



Mississippi Gov. Ronnie Musgrove, center, recently visited Stennis Space Center for briefings on the ongoing activities of NASA, the Navy and other agencies located at the center. Pictured here with Musgrove is Stennis Center Director Roy Estess, left, and NASA's Patrick Scheuermann, assistant to the director of Center Operations & Support Directorate, atop the B-1 test stand where the RS-68 engine is undergoing testing.

## Aerospike dual engine test phase nears

Stennis engineers and technicians are busy modifying the A-1 test stand to prepare it for the dual engine test phase of the flight certification process for Boeing-Rocketdyne's XRS-2200 linear aerospike engine.

The engine will power Lockheed Martin's X-33 technology demonstrator.

The single engine test phase wrapped up with a record duration firing of 290 seconds May 12. Engineers hope to begin dual engine testing in September and finish by the end of the year.

Parts for the two flight engines have been delivered to Stennis throughout the past year. Boeing-Rocketdyne technicians in Building 3202 at Stennis assembled both engines and are now putting the finishing

touches on both engines in advance of installation at the A-1 test stand. The engines will be positioned end-to-end as they would be on the X-33 and will be tested in this flight configuration.

The X-33, which is a half-scale, sub-orbital technology demonstrator for Lockheed Martin's proposed commercial reusable launch vehicle called VentureStar™, will use two aerospike engines. VentureStar™ will use seven aerospike engines twice the size of the ones used by the X-33.

Dr. Don Chenevert, NASA's aerospike project manager at Stennis, praised the engine for its performance.

"The engine met all of my expectations and more. This is an outstanding engine," he said.

## NASA, Dreamtime partnership propels space information age to new heights

NASA and Dreamtime Holdings Inc. have formed a partnership that will deliver the adventures of the space frontier through the new technologies of the digital frontier.

The unprecedented agreement was announced June 2 at NASA's Ames Research Center, in the heart of California's Silicon Valley. It includes, for the first time, high-definition television coverage of astronaut activities aboard the International Space Station and on Space Shuttle missions. It will also create an easily accessible, Web-searchable, digital archive of the best of NASA's space imagery.

"Not only does this bring the space program into partnership with Silicon Valley," said NASA Administrator Daniel Goldin, "but the partnership also puts NASA at the forefront of the information age. This is innovative government at its best."

The NASA-Dreamtime partnership will provide public access to space exploration by creating a state-of-the-art multimedia portal, [www.dreamtime.com](http://www.dreamtime.com), that will, with the click of a mouse, open the door to thousands of images, sounds, documents, blueprints and plans from NASA's currently underused archives. Roll out of the in-depth portal site will begin within the next several months.

The unparalleled space content will be accessible via Web, wireless TV and interactive TV devices. Shuttle launches will light up handheld computers, and school children will be able to watch compelling interactive space programming on TV and the Web.

"Our goal of engaging more Americans in the exploration of space will be made possible through this partnership," Goldin said.

## LAGNIAPPE Commentary

### Splashdown!

A long time ago in oceans far, far away from Stennis Space Center, there was a time in American spaceflight history when astronauts came out of the heavens at the end of their missions and “splashed down” in the deep blue waters of the Atlantic and Pacific oceans.

I think of that romantic era every time the Space Shuttle gracefully glides in and touches down like a big airplane on the runway at Kennedy Space Center. Back then, during the early years of space travel, we all knew that the era of Mercury, Gemini and Apollo would eventually end and that the spectacular splashdowns would wind up as only pictures in history books.

Readers might wonder why me and Gator even thought of that time way past, with all the excitement we have now — Space Shuttle missions, construction of the International Space Station and new engines test fired almost daily here at Stennis Space Center.

It has been 25 years since the last splashdown, July 24, 1975, ending that exciting, pioneer era of spaceflight. The last of the “capsules” or spacecraft came down that day in the Pacific Ocean at the “EOM” or end of mission of the Apollo-Soyuz Test Flight, bringing home astronauts Deke Slayton, Tom Stafford and Vance Brand.

