



National Aeronautics and Space Administration

40th Anniversary
Pioneering the Future

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LAGNIAPPE

John C. Stennis Space Center

August 21, 1998

All major test positions at Stennis contain propulsion test articles

Never before in the history of Stennis Space Center have all of the major test positions been occupied with test articles at the same time. The A-1, A-2 and B-1, B-2 positions contain rocket engines for today's Space Shuttle and for those that will power the nation's next generation of rockets.

New propulsion test programs are setting a pace for the NASA-contractor propulsion test team that has not been seen at Stennis since America's race to the moon during the Apollo era.

The programs are ushering in a new era of space transportation for the U.S. and a bright future for Stennis.

In addition, the center's newer test facilities will soon begin testing smaller rocket engines and components.

Since mid-July, Stennis has received:

- the first power pack assembly for the X-33's aerospike engine;
- a 40,000-pound thrust Fastrac engine for the X-34 and the Low-Cost Technologies program;
- a 250,000-pound thrust hybrid rocket motor, which is the largest hybrid motors to be tested at Stennis;
- the first certification unit of Pratt & Whitney's high-pressure fuel turbopump for the Space Shuttle Main Engine.

NASA plans to begin testing the aerospike engine's power pack by the end of the month on the A-1 test stand.

The Fastrac engine will power the X-34 space plane and the first stage of a small rocket booster for the Low-Cost Technologies project.

That program will use two test positions at the B-2; one position is set to vertically test the first stage booster; the second position will test the Fastrac engine horizontally for the X-34.



A frame, housing fuel tanks for a first-stage booster for the Low Cost Technologies project, is lifted into the B-2.



Stennis will soon begin testing the first power pack assembly of the X-33's aerospike engine.

NASA presents verification results

NASA's Commercial Remote Sensing Program at Stennis Space Center presented results of the Verification and Validation Program's development phase to representatives of the commercial remote sensing community during a symposium held Aug. 4-6 at the space center.

Remote sensing uses sensors on aircraft or satellites to observe the Earth's surface. The sensors gather information that can be used to make decisions.

The Verification and Validation Program is an effort to establish a nationwide network of ground sites for commercial and government remote sensing systems. Ground truthing verifies that the data acquired by those systems accurately represent what is occurring on the ground.

Part of ground truthing involves using a ground verification site that works like a specialized eye chart to determine the resolution and accuracy of remote sensors.

The first ground verification site has been constructed at Stennis, based on industry input at the 1997 Verification and Validation Workshop, where NASA and industry representatives laid the groundwork for cooperation in this area.

During the past year, the Verification and Validation Team developed several skills, tools and techniques to make sure remotely sensed data from new commercial sources will meet customers' needs.

"Right now, our primary customer is NASA's Earth science enterprise. We've just completed the validation of 16 sample commercial data sets that NASA can purchase for the Earth science community. Buying data 'by-the-megabyte,' rather than developing and operating our own sensor systems, encourages private companies to share cost and risk with the government. NASA should then be able to do the same science for less cost. But first, we must bring these commercial products up to scientific standards, which requires lots of documentation and independent testing," said NASA's Jeff Jenner, verification and validation project manager at Stennis.

(See RESULTS, Page 10)

LAGNIAPPE Commentary

Where were you when ...?

The older you get, the more you remember where you were and what you were doing when certain events happened. Like where you were when Pearl Harbor was bombed, Franklin Roosevelt died, President John Kennedy and Martin Luther King were assassinated, Neil Armstrong landed on the Moon, Elvis died, and the Challenger accident occurred.

These major historical events are remembered by practically everyone who was around when they happened. Granted, those of us associated with NASA have a few more special memories to add to the list because most of us were so engrossed in our dogged efforts to see the Agency succeed, such as the very first rocket tested at the old MTF on April 23, 1966, or the dedication of the John C. Stennis Space Center August 3, 1988. I think our deep involvement with NASA comes largely from working so hard to make something happen or to see our dreams come true.

