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MARSHALL STAR

Serving the Marshall Space Flight Center Community **Sept. 4, 2008**

NASA's Michoud Assembly Facility escapes wrath of Gustav

Other storms being closely watched for impact to space shuttle operations at Kennedy Space Center

By Sanda Martel

NASA's Michoud Assembly Facility in New Orleans experienced sustained winds of 50-60 mph, with gusts of up to 89 mph, when Hurricane Gustav passed to the west of New Orleans on Sept. 1.

Michoud is a NASA-owned facility managed by the Marshall Space Flight Center. The world-class manufacturing facility provides vital support to NASA exploration and discovery missions. Michoud manufactures and assembles critical hardware components for the space shuttle and exploration vehicles under development at Marshall and other NASA field centers.

Michoud is below sea level, located alongside a deep-water canal at the intersection of the Gulf Intercoastal Waterway and the Mississippi River Gulf Outlet. It is protected from hurricane surge by a levee along the waterfront. The factory site is kept dry by a pumping station. Initial reports following the hurricane indicated 1.5 inches of rainfall accumulated on the Michoud grounds, but high-capacity pumps, designed to remove excess water, performed normally, according to a Marshall Center Emergency Operations Center Update on Sept. 2. The water level in the Gulf Intercoastal Waterway never rose to within 5 feet of the top of the levee that protects Michoud from the Gulf of Mexico waters.

There were no injuries to the 64-person storm crew that stayed on-site to monitor the hurricane. Called the ride-out crew because they stay behind to "ride out the storm," its members include NASA civil service, Lockheed Martin contractor employees and Coastal International Security personnel.

"We have an experienced ride-out crew and they executed the emergency plan for hurricanes just the way they were supposed to," said Clyde "Chip" Jones, Michoud's chief operating officer.

"We were fortunate to have missed the worst of the storm," he

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Marshall-led team completes major test of new potentially life-saving hurricane sensor

By Dauna Coulter

A team led by the Marshall Space Flight Center has completed a major test of an innovative new hurricane sensor that could help reduce property damage and even save lives.

HIRAD, short for Hurricane Imaging Radiometer, will use state-of-the-art technology developed at the Marshall Center to scan large areas of the ocean for microwave signals to give weather forecasters a more detailed look at a storm's winds and rain, according to Tim Miller, a lead meteorologist at Marshall and the HIRAD principal investigator.

"From HIRAD readings, we can map out wind speeds on the ocean's surface, which correlate to hurricane wind speeds within the eye wall and elsewhere," Miller said. "We can also determine how

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David Higginbotham/MSFC

David Simmons, Hurricane Imaging Radiometer engineer at the University of Alabama in Huntsville, and Courtney Buckley, a Universities Space Research Association scientist, adjust receiver boxes on the rear of the HIRAD test antenna before a test run in Marshall's Anechoic Chamber. The chamber's damping material helps minimize microwave reflections or echoes and eliminate electromagnetic interference.

Susan Cloud appointed center ombudsman

Ombudsman Program helps Marshall resolve work force issues

When feeling the need to address issues and concerns related to mission success, Marshall Space Flight Center civil service and onsite contractor employees can now turn to Susan Cloud.


Susan Cloud

Cloud, special assistant to the director in the Office of Human Capital, has been appointed as the new center ombudsman. Barry Musick, assistant to the director of the Engineering Directorate, has been reappointed alternate center ombudsman.

Established in 2005 as a result of the 2003 Columbia Accident Investigation Board Report, the NASA Ombudsman Program is an informal, independent, confidential and neutral means of communicating and facilitating the resolution of safety, organizational performance, and mission-related issues without fear of retaliation.

The program provides:

- A safe place to raise concerns
- An opportunity to be heard
- An opportunity to consider other options

An ombudsman can serve as a link, when appropriate, between an employee and management to resolve an issue by actively listening to and discussing concerns while advocating for a fair resolution process. At the discretion of the ombudsman and in keeping with the confidentiality principle, an issue can be elevated to the center director.

