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Roundup

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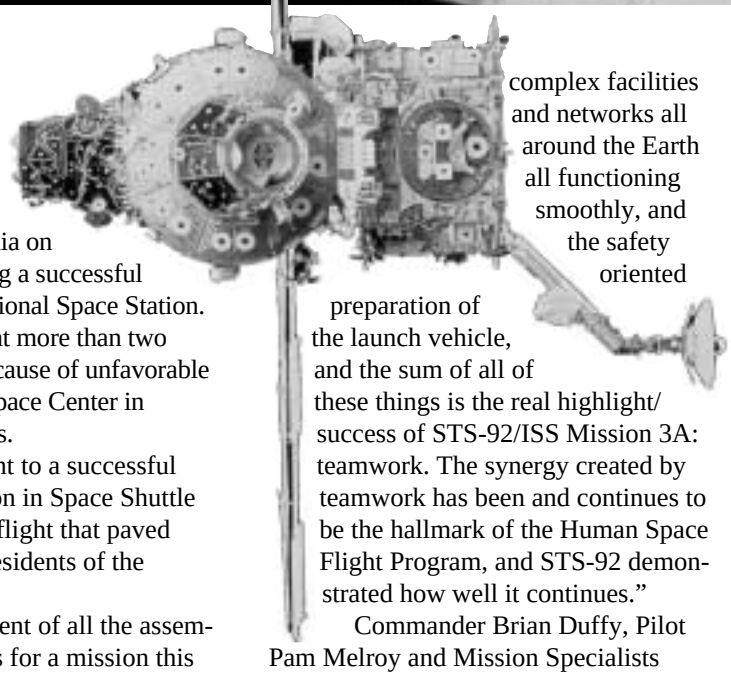
STS-92 delivers two major station components

Endeavour's *crew powers up for next mission*

Astronaut Michael Lopez-Alegria, mission specialist, hangs onto a handrail on the U.S.-built Unity or Node 1 on the International Space Station. The third pressurized mating adapter, installed during the STS-92 mission, is at upper right.

NASA Photo STS092-367-035



The Space Shuttle *Discovery* glided to a textbook landing under sunny skies at Edwards Air Force Base in California on October 24, completing a successful mission to the International Space Station. The STS-92 crew spent more than two extra days in space because of unfavorable weather at Kennedy Space Center in Florida and at Edwards.

The landing brought to a successful close the 100th mission in Space Shuttle Program history on a flight that paved the way for the first residents of the orbiting ISS.

"The accomplishment of all the assembly mission objectives for a mission this complex required the integrated efforts of hundreds of people both pre-mission and in real time," said STS-92 Lead Flight Director Chuck Shaw. "To do this required a lot of effort by folks in the preflight planning activities over the last three years, and then the situational awareness to be able to apply this planning to the several instances in the mission where problems arose. Add to all of these the support provided by the hundreds of unseen heroes who keep the complex facilities and networks all around the Earth all functioning smoothly, and the safety oriented preparation of the launch vehicle, and the sum of all of these things is the real highlight/success of STS-92/ISS Mission 3A: teamwork. The synergy created by teamwork has been and continues to be the hallmark of the Human Space Flight Program, and STS-92 demonstrated how well it continues."

Commander Brian Duffy, Pilot Pam Melroy and Mission Specialists Leroy Chiao, Bill McArthur, Jeff Wisoff, Mike Lopez-Alegria and NASDA Astronaut Koichi Wakata spent 6 days, 21 hours and 23 minutes docked to the ISS during which they added two major elements to the station and completed four consecutive days of space walks to complete those elements' linkup to the orbiting laboratory.

The two major components added to the ISS – the Z1 Truss and the Pressurized

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First station crew initiates new era in space

Lifting off from Baikonur Cosmodrome, Kazakhstan in the early hours of October 31, the sleek Russian Soyuz spacecraft carried with it the first residents of the International Space Station – christening a new era in space flight.

At 1:53 a.m. CST, American Astronaut Bill Shepherd, and Cosmonauts Yuri Gidzenko and Sergei Krikalev, branded as the Expedition 1 crew for their historic role with the ISS, departed for their four-month stay aboard the station, orbiting 240 miles above the Earth.

Two days later, the team docked and entered the modular space station, which will be their home for the next 115 days.

Although the Expedition 1 crew is the first of many that will reside on the station to conduct long-term science, medical, astronomy and Earth science research, Shepherd and his team will be busy with assembly tasks as new elements, including the U.S. Laboratory, are added to the orbiting outpost. Expedition 1 is scheduled to leave the station in February when the three-member Expedition 2 crew arrives on STS-102.

When complete in 2006, the International Space Station will be about the size of a three-bedroom house and will be home to up to seven astronauts at a time, who will work on experiments running the gamut of scientific disciplines. ■

STS-97 readies to deliver station's wings.

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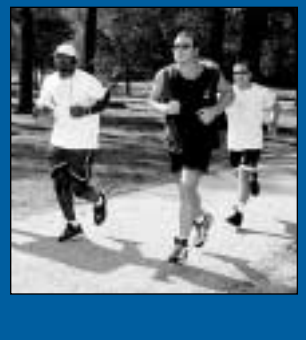

Employees rush to see everything at S&TH Day.

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Webcast newest tool to bring space to kids.

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STS-92 postflight event set for November 27

The STS-92 crewmembers will share their 12-day mission experiences aboard *Discovery* with JSC employees, contractors, friends, family members, and public guests. This event is scheduled for 6:30 p.m. November 27 in the IMAX Theatre at Space Center Houston and includes slides and a video presentation.

Commander Brian Duffy, Pilot Pamela Melroy, Mission Specialists Leroy Chiao, Michael Lopez-Algeria, Bill McArthur Jr., Jeff Wisoff, and Koichi Wakata of NASDA will share their flight experiences. During their recent visit to the International Space Station, the seven-member crew successfully installed the Z1 Truss, paving the way for installation of the U.S.-provided solar arrays in December, and attached a new shuttle docking port.

Chiao, Lopez-Alegria, McArthur and Wisoff spent 27 hours and 19 minutes conducting space walks during the on-orbit construction.

Immediately before the briefing, Johnson Space Center Director George W.S. Abbey, assisted by STS-92 Lead Flight Director Chuck Shaw and Lead Space Station Flight Director Sally Davis, will recognize key individuals and teams for their outstanding contributions to the flight. Abbey also will recognize the astronauts' accomplishments with the presentation of their NASA Space Flight Medals.

Doors will open at 6 p.m. Seating is limited and is available on a first-come, first-served basis. For more information, call Helen Harris at x38413. ■

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STATION

Mating Adapter (PMA) 3 – increased the mass of the station by about 10 tons to a total of about 80 tons. The Z1 Truss is the base structure for the U.S. solar array. The PMA 3 will provide a place for an orbiter to dock with the U.S. segment of the ISS.

