month and two weeks a year, or the equivalent, as volunteers for the defense of their country — and while they're at it, supplement their incomes and enjoy a diversion from the usual 8 to 5 routine.

"You get the feeling you're doing something important," Mr. Hart says. "And it's nice having two jobs..."

As an astronaut, Mr. Hart's assignment is to supply support to the second Shuttle flight — work on the main engines and develop ascent flight techniques. Being a



Castillo at work

mission specialist astronaut, he puts in 15 hours a month flying time on the T-38s.

Being in the Air Guard he can augment his flying time by about 10 hours a month in the F101.

Gloria Castillo, an apprentice in the sheet metal shop, is also in the Air Guard. "I like it," she says. "It breaks up the monotony."

Joining the Guard seven years ago started Ms. Castillo up the first steps of a career ladder. The Guard sent her to technical school where she learned office skills.

She used those skills to land a better job with the Civil Service, transferred to Houston, did secretarial work for NASA, and last January was chosen for the Apprenticeship Program at JSC where she is learning to be a sheet metal mechanic.

One weekend a month she and her husband do active duty with the Guard at Ellington.

"My husband was in the Guard," she says. "One day he mentioned something about a WAF, and I said, 'I didn't know they had women in the Guard.' So I joined up."

Today Ms. Castillo is a Staff Sergeant. "I'm a supply specialist," she says. "I research the stock numbers for aircraft parts."

Frank Marlow, who is a pilot for NASA at Ellington, is Executive Officer for an anti-submarine warfare squadron that drills with the Navy reserves out of Naval Air Station New Orleans.

Their mission is to patrol the ocean and locate submarines, usually off Bermuda and the Azores.

"We fulfill a real strategic commitment," Mr. Marlow says. "VP patrol squadrons actually fulfill part of the strategic defense plan of the Pentagon."

Flying and crewing in nine P-3s, the 430 persons in Mr. Marlow's squadron localize, detect, and track Soviet submarines, and keep the Pentagon informed as to the subs' locations. "We also do some surface patrol-

ling and some search and rescue," he says.

At NASA Mr. Marlow flies two kinds of Earth Resources helicopters, the Super Guppy, the G159 (Gulfstream), and the C130.

"One job augments the skills needed for the other," he says.

But Mr. Marlow is especially interested in recruiting new personnel for the Reserves. "We are looking for people with electronic and technical backgrounds," he says.



Marlow ready for a mission

The Navy Reserve picks up trained and qualified personnel on an Advanced Pay Grade program, where skills and education can substitute for years in service.

Someone with the ability to operate an acoustic sensor could come into the Navy as an E-5, for example, a rank that a full-time enlisted person could take 10 years to achieve.

NASA recently pledged its continuing support for employees who give voluntarily of their time and energy to take part in the Guard and Reserve. NASA Administrator Robert Frosch has signed a "Statement of Support for the Guard and Reserve" and circulated it to all centers. The following are excerpts:

Shuttle Training Program has been to divide it into separate parts which permit the efficient flow of the large number of trainees through a progression of training sessions from the classroom to the integrated simulations.

The program he designed is flexible enough to adjust for the entry level of people with varied backgrounds and to tailor their training to the particular job to which they are assigned—all conducted separately and in parallel.

Willie Biggs Williams was recently selected for the 1980 Outstanding Young Man of America Award sponsored by the U.S. Jaycees, competing with other young men ages 21 through 35 throughout the country.

The Jaycees give the award in recognition of outstanding professional achievement, superior leadership ability, and exceptional service to the community.

Mr. Williams is an Energy and Budget Program Analyst at JSC in the Plant Engineering Division. He is a member of the Board of Directors of the Houston Citizens Chamber of Commerce, a lecturer with the American Mathematics Association, and he has served a three month term as a Harris County Grand Juror.



Hart at a console

"We recognize the National Guard and Reserve as essential to the strength of our nation and the maintenance of world peace. They require and deserve the interest

answer their country's call to active service in the United States armed forces.

"If these volunteer forces are to continue to serve our nation, a broader public understanding is required of the total force policy of national security — and the essential role of the Guard and Reserve within it.

"The Guard and Reserve need the patriotic cooperation of American employers in facilitating the participation of their eligible employees in Guard and Reserve programs, without impediment or penalty."

In essence NASA encourages its employees to be active with the Guard or Reserves. Call Personnel; call a recruiter. You'll be serving your country and yourself.

"We therefore join members of the American business community in agreement that:

1. Our employees' job and career opportunities will not be limited or reduced because of their service in the Guard or Reserve;

2. Our employees will be granted leaves of absence for military training in the Guard or Reserve without sacrifice of vacation time; and

3. This agreement and the resultant policies will be made known throughout the organization."

Backpack fire

From Page 1

18 test were proper. The regulator module had 19 cycles with high-pressure oxygen prior to the accident.

Technicians were unable to duplicate the failure in tests at JSC's White Sands Test Facility, Las Cruces, N.M. Four regulator modules of the same factory batch were cycled 2,228 times. Post-test disassembly revealed significant contamination within the modules.

After ignition on April 18, the regulator module burned through and an oxygen-rich jet of flame burned the lower torso of the attached spacesuit.

The board ruled out backpack and clean room electrical systems as ignition sources. It said all clean room support feed lines were pure.

Among the 11 recommendations of the board are:

- Redesign high pressure oxygen valves and regulators so that debris cannot be trapped and eliminate "stagnation points" where heating by compression and shock can occur.

- Redesign regulator modules to lessen chance of internal contamination, while improving manufacturing inspection techniques.

- Review the design of all Space Shuttle high pressure valves and regulators for debris traps and unprotected o-rings.

- Replace existing silicone o-rings with silicone o-rings having improved ignition resistance.

- Inspect completed regulator modules with X-rays.

- Consider establishing a committee consisting of NASA and non-NASA personnel to collect existing high-pressure oxygen data, review and clarify existing design standards and requirements, recommend any necessary supplements to presently available information and publish a comprehensive standard for the design and use of high-pressure oxygen equipment used in the space program

The investigating board was headed by Chester A. Vaughan, propulsion engineer. Members were: Noel Willis, Jr., crew systems engineer; George D. Nelson, astronaut; Joseph Degioanni, flight surgeon; and James B. Chappee, safety engineer. Andrew J. Hoffman of Hamilton Standard served as ex-officio member, and R. L. Johnston, materials engineer, served as advisor.

Nationwide honors to 2 at JSC



Shelley



Williams

Two JSC employees received nationwide recognition recently for outstanding professional achievement.

Carl B. Shelley, Deputy Chief of Crew Training and Procedures, received the coveted DeFlorez Training Award from the American Institute of Aeronautics and Astronautics. The award is presented to an individual for outstanding improvement in aerospace training.

Mr. Shelley received the award for his contributions to the development and design of training concepts for the Shuttle flight crew and flight controllers and for his leadership in helping to develop the training complex at JSC.

One of Mr. Shelley's notable contributions to the