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MARSHALL STAR

Serving the Marshall Space Flight Center Community

Oct. 19, 2006

An interview with Roy Malone, director of Safety & Mission Assurance

"Increase our expertise and celebrate accomplishments, but never relax"

Could you tell us about your vision for the Safety & Mission Assurance Directorate and how that fits into the mission for the center?

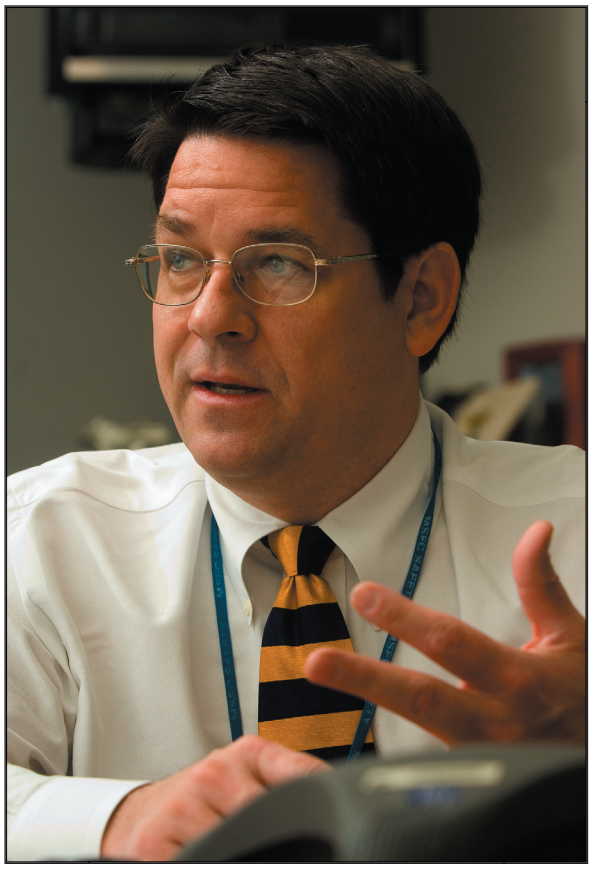
History has taught us there is a need to have a robust, technically competent safety and mission assurance organization. Here at Marshall, the Safety & Mission Assurance Directorate is continuously increasing our technical expertise so that we can make significant contributions in the technical decisions being made. Our vision is to have an organization capable of making a difference and that is grounded in developing the technical expertise.

I have to provide my people with the tools they need to be successful. As a manager, that means getting the training, software tools, experience and the right people to make a difference. Then we can be successful, the program and projects can be successful and the center can be successful.

Whether it's building a cargo launch vehicle, flying the space shuttle safely or continuing the efforts to build the International Space Station, Safety and Mission Assurance has a critical role in all of those things. Plus, we are a big part of the contribution to health and safety of the workforce.

How is the Safety & Mission Assurance Directorate organized and how does it operate?

We are organized into five separate departments. The first department has responsibility for work related to the Ares I crew launch vehicle. The second group is responsible and accountable for space shuttle propulsion elements that Marshall has developed.



David Higginbotham/MSFC

Roy Malone, excited about the role of the directorate in the last two successful launches, talks about the importance of welcoming and encouraging dissenting opinions to ensure safe mission accomplishment.

See Malone on page 8

2006 Safety Day to be held Oct. 19

Addressing Marshall's paramount challenges as they relate to Safety and Mission Success will be the focus of a day of discussions on Thurday, Oct. 19, starting at 8 a.m. Gene Kranz, retired NASA flight director and manager, will be the guest speaker.

Go to page 12 to review the event schedule. To review the bus schedule or get more information, go to http://safetyday.msfc.nasa.gov/ .

From land, sea or air, new Marshall capability helps hurricane hunters share data in real time

By Sherrie Super

With significant contributions by scientists at the National Space Science and Technology Center in Huntsville, a new Web-based application called the Real-Time Mission Monitoring system is enabling scientists to monitor hurricanes in a revolutionary way, whether the scientists are on the ground, in the air or on the other side of the world. The system is the result of a collaboration that included NASA's Dryden Flight Research Center in Edwards, Calif.

The Real-Time Mission Monitoring system was used for the first time during the NASA African Monsoon Multidisciplinary Analyses, or NAMMA — a month-long hurricane research expedition off the coast of Africa.

The system shares observations by Earth-orbiting satellites, ground-based radar, weather balloons, forecast models and aircraft instruments, combining all these elements into a "Google Earth" visualization display, accessible from virtually any place with an Internet connection.

To visualize the new capability, imagine yourself on board NASA's DC-8 research aircraft with a wireless satellite connection to the ground, circling a powerful storm system. Want to see satellite imagery of your current region? Grab a laptop computer, click a button, and a colorful map appears on your screen.

Want to chart the position of your aircraft? Click another button, and a jet-shaped icon pops onto your monitor, showing you where you've been and where you're going.

Want to see where lightning is striking? Click again, and x's appear on your map, pinpointing nearby lightning activity. Keep clicking, and up comes information on temperature, humidity, wind speed and more. You choose as much — or as little — detail as you need.

Now imagine yourself supporting the research on the ground in the Cape Verde Islands off Africa, or from halfway around the world, in Huntsville or Washington. Want the same data? No problem. With the new capability, you can monitor the storm system along with researchers on the aircraft — but without all the turbulence.