That splashdown marked the end of the Apollo-Soyuz Test Mission, know then as “ASTP,” and its recovery by the NASA team and members of the Navy carrier *U.S.S. New Orleans* was in itself a historical event. That landing in the Pacific closed the books on a dramatic chapter in America’s space program.

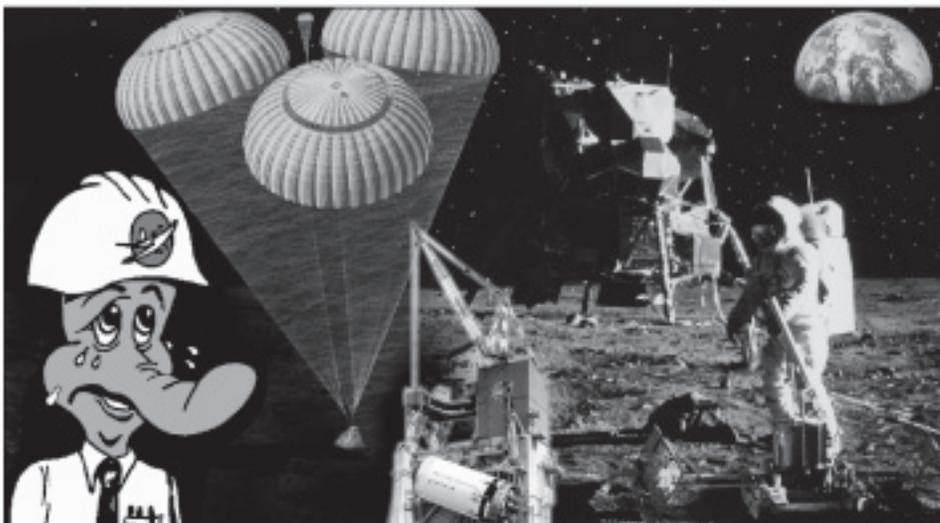
I never will forget when me and Gator sat on the deck of the majestic old *U.S.S. Ticonderoga* after the recovery of Apollo 17, the last flight to the Moon. We joined a small band of sailors — one softly strumming his guitar — to watch the sunset on that most exciting day. We quietly chatted with other NASA recovery personnel about the significance of the day.

The end of Apollo — mankind’s greatest adventure. Would any of us ever see another splashdown? Many members of the NASA Recovery Team had been working together since the very first American human spaceflight in 1961.

We were melancholy on that December day out in the Pacific, watching the brilliant colors of the sunset sink into the ocean. Some of us had no idea we would be back again for the Skylab Program and finally for the last splashdown of them all — Apollo-Soyuz.

We knew the program would go on, but with a more modern flair, taking off and landing like an airplane with a reusable spacecraft. No more romantic splashdowns. Our astronauts are building a space station with the shuttle, taking off and landing safely on a runway down in Florida. But let me tell you, there was a time, 25 years ago, when grown men cried when they saw the beautiful chutes open and the spacecraft float gently down and splash into the ocean.

M.R.H.



## NEWSCLIPS

**Robotic hand offers a new grasp on space construction** — A robotic system intended to give spacewalking astronauts a hand is being refined at NASA’s Johnson Space Center. A mechanical hand, very much like a human hand, offers remarkable abilities to operate tools used by people in spacesuits. The hand, in combination with an attached arm, is capable of action as delicate as lifting small objects with tweezers. Designers have worked to make the hand function like a human’s. Developers believe that as the hand evolves, other applications will emerge. Eventually, the hand and robot together with a human operator some distance away in space may eventually be able to do almost anything a human could do.

**Director of Jet Propulsion Lab to retire** — Jet Propulsion Laboratory Director Ed Stone has announced plans to retire from his post next year. Stone, a highly regarded physicist and astronomer, has directed the lab since January 1991. In that time, he has overseen several high-profile missions, including the 1997 Pathfinder landing, in which a robotic rover successfully landed on Mars and poked around the Red Planet.