In addition to the total of 27 hours and 19 minutes spent outside the station during four space walks, two each by Chiao, McArthur, Wisoff and Lopez-Alegria, the astronauts spent 27 hours and 4 minutes inside, completing connections with the new elements and transferring equipment and supplies for the Expedition 1 crew. On the final extravehicular activity, Wisoff and Lopez-Alegria took part in a special demonstration of a crew rescue backpack, Simplified Aid for EVA Rescue (SAFER). SAFER can provide contingency maneuvering capability for a spacesuited crewmember during EVA operations on the space shuttle and the space station.

STS-97 next step

With STS-92 successfully completed, all eyes move toward completing preparations at KSC for the launch of STS-97, ISS Assembly Flight 4A. *Endeavour*'s five astronauts will deliver the first U.S. solar arrays that will provide power to the station and will be the first shuttle crew to visit the station's first resident crew.

"In my fourteen years as a flight director, this is one of the most challenging and exciting flights I have worked," said STS-97 Lead Shuttle Flight Director Bill Reeves. "Every one of these assembly flights is critical to the ISS, but this one has special significance to those of us working it because we will be breathing life in the form of power into the U.S. segment. We will be flowing electrons and fluids through a lot of systems that were previously delivered but have not been operational until we get there. The size of these solar arrays is also pretty awesome and should make the ISS readily visible from the ground, which will be a constant reminder to all of us of the contribution we made. The power will enable ISS to have the capability to start being used for its designed intentions."

STS-97 will be the sixth space shuttle mission to visit the space station. *Endeavour* and its crew will deliver the P6 Integrated Truss Segment, which includes the first U.S. solar arrays and a power distribution system. *Endeavour*'s robotic arm will be used and two space walks will be conducted to install the P6 onto the station's Z1 Truss. The solar arrays will be the largest ever to fly in space. Also, the crew will relocate the S-Band Antenna Support Assembly from the Z1 to the P6, which will make the S-band system operational. Another payload for STS-97 is an IMAX Cargo Bay Camera-3D, which will be used to record activities of the mission.

The P6 Integrated Truss Segment is comprised of three major elements: the Photovoltaic Array Assembly (PVAA), the Integrated Equipment Assembly (IEA) and the Long Spacer.

The heart of the PVAA is a set of solar array wings. Each wing consists of two solar array panels, the largest-ever solar arrays, which convert solar energy into electrical energy through 32,800 individual solar cells. When prepared for launch, each solar array panel is folded into a box measuring just 20 inches tall and 38 feet long. When opened, the array stretches out to 1,380 inches (115 feet) tall.

Each solar array wing is mounted on a mast that is housed within the mast canister. The mast canister is mounted to a device designed to rotate and deploy the solar array wing. Rotation of the solar array wing about its longitudinal axis allows tracking of the sun while the ISS rotates about the Earth. There are two mast canister/solar array wings mounted in opposition on the IEA, resulting in a fully expanded wing set stretching more than 220 feet long and 38 feet wide.

Also mounted on the mast canister is the Sequential Shunt Unit (SSU) that regulates solar array energy to meet the power demands of the ISS. By shunting various strings of photovoltaic cells, the amount of power produced by a solar array wing can be controlled.

The power output from the SSU is fed into the second major element, the IEA, where the electrical power is conditioned, stored and distributed. The IEA has two isolated electrical channels each consisting of power electronics, six batteries and a computer. The IEA truss structure serves as both a launch carrier and as a key element of the station primary truss assembly.

The third element is the Long Spacer. The original purpose of the Long Spacer was to separate P6 from the adjacent P5 Truss. When an early assembly sequence moved the P6 above Unity, the Long Spacer became the home for the Early External Thermal Control System, which will be used to cool the U.S. Laboratory Module *Destiny* to be delivered early next year during STS-98 (ISS Assembly Flight 5A).

The crew of STS-97 includes Commander Brent Jett Jr., making his third flight; Pilot Michael Bloomfield (second flight); and Mission Specialists Joseph Tanner (third flight), Carlos Noriega (second flight) and Marc Garneau of the Canadian Space Agency (third flight).

During docked operations, Tanner and Noriega will perform two scheduled EVAs to install and activate the P6 Truss and the electrical power system. During the first EVA, Garneau, operating the shuttle's robotic arm, will position the P6 Truss onto the Z1 Truss while Tanner and Noriega actuate the truss attachment system. Tanner and Noriega will then remove launch restraints to allow deployment of the solar arrays and photovoltaic radiator. At the end of the first EVA, the shuttle crew will remotely deploy the solar arrays from inside the shuttle.

On the second EVA, Tanner and Noriega will reconfigure the Z1 connector patch panels to permit the P6 to provide power to the ISS. The robotic arm will assist the astronauts in relocating the S-Band Antenna Support Assembly from the Z1 Truss to the outboard end of P6. Preparation of the PMA 2 for relocation on the 5A mission will also be supported by the robotic arm. Several tasks in support of the 5A mission are also planned. The two EVAs are scheduled for six-and-a-half hours each.

"We are very excited about seeing Joe and Carlos mate the P6 element to the station," said STS-97 Lead EVA Officer Glenda Laws. "This is an exceptional EVA crew with a lot of critical tasks to perform. For example, they performed a manual backup deployment test of the solar arrays last year out at Sunnyvale. We had goose bumps that day just looking at the size of one of the arrays. This will be incredible. Also, this will be the first flight of the wireless video system that uses an EVA helmet cam. For the first time on ISS, we will have some video downlink during the EVAs that will show us exactly what the EVA crew is seeing. Thanks to the hard work of a lot of people on our EVA team, we are ready to add the next element to the ISS."

Endeavour and the five-member crew are slated for launch at 9:05 p.m. CST November 30 with landing at KSC set for 5:46 p.m. CST December 10. ■

STS092-337-024

Seldom does a photographer show up so clearly in his own work as in the case of astronaut Peter J.K. (Jeff) Wisoff, reflected in the helmet visor of astronaut Michael Lopez-Alegria, as the STS-92 mission specialist snapped this 35mm image in the cargo bay of the Earth-orbiting *Discovery*. A good portion of a heavily cloud-covered Earth and part of the International Space Station are also mirrored in Lopez-Alegria's visor.

Grant provides for Space Sciences' largest outreach program ever

More minority students in the Houston area will be exposed to hands-on space sciences and astromaterials activities beginning next year as the result of a recent grant award at JSC. Titled S*pace Science Minorities Outreach*, the multi-tiered program is aimed at increasing awareness of the sciences among area youth, teachers and college students.