Part of what makes the system so revolutionary is the speed at which information becomes available. "In the past, current satellite imagery and surface-based data have been largely unavailable to the scientists on research aircraft while data from the plane is unavailable to those on the ground," said Rich Blakeslee, the Marshall atmospheric scientist who led the Real-Time Mission Monitoring task. "But now, we're able to access and share data sets in real time. This, in turn, improves decision making and enhances mission success."

Complementing the new system, Blakeslee said, was Internet chat capability, which enabled researchers to share insights and provide technical support from any location. For example, Blakeslee noted, Marshall's lead software developer on this project — John Hall, an employee of Science Applications International Corporation — successfully addressed key technical issues with the systems and software throughout the mission without having to leave Huntsville.

Marshall researcher Michael Goodman coordinated the collection and delivery of data. As the mission's information manager, he was charged with making sure, for example, that lightning patterns from west Africa were viewable to researchers in Huntsville. "Under the old system, scientists on the plane could receive data only from their own instruments," he said. "They weren't able to see the big picture. Now they can."

Along with the data-integration capability developed at Marshall, two other elements were required to make the system a reality, Goodman said. First, the researchers needed a visualization package. This came in the form of the Google Earth display.

See Hurricane on page 3

NASA Ames/Eric James

On board NASA's DC-8 research aircraft, Philip Parker, an NSSTC researcher from the University of Alabama in Huntsville, monitors the Real-Time Mission Monitoring system.

Hurricane

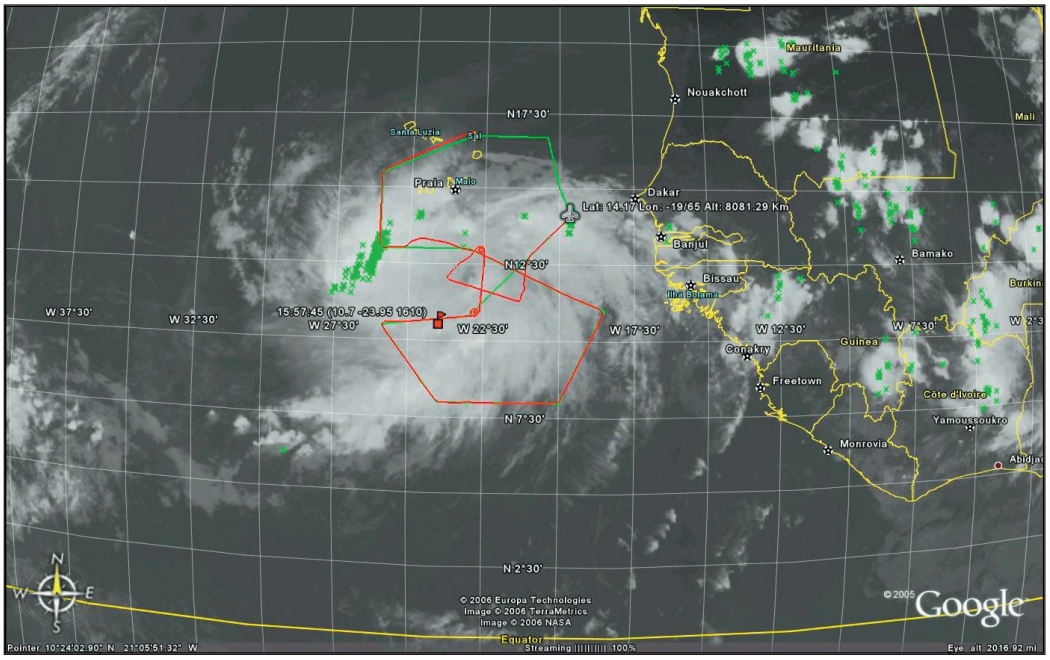
Continued from page 2

Second, they needed a communication pathway to transmit the data and information to and from the aircraft. An innovative system called REVEAL, short for Research Environment for Vehicle-Embedded Analysis on Linux, met this need. Developed by NASA Dryden, the REVEAL system is an airborne processing system that establishes Internet connectivity through Iridium satellite telephone channels to allow communication between the airborne and ground-based operators and computers.

The mission also tapped model forecasts — computer-driven predictions of storm activity. Along with aiding in mission planning, these models enabled researchers to compare predicted storm activity with actual storm activity in real time.

To enhance the hurricane-monitoring capabilities for future missions, Marshall scientists and their partners are looking to add new features to the Real-Time Mission Monitoring system. Along with new data-analysis tools, future hurricane hunters will have the ability to track multiple aircraft, save and play back animated mission data, and time flights to correspond with satellite orbit positions.

The writer, an ASRI employee, supports the Office of Strategic Analysis and Communications.



NASA/MSFC/Michael Goodman

The Real-Time Mission Monitoring system combines and shares observations by Earth-orbiting satellites, ground-based radar, weather balloons, forecast models and aircraft instruments.

Hurricane mission completed, but data analysis just beginning

By Sherrie Super

In mid-August, a team of seasoned hurricane hunters headed from Huntsville to Africa — the birthplace of some of the world's most powerful storms. Today, the scientists have returned, but the data analysis has just begun.

Based at the National Space Science and Technology Center, the atmospheric scientists were participants in the NASA African Monsoon Multidisciplinary Analyses, or NAMMA — a month-long hurricane research expedition based in the Cape Verde Islands, 350 miles off the coast of Senegal in west Africa.