**Black holes shed light on galaxy information** — Astronomers are concluding that monstrous black holes weren’t simply born big but instead grew on a measured diet of gas and stars controlled by their host galaxies in the formative years of the universe. These results released by the Goddard Space Flight Center in Greenbelt, Md., were gleaned from a NASA Hubble Space Telescope census of more than 30 galaxies with its powerful “black hole hunting” spectrograph. Though much more analysis remains, an initial look at Hubble evidence favors the idea that titanic black holes did not precede a galaxy’s birth but instead evolved with the galaxy by trapping an amazingly exact percentage (0.2 percent) of the mass of the bulbous hub of stars and gas in a galaxy.

## River research project proves successful for Earth science team

NASA's Earth System Science Office Chief and Biological Oceanographer Dr. Richard Miller described a recent Mississippi River Interdisciplinary Research (MiRIR) survey cruise into the Gulf of Mexico with Tulane University as one of the best examples of a true interdisciplinary project in which NASA's Earth System Science Office (ESSO) at Stennis has participated.

"The success of this project is two-fold," Miller said. "Not only did we collect excellent data, but it was one of the most successful interdisciplinary projects in which I have had a part. There was activity in different areas of study that complemented the central goal of the project. We covered an unusual number of bases in one trip."

Under a grant from the Office of Naval Research (ONR), Tulane's Center for Bioenvironmental Research assembled a survey team consisting of biologists,



Scientists from NASA's Earth System Science Office (ESSO) at Stennis recently participated in an interdisciplinary river survey project in the Gulf of Mexico. At left, post-doctoral student Yuan Jinchun, left, works with a Tulane University student to collect water samples measuring ocean color.

oceanographers, geochemists, zooplankton ecologists, and graduate and post-graduate students to collect data from the river plume at the mouth of the Mississippi River.

The goal, Miller said, was to look at the impact of the fresh water from the river — with all of its dissolved organic materials, suspended sediments and particles — on the near shore saltwater of the Gulf.

"We wanted to understand the transportation and the fate of these materials and how their presence affects the coastal zone's productivity."

On board the survey vessel, Pelican, scientists collected data in their own areas of expertise. The Stennis team, consisting of

See SUCCESSFUL, Page 7

## Shuttle crew completes mission to ISS

Atlantis' astronauts glided to a ghostly pre-dawn landing on the morning of May 29 at Kennedy Space Center to wrap up a successful refurbishment and resupply mission to the International Space Station (ISS).

Louisiana native, Commander Jim Halsell flew Atlantis to a nighttime touchdown at the Florida spaceport at 1:20 a.m. CDT to complete a 4,076,000-mile mission, the second Shuttle flight of the year. It was the 14th nighttime landing in shuttle history and the 22nd consecutive mission to end with a landing at Kennedy.

Halsell was joined on Atlantis' flight deck by Pilot Scott Horowitz, Flight Engineer Jeff Williams and Mission Specialist Mary Ellen Weber. Crewmates Susan Helms, Jim Voss and Yury Usachev were seated down on the orbiter's middeck for entry and landing.

Atlantis returned to Earth after Flight Director John Shannon determined that crosswinds at the Kennedy Space Center's three-mile long landing strip were gentle and steady, enabling him to give the astronauts the green light to come home on time.

Halsell fired the Shuttle's braking rockets at 12:12 a.m. CDT, allowing Atlantis to drop



Louisiana native Jim Halsell commanded the Space Shuttle Atlantis and its crew on STS-101's mission to make improvements to the International Space Station. Here, Halsell docks the shuttle with the ISS.

out of orbit for its high-speed descent. Atlantis passed over southern Mexico and the Gulf of Mexico before crossing over the Sarasota / Ft. Myers area of Florida en route to the Cape. Atlantis broke the quiet of the pre-dawn hours in central Florida with a double sonic boom just minutes before touchdown.

The mission left the International Space Station equipped with an upgraded electrical

### STS-101 Accomplishments

- Prepared the station for the arrival of the Zvezda Service Module.
- Installed four new batteries, 10 new smoke detectors and four new cooling fans on the Zarya module, which is also known as the Functional Cargo Block.
- Installed the final parts of the Strela crane on Pressurized Mating Adapter 1.
- Removed and replaced the early communications system antenna.
- Installed handrails on Node 1, which is also known as the Unity module.

system, new fans, filters, fire extinguishers, smoke detectors and communications gear. ISS flight controllers report that the complex is functioning in excellent condition.