It just seems like here of late we are adding some new milestone memories rather quickly. For some of us advancing seniors, Roy Rogers brought many, many good memories of an exciting Saturday afternoon at the downtown picture show. And now, even our beloved straight-shootin' cowboy has bid his last "Happy Trails."

Many also remember a special evening dancing close to a significant other to the golden croons of Frank Sinatra. Maybe even a promise for a lifetime came while you were snuggled up on the dance floor with old "Blue Eyes."

Just this past month, when Astronaut Alan Shepard died, one of the most significant memories of my lifetime was recalled. Yes, I know right where I was when that brave American climbed aboard *Freedom 7* atop a Mercury-Redstone rocket and was blasted off from Cape Canaveral to become America's first person in space. We all know the flight went "A-OK" because that's when NASA's Shorty Powers coined that history-making cliché and attributed it to Commander Shepard.

Most importantly, Shepard's 15-minute flight down the Atlantic Missile Range served notice to the world that the United States would not remain second in the critical Cold War "space race" and would be number one in the extraordinary exploration of the heavens.

His flight also gave President Kennedy the confidence to declare a few days later that Americans would land a man on the Moon and return him safely to Earth in the decade of the 1960s.

Al Shepard was more than just a tough, dedicated, Navy pilot and astronaut, he was a patriot, leader and visionary. He was an explorer that history will remember alongside Christopher Columbus.

I watched the flight of *Freedom 7* on a 17-inch black and white TV at my home in Dothan, Ala., on May 5, 1961, and vowed to join NASA in its magnificent quest to explore space. What a great debt I owe to the memory of Al Shepard!

M.R.H.



NASA NEWSCLIPS

ALAN SHEPARD REMEMBERED

— The United States mourned the passing of Alan B. Shepard Jr., the first American to fly in space and one of only 12 humans who walked on the moon. Shepard died at Community Hospital on the Monterey Peninsula in California on July 21 after a lengthy illness. He was 74.

"The entire NASA family is deeply saddened by the passing of Alan Shepard. NASA has lost one of its greatest pioneers. America has lost a shining star," said NASA Administrator Daniel S. Goldin.

"Alan Shepard will be remembered, always, for his accomplishments of the past; being one of the original Mercury astronauts, for being the first American to fly in space, and for being one of only 12 Americans ever to step on the moon. He should also be remembered as someone who, even in his final days, never lost sight of the future," Goldin added.

HURRICANE STUDY COULD SAVE LIVES AND MONEY

— Two specially equipped NASA aircraft soon will take to the skies to collect high altitude information about Atlantic hurricanes and tropical storms.

The Convection and Moisture Experiment (CAMEX) mission is scheduled through September.

Results from the mission may increase warning time, saving lives and property, and decrease the size of evacuation areas, saving money while giving scientists a better understanding of these dramatic weather phenomena.

CAMEX will yield high-resolution spatial and temperature information on hurricane structure, dynamics and motion, leading to improved hurricane prediction.

Results also will be used to validate existing measurements from the Tropical Rainfall Measuring Mission of hurricanes and tropical storms and to develop algorithms for future Earth science missions.

Led by the Atmospheric Dynamics and Remote Sensing program at NASA Headquarters in Washington, D.C., the experiment unites eight NASA centers, other government weather researchers and the university community.

Stennis is site for procurement assistance

With the cutting of a ribbon, the newest resident agency at Stennis Space Center opened its doors for business Aug. 14.

The Mississippi Contract Procurement Center opened at its new satellite office in the NASA-sponsored Stennis Technology Enterprise Center incubator at the deactivated Mississippi Army Ammunition Plant at Stennis.

"We want to extend a warm welcome to our newest resident agency at Stennis Space Center, the Mississippi Contract Procurement Center," said Jon Roth, special assistant to the Stennis director. "It's always a pleasure to have a new professional organization with such a strong technical background and expertise join us."

The Mississippi Contract Procurement Center is a private, non-profit corporation established by the public and private sectors to enhance economic development of the state of Mississippi by assisting Mississippi businesses with obtaining federal, state and local government contracts.