The program, led by JSC Earth Science and Solar System Exploration Education and University of Houston-Downtown Assistant Professor Penny Morris-Smith, Ph.D., ties in a number of Houston-area organizations for a comprehensive outreach program.

"This program combines elements from other outreach activities we've done before," explained Jaclyn Allen. "We've had interns, we've had student programs, we've trained teachers, but we've never had them all together and never with a focus on minorities."

> ***We hope the program may prove to be a good chance to provide students with good role models and make them see that they can achieve these kinds of jobs.***
>
> – Penny Morris-Smith, Ph.D.

NASA JSC Photo 2000-07054 by Benny Benavides

Shown here, left to right, Penny Morris-Smith, Ph.D., Marilyn Lindstrom, Ph.D., and Jaclyn Allen, of JSC's Earth Science and Solar System Exploration Education team will lead one of the largest outreach projects ever taken on by their department.

Through the program, JSC's experience and unique resources in astromaterials and planetary science will be cascaded down through multiple education levels. JSC's astromaterials experts will mentor college interns from the University of Houston-Downtown and from Texas Southern University. In turn, through a student ambassador project, high school and college students will be trained at The Houston Museum of Natural Science by JSC and museum staff, to extend space science activities to the public through demonstrations at the museum, youth clubs, local day camps and community family events.

"This large-scale program umbrellas many of the outreach activities we already participate in," said Morris-Smith. "At the same time, we are able to partner with outside organizations, such as the museum and academia, that share our expertise in space science."

According to Morris-Smith, it is a win-win situation for everyone involved. The program helps equip the students with professional skills they might not otherwise be exposed to while they themselves help encourage other students to pursue science and higher education.

"The whole point of this program is to reach out to these students and get them excited about science and motivate them towards college," said Morris-Smith.

"We'll be doing that in spades," adds JSC's Marilyn Lindstrom, Ph.D., Earth Science and Solar System Exploration Education lead who is co-investigator for the program, "because we are targeting inner city students and providing them with role models."

Additionally, faculty from UHD and TSU will provide summer courses on space science for educators. One of the courses that will be taught at UHD will provide graduate credit towards the MAT degree. In addition, UHD will teach pre-service courses for prospective teachers.

The Space Science Ambassador program will provide pre-college science programs. Some participating schools include the Raul Yzaguire School for Success, a charter school that provides education for pre-K to 12, and some schools within the Klein Independent School District. According to the program's administrators, the program has the potential to make a strong impact in the Hispanic community through minority and bilingual mentors.

"This program can give students exposure to the 'can do' attitude," said Jaclyn Allen, Lockheed Martin science education specialist. "If they can see [success stories] in their community, and they can identify with the mentors, they may see it as an opportunity. That is where the role models come in."

The program goes into effect in January 2001 and will be one of the largest outreach projects taken on by the Earth Science and Solar System Exploration Education team.

The grant, a three-year obligation, is funded through the Office of Space Science and the Office of Equal Opportunity Programs Minority University Education and Research Partnership Initiative in Space Science. ■

JSC recognizes Fire Prevention Week

The smoke has cleared and the sirens have stopped but hopefully the messages have stuck as Fire Prevention Week concluded at JSC. Always committed to safety, the center organized special activities to commemorate Fire Prevention Week 'The Great Escape' campaign October 8 - 14.

"The primary goal this year was to promote fire drills at home," said J.B. Williamson, Fire Protection Operations coordinator. "'The Great Escape' is a fun, family-oriented activity that gets the public actively involved in home fire planning and practice. During the past two years, the National Fire Prevention Association has documented 58 lives saved as a direct result of this campaign. With help from fire safety advocates throughout the United States and Canada, our goal is to make sure more families are truly prepared to survive a home fire than ever before."

As part of the campaign to increase fire prevention awareness, displays were set up in Bldgs.1, 3, 11, 30 and Sonny Carter Training Facility. Additionally, fire extinguishers and smoke detectors, donated by Muniz Engineering and SAIC, were awarded as prizes in a drawing for those who pledged to be fire safe and to practice fire drills at home. ■

NASA JSC Photo 2000e26595 by James Blair

Area fire departments paraded their shiny trucks of past and present as part of JSC's Fire Prevention Week. Shown here, a 1947 Mack, owned by Tim Rogers of the Baytown Fire Department, makes it way through the parade course.

JSC kicks off Continuous Risk Management initiative and training

By S. Alexs McCauley

With the inherent risk of space flight, NASA has been managing risk since its inception. NASA Administrator Dan Goldin has challenged all NASA centers to provide a renewed world-class risk management foundation for our spacecraft engineering community. All applicable NASA personnel should be trained and familiar with the tools and techniques of risk management.

Under NASA Program and Project Management Processes and Requirements [NPG 7120.5A] NASA stresses risk management as an integral part of program/project management. This NASA policy provides program and project management considerable leeway in how they choose to implement risk management. The goal of this initiative is to integrate continuous risk management into existing management processes.

Continuous Risk Management is a structured process to ensure that risk plays a role in the program or project management decision process. It provides a disciplined environment for proactive decision making to:

- Assess continually what could go wrong (risks);
- Determine which risks are important to deal with;
- Implement strategies to deal with those risks;
- Assure/measure effectiveness of the implemented strategies.

Risk is defined as the possibility of suffering loss, injury, disadvantage or destruction. Risk management is the proactive approach to dealing with potential problems, whereas problem solving is a reaction to a problem that has already occurred. By identifying and planning for risk, individuals can reduce the cost and stress associated with immediate unexpected problems. The documented CRM process feeds directly into NASA's continuous effort to improve through lessons learned from previous projects and programs.

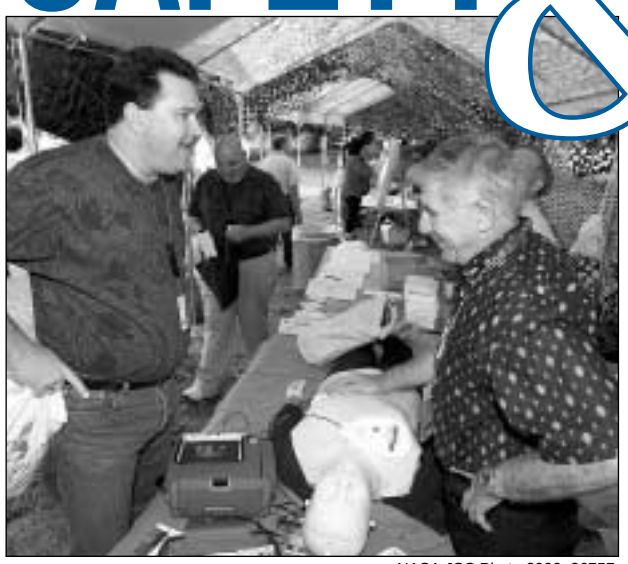
According to the Continuous Risk Management Guidebook, published by Carnegie Mellon University, CRM enables better use of resources through a proactive approach to identify potential problems and provides input into management decisions regarding resource allocation. It promotes teamwork by involving personnel at all levels of the project. CRM provides information for trades based on priorities and quantified assessments, therefore increasing the chances of the project's success.