See HALSELL, Page 7

## StenniSphere opens Memorial Day weekend to excited crowds



Cutting the ribbon opening StenniSphere are, from left: Marc Bonis, president of Partners for Stennis; Astronaut Lee Archambault; Rear Adm. Kenneth E. Barbor, Commander, Naval Meteorology and Oceanography Command; Stennis Space Center Director Roy Estess; Astronaut Barbara Morgan; and Stennis Space Center Deputy Director Mark Craig.



The first riders on the motion simulator at StenniSphere were children from Pine, La.



When StenniSphere officially reopened May 26, 123 hand-stitched patches donated to NASA by the American Needlepoint Guild were proudly displayed. Above, 42 members of the guild were present to witness their handiwork become part of NASA history.



Tours of StenniSphere begin at the Mississippi Welcome Center on I-10 in Hancock County. More than 6,400 visitors toured StenniSphere in its first week, compared to 1,752 during the same week in 1999.

From left, astronauts Barbara Morgan and Lee Archambault present a commemorative display and patch from STS-88 flown by the Space Shuttle Endeavor to Stennis Space Center's Public Affairs Chief Myron Webb, Public Affairs Specialist Linda Theobald and Bo Clarke, project engineer for visitor center redesign with NASA's Facilities Engineering Division. Based at Johnson Space Center in Houston, Morgan and Archambault participated in the official opening of StenniSphere.



## New equal opportunity officer strives for more open communication at Stennis

Although she's been at Stennis Space Center for only three months, Marilyn Donald loves what she does.

"It's a lot of work, but it's very rewarding," Donald said. "It's an opportunity to open doors."

As NASA's Equal Opportunity Officer at Stennis Space Center, Donald is primarily in the communications and cultural awareness business. In addition to submitting numerous EO reports as required by NASA Headquarters and the Equal Employment Opportunity Commission, she must help a diverse employee population communicate efficiently. As an advisor to the space center's Director and Deputy Director, she must also communicate proactively with her superiors on ways to keep Stennis a workplace where employees value their differences and discover their similarities.



Marilyn Donald

"We encourage open communication and cultural understanding," she said. Donald said she emphasizes proactive measures to build understanding among diverse people, whether the differences are based on ethnicity, occupation, disability, gender or a myriad of other characteristics.

Although she is relatively new at Stennis, Donald has a clear vision of her goals. First, she plans to serve as an effective and proactive advisor for NASA management on equal opportunity matters.

Second, she plans to "revive" the Association for Cultural Awareness (ACA). ACA has representatives of diverse racial, educational and occupational backgrounds from every agency at Stennis.

See DONALD, Page 7

## Mir crew's photos show changes on Earth

Like photo-hungry tourists, the astronauts and cosmonauts who spent time on the Russian space station Mir took along cameras and lots of film to record their observations.

The photographs they have taken are providing important new insights into how nature and humans are changing planet Earth.

Some of these photographs will be published as part of a new book on the results of imagery analysis in such areas as urban growth, El Niño impacts and changes in sea

levels, coastal vegetation and land use.

A second major objective was to use the experience gained during actual space flight to develop approaches and tools for the next generation of Earth observations from the International Space Station.

■ An on-line database of astronaut photos from space is available at these Web sites: <http://eol.jsc.nasa.gov>; <http://earth.jsc.nasa.gov>; and <http://images.jsc.nasa.gov>.



Space artist Pat Rawlings created a special hybrid acrylic/digital painting called "Trial by Fire" for Stennis Space Center in commemoration of the May 26 opening of StenniSphere. Rawlings is well-known within the space industry for creating images based on scientific and technical themes that appeal to both rocket scientists and everyday citizens. His extraterrestrial "snapshots" of future events give viewers a sense of "being there" as explorers hop from one world to the next using the best technology of the 21st century. The original painting hangs in StenniSphere, and posters are available for purchase in the Space Odyssey Gift Shop.