With its corporate office located in Biloxi, the center consists of regional centers in Columbus, Jackson, Greenville and Meridian. The center operates two other satellite centers at the University of Southern Mississippi in Hattiesburg and at Itawamba Community College in Tupelo.

Speaking to more than 30 people in attendance, Van Evans, president of the board of directors of the Mississippi Contract Procurement Center, said, "Thank you for your support, for your interest in the Contract Procurement

Center. This is not just a program to assist businesses in getting contracts, but it assists agencies in getting more people bidding on the contracts. This is a benefit for our state government in that we are assured we are going to get the lowest and best bid for our contracts."

Richard Speights, executive director for the Mississippi Contract Procurement Center, gave an overview of the center's program. According to Speights, the Stennis satellite office will be open each week on Tuesday and Thursday by appointment, and then they will, "see how demand for our services goes. If demand is there, then we're going to put somebody out here full-time."

Also speaking was the Deputy Director of the Mississippi Department of Economic and Community Development, Bob Sizra. "We support the Contract Procurement Center and business incubators because we know that businesses that live and grow in Mississippi will continue to grow and create jobs that our citizens need," Sizra said.

By opening the new office in the deactivated Army plant, the organization is participating in the Mississippi Enterprise for Technology's business incubator program.

"I have heard from our tenant companies about needing assistance in the procurement process and being more aware of the opportunities out there," said Lyn Stabler, acting executive director of the Mississippi Enterprise for Technology. "So, we agreed to offer the center office space in return for counseling services. It truly is the right sort of partnership."

Executive Director of the Mississippi Contract Procurement Center
Richard Speights, right, speaks to attendees at opening ceremonies of the Procurement Center's Stennis Space Center satellite office.



Miller named SSC Associate Director

NASA's Lon Miller—formerly the deputy director of NASA's Propulsion Test Directorate at Stennis Space Center—has been named associate center director.

Miller will work directly under Stennis Director

Roy Estess
and Deputy
Director

Mark Craig.
As deputy
director of
Propulsion
Test, Miller
assisted in
the overall
management
of personnel
involved in
rocket pro-
pulsion test-
ing, includ-
ing testing all Space Shuttle Main Engines.

Miller will continue to chair the Rocket Propulsion Test Management Board, which formed after NASA designated Stennis as its lead center for rocket propulsion testing.

The board makes testing assignments and approves investments in test facilities at Stennis and at three other NASA centers that conduct propulsion testing—the Marshall Space Flight Center in Huntsville, Ala., the Lewis Research Center's Plum Brook Station in Ohio, and the Johnson Space Center's White Sands Test Facility in Las Cruces, N.M.

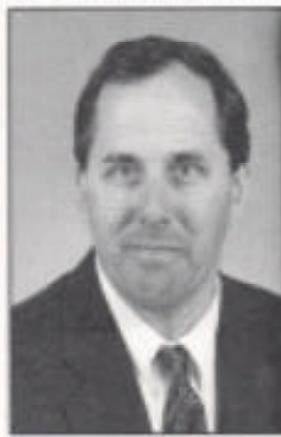
Miller is a 10-year NASA veteran, having spent nine of those years at Stennis Space Center.

Before moving to Stennis Space Center from Reston, Va., Miller was program manager of reliability, maintainability and electronic parts on the Space Station Freedom program, the forerunner of the International Space Station program.

Before joining NASA, Miller worked nine years as a division manager of engineering for the Thiokol Corporation in Utah, where he developed and tested propellants and composite materials for various solid rocket motor projects.

He graduated from the University of Colorado at Boulder with bachelor's degrees in chemistry and business.

Lon and his wife, Michele, have one daughter, Kelly, and live in Slidell, La.



Lon Miller

NASA HONOR AWARDS 1998

NASA's presented its prestigious NASA Honor Awards to 24 Stennis Space Center employees on Aug. 12 in the Visitors Center auditorium.

This year's awards went to Boyce Mix, who was given the NASA Distinguished Service Medal; Lon Miller and Richard Miller, who both received the NASA Exceptional Service Medal; and Bill George, who was awarded the NASA Public Service Medal.