The Guidebook also credits open communication as the key to the successful implementation of CRM. Management should be looking to the workforce to provide this type of up-front identification and analysis of risk. Their knowledge and understanding of the project is required to successfully employ CRM.

Everyone at NASA has a role in contributing to the success of NASA missions via CRM. The Human Resources and Education Department has funded a comprehensive set of courses to help meet this challenge. Because everyone has different needs, the training program will be targeted for three different skill levels: Awareness, Basic Knowledge, and Comprehensive Knowledge. The focus of the classes is on the tools and techniques of risk management. Our Center Director, George Abbey, encourages everyone involved with spacecraft design, management, or operations to take one of these courses.

Visit the Risk Management website at http://wwwsrqa.jsc.nasa.gov/RiskMgmt/Pages/MainPage.asp to see a complete listing of courses and their descriptions. The Safety, Reliability and Quality Assurance Directorate will also be sponsoring a symposium on CRM in spring 2001. ■

SAFETY & TOTAL HEALTH DAY



NASA JSC Photo 2000e26757

NASA JSC Photo 2000e26754

NASA JSC Photo 2000e26752

Center's annual event 'a real winner' say employees

By Mary Peterson

Whether in conversation, by phone, or by e-mail, Safety & Total Health Day was a "WOW!" say employees from all parts of JSC and beyond. Even the vendors who participated echoed the sentiment, and many of them were already casting for return invitations to next year's event.

If you missed it, or for some reason could not take advantage of the day, it had the grand feel of the major event it was planned to be.

After taking part in safety and health education planned by each organization, employees soon hit the mall and nearby buildings to pursue information they could use or to learn some things they didn't know. And, they ran into a horn of plenty. With more than 100 booths and demonstrations to visit and opportunities to hear more than a dozen speakers, the question became not "What to do?" but, rather, "How can we get to everything we'd like to do?"

New this year were booths and seminars for those needing help in caring for senior members of their families. The Senior Perspectives stop was a favorite, where information was dispensed about care relating to emotional, behavioral, developmental, psychiatric, and chemical dependency disorders. On the subject of practical choice, legal experts spoke in detail in their seminar about Medicare/ Medicaid, nursing care options, legal issues affecting the elderly, and estate planning.

With hunting season upon us, a lot of interest was shown at the Texas Parks & Wildlife booth, with its focus on hunter education. If you didn't know, hunter education became mandatory by law in Texas in 1988, and most, if not all, other states have it as well. Since 1972, TPW has certified more than 400,000 Texans, and this education is reciprocal with other states.

And, if national politics has piqued your interest in things environmental, then you would have liked the Houston Renewable Energy Group that counts JSC employees among its members. They work hard to raise interest and awareness in what can be done with our natural resources in terms of energy and have even extended their efforts to one of our local schools. Each year, they, along with volunteers, help fifth-graders at Ed White Elementary School design, build, and race solar-powered model cars, all the while teaching them engineering terminology and about renewable energy. If you missed the booth but would like to take part in a future outreach project, call Mike Ewert at x39134 for details.

On the lighter side, a visit to the Snake Sense booth, staffed by JSC employee Tom Wilks, also made some practical sense. One man studied the live snakes on exhibit and the colored photos with more than passing interest. He told Wilks that none of the snakes looked quite like the new inhabitant he had in his backyard, which he described as "big around, black with a beige belly, and having a triangular-shaped head." With just one or two more questions, Wilks identified it as a probable cotton-mouthed water moccasin, a very poisonous customer, which, he said, will lose some of its more prominent markings as it ages, having a more solid look. "But I live a good two-tenths of a mile from the nearest creek?" puzzled the man. "No matter," Wilks told him, "they can, and will, travel a fair distance from water." Now that's news to use.

Aside from activities, employees were also generous in giving of themselves, literally, as 482 whole blood, 11 plasma, and 4 platelet donations were collected during the 3-day period that included S&TH Day.

The child car seat check, which is fast becoming a mainstay at major JSC events, accounted for 83 inspections during a 4-hour period.

By all accounts, S&TH Day 2000 lived up to its billing. If it brings about a greatly reduced lost workday rate (ideally, zero) that would be an even greater. ■

NASA JSC 2000e26764

NASA JSC 2000e26778

Ellington Field celebrates Safety & Total Health Day

A broad range of activities and information booths made S&TH Day at Ellington a success. More than 500 people from JSC's Aircraft Operations Division participated in the event.

There was something for everyone. Participating organizations ranged from blood pressure and depression screenings and acupuncture demonstrations to motorcycle safety and a presentation from the FAA on runway incursions and aircraft maintenance record keeping.

"It was great!" said Shirley Dowling, Lockheed Martin. "There was plenty of information. I was very pleased with the choice of presenters, especially Officer Garmond."

Houston Police Officer Garmond discussed road rage and car jacking prevention while Friendswood Police Officer Pree enlightened people about personal protection.

Although the boat safety booth appeared to be the most popular, chair massages given by Bee Carter and Andrea Johnson of "Ahhh What a Massage" were a close second.

"There was a lot of variety," said Sharon Davidson, GHG. "and the chair massage was GREAT!"

Beth Martin, Lockheed Martin Lifeworks Program, presented shared relaxation techniques and American Ref-Fuel offered other relaxation and stress reduction presentations. Hopping Eye Associates provided workplace eye care information and visual acuity testing.

Two bicycle helmets, donated by Pearland Cycles, were given away in a drawing as part of a bicycle safety presentation conducted by Tessilynn Knell, Lockheed Martin.

An aircrew emergency egress training was demonstrated and the Ellington Fire Department fire truck and the Houston Fire Department Hazardous Materials Response vehicle were on display. The day's activities ended with the S&TH Day Run/Walk.

"We have a saying at Ellington – 'Safety is everybody's job,'" said Knell. "Safety and Total Health Day gives us an excellent opportunity to remind everyone of the importance of being safe – at home, at work, and on travel." ■

White Sands Test Facility's *Passport to Health* a huge success

By Cheerie R. Patneaude

Safety and Total Health Day started out as a beautiful morning and continued that way for the employees at White Sands Test Facility.