The NASA Commercial Remote Sensing Program (CRSP) at Stennis Space Center, the Naval Oceanographic Office (NAVO) and companies from the Mississippi Space Commerce Initiative (MSCI) participated in a Commercial Imagery Industry Day held May 31 at the Center. The day's activities were focused on providing an opportunity for CRSP and NAVO to become better acquainted with the expertise of the MSCI companies. Event coordinators included, front row from left, MSCI Executive Director Dr. Allan Falconer; NASA's Anne Peek, AST, Earth Sciences Remote Sensing; George Mason, NAVO, head of the Oceanographic Applied Techniques Branch; back row, Scott Klingenberg, also of the NAVO, Oceanographic Applied Techniques Branch; Milton Chambliss, MSCI, Commercial Operations manager; Mark Mick, AST, Technical Management and NASA's Liaison to MSCI; and Mississippi Enterprise for Technology Executive Director Greg Hinkebein.

## Stennis eyes busy storm season with new emergency plan

As the 2000 hurricane season began June 1 with promises of a very active season from the National Oceanographic and Atmospheric Agency (NOAA), NASA's John C. Stennis Space Center prepared for stormy weather with an updated Emergency Preparedness Plan.

Approved in November, the plan includes a Hurricane Policy for Stennis. Procedures established in the Hurricane Policy apply from the declaration of a Condition IV alert until Stennis is cleared for normal work operations. The policy can be found on the Stennis Web site [www6.ssc.nasa.gov/iso9000/](http://www6.ssc.nasa.gov/iso9000/). From there, click on Document Repository, FOSC Documents, FOSC Safety & Mission Assurance Documents and then file name 1-GA03.

Under the new policy, **Condition IV** alerts Stennis personnel that the National Weather Service has issued a warning of destructive force winds expected to reach the Mississippi Gulf Coast in 72 hours. Personnel are placed on a general state of readiness and the Stennis Emergency Operations Center will open on a limited basis.

A **Condition III** alert indicates destructive force winds anticipated to make landfall within 48 hours. Most storm preparations are accomplished within this alert period. The Emergency Operations Center will be open.

A **Condition II** emergency signals destructive force winds approaching within 24 hours. Final emergency preparations are completed. It is during Condition II that the Stennis Emergency Director will assess conditions and make decisions regarding employee dismissal and site closure for the storm.

A **Condition I** goes into effect when only 12 hours remain before destructive winds are expected to make landfall. Shelters will be opened for employees and their dependents.

Clyde Dease, NASA Emergency Preparedness Coordinator at Stennis Space Center, said he is paying particular attention to shelter management and special needs shelters in the early days of what promises to be an active hurricane season.

"We are reviewing the processes and procedures to improve management of our shelters," Dease said.

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## Gay Irby helps new acquisition program at Stennis provide 'Net' gains

Gay Irby is doing her part to help Stennis stay on the cutting edge. The NASA computer specialist has a hand in the development of an Internet acquisition system that is proving successful enough that government agencies nationwide are looking into it.

Irby is a Stennis representative to the NASA team that administers the NASA Acquisition Internet Service (NAIS). The system allows NASA to conduct electronic commerce and procurement of service contracts and commercial items that cost \$25,000 or more.

NAIS has proven a success, too. In fact, the program has worked well enough that Irby and a counterpart from NASA's Marshall Space Flight Center in Huntsville, Ala., gave a presentation on NAIS in Washington, D.C., before a federal Chief Information Officer workshop.

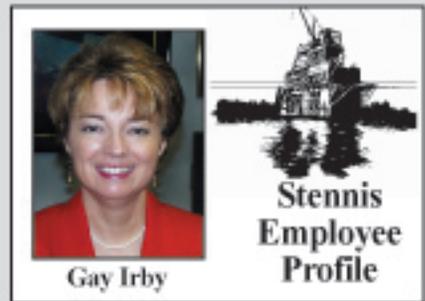
"The General Services Administration started looking at our NAIS model," Irby said. "They're now forging ahead with what we've done and rolling it out governmentwide."