The Security Services Buying Team was awarded the NASA Group Achievement Award, and the Johnson Controls World Services Inc. Food Services Team was honored with the NASA Public Service Group Achievement Award.

NASA's Honor Awards are presented to a number of carefully selected individuals and groups of individuals, both government and non-government, who distinguish themselves by making outstanding contributions to the NASA mission.

Joseph Rothenberg, NASA's Associate Administrator for Space Flight, was the guest speaker at the awards ceremony.

Rothenberg oversees all aspects of Space Shuttle flight as well as the design and construction of the International Space Station.

"Stennis is probably one of the few cen-

ters I keep thinking about that really has stepped up to the lead center concept, and I think people recognize that," Rothenberg said in his statements.

NASA Headquarters in Washington, D.C. has designated Stennis as the Agency's lead center for rocket propulsion testing and commercial remote sensing.

In his address, Stennis Space Center Director Roy Estess said, "I want to give you all a big pat on the back. The ones who are getting the recognition today are but the tip of the iceberg. The iceberg being all of those who stand under them to make them the success they've been, but you have accomplished an unbelievable amount of work in the past year. I'm elated to be a part of this team and to see what you people have done."

Distinguished Service Medal

The NASA Distinguished Service Medal is the highest honor NASA confers upon a government employee. It is given only to employees who, by distinguished service, ability or courage, have personally made a contribution representing substantial progress to the NASA mission.

Mix, director of the Propulsion Test Directorate, was cited for his exceptional technical capability, as evidenced by the

success of the rocket propulsion test operations.

Exceptional Service Medal

The NASA Exceptional Service Medal is awarded for significant, sustained performance characterized by unusual initiative or creative ability that clearly demonstrates substantial improvements or contributions to the missions of NASA.

Lon Miller, who was recently named SSC Associate Center Director, led the effort to produce the Consolidation Study on the NASA Rocket Propulsion Test Facility Inventory. His outstanding efforts in propulsive test activities were exceptional and contributed to Stennis Space Center's being named lead center for propulsion testing.

Richard Miller contributed significantly to the restructuring of the Earth System Science Office and established a research focus directly aligned with, and supported by, the Earth Science enterprise.

Public Service Medal

The NASA Public Service Medal is awarded to any individual who was not a government employee during the period in which the service was performed. The award is granted for exceptional contribu-

(See AWARDS, Page 10)



Pictured from left are Stennis Space Center Director Roy Estess, Carol Mix, NASA's Boyce Mix, recipient of NASA's Distinguished Service Medal, and Joseph Rothenberg, NASA's Associate Administrator for Space Flight at NASA Headquarters in Washington, D.C.



Pictured from left are Stennis Space Center Director Roy Estess, Michele Miller, NASA's Lon Miller, recipient of NASA's Exceptional Service Medal, and Joseph Rothenberg, NASA's Associate Administrator for Space Flight.



Pictured from left are Stennis Space Center Director Roy Estess, Jo Ann Miller, NASA's Dr. Richard Miller, recipient of NASA's Exceptional Service Medal, and Joseph Rothenberg, NASA's Associate Administrator for Space Flight.



Pictured from left are Stennis Space Center Director Roy Estess, Mary George, Bill George, recipient of NASA's Public Service Medal, and Joseph Rothenberg, NASA's Associate Administrator for Space Flight.

"Stennis is probably one of the few centers I keep thinking about that really has stepped up to the lead center concept, and I think people recognize that."

—Joseph Rothenberg



Pictured from left are Stennis Space Center Director Roy Estess, Jim Cluff and Harold Tumblebee, members of NASA's Security Services Buying Team that received NASA's Group Achievement Award, and Joseph Rothenberg, NASA's Associate Administrator for Space Flight.



Pictured are Stennis Space Center Director Roy Estess (far left), members of the Johnson Controls World Services Inc. Food Services Team that received NASA's Public Service Group Achievement Award, and Joseph Rothenberg (far right), NASA's Associate Administrator for Space Flight.