A large parking lot was transformed into a festive tent city, where booths, vendors, and WSTF and White Sands Complex employees converged. From an unusual-looking Jeopardy host who quizzed employees with questions such as "How long does it take a hydrazine Interscan to react to low, hazardous levels of hydrazine?" or "How often should you get a tetanus booster?" to a real-time burn conducted by the WSTF Fire Department, WSTF employees were on the lookout to learn more about safety and health.

During the planning stage for this year's Safety and Total Health Day, the committee was adamant in creating a day worth remembering. Co-chairs Barry Plante and Dave Loyd said of the event, "We wanted to establish a theme that entailed our commitment to safety and health and improve on the successes of last year's event. When we designed our event, we wanted to reach out to the community in a joint venture into health."

Because of this foresight, the committee established the *Passport to Health* theme. Committee members were: Jennifer Allred, Ralph Brown, Deb Chowning, Tim Davidson, Holger Fischer, Ray Gruben, Ron Lerdal, Miguel Maes, Ron Samaniego, Patsy Segura, and Larry Schuyler.

Eighteen activities ranging from the Doña Ana Sheriffs Department's "Convincer" to *Beware of Snakes* presenter Doug Burkett, were ongoing, while seventeen safety and health vendor booths drew the participants under the tents to hear opinions on metatarsal guards and diabetic blood sugar levels to flu shots and stress massages. The *Passport to Health* theme inspired a printed passport where activities and booths were listed along with the times and content of the presentations. Under one of the tents, the Voluntary Protection Program Keystone Committee asked participants questions such as, "Where do you get the locks for Lock Out/Tag Out work?" before employees earned a chance at spinning the wheel of fortune.

Many of WSTF Safety and Total Health Day participants commented on the day. Pleddie Baker said of the event, "The Committee did a fantastic job putting something together like this. I have had that job, and I know how much effort it takes. It was outstanding!" Baker, who scheduled the NASA Benefits of Space trailer, said that he had more than 480 visitors to the trailer during the day.

The event boasted astronauts Steve Smith and Jeff Ashby who touted WSTF's stand-down day for safety and health as "a remarkable accomplishment for the site." Ashby went on to say that when he was given the opportunity to travel to WSTF, he enthusiastically accepted. Stressing the safety and health theme during one of his presentations, Smith said that even if his neighbors thought of him as a "geek," he still paid attention to the right safety gear at home. He said his neighbors probably wondered about him decked out in mask, hearing protection, and goggles just to mow his lawn, but wearing safety gear at home was "just as important as it is on the Orbiter." Smith said that he was so "impressed by the work WSTF does for the space program," that he would like to bring his wife to see the emphasis that WSTF places on his safety.

At the end of the day, 600 people left WSTF more educated about their safety and more considerate of their health than they were at the beginning of the day. Next year's challenge will be to exceed this year's successful Safety and Total Health Day. ■

NASA WSTF 1000D1024

WSTF employees visit the Benefits of Space trailer.

Only you can assure your safety, audiences told

By Mary Peterson

Risk is a part of life, but don't take foolish chances. No one else can keep you safe. You are responsible for you.

These were the recurring themes of the keynote address and featured speakers for Safety & Total Health Day, led by Center Director George Abbey who reminded listeners once again that safety is paramount in everything we do at the space center, saying, "You [the workforce] represent our most critical resource."

To further illustrate JSC's concern, Col. John Casper paraded a total of 51 people across the stage, representing each lost workday case reported since the first of the year. It drove the point home. Illness and injury are not merely statistics. They are people-your coworker, your friend, you.

Dr. Robert Conn, creator and executive director of SmartRisk Foundation, based in Toronto, Ontario, Canada, returned not only as keynote speaker this year, but also to oversee the specially arranged production of his HEROES presentation, which would be shown at Gilruth Center to some 2,200 Houston area teenagers. His message, however, applied to everyone.

Opening with the statement that has become his mantra, Conn said, "The word 'accident' is described in the dictionary as 'an unavoidable act of fate.' But, accidents are avoidable, preventable occurrences. Most, 90 percent in fact, can be prevented," he said.

A former trauma room surgeon and part of an organ transplant team, Conn became deeply affected by his work, especially when he realized that many of the hearts he salvaged came from living, yet brain-dead, young people, and that, in his words, "It didn't have to happen." That was the genesis of his plan to educate and, he hoped, preserve as many teenagers as he could from traumatic, life-altering injury or death.

Conn believes deeply that setting rules and preaching safety do not work – not for teens, not for anyone. But, he also believes just as passionately that a few simple "smart risk" choices can make the difference in protecting yourself from danger and possible death. This also means not going beyond your "stupid line," that invisible demarcation between good sense and sheer folly. Specifically, the choices between smart risk and stupid risk are:

- **Buckle up**: Whether in a car, a plane, skydiving, or any activity requiring a belt, use it.
- **Drive sober**: Don't drive while impaired, whether from drugs, alcohol, a chemical reaction, or the use of a cell phone.
- **Look first**: Always be aware of your surroundings and where you're going, whether at a railroad crossing, street, water you're about to dive into, or any unfamiliar territory. Assess potential dangers first.
- **Wear the gear**: Safety equipment such as helmets, life jackets, PPE, etc. are effective only if you use them.
- **Get trained**: In both work and recreation, be sure you are trained and understand the safety considerations of what you are about to do. Too many people don't know what to do in a crisis until it arises.

Conn also urged everyone to take first aid training. Statistics have shown that those who have such training are far less likely to be victims of preventable injuries.

The doctor closed his remarks with this candid reminder, "Frankly, we'd do anything we could if we thought it would keep you safe. But there isn't anything we can do. You're in control. It's your choice. It's your body. It's your responsibility. It is now and always will be, as long as you live. All we can do is give you the facts and leave the choices up to you." ■

Ripped from the ROUNDUP

Ripped straight from the pages of old Space News Roundups, here's what happened at JSC on this date:

1 9 6 5

The Gemini spacecraft that will carry crewmen Frank Borman and Jim Lovell on a two-week earth-orbital mission was mechanically mated Monday with its launch vehicle following activation of two replaced fuel cell sections.

The Gemini VII/VI mission, as now planned, calls for Gemini VII to be launched a week from tomorrow with the primary objective of 14 days of space flight. Gemini VI spacecraft and its launch vehicle will then be re-erected on Pad 19 as soon as launch damage can be repaired.

1 9 7 0

Ten employees of the NASA Manned Spacecraft Center have applied for a joint patent on a simple and practical device and process for recovering water and its constituent elements, hydrogen and oxygen, from lunar soil.

The device is based on a chemical process using hydrogen and solar energy to reduce oxides containing iron, which are constituents of lunar soil, to produce water vapor, which can in turn, be electrolyzed to yield oxygen and hydrogen.

Samples of the lunar material returned by the Apollo 11 and 12 astronauts contain significant proportions of an iron-titanium oxide called ilmenite.