Along with researchers from other NASA centers, the National Oceanic and Atmospheric Administration, universities and international agencies, the NSSTC scientists gathered data on nearly a dozen storms. The mission targeted tropical cyclones that develop off Africa's west coast — some of which eventually reach the U.S. mainland. A tropical cyclone is the general name given to tropical depressions, storms and hurricanes.

Marshall Center atmospheric scientist Robbie Hood served as one of four mission scientists, co-managing the field study during the second half of the four-week mission. Conducting research in Africa, she said, enabled the team to study storms in the earliest stages of development.

"I'm used to looking at more mature storms," she said. "But for this study, we were able to watch weather systems as they developed over Africa."

Some of the weather systems fizzled, but four continued to develop — moving on to become tropical cyclones Ernesto, Debbie, Gordon and Helene.

Learning why some systems become tropical cyclones while others don't develop is key to a better understanding of hurricanes, Hood said. "We found as many mysteries as answers," she said. "It will make for some fascinating data analysis."

The writer, an ASRI employee, supports the Office of Strategic Analysis and Communications.

Marshall implements program management and public outreach

Mercury-bound MESSENGER to fly by Venus on Oct. 24

By Sherrie Super

On Oct. 24, NASA's Mercury-bound MESSENGER spacecraft will swing by Venus for a gravity-assist — a slingshot-type boost from the planet's gravity.

This is the first of two Venus flybys. The second will occur in June 2007. Such maneuvers help speed up a spacecraft without the need for massive amounts of on-board propellant.

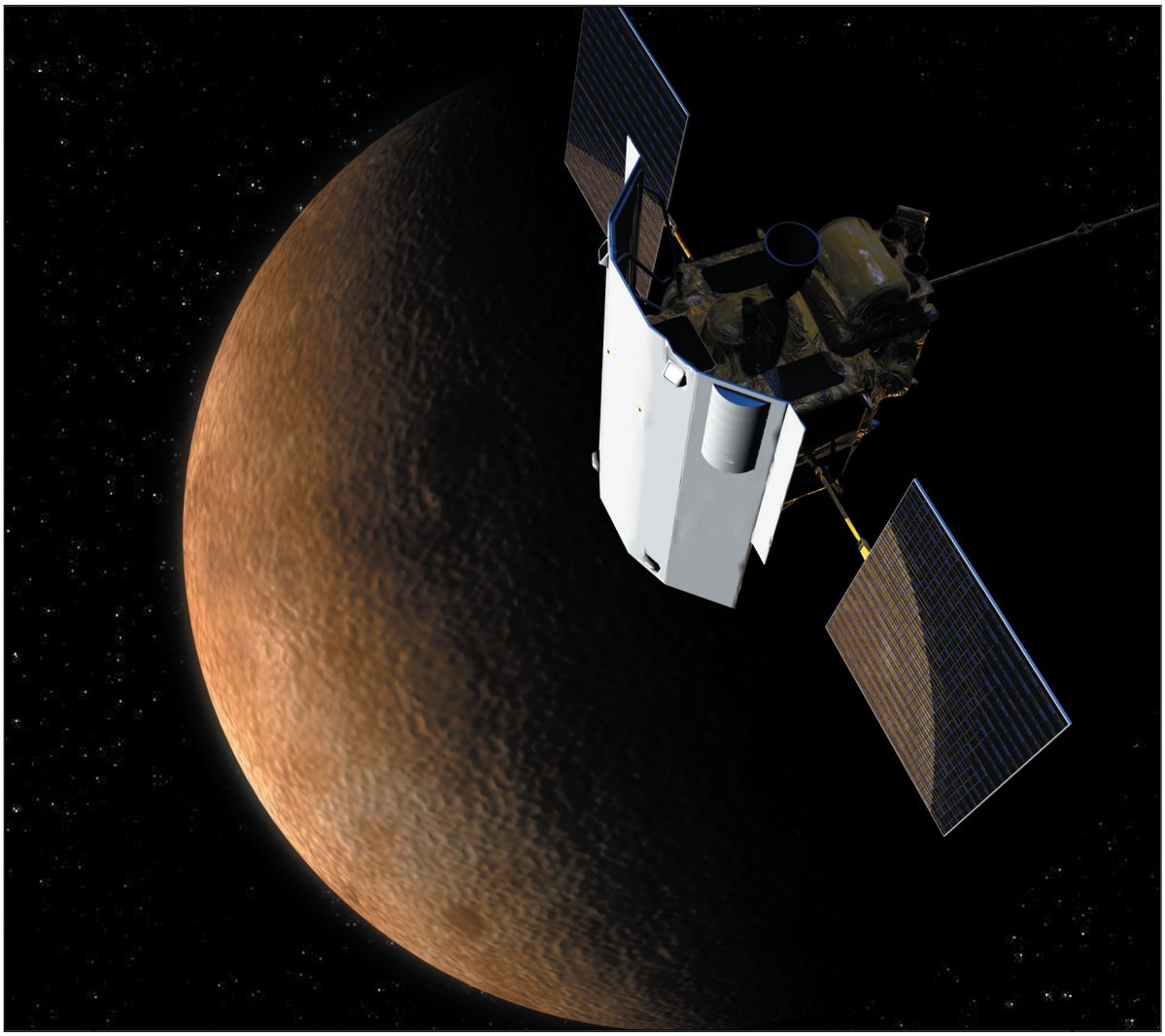
MESSENGER, short for MErcury Surface, Space ENvironment, GEochemistry and Ranging, will conduct the first orbital study of Mercury. The planet is the least explored of the terrestrial, or rocky, planets that also include Venus, Earth and Mars. Over one Earth year, or four Mercury years, MESSENGER will provide the first images of the entire planet and collect detailed information on Mercury's planetary and atmospheric makeup.