MORE HONOR AWARDS



Pictured from left are Stennis Space Center Director Roy Estess, Myron Webb, Lance Cooksey, Virginia Butler and Mack Herring, members of the Stennis History Publication Team, and Joseph Rothenberg, NASA's Associate Administrator for Space Flight.



Pictured from left are Stennis Space Center Director Roy Estess, NASA's Joey Kirkpatrick, and Joseph Rothenberg, NASA's Associate Administrator for Space Flight.

Local business chosen for data purchase

AstroVision Inc., located at Stennis Space Center, is among five companies that have been selected to continue into the second phase of NASA's purchase of Earth science data products that help meet the agency's scientific requirements.

"We are very pleased that the products we have chosen will provide NASA with valuable scientific data for our Earth sciences efforts," said Dr. Ghassan Asrar, Associate Administrator for NASA's Office of Earth Sciences, Washington, DC.

"This purchase continues the multifaceted process of NASA's working more aggressively with industry and other non-governmental organizations to advance scientific understanding of our Earth as a total environmental system."

The U.S. Congress approved the plan to initiate the data purchase activity in the fiscal 1997 NASA budget.

The Commercial Remote Sensing Program at Stennis manages the program as NASA's lead center for fostering commercial applications of NASA Earth science data and related technology.

NASA made a Phase I Request For Offers in May 1997 to provide unique simulated or prototype Earth science data products for science assessment and validation.

The Phase II information will be used by research teams within NASA's Earth science enterprise, which manages the agency's portion of an internationally coordinated research effort to study the Earth's land, oceans, atmosphere, ice and life as a global environmental system.

"By purchasing data upon delivery from the private sector instead of developing, building, and launching new satellites, NASA may be able to conduct and expand its scientific investigations at a much lower cost, while encouraging the growth of this economic area," Asrar said.

Selected products were based on several criteria, including "best science value" to the government, and the degree to which the offered data met the business and performance characteristics of the solicitation, including scientific utility and data rights.

The combined Phase I and Phase II data purchases are valued at approximately \$50 million. Other companies selected for the data purchase were: Earth Satellite Corporation Rockville, Md.; Positive Systems, Inc., Whitefish, Mont.; EarthWatch, Inc., Longmont, Colo.; and Space Imaging EOSAT, Thornton, Colo.

X-34 completes critical milestone

The first wing assembly for NASA's X-34 technology demonstrator has passed qualification tests and has been shipped to the prime contractor, Orbital Sciences Corporation, Dulles, Va.

This marks a major milestone in the program. NASA plans to begin flying the air-launched X-34 next year along with flights of its larger and more advanced sister ship, the X-33.

The wing assembly has been installed on a full-scale X-34 test article at Orbital. It will be used for X-34 verification and certification. This first wing assembly will ultimately fly aboard one of two flight vehicles also under construction at Orbital.

The sub-orbital X-34 and X-33 vehicles will demonstrate key technologies at high speeds and high altitudes. The test flights will lead toward the development of full scale, commercially operated reusable launch vehicles after the turn of the century. The ultimate objective of these efforts is to dramatically reduce the cost of placing payloads into space.

Weather Service Director praises Stennis multiagency concept

Brig. Gen. John Kelly Jr.—who was recently appointed assistant administrator for the National Weather Service and director of the National Weather Service for the National Oceanic and Atmospheric Administration—visited Stennis Space Center on July 23.

Kelly became director of the National Weather Service in February 1998 after serving as a senior advisor on weather services for the Department of Commerce.

He visited Stennis to see the facilities, buoys and people associated with the National Data Buoy Center.

"It's always more fun to see an operation than it is to sit in Washington and have somebody tell you about it," he said.

Kelly said that he was impressed with the enthusiasm and diversity of the people and was amazed how different government agencies worked together at Stennis.

National Weather Service Director Gen. Jack Kelly (right) visited Stennis to observe the National Data Buoy Center's facilities, equipment and personnel. He met with National Data Buoy Center Director Dr. Jerry McCall (left) and Stennis Deputy Director Mark Craig.



"Here, you really have three different parts of the federal government working together with NASA providing the housekeeping support," Kelly said.