1 9 9 5

When *Atlantis* glided to a landing at Kennedy Space Center on Monday, it ended an eight-day mission that marked several milestones in the continuing program of joint U.S./Russian cooperation in space.

"I think we left a gateway open for the next five flights," Commander Ken Cameron said. "That's what it's all about - one step at a time toward the [International Space] Station."

The STS-74 astronauts successfully attached an 8,000-pound, 15.4-foot-long docking module to Mir's Kristall module. The docking module will serve as the permanent docking port for all future shuttle/Mir missions.

Rigging and Welding Specialists named NASA's Minority Subcontractor of the Year

NASA Administrator Daniel S. Goldin presented awards to three minority contractors including Rigging and Welding Specialists, Inc., a subcontractor to Brown & Root Services Pioneer that provides specialized transportation services to JSC, during the agency's annual Minority Business and Advocates Awards Ceremony September 26 at NASA Headquarters.

NASA named RWS Minority Subcontractor of the Year. Charles Fayle, CEO and president of the company, accepted the award.

"Being presented this award by the NASA administrator in the presence of my family and employees was a very special experience," Fayle said. "The extraordinary expression of confidence signified by this award is greatly appreciated. RWS is committed to excellence, and working at NASA presents daily challenges with unlimited opportunities to excel. RWS is proud to be a part of the BRSP team, and we will continually strive to maintain a level of performance worthy of this prestigious award."

RWS, a Native American-owned contractor with 16 employees headquartered in Highlands, Texas, is responsible for transporting critical and sensitive space flight articles in support of various Space Shuttle and International Space Station Programs. The company loads and off-loads aircraft, barges and commercial carrier vehicles containing mission-critical, one-of-a-kind spacecraft components, test articles, simulators, shuttle and Orbiter trainers, and space-flight hardware such as crew modules. RWS is also responsible for handling the space station equipment being furnished by the international partners building the International Space Station.

The company's safety program has been a key element in having safely performed approximately 270 "critical lifts" during the past three years. The company has had no OSHA recordable or lost time injuries since July 1, 1997, and is pursuing OSHA Voluntary Protection Program recognition.

NASA Administrator Daniel S. Goldin, left, presents the Minority Subcontractor of the Year Award to Charles Fayle, CEO and president of Rigging and Welding Specialists, Inc.

RWS was nominated by BRSP and is its subcontractor for rigging and heavy hauling support services at JSC. The company has supported BRSP in the performance of its Base Operations Support Services Contract since 1997.

"I am delighted that RWS was selected for this award," said Frank Fort, BRSP logistics manager. "RWS is customer oriented and does an excellent job of planning and coordinating critical work requirements with various JSC organizations. It possesses the technical knowledge and the ingenuity necessary to safely perform uniquely sensitive rigging requirements. This award was very much deserved, and I am proud of their outstanding accomplishments."

BRSP provides a wide spectrum of services at JSC: program management, operations and maintenance of mission critical facilities, utilities and life-support systems, engineering, construction, logistical support, transportation, critical lifts of one-of-a-kind space hardware, environmental management, physical security, grounds maintenance and custodial services. ■

Brown & Root Services Pioneer earns ISO 14001 certification

Brown & Root Services Pioneer continued toward its goal of being the Brown & Root Services' center of excellence for operations, maintenance and logistics by achieving ISO 14001 certification of its environmental management system on September 15.

"There is great satisfaction when an independent third-party certifies your commitment to operational excellence," said John Stout, vice president of BRSP's Operations Maintenance and Logistics Product Service Line.

BRSP has now achieved all three major third-party certifications: ISO 9001 for its Quality Management System, Voluntary Protection Program "Merit" for its safety program and now ISO 14001. BRSP is the only Halliburton site to achieve all three certifications.

"It is especially gratifying when you realize that operational excellence is the byproduct of a management team committed to the concept of continuous improvement," explained Stout. "The piece that pulls it all together is the project's employees who believe in their management team, support the concept of operational excellence, and integrate it into their daily work."

This environmental certification recognizes BRSP's sound environmental performance across its wide spectrum of services: program management, operations and maintenance of mission critical facilities, utilities and life support systems, engineering, construction, logistical support, transportation, critical lifts of one-of-a-kind space hardware, environmental management, physical security, grounds maintenance and custodial services.

BRSP based its environmental policy on pollution prevention, waste minimization, compliance with all rules and regulations, and continuous improvement. The BRSP management team identified the environmental aspects of all its activities and services and determined which ones have or can have significant impacts on the environment. The team then focused on setting environmental objectives and targets to reduce hazardous waste and improve pollution prevention. The critical element of success is the employees' understanding of how their work can impact the environment and their role in environmental compliance and pollution prevention.

"Quality is a never-ending quest, and Continuous Process Improvement is a never-ending effort to discover and eliminate the main causes of problems," said Dick Castleberry, BRSP project manager.

"The diverse, empowered team at JSC is accountable for delivering quality service, safely and on time, while preserving the environment. They have met the challenge as acknowledged by the International Standards Organization and the Occupational Safety and Health Administration." ■

Another Star is born

Just more than a year since JSC received its commendation, Science Applications International Corporation (SAIC) has received its own VPP Star site certification. John Miles, OSHA Region 6 regional administrator presented the flag to SAIC at a ceremony October 26.

J. D. Howell, Jr., SR&QA Contract program manager, Derek Robins, SR&QA Contract safety representative, Kathleen Leonard and Les Caldwell, Employee Safety Committee representatives, received the flag on behalf of SAIC.

This is the first SAIC corporate site to earn the STAR certification.

According to Janet Reister, SAIC institutional safety assistant, the flag will be rotated through SAIC Team SR&QA contract office spaces so all employees "can enjoy it and be proud of their efforts to earn the flag." ■

VPP & JSC
OSHA VOLUNTARY PROTECTION PROGRAMS

Distance Learning closes in on the digital divide

JSC's Distance Learning Team continues to bridge the gap between space and the country's inner cities through technology. The office recently hosted a distance learning event tying in young people from across the country to a live Webcast with Astronaut John (Danny) Olivas.

The event was held October 17, in tandem with Hispanic Heritage Month. U.S. Deputy Secretary of Housing and Urban Development Saul Ramirez participated in the event from the Bldg. 9 electronic classroom and joined Olivas, who responded to space-related questions during the Web chat session.

> ***I personally like to work with these cooperative partnerships with HUD because they impact children who don't have the same accessibility to resources due to their social and economic backgrounds. They are very receptive and appreciative kids so it is very rewarding for me to work with them.***
>
> – John "Danny" Olivas
> NASA Astronaut

Ames Research Center provides the digital capability for the Webcast through NASA Quest, NASA's online education portal. The Webcast was made available to young people through Neighborhood Networks, HUD-supported computer labs around the country. There are more than 600 Neighborhood Network facilities in the U.S. They provide technology resources and tools for residents in HUD assisted communities in an effort to make them more self-sufficient. JSC has participated in two live Webcasts with Neighborhood Networks in the last six months.