Launched in August 2004, MESSENGER will reach orbit around Mercury in March 2011. During its 4.9-billion-mile journey that includes 15 trips around the sun, MESSENGER will fly past Mercury three times before the journey's completion. These flybys — January 2008, October 2008 and September 2009 — will help MESSENGER match the planet's speed and location before easing into its final orbit.

MESSENGER is the seventh in NASA's Discovery Program of lower cost, scientifically focused exploration missions. NASA's Discovery and New Frontiers Program Office at the Marshall Center assists the Science Mission Directorate at NASA Headquarters with program management, technology planning, systems assessment, flight assurance and public outreach.

MESSENGER is managed for NASA by Johns Hopkins University Applied Physics Laboratory in Laurel, Md., which also built MESSENGER and operates the spacecraft.

The writer, an ASRI employee, supports the Office of Strategic Analysis and Communications.



NASA/Johns Hopkins University Applied Physics Laboratory/Carnegie Institution of Washington

Artist's concept of MESSENGER orbiting Mercury.

Three Marshall employees selected for NASA's Senior Executive Service Candidate Development Program

By Jessica Wallace

Three Marshall Center employees have been selected by NASA Headquarters in Washington to participate in the Senior Executive Service Candidate Development Program.

The program trains and prepares candidates for entry into the Senior Executive Service, the federal personnel system covering most top managerial and policy positions in the executive branch. The program is part of the federal government's and NASA's strategic human capital management and leadership development initiatives.

Larry Leopard, division chief of Propulsion Components Design and Development in the Engineering Directorate; Daniel Schumacher, manager of Exploration Flight Projects in the Science and Mission Systems Office; and Jim Turner, chief of operations of the Propulsion Systems Department in the Engineering Directorate, began the development program recently.

The curriculum is comprehensive and includes classroom work, interagency experience, on-the-job learning, mentoring, coaching, field experiences and Web-based learning with other agency candidates. A core benefit of the program is access to senior leaders throughout NASA, the federal government and private industry, who serve as speakers and workshop leaders.

The curriculum can take up to 24 months to complete. Candidates must then be certified as meeting the executive qualifications of the Senior Executive Service through the Office of Personnel Management's Qualification Review Board. Once certified, program participants can be appointed to Senior Executive Service positions, sometimes without competition.

The writer, an ASRI employee, is the Marshall Star editor.

What does being selected for the SESCDP class mean to you and how will this training benefit your career at NASA?

Larry Leopard

Larry Leopard, team member for 16 years

I am honored to have been selected and am looking forward to getting the most out of this highly regarded program. The program gives me a great opportunity to improve leadership skills through specialized training programs and developmental work assignments within NASA and also within industry.

Daniel Schumacher

Daniel Schumacher, team member for five years

The program not only provides an excellent opportunity to evaluate and enhance my skills as a leader, but also will allow me to meet and work with an exceptional group of people across NASA. The training and developmental assignments will give me a better understanding of the agency-level viewpoint, as well as NASA processes outside of my current engineering discipline. I feel very fortunate to have been selected for the program.

Jim Turner

Jim Turner, team member for 23 years

This is an opportunity to work and learn with an outstanding group of people from across the agency. I will be able to establish contacts and open communication paths between other NASA centers and Headquarters via the members of the class. There are outstanding formal training classes that will cover a wide range of leadership topics that are invaluable. There are the rotational assignments associated with the class that will help me experience some unique opportunities both within and outside of NASA, exposing me to work areas and practices that are different than what I've experienced in the past.

International Hispanic association names Marshall's Elia Ordonez its Woman of the Year

By Bill Hubscher

The Worldwide Association of Mexicans Abroad — helping to build an international network of Hispanic business owners — has recognized the Marshall Center's Elia Ordonez as the 2006 National Hispanic Woman of the Year for her support of Alabama's Hispanic community.

Ordonez is the Hispanic program manager for the Marshall Center's Office of Diversity & Equal Opportunity. The association honored Ordonez at its annual meeting this summer in Universal City, Calif.

"I felt honored to receive this award for something I do even in my spare time that is very close to my heart," Ordonez said. "I have such a passion for helping Hispanic people in this area and around the world. It is important to help open doors for children and let them see the opportunities they have. I want to help them get scholarships and go to college because they deserve the chance to succeed."

The Worldwide Association of Mexicans Abroad is a California-based organization founded in 1999 to help connect businesses owned by Hispanic people. In addition to its American chapters, the association has seven international chapters helping to establish links among the Hispanic businesses in the United States, Mexico and overseas in the effort to create new business opportunities.

Ordonez joined Marshall as a co-op student in 1989. She became a full-time NASA employee in 1990 as a program analyst for the Engineering Support Group.

In 1998, she was named a contract specialist and contracting officer for small purchases in Marshall's Office of Procurement. Ordonez joined Marshall's Office of Diversity & Equal Opportunity as the Hispanic program manager in 2000 and became a specialist in the administration of minority education resources. Ordonez works to promote the social and cultural development of Hispanic youth and helps make them aware of career opportunities offered by NASA.