He met with Stennis Deputy Director Mark Craig after a news briefing. He spoke of the uniqueness of this multi-

agency center, which is NASA's lead center for rocket propulsion testing and commercial remote sensing.

Stennis also is home to more than 30 resident agencies.

"We've been reinventing government for 25 years," Craig said.

NASA names crews to support Space Shuttle flights in 1999

Thirteen astronauts will support upcoming shuttle missions, STS-96, STS-97 and STS-98, scheduled next year. The flights will be dedicated to continue the construction of the International Space Station.

Kent Rominger will command the crew of STS-96, a logistics and resupply mission for the space station targeting a mid-May 1999 launch. Rick Husband will join Rominger on the flight deck of Discovery as pilot. Mission specialists are Ellen Ochoa, Tamara Jernigan, Daniel Barry, Canadian Space Agency astronaut Julie Payette and Russian cosmonaut Yuri

Malenchenko. The STS-96 crew will be the first to visit the station following the arrival of the Service Module.

Brent Jett Jr. will lead the crew of Endeavour for STS-97 in August 1999, continuing space station construction. He will be joined on board by pilot Michael Bloomfield and mission specialist Marc Garneau of the Canadian Space Agency. Astronauts Joseph Tanner and Carlos Noriega will conduct two planned space walks. STS-97 will deliver the first set of U.S.-provided solar arrays, batteries and radiators to provide cooling.

Discovery will continue expansion of the space station in October 1999 when Kenneth Cockrell commands STS-98. Cockrell will be joined by pilot Mark Polansky, a member of the 1996 astronaut class and mission specialist Marsha Ivins. Astronauts Mark Lee and Thomas Jones, previously named to the mission, are in training to support three planned space walks. STS-98 will mark the arrival of the U.S. laboratory module, which will become the centerpiece of scientific research on the station. Three spacewalks are planned during the mission.



Editor's note: As part of Stennis Space Center's celebration of the 40th Anniversary of the National Aeronautics and Space Administration, the Lagniappe will publish monthly throughout 1998 significant dates in NASA's history.

Aug. 20, 1998—Marked the first time in history that Space Shuttle Main Engine tests are conducted on all three test stands (A-1, A-2 and B-1) on the same day at Stennis Space Center.

Dec. 30, 1991—NASA Administrator designates Stennis Space Center as Center of Excellence for large propulsion system testing.

July 24, 1992—The Space Shuttle Main Engine test program at Stennis Space Center achieves its 2,000th test firing.

Aug. 11, 1993—A new High Heat Flux Facility is dedicated. The facility was built to test materials that will be used on hypersonic spacecraft of the future.

Feb. 3, 1994—Launch of STS-60, the 18th flight of the Space Shuttle Dis-

covey with Charles Bolden, Ken Reightler, Ronald Sega, Franklin Chang-Diaz, Jan Davis and Sergei Krikalev as flight crew members. This was the first flight with a Russian cosmonaut on board.

May 1, 1994—Space Shuttle Main Engine test management was transferred from the Marshall Space Flight Center in Huntsville, Ala., to Stennis Space Center.

May 26, 1995—Stennis Space Center completes testing on a new Block I configuration Space Shuttle Main Engine containing a Pratt & Whitney high-pressure oxidizer turbopump.

Teachers learn to incorporate remote sensing into curriculums

The Mississippi Department of Education, in partnership with NASA's Commercial Remote Sensing Workforce Development Education and Training Initiative (WDETI), recently held teacher training workshops to kick off a pilot program designed to assist Mississippi teachers in successfully integrating remote sensing into their programs.

The Department of Education and WDETI are utilizing the existing infrastructure and educational delivery system to make implementation of the program a seamless process.

Six sites were selected to participate in the program. Schools were chosen based on the availability of functional laboratories and their proximity to other pilot sites. The pilot programs will utilize the existing Tech Prep program at the secondary school level and ongoing technology programs at the senior high and community college levels.

Remote sensing is the process of acquiring and interpreting data from a distance, such as from Earth-observing satellites. It is emerging as one of the fastest growing high-tech industries. Stennis Space Center is NASA's lead center for commercial remote sensing.