The NAIS system allows documents that are part of a contract solicitation process to be posted on the Internet making part of the process more efficient and easy to access by businesses interested in contracting with NASA, Irby said.

She added that efforts are under way to resolve security considerations so NASA can also receive vendor bids.

While her work with NAIS may not be publicly visible, many people at Stennis are acquainted with another aspect of Irby's work, whether they know it or not. In addition to working extensively with NAIS, Irby provides Web support and maintains the Stennis Intranet site, which was recently upgraded and redesigned.

"I worked with Mike Wethington from the business management office and Deputy Director Mark Craig on the design," she said. "It was a team effort to design it. My responsibility now is to



Gay Irby

monitor it."

Irby also develops and maintains Web sites subordinate to the main Stennis Intranet site.

"I love it," she said of her job.

And she's been loving it for 13 years. Irby came to Stennis back in 1987 to work with the Science & Technology Laboratory. In that capacity, she provided programming support for remote sensing software.

When the lab was reorganized in the early '90s, Irby began monitoring financial support applications and next worked for NASA's Integrated Financial Management Project. Then she branched off into Web development and support in the mid 1990s.

And that led her to where she is today.

"It was through the Web activity that I got in with the NAIS applications," she said.

In addition to her hectic work schedule, Irby finds time for other activities. When she isn't at Stennis tangled up in her Web work, she can be found helping her husband, Ron, with Irby's Answering Service, their telephone answering service based in Gulfport.

The Long Beach couple also likes to take to the Mississippi Sound for a little boating and fishing. Gay also teaches Sunday School at First United Methodist Church in Long Beach, where she and her family attend.

The Irbys have two sons, 16-year-old Brant, who will be a senior at the Mississippi School for Math and Science in Columbus, and Sean, 13, who will be an eighth-grader at Long Beach Middle School.

## DREAMTIME ...

(Continued from Page 1)

The NASA-Dreamtime partnership will also provide the agency with high-definition television capability that will give NASA engineers and scientists the most detailed look ever at shuttle flight operations and at scientific experiments conducted on the shuttle and on the International Space Station.

Education plays a prominent roll throughout the agreement. Educational content planned in the documentaries and TV broadcasts will be linked to educational modules in the portal.

"We plan to vividly convey the space experience into classrooms and living rooms across America," Bill Foster, Dreamtime Chairman and CEO said. "This partnership intends to explain the complexities of space in an interesting, entertaining and educational way."

## HALSELL ...

(Continued from Page 3)

The station is orbiting at an altitude of about 238 statute miles, awaiting the arrival of its next component, the Russian Service Module Zvezda, which is scheduled to be launched on a modified Proton rocket from the Baikonur Cosmodrome in Kazakhstan in July.

The ISS will automatically rendezvous and dock with Zvezda about two weeks after

## DONALD ...

(Continued from Page 5)

"ACA is a priority," she said. "We will capitalize from team work among all agencies on site and keep a finger on the pulse of the space center."

The ACA will plan various cultural activities, including "International Festival 2000" in October, that will be both entertaining and educational.

Donald is extremely committed to strengthening the NASA Scholars program and other student programs designed to develop a pool of qualified minorities, females, and persons with disabilities for the future NASA Workforce.

Finally, Donald will finalize and implement the Stennis Alternative Dispute Resolution (ADR) process, which allows resolution of disputes at the earliest stage and at the lowest level possible.

the new module is placed in orbit.

Atlantis will now be processed for the next shuttle flight in early September to return to the International Space Station with another crew for the outfitting and supply of the newly arrived service module. Veteran Commander Terry Wilcutt will lead that flight, STS-106.

The STS-101 astronauts spent Memorial Day relaxing with their families in Florida before returning to Houston on June 1 for a welcoming ceremony at Ellington Field near Johnson Space Center.



ESSO Chief Dr. Richard Miller, left, works with post-doctoral student Yuan Jinchun, right, and a crew member in preparing the bio-optics package for underwater data collecting.