In 2002, Ordonez co-founded the annual "Mi Futuro" Hispanic Youth Conference, sponsored by NASA and hosted by the Marshall Center. Each year, nearly 200 Hispanic high school students from Alabama visit Huntsville to interact with government representatives, astronauts, teachers, community leaders and representatives from Hispanic groups across the state.

Ordonez earned a bachelor's degree in business administration and management in 1990 from Athens State University in Athens, Ala.

Elia Ordonez

She is a founder of the Alabama Hispanic Association, which serves the needs of the Hispanic community in the state. She served as its vice-president in 2001-2002. The following year, Ordonez served on the board of directors of the Alabama Latin American Association, which provides statewide advocacy to improve education for the Hispanic community. She has been a member of NASA's Corporate Recruitment Team since 2003, encouraging students and recent graduates to pursue careers with NASA. In May 2006, Ordonez was invited by the Mexican consulate in Atlanta to represent Alabama in a community relations conference in Mexico City.

Ordonez has received numerous recognitions for her achievements during her NASA career, including Sustained Superior Performance and Special Service Awards. She was named a Space Flight Awareness Honoree in 2002 for her dedication to quality work and flight safety.

Ordonez has three children and resides in Madison, Ala.

The writer, an ASRI employee, supports the Office of Strategic Analysis and Communications.

Pulitzer Prize winner working in Marshall Center archives

Diane McWhorter

Pulitzer Prize-winning author Diane McWhorter is conducting research in the Marshall Center archives for a new book she is writing about Huntsville.

McWhorter won a Pulitzer Prize in 2002 for general nonfiction for her book "Carry Me Home: Birmingham, Alabama, the Climactic Battle of the Civil Rights Revolution." Originally from Birmingham, she now lives in New York City.

"Carry Me Home" has been called a major work of history and investigative journalism. It also is a personal memoir and a dramatic account of the civil rights era's climactic battle in Birmingham, as the movement led by Dr. Martin Luther King Jr. and others brought down the institution of segregation.

McWhorter says her new book will cover the Cold War arms and space race. She calls the development of the Saturn V rocket under Wernher von Braun, Marshall Center's first director, "the spine" of the book. "Diane has used Marshall archives to find numerous reports and articles about the Saturn V," said Marshall Center historian Mike Wright. "She has also used it to locate articles about life in Huntsville during the von Braun era."

Intrigued by Alabama as a focal point for civil rights and the space race, McWhorter sees Huntsville as an international story. Though she has found that many people outside the state have heard of von Braun, they are typically amazed to learn that he and his German "rocket team" were based in Huntsville. "There is something of a disconnect between von Braun and Alabama," she said. McWhorter says the new book will deal with social as well as technical history. It will deal with all of Huntsville including NASA, the Army, Sen. John Sparkman, and old Huntsville as well as civil rights.

"I have always had this project in the back of my mind," said McWhorter, who has made two trips and is planning a third to the archives.

Educated at Wellesley College in Massachusetts, McWhorter is a long-time contributor to "The New York Times" and writes for the op-ed page of "USA Today." Her articles about race, politics and culture have also appeared in "Slate," "The Nation," "People," "Talk," "The American Scholar" and other publications.

Marshall Center historian Mike Wright contributed to this article.

KSC

External tank is mated to twin solid rocket boosters

External tank ET-123 was mated to twin solid rocket boosters Oct. 13 at the Kennedy Space Center, Fla., for space shuttle mission STS-116 to the International Space Station. Space Shuttle Discovery will deliver a new crew member to the station. Astronauts will rewire the growing orbiting laboratory to bring online new power supplies generated by solar arrays installed during the STS-115 mission, which flew in September. The STS-116 launch is scheduled for no earlier than Dec. 7.

Malone

Continued from page 1

The third organization is responsible for the diverse activities in the Science and Mission Systems Office. The activities include lunar lander programs, station hardware and experiments, and programs discovering new frontiers.

The fourth group is responsible for audits, independent assessments and the discipline development of our entire organization. This group also has experts that work in the manufacturing and test areas to provide quality assurance and oversight of the activities that are performed there. They also inspect hardware as it comes into the center to ensure it meets specifications and requirements.

The fifth and last department is our industrial safety organization. They help to ensure the safety of the personnel and facilities here at the center. They develop the policies, train the workforce and facilitate safety activities at Marshall.

The Safety & Mission Assurance Directorate has an important role in supporting agencywide programs such as the Space Shuttle Program and the Constellation Program. Could you tell us about that role?

In a development project within a program, we have discipline engineers in the areas of system safety, reliability, maintainability and quality engineering. These engineers work with the design teams to perform analyses and trade studies that lead to safe and reliable systems for the new projects being built at Marshall. The expertise we provide contributes to better informed decisions, thus we get safer, more reliable systems, spacecrafts and payloads.

NASA uses contractors for many projects. Our organization has engineers assigned to the different projects, and even located on-site at contractor facilities. For example, we have safety and mission assurance engineers assigned to each one of the elements for the space shuttle propulsion systems.

There is a set of engineers that support the reusable solid rocket motor design engineering function. We help provide surveillance, oversight and quality assurance wherever it is needed — even in Utah at the ATK Launch Systems plant.

Safety and Mission Assurance evaluates hazards, critical items, failure modes and effects, design changes, and failures, and develops recommendations on how to correct deficiencies. For example, our directorate has a strong technical voice in recommending whether or not to proceed with a launch of the space shuttle.