The goal of the education and training initiative is to ensure that Mississippi will be ready to meet the projected workforce demands of the industry.



Twenty teachers from across the Mississippi Gulf Coast recently participated in workshops sponsored by the Mississippi Department of Education and NASA's Workforce Development Education and Training Initiative. The workshops, held at Long Beach Middle School, are part of a pilot program that will implement remote sensing into curriculums of select Mississippi schools during the 1998-99 school year. The program will be phased into the Tech Prep program during a three-year period.

The workshop participants are enthusiastic about the new opportunities that may develop for their students.

"My students are always interested in careers," said Dre' Helms of Puckett Attendance Center in Rankin County.

"They are aware of the traditional ca-

reers involving computers, so I think that this will give them fresh ideas about new careers and emerging technology."

When fully implemented, the program will put remote sensing training within reach of all Mississippi students by the year 2002.

Stennis Space Center tour guide Wendy Lester reads to children at the Mandeville Public Library as part of the Visitors Center's annual Summer Reading Program. Stennis tour guides traveled to more than 30 public libraries and Vacation Bible School sessions throughout east Louisiana and central and south Mississippi, reaching more than 7,000 children. This year's theme was "My Place in Space."





Stennis Space Center welcomed Daniel Bates (center), one of 11 winners in a National Science Teachers Association contest. Students submitted research proposals to NASA centers. Winners won a one-week trip to a NASA center. Bates, a freshman at Montgomery-Blair High School in Silver Spring, Md., proposed a plasma propulsion system. From left are Dr. David Powe, Stennis Director Roy Estess, Bates' instructor Ned Johnson and Leo Miller.



Twenty-six teachers from across the U.S. gathered at Stennis for NEW (NASA Educational Workshops), formerly NEWEST and NEWMAST. They toured Stennis and the Michoud Assembly Facility in New Orleans, La., where the Space Shuttle's external fuel tanks are built. The teachers will be NASA's guests at a future shuttle launch.

Stennis offers fall educator workshops

NASA's Educator Resource Center at Stennis will offer the following workshops this fall:

An Apple A Day: Sept. 16, all teachers; **Intro to Windows '95:** Sept. 17, Oct. 13, all teachers; **Intro to the Internet:** Sept. 22; Nov. 3, teachers grades K-8, and Oct. 6, teachers grades K-12; **GLOBE:** Sept. 23, 24 & 25, all teachers; **Teaching with the Internet:** Sept. 29; Oct. 20; Oct. 29, teachers grades K-6; **Is it Science or is it Magic?:** Sept. 30, teachers grades 1-6; **Capturing the Internet:** Oct. 1, all teachers; **When I Grow Up, I Want to be an Astronaut:** Oct. 7, teachers grades K-6;

Intro to Power Point: Oct. 8; Nov. 5, all teachers; **Astronomy for Kids:** Oct. 14, teachers grades K-4; **The House of Science:** Oct. 21, teachers grades K-4; **Intro to Home Page Development:** Oct. 22; Nov. 17, all teachers; **Introduction to Word:** Oct. 28, all teachers; **Flying High!** Nov. 4, teachers grades 2-6; **Making Math Meaningful:** Nov. 10, teachers grades K-4; and **Let's Do Language Arts!** Nov. 18, teachers grades K-5.

Reservations are required due to limited seating. For reservations, call the NASA Educator Resource Center at 1-800-237-1821 (select option 2) or (228) 688-3338.

International Space Station facts

■ Global Cooperation—The International Space Station is a clear demonstration of U.S. leadership of the Global community, lighting the pathway for peaceful cooperation between nations in the 21st Century.

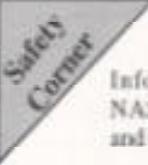
■ World's Largest Project—The space station is the largest international scientific and technological endeavor ever undertaken. It is taking shape in factories and laboratories in the U.S. and around the world.