"The HUD Neighborhood Network chats provide underrepresented minority students an opportunity to ask questions of NASA minority engineers, scientists, and astronauts and receive immediate feedback during a live interactive webcast," said Susan Anderson, manager of JSC's Distance Learning Project. "Students have an opportunity to learn what motivated the professionals to pursue their careers, what educational track they chose, what technical applications they apply during their work, as well as learn about the advanced training the professionals take to keep abreast of changes in their fields."

In addition to the live chat sessions, the Distance Learning organization continues to expand its education and outreach activities. According to Anderson, there are now 12 different education modules ranging from space rocks and Earth observations to space food, robotics and careers that teachers can work from to incorporate space and JSC into lesson plans.

Distance Learning's resources are also starting to be tapped by JSC co-ops who can now use the technology to conduct presentations from JSC to their faculty sponsors at their universities or conduct outreach events with their former secondary schools to share their NASA experiences with their home state.

"Our plan for fiscal year '01 is to take our video-conference modules and adapt them to web-based interactive personal challenge products that students and teachers can access over the Internet," said Anderson. "We also want to strengthen the use of distance learning methods for employee development and its usefulness in space flight training." ■

For more information about JSC's Distance Learning office or to become involved as a volunteer host visit the Web site http://learningoutpost.jsc.nasa.gov *or call x47325.*

Astronaut John "Danny" Olivas talks about astronaut training with students in Bldg. 9 and across the country through JSC's Distance Learning Project. Students from coast to coast participated in the live Webcast with Olivas to commemorate Hispanic Heritage Month. Shown here, students from the Houston and Galveston Neighborhoods Network got a personal tour of the shuttle and station mockups from Olivas.

Transportation Fringe Benefit Program expands commuting alternatives

Last April, the President signed an Executive Order, Federal Workforce Transportation, to reduce federal employees' contribution to traffic congestion and air pollution and to expand employees' commuting alternatives. Qualified employees may exclude up to $65 per month ($780 per year) from taxable wages and compensation for the commuting costs of using mass transportation and vanpools.

Additionally, employees using mass transportation and van pools may exclude from taxable wages up to $175 per month for qualified parking. Qualified parking would be on or near the location from which employees commute to work using mass transit, but does not include parking at or near the employee's home.

The three-year pilot program became effective October 1. In 2002, the monthly exclusion for mass transportation and vanpools will increase to $100 per month ($1,200 per year).

Transportation/Parking Expenses Incurred	Dates Forms Are Due to Payroll
November 1 – December 15, 2000	December 11, 2000
December 15 – 31, 2000	January 8, 2001
January 1 – March 31, 2001	April 3, 2001
April 1 – June 30, 2001	July 3, 2001
July 1 – September 30, 2001	October 3, 2001
October 1 – December 31, 2001	December 7, 2001

Employees who wish to exclude their mass transportation/van pool costs (up to $65 per month maximum) and/or parking expenses (up to $175 per month) from their taxable wages must complete a Transportation Fringe Benefit Program Claim for Pre-Tax Commuting Cost of Actual Expenses form and submit it to the JSC Payroll Office. This form will be required monthly through December 2000; thereafter, employees must submit a claim form each quarter. These must be submitted to Payroll by the dates noted in the accompanying table.

Qualified vanpools only include those with a seating capacity of at least six adults (not including the driver) and at least 80 percent of the mileage use for purposes of transporting employees in connection with travel between their homes and places of employment. For each commuting trip, the number of employees transported must be at least one-half of the adult seating capacity of the vehicle, excluding the driver. ■

Questions about this program may be addressed to the JSC Payroll Office x34832.

Get into the Spirit

Children were treated to Halloween fun and festivities at the JSC Child Care Center last month. As part of the event, children were encouraged to dress up for a trick or treating parade through JSC, visiting various buildings on site. Activities also included a petting zoo, pony rides, moon walk, face painting and a little clowning around with balloons.

Kids weren't the only ones having fun. Adults got into it as well by sponsoring game booths such as bean bag toss, ring toss, and the Wheel of Fortune. ■

NASA JSC Photo 2000e27368 by James Blair

Noah McWhorter, right, age 2, shows off his spider costume to Sharyn Bristol, age 2, during Halloween festivities at JSC's Child Care Center.

NASA JSC Photo 2000e27369 by James Blair

Vincent Conder, age 3, in a lion costume feeds a sheep in the animal petting zoo.

DATES & DATA

November 22

Astronomy seminar: The JSC Astronomy Seminar Club will meet at noon Nov. 22 and 29 in Bldg. 31, Rm. 248A. For more information contact Al Jackson at x35037.

Spaceteam Toastmasters meet: The Spaceteam Toastmasters meet at 11:30 a.m. Nov. 22 and 29 at United Space Alliance, 600 Gemini. For more information contact Patricia Blackwell at (281) 280-6863.

November 23

Communicators meet: The Clear Lake Communicators, a Toastmasters International club, meet Nov. 23 and 30 at 11:30 at Wyle Laboratories, 1100 Hercules, Suite 305. For more information contact Allen Prescott at (281) 282-3281or Richard Lehman at (281) 280-6557.

November 30

Radio Club meets: The JSC Amateur Radio Club meets at 6:30 p.m. at Piccadilly, 2465 Bay Area Blvd. For more information contact Larry Dietrich at x39198.

December 1

Chess Club meets: The Space City Chess Club meets from 5 p.m. - 9 p.m. at the Clear Lake Park Recreation Bldg. All skill levels are welcome. For more information call James Mulberry at x39287 or James Termini at x32639.

December 4

NSS meets: The Clear Lake area chapter of the National Space Society meets at 6:30 p.m. at the Parker Williams Branch of the Harris Co. Library at 10851 Scarsdale Blvd. For more information contact Murray Clark at (281) 367-2227.

December 5

Quality society meets: The Bay Area Section of the American Society for Quality will meet at 6 p.m. at Franco's Real Italian Restaurant on NASA Road 1. No reservations are required. For more information, contact Ann Dorris at x38620.

December 7

Warning System Test: The site-wide Employee Warning System performs its monthly audio test at noon. For more information contact Bob Gaffney at x34249.

December 8

Astronomers meet: The JSC Astronomical Society meets at 7:30 p.m. at Space Center Houston. For more information contact Chuck Shaw at x35416.