There are three legs to the technical authority stool — the program or project, responsible for the overall safety, schedule and technical aspects; the Engineering Directorate, responsible for the engineering disciplines such as avionics, electronics and structures; and the Safety & Mission Assurance Directorate, providing the system safety, reliability and quality engineering and assurance expertise.

Between those three groups, there is a healthy tension as we often look at things in a slightly different way. All three organizations look at technical issues and have a part in the technical decision-making process. We have a very healthy, robust, final decision process that takes into account all of the key elements for assuring a successful flight or experiment.

See Malone on page 9

David Higginbotham/MSFC

When asked about the directorate's strengths, Malone says the center relies on Safety and Mission Assurance to have qualified, competent technical people for system safety engineering, reliability engineering, quality engineering, quality assurance, industrial safety, software assurance and auditing expertise.

Malone

Continued from page 8

We have just had two successful shuttle flights. Does this change the approach for the Safety & Mission Assurance Directorate for the upcoming missions? Have ways been identified to make the processes leading up to launch better?

I am extremely excited about the role Safety and Mission Assurance had in both of those successful launches. Recently, Center Director Dave King mentioned how impressed he is in the technical information and level of expertise that our directorate is providing in the decision-making process. The center director counts on Safety and Mission Assurance and the other two legs of the stool for recommendations to make informed technical decisions. The last two flights have shown that our directorate is making key contributions in providing sound rationale and recommendations.

During the last two space shuttle flights, NASA has exhibited a healthy environment of welcoming and encouraging dissenting opinions. The opinions are listened to, and are important. I believe Safety and Mission Assurance has a role in championing people with dissenting opinions to get their voices heard.

The successful shuttle flights provide good examples of Safety and Mission Assurance doing the right thing, supplying technical expertise in our disciplines. We have to continue to build on that and get better. There is always room for improvement.

The directorate provides safety and mission assurance expertise for new technologies and further space exploration. Have the 'lessons learned' with the shuttle flights impacted the way the organization will approach the responsibilities the directorate faces?

Providing technical expertise to shuttle launch decision processes is important, and it is just as important in developing new propulsion systems and launch vehicles. The Engineering Directorate and the new programs and projects are counting on our directorate to provide Safety and Mission Assurance expertise for design and development activities. Supplying the right technical expertise, the right people and the right number of people in the right place is just as important when making launch decisions.

We will take what we do, how we interface, how we react, and lessons learned and directly apply it today as we blend our knowledge, roles and responsibilities to project changes and hardware life cycles. Safety and Mission Assurance technical expertise is an important part of both design and operational phases in all programs or projects, whether it is for payloads or further lunar exploration activities. It's essential that we are staffed and trained to bring the right capabilities.

We also leverage the technical expertise of our support contractor workforce. If our directorate does not have enough people, we rely on our local contractor for additional expertise. Building a strong civil service-contractor team helps make programs and projects, such as Constellation, shuttle, space station and future lunar exploration activities successful. These partnerships also contribute to the success of the center and agency.

What do you feel are the greatest strengths of the Safety & Mission Assurance Directorate?

System safety engineering, reliability engineering, quality engineering, quality assurance, industrial safety, software assurance and auditing expertise — people count on us to have qualified, competent technical people to do the things we need at the center. That is our strength.

It can also be our weakness if we don't continuously develop and help the Safety and Mission Assurance workforce to continue to build experience and increase competence in their jobs.

For example, we have very competent system safety and reliability engineers that partner with the Ares I design teams today. They perform hazard analyses, which are being used by Ares design engineers to make key design decisions on how to build certain parts of the Ares I vehicle. We also have industrial safety specialists with OSHA knowledge to help make Marshall a safer place to work.

Recently our directorate developed a managers' training assessment program. A manager can answer questions about their employees' job functions, and the software program will produce a safety training needs list tailored to that specific employee.

We also have quality assurance experts in test setups and proper documentation. Many times, the discipline experts reside in Safety and Mission Assurance and are critical to the programs and projects, yet are part of supporting the daily business at the center.

What are the biggest changes, both positive and negative, experienced in the Safety & Mission Assurance Directorate in the last few years that will be beneficial in the future?

We have developed a comprehensive discipline training roadmap program for discipline experts — novice to expert classification. It includes classroom and online training requirements, on-the-job training and document knowledge. The training also helps ensure that the trainee understands all of the documents necessary to do the job.

The approach is proactive and starts with the managers' ability to make sure their people have the tools such as resources, training, the right amount of people and needed software, to do the job. This is the root of our success at Marshall.

See Malone on page 10

Malone

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The center is observing Safety Day this week. Why is this day important to Marshall?

I think everyone here at the center believes that safety and the work we do here at NASA is important. They want not only what they do at NASA to be safe, but everything they do in their lives. Often we are too busy with our daily lives to stop and think about safety. I think, at a minimum, we need to take half a day and re-emphasize the importance of safety, and how it makes a difference in our lives. We need to refocus on the safety decisions we make every day — whether it's the speed we drive in our car or what system we use on the new launch vehicle.

This year, we are focusing on both workforce safety and mission safety. Gene Kranz, retired NASA flight director and manager, will speak about his organization and the training and development of the people in his group while he was at NASA. Strong, capable, well-trained people supporting him were key to his success.

Safety Day is more than reminding people to hold the handrails, although this is more important than people imagine. We also care about the safety of our mission and this year we will have a good blend of both.