■ A Futuristic Laboratory—With the space station, a permanent laboratory will be established in a realm where gravity, temperature and pressure can be manipulated to achieve a variety of scientific and engineering pursuits that are impossible in ground-based laboratories. It will be a testbed for technologies of the future and a laboratory for research on new, advanced industrial materials, communications technology, medical research and much more.

■ A New Star—On orbit assembly will begin this summer, with a new star appearing in the night sky and growing brighter as each international contribution is delivered to space.

■ New Generation Astronauts—In July 1999, an international crew of three will begin living aboard the International Space Station, starting a permanent human presence aboard the outpost. The crew has been in training for the mission since late 1996 and includes flight engineer Sergei Krikalev, a Russian cosmonaut; Soyuz Commander Yuri Gidzenko, also a Russian cosmonaut; and commander Bill Shepherd, a U.S. astronaut.

■ X-38 Transport Vehicle—NASA engineers are designing and flight-testing a prototype spacecraft called the X-38. It is a prototype emergency crew return vehicle, or lifeboat, for the International Space Station. But the project also is aimed at developing a crew return vehicle design that could be modified for other uses, such as a possible joint U.S. and international human spacecraft.



Information provided by
NASA's Safety Reliability
and Quality Assurance Office

Tips for dealing with eye injuries

To protect your eyes, the American Optometric Association recommends:

- Wear safety glasses or goggles in areas where required. Be sure they have prescription lenses if needed.
- Never rub an injured eye.
- If a chemical gets in the eyes, wash them with clean water.
- To remove a particle, lift the upper lid and pull it down over the cornea to trap the particle in the lower lashes; or wipe the particle from the lid; or wash the eye with water. If unsuccessful, get medical attention.
- If struck in the eye, get medical attention. Never assume it is a minor injury.

RESULTS

(Continued from Page 1)

This year's symposium presented those new skills, tools and techniques to the commercial remote sensing community.

Team members and benchmarking partners presented papers on topics such as large scale verification targets, ISO 9000 and remote sensing, atmospheric measurement systems, and the validation process for commercial Earth science data.

LAGNIAPPE

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QUICK LOOK

- The Federal Women's Program will hold its Women's Equality Day Luncheon at 11:15 a.m. Aug. 26, at the Waveland Holiday Inn. Guest speaker will be Dr. Maryorie Wheeler, professor of History & Director of the University Forum at the University of Southern Mississippi. Tickets are \$12. Call Ext. 2123 for information.
- The Wellness Center's Lap Pool is open from 6 a.m. to 6:45 p.m. Monday through Friday. For more information, call the Wellness Center at Ext. 3950.
- The next blood drive will be held by the Blood Center of New Orleans on Sept. 1 and 2. This is the first two-day blood drive to be held at Stennis. For more information, contact Elizabeth Valenti at Ext. 1468.
- The Stennis Space Center Mardi Gras Krewe is accepting applications for new members for the upcoming parade season. For more information, contact Kay McArthur at Ext. 1362 or Barb Marino at Ext. 1378.
- Keesler Federal Credit Union currently has financing as low as 6.95% APR for new and used autos. (Rates and terms vary, based on credit history. Limited time offer.) For more information, call Beth McGregor at Ext. 3478.

AWARDS

(Continued from Page 1)

tions to the mission of NASA.

George, retired from Lockheed Martin Stennis Operations, helped initiate the current method of transferring cryogenic propellants from barges to the Space Shuttle engines through rail tanks on the test stands. This enabled the Space Shuttle Main Engine program to carry out test firings of longer duration.

Group Achievement Award

The NASA Group Achievement Award is given to a non-government group in recognition of outstanding accomplishment which has contributed substantially to the NASA mission.

This award went to the Security Services Buying Team for developing a performance-based work statement that encouraged adequate price competition by using a fixed price, performance-based contracting vehicle. This eliminated the need for lengthy and expensive cost analysis of all proposals.

Public Service Group

Achievement Award

This award is given to a group of non-government employees in recognition of outstanding accomplishment that contributed substantially to the NASA Mission.

This award went to the Johnson Controls World Services Inc. Food Services Team for dramatically improving its operations during the past two years by empowering exceptional employees who developed and enhanced an increasingly productive team.



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