## SUCCESSFUL ...

(Continued from Page 3)

Miller, ESSO co-op student Callie Hall and post-doctoral fellow Yuan Jinchun, utilized the Stennis-engineered bio-optics package for underwater sampling, as well as above water sampling with a spectroradiometer that measures ocean color.

A principle element in the project's successful outcome, Miller said, was real-time imagery from the Sea-Viewing Wide Field-of-View Sensor (SeaWiFS) satellite supplied to the ship from NASA's Goddard Space Flight Center in Greenbelt, Md.

"Each day we received SeaWiFS data shot the previous day for our work," Miller said. "It allowed us to specifically focus on the flow of the river plume. It was a tremendous advantage."

The information gathered from the survey will serve as a guide in designing a much larger scale program to address the complexity in analysis of river plume environments. The cruise was the first of two scheduled under the ONR grant to Tulane.



Kathy Ladner of OMNI-Cube, left, talks with Mary Jane McKee at Old Timers' Day 2000. McKee was the sixth person hired on the NASA site. Inset below, this year's aprons featured a tribute to Jim McArthur, longtime Old Timers' cook and friend, who died of cancer in 1999.



**Safety  
Corner**

## Chemical hazards lurk in aerospace

### Administrator's Message

The aerospace industry is known for having an extremely complex chemical environment.

Demand for decreasing product development flow time, combined with increasingly stringent performance criteria, may cause an imbalance between performance testing and environmental health testing. While a product may have been performance tested and approved, users may know little about its health and environmental impact.

NASA's inventory includes about 17,000 chemical products, including composites, metals, organic compounds, plastics, fibrogenic dusts, and benign dusts. We have one of the most chemically complex workplaces in the world.

One of our biggest challenges is the early identification of potential material substitutions. The goal is to replace a hazardous material with a nontoxic or less toxic one. The scientific and research communities help us identify potentially hazardous situations, and chemical safety experts assist us in identifying appropriate engineering controls and protective measures.

## QUICK LOOK

- **An on-line smoking cessation program** is now offered by the Stennis Occupational Health Services. For details, contact Tim Donohoe at Ext. 3005 or by e-mail at [timothy.donohoe@ssc.nasa.gov](mailto:timothy.donohoe@ssc.nasa.gov), or call Scott Burks at Ext. 3950.
- **A NASA Alumni Meeting** will be held July 14 at 2:30 p.m. in the Director's Conference Room, Building 1100. Robert Bruce will be the speaker. For more information, call NASA Stennis Space Center Alumni at (228) 467-7113.
- **Applications for the 2001 Gulf Guardian Award**, sponsored by the partnership of the Gulf of Mexico Program to recognize environmental excellence in the five Gulf Coast states, are now available on line at [www.gmgo.gov](http://www.gmgo.gov). Those who do not have access to the Internet may call (228) 688-1159 for details. The deadline for submitting applications is Oct. 2.
- **Plans to create a U.S. Military Veterans Organization** at Stennis are under way. For information, contact Lee Cury at Ext. 3607.

## HURRICANES . . .

(Continued from Page 6)

Special emphasis will be placed on further development of shelters for employees with special physical and medical needs.

Dease said that current warm waters in the Gulf and continuing weather patterns spawned by El Nino and La Nina are conducive to strong storm systems this year.

On June 7, Dr. William Gray of the Department of Atmospheric Science at Colorado State University updated his forecast for the 2000 hurricane season to include 12 named storms, eight hurricanes and four intense hurricanes.

Gray predicts a 40 percent chance of one or more major hurricanes occurring along Gulf Coast from the Florida Panhandle westward to Brownsville, Texas.

The weather data buoys of the National Data Buoy Center (NDBC) will track all this activity, said Dave Gilhousen, meteorologist with NDBC at Stennis.

"Our buoys determine the radius of maximum winds," Gilhousen said.

NDBC hosts a popular Web site that features real time information from weather buoys, found at [www.ndbc.noaa.gov](http://www.ndbc.noaa.gov).

"We average 2 million hits a month on that Web site," Gilhousen said.

In hurricane season, activity on the NDBC site increases to about 300,000 hits a day, he said.

## LAGNIAPPE

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