The directorate has a big role in safety at the center. What are the goals for enhancing safety and what changes do you see in this area in the next four to five years?

At our directorate's off-site each year, we discuss what we can do to improve our organization. Training and development of the workforce always is brought up and is a key factor in the future of our directorate.

You also have to take care of your people and reward them. I go by three principles of management — treat others as you want to be treated, make sure your people have the tools needed to be successful and recognize the people of your organization.

There is an upward trend in how Safety and Mission Assurance is being viewed by our customers. We have set a pretty strong standard with the quality we bring to the programs and projects at the center. We are dedicated and will continue to improve.

Industrial and mission safety is a never-ending process. It is easy to have successes, but we can not stand down. We have to be vigilant. Ever-constant efforts to improve are the only way we can help reduce the risk for future accidents.

Our safety, health and environmental metrics are the best they have ever been, and that is a signal to me. I don't want us to relax. If we do, that is when the accidents happen. We start to think we don't need all the processes, and that is when danger sets in and risks go up. We need constant vigilance; ever improving organization capabilities; continuous training and communication; and a healthy tension between our directorate, engineering and the programs with flight projects. That's the way we are going to be safe and have mission success. We can't let our guard down. Increase our expertise and celebrate accomplishments, but never relax.

Rita Roberts, an ASRI employee who supports the Office of Strategic Analysis and Communications, contributed to this article.

Obituaries

Thomas Allen "T.A." Gilliam, 76, of Huntsville died Aug. 26. He retired from the Marshall Center in 1990 as a visual information specialist. He is survived by his wife, Ruth Enzweiler Gilliam; two sons, Thomas Allen Gilliam Jr. of Huntsville and Mark Robert Gilliam of Harvest; one daughter, Kristen Leigh Gilliam of Huntsville; and one brother, Richard H. Gilliam of Huntsville.

James Lewis Logan, 74, of Meridianville died Aug. 30. He retired from the Marshall Center in 1987 as an aerospace engineer. He is survived by his wife, Jo "Bratsie" Logan; two daughters, Emily Hoffman and Julie Lake; and two sisters, Pluma Simpson and Estellene Clayton.

Clyde D. Baker, 80, of Guntersville died Sept. 4. He retired from the Marshall Center in 1973 as chief of the Astrodynamics and Guidance Theory Division. He is survived by his wife, Mary Bennett Baker; one daughter, Susan Baker of Gardendale; one stepson, Elliott Bennett of Guntersville; one stepdaughter, Liz Traylor of Pensacola, Fla.; and one brother, Carey Baker of Rainsville.

Edward D. Mohlere, 93, of Huntsville died Sept. 6. He retired from the Marshall Center in 1977 in technical management in the Office of the Director. He is survived by two sons, Richard Mohlere and Michael Mohlere; and one daughter, Melinda Robertson.

Classified Ads

To submit a classified ad to the Marshall Star, go to Inside Marshall, to "Employee Resources," and click on "Employee Ads — Submit Ad." Ads are limited to 15 words, including contact numbers. No sales pitches. Deadline for the next issue is 4:30 p.m. Thursday.

Miscellaneous

Walnut china cabinet, $275; sofa, 11 ft., $200; large copper collection, $400. 852-6952

Full bed, $100; twin bed, $100; computer desk, $50; sofa, $100; student desk, $50. 534-0939

Washburn X50ProQ guitar and case, Seymour Duncan pickups, $500; Boss TU-2 guitar tuner, $80. 256-655-6293

TiVo wireless G USB network adapter, use with TiVo Series 2 DVR only, unused, $45. 489-6320 leave msg.

Two gas-powered scooters, $175 for both. 534-8414

Golf clubs, men's left-handed, Woods 1/3/5, Irons 3-9, PW, SW, Putter, no bag, $125. 882-3983

Pneumatic computer chair, light blue-gray cloth, high-back, swivel/tilt, wood arms, $25. 859-0101

Kirmen Persian rug, Belgian weave, 8'x11', nice design, stored, clean, $500. 534-8029

Pony saddle & bridle, $25. Athens 256-232-4168 Ken Fikes

3-piece sectional, two recliners built-in, full-size hide-a-bed, small storage compartment, hunter green. 256-508-5250

36" Zenith TV and solid oak entertainment center, $650 OBO. 256-479-5930 for questions/pics

'Hit-A-Way' tennis/baseball practice pole with tennis trainer kit, $110. 337-2534

Amana electric dryer w/electronic display, white, 8-yrs old, $100 OBO. 325-3449

Manual treadmill, air resistance cushion deck, quiet, no motor, $99. 961-1603

Extra heavy-duty metal paper cutter, 19"x19", $25; stadium seat, $7. 837-6776

Four plots in Tri-Cities Memorial Gardens, Florence, $4000. 256-436-1106

"This End Up" furniture, natural, bed, desk, bookcase, toychest, entertainment center, chest, etc., $900. 350-1292

Boyds cat collection, 29 various plush, smoke-free home, most have tags, $125. 256-468-5680

Longaberger housekeeping basket w/liner & protector, $280 OBO. Call 509-2536

Two large sky kennels, $60 each or both for $100. 539-0777

Nike Sasquatch driver, 9.5 deg loft, stiff flex, $150. 859-8814

Workstation, $90. 881-9084/pics available

1974 Glassmate 16-foot bass boat, 85HP Evinrude. No seats or depth finder, $500. 883-9884

Grill, roll-around, Teflon surface, integrated ice chest, Grill2Go/Fire-N-Ice, $100 OBO. 233-0705