December 12

Aero Club meets: The Bay Area Aero Club meets at 7 p.m. at the Houston Gulf Airport clubhouse at 2750 FM 1266 in League City. For more information contact Larry Hendrickson at x32050.

IAAP meets: The Clear Lake/NASA Chapter of the International Association of Administrative Professionals meets at 5:30 p.m. in the Colonial Room at Grace Community Church, 14325 Crescent Landing (Hwy 3 & Clear Lake City Blvd.). Cost is $12.

NPMA meets: The National Property Management Association meets at 11:30 a.m.at the Gilruth Center. For more information contact Ray Whitaker at (281) 212-6030.

December 13

MAES meets: The Society of Mexican-American Engineers and Scientists meets at 11:30 a.m. in Bldg. 16, Rm. 111. For more information contact Laurie Carrilo at 281-244-5203.

December 14

Airplane club meets: The Radio Control Airplane Club meets at 7 p.m. at the Clear Lake Park building. For more information contact Bill Langdoc at x35970.

December 21

Directors meet: The Space Family Education board of directors meets at 11:30 a.m. in Bldg. 45, Rm. 712D. For more information contact Lynn Buquo at x34716.

Mentors and judges needed

National Engineers Week Texas-Houston Regional Future City Competition FC2001 has begun. It involves teams consisting of three seventh and eighth graders, a teacher and an engineer mentor who conceive, analyze, and design a future city using SimCity 2000 software, write an essay and abstract of the city built, make a physical model of a portion of their future city, and make a presentation on the features of their creation. This four-phase event culminates January 27 at the Texas-Houston Regional competition at San Jacinto College Central. All registered schools have been provided SimCity 2000 software and a Teachers Guidebook to help the teams.

The competition is open to all public, private, and home schools. This year's competition has participation from intermediate/junior high schools from Houston, Deer Park, Aldine, Pasadena, Goose Creek, Atascosita, Barbers Hill, Santa Fe, Crosby, and Clear Creek school districts, in addition to several private and home schools.

Engineering mentors are needed for the school teams and judges are needed for the competition January 27. If you are interested in volunteering, please contact Dr. Zafar Taqvi, Texas-Houston Regional Future.City Competition coordinator at 281-244-4436 or via email at taqvi@ieee.org.

More information on FC2001 is available at www.ghgcorp.com/ ieeegbs/futurecity-houston.

TICKET WINDOW

The following discount tickets are available at the Exchange Stores

Sony Loew's Theaters $5.50
AMC Theaters $5.00
Astroworld . . . . . .1 day $21.00
Moody Gardens (2 events) (does not include Aquarium Pyramid) $10.75
Moody Gardens (Aquarium only) $9.25
Space Center Houston . . . . . adult . . $11.00 . . . .child (age 4-11) $7.25
(JSC civil service employees free.)
Space Center Houston annual pass $18.75
Postage Stamps (book of 20) $6.60

September 30 - November 14

Texas Renaissance Festival . . adult . . $16.00 . . . .child (age 5-12) $6.50
Entertainment Books $20.00
Franklin Planner Refills (Classic Style) $25.50
Franklin Planner Refills (Seasons and Montecello) $30.25
Holiday Gift Wrap available November 15 to December 15

Check out our new website on the JSC People page at: http://hro.jsc.nasa.gov/giftshop/

Exchange Store hours

Monday-Friday
Bldg. 3 7 a.m.-4 p.m.
Bldg. 11 9 a.m.-3 p.m.

- All tickets are nonrefundable.
- Metro tokens and value cards are available.
- Sweetwater Pecans . . . . . $6.25 per lb.
- Chocolate-covered Pecans . . . . $8.00 per lb.

For additional information, please call x35350.

Please bring your driver's license to pay by personal check.

NASA BRIEFS

SAFETY SYSTEM STEERS PILOTS CLEAR OF CLOSE CALLS

Overcrowded airports mean overcrowded runways, taxiways and ramps. On-the-ground collisions at the nation's airports are occurring more frequently, but NASA engineers have developed a way to keep aircraft on track and away from dangerous encounters.

It is an advanced cockpit display system, developed at NASA's Langley Research Center. The Runway Incursion Prevention System, or RIPS, would give pilots and air traffic controllers an early warning if another plane or ground vehicle is about to intrude onto the runway.

Close calls between aircraft and ground vehicles or other planes, often called runway incursions, have grown steadily during the past decade. In the last five years there has been a 60 percent increase in near-collisions, according to the National Transportation Safety Board, with 320 incidents reported in 1999 alone. Reducing runway incursions has become the Federal Aviation Administration's number one safety priority.

Harry Verstynen, the chief pilot from Langley, said the RIPS display has multiple uses. "Even for the large percentage of the time that you are not having a runway incursion," he said, "the displays that are being developed as part of this project will give the pilot significant improvements in situational awareness on the airport and taxiing in low visibility conditions."

Technicians equipped a NASA 757 aircraft with the experimental displays and computer systems. NASA and airline pilots made a number of overnight flight tests at Dallas-Fort Worth International Airport to evaluate the technologies. Their observations will be used to help refine the displays for possible use in airliners.

Airline pilots have given the system high marks. "We have made several recommendations on some changes, but overall it's a well-thought out system," said John Penney, Advanced Maneuvers Program Manager and Standards Captain B-757/767 of United Airlines. "With a few minor adjustments, I think it's something commercial industry and aviation industry should take and grab hold of."

NASA's Runway Incursion Prevention System integrates several advanced technologies into a surface communication, navigation and surveillance system for flight crews and air traffic controllers. It combines a head-down display of an electronic moving map of airport runways and taxiways with a head-up screen that gives the pilot real-time guidance. The system shows and sounds alerts if another plane or vehicle is about to encroach onto the runway. RIPS also uses specially developed computer software, GPS signals and ground technologies developed by the FAA's Runway Incursion Reduction Program.

NASA AWARDS CONTRACT FOR SHUTTLE EXTERNAL TANKS

NASA and Lockheed Martin Space Systems, of New Orleans, La., have completed negotiations for production of 35 additional Super Lightweight External Tanks for the Space Shuttle Program.

The six-year contract, worth approximately $1.15 billion, includes the manufacture, assembly, test and delivery of the Super Lightweight Tanks and the operations and maintenance of NASA's Michoud Assembly Facility in New Orleans. The contract also includes activities at NASA's Marshall Space Flight Center and Kennedy Space Center.

This sixth production of tanks will be the first comprised totally of Super Lightweight Tanks. This latest version of the tank, which flew for the first time in June 1998, is the same size as the tank it replaces, but is about 7,500 pounds lighter. The weight reduction allows the shuttle to carry more payload.

The first tank of the sixth production is scheduled for delivery to the Kennedy Space Center in 2002.

SPACE CENTER Roundup

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