Oak rolltop desk with drawers, file hanger, originally bought $950, asking $300. 457-3545 or 539-5995

Hardwood flooring, 3/4" nail-down red oak, approx. 900 sq ft, $2.50/sq ft. Dave 227-0339

Microwave oven, $25; portable spa, $30; bedspread full size, $30; queen bedspread/drapes, $60. 837-1191

Rossignol 180cm skis, Tyrolia bindings, poles, Large size 6 1/2 boots, $300. 256-586-7375

China cabinet, glass shelves, interior light, lots of storage in base, 83" x 54" $100. 682-2550

Used exterior wood fixed louver shutters and interior adjustable bi-fold stained shutters, best offer. 256-797-3780

Diamond solitaire, round, .50 ct, new, $1050. 430-0755

Vehicles

1971 Ebbtide fishing boat & trailer, 40HP outboard, 13' long, 2 chairs, $1,000. 885-2293

1987 Plymouth Voyager LE, 2.6L, red, a/c, 181K miles, $800. 527-8116

1996 Mazda MPV, 189K miles, $1,500. 520-1970

2003 Jetta GLS, leather, heated seats, 5-speed, sunroof, 45K miles, $14,500. 651-9661

1971 Chevy pickup, rare, SWB, 4-wheel drive, red, $5,800. 653-9320

2001 Ford Windstar SE, loaded w/leather seats, 97K miles, $7500. 256-497-3951

1998 Corvette Roadster, 13K miles, triple black, auto, a/c, sell at loan value, $26,500. 837-1774

2005 Kia Optima LX, 658 miles, $15,000. 755-7221

2004 Ford Explorer XLT, leather, fully loaded, 38K miles, transfer at no cost. 256-797-1730

2006 Chevrolet Impala LS, 3.5LV-6, red exterior, black cloth interior, 14K miles, $16,500. 256-347-2501

2004 Toyota Tundra SR5 Doublecab, towing package, LE rims, running boards, Line-X bed cover, $21,000. 714-3742

2000 SeaDoo GTI with trailer, cover & service manual, $2300. 683-3745

1999 Honda CR-V EX, auto, silver, 89K miles, 4WD, many accessories, garaged, $9000. 850-4185

1987 Mazda RX-7 5-speed, FI Wankel, PS, a/c, sunroof. 110K miles, daily driver, $2500. 468-2092

1995 Toyota 4Runner SR5 4x4, green w/tan leather, new tires, auto, 135k miles, $5350. 256-461-8854

1989 Toyota Corolla, 159K miles, 4-door, sunroof, red, $2,500 OBO. 651-2429

1998 GMC Yukon SLT, maroon w/tan leather, heated seats, auto, 4WD, $8,500. 682-6326

2004 Chevy Silverado LS, Ext. Cab, 4x4, red, 63K miles, $18,500. 256-565-9918

2001 Suzuki SV650S, 5K miles, blue, 2 bros exhaust, $4K OBO. 256-503-7327

2004 Coachman Catalina 32' Travel Trailer w/super-slide/ queen bed/sofa-sleeper, full kitchen and bathroom, $15,500. 256-426-0856

Wanted

Sears pressure washer, gas powered type, motor not needed, only water pump. 534-4968

Doghouse for 60-65 lb. dog, will pick up. 256-468-4107

Free baby items like clothing, furniture, car seat, swing or crib. 655-1733

Baritone/Euphonium for advanced student musician. Decent, playable condition, reasonable price. Call Monica at 874-0410.

Free

Free to good home, mix-breed puppies, 8-weeks old, first shots, dewormed. Call 653-9082

Shuttle Buddies to meet Oct. 23

The Shuttle Buddies will meet at 9 a.m., Monday, Oct. 23, at Mullins Restaurant on Andrew Jackson Way. For more information, call Deemer Self at 881-7757.

Marshall employees help serve meals at Downtown Rescue Mission

Doug Stoffer/MSFC

Serving lunch at the Downtown Rescue Mission in Huntsville as part of the Combined Federal Campaign's Community Service Days on Oct. 17 are, from left, Linda Dunivant of Marshall's Spacecraft and Vehicle Systems Department, Peggy Williamson of the Accounting Operations Office, Teresa Danne of the Policy and Management Controls Office, and Shirley Moore of the Accounts Payable Office. The CFC is an annual initiative by federal and military personnel to raise money for local charities. The Downtown Rescue Mission, which provides food and shelter for men, women and children in the Huntsville area, is one of 10 Tennessee Valley agencies that requested volunteers during Community Service Days.

Marshall employees can sign up through Nov. 3, to donate time and skills by volunteering at local organizations during regular work hours. Employees also can show their support for CFC through cash, check or payroll deduction donations. The campaign continues through Nov. 17. To register for Community Service Days or for more information about the campaign, visit http://cfc.msfc.nasa.gov/ .

Safety Day event schedule

Time	Event	Location
8 - 9:15 a.m.	Gathering Hour - "Coffee and Kranz"	Building 4316
9:15 - 9:30 a.m.	Begin seating	Building 4316
9:30 - 10:30 a.m.	Gene Kranz - Keynote Speaker	Building 4316
11 a.m. - 1 p.m.	Mission Safety Focused Group Discussions	Scheduled by your group
2:30 - 3:30 p.m.	Supervisor's Safety Forum	Morris Auditorium

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