"We are here to provide assistance to civil service and contractor employees by helping them think through problems, giving them options and finding solutions to issues," said Cloud. "Our responsibility to Marshall employees is to serve as a neutral 'third party' in conflict resolution. We are not here to render judgments on others. Barry and I have a strong interest in civil service and contractor employee needs, and want to provide service where we can."

An Ombudsman Program brochure is now available and will be distributed to each center organization by mail.

The preferred method of contacting an ombudsman is a personal visit or by phone. Sending an e-mail message could potentially compromise confidentiality.

To contact Cloud, call 544-5377. Musick can be reached at 544-1002.

Additional information about the program can be found in NASA Policy Directive 2025.1 at http://nodis3.gsfc.nasa.gov/.

New Marshall domain user IDs coming this month

Beginning this month, all Marshall Space Flight Center domain accounts will be renamed to the new agency user ID standard.

The format is based on a new agency-wide format. Each user ID will be unique agency wide. This change will affect all Windows, Macintosh and Windows NASA Operational Messaging and Directory Services — or NOMAD — users who log into their machines using a Marshall domain user account MSFC\<UserId>. This user ID also is referred to as "IDS UserId" or "ODIN UserId."

The user IDs — which will not change any passwords — have been assigned to all users.

To view yours, visit https://webdir.nasa.gov/dir and type in your name. Please note that agency user IDs do not contain any punctuation.

The agency user ID standard will take effect beginning this month. Marshall account users will receive an e-mail notification of the day this change will occur.

When the user IDs change, users will be required to reboot computers and re-enter user credentials to some applications such as NOMAD. These are one-time actions, and instructions will be sent in an e-mail notification.

For questions concerning this activity or additional assistance, call the ODIN Help Desk at 544-4357, Option "7." The Help Desk is prepared to assist all customers with any login issues or general authentication problems.

You may also send an e-mail to MSFC-NCAD-Administrator@mail.nasa.gov.

Hurricane

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said, noting that facility preparations before the hurricane ensured that damages were kept to a minimum.

"We had excellent cooperation from Marshall's Emergency Operations Center and a wide range of other Marshall organizations," he added.

Based on initial assessments, there was no damage to flight hardware or support equipment at Michoud. Some of its facilities did suffer minimal damage cased by wind and water intrusion. Major plant infrastructure systems became fully operational Sept. 3.

A limited number of Lockheed Martin personnel will begin a detailed inspection to restart production of space shuttle external tanks, which is targeted to begin Sept. 8. That schedule will depend on the ability of Michoud's workforce to return to their homes in the New Orleans area.

NASA managers are keeping an eye on other hurricanes developing in the Atlantic Ocean, and the impact they could have on space shuttle operations at the Kennedy Space Center, Fla.

Space shuttle Atlantis' rollout to the launch pad at the Kennedy Center is being delayed due to the uncertainty of the path of Hurricane Hanna. The targeted launch date of space shuttle Atlantis' mission to the Hubble Space Telescope for a fifth and final servicing mission, STS-125, is Oct. 8.

Martel, an AI Signal Research Inc. employee, supports the Office of Strategic Analysis & Communications.

Moving toward NASA's 50th anniversary ...

NASA marks its 50th anniversary this year on Oct. 1, 1958. T. Keith Glennan, who served as the agency's first administrator, issued a proclamation on Sept. 25, 1958, noting that the new agency would come into existence Oct. 1 after the "close of business" on Sept. 30, 1958.

Classified Ads

To submit a classified ad to the Marshall Star, go to Inside Marshall, to "Employee Resources," and click on "Marshall Star Ad Form." Ads are limited to 15 words, including contact numbers. No sales pitches. Deadline for the next issue, Sept. 11, is 4:30 p.m. Thursday, Sept. 4.

Miscellaneous

Antique hand-hewn spinning wheel, 19th century, from Cherokee County, Ala., $300 obo. 776-7249

Tennessee football tickets, Sept. 13, UAB; Oct. 4, Northern Illinois; Nov. 8, Wyoming, regular price. 652-2787

Milkglass vase, $30. 509-2536

Dog pen, protective cover, 7.5x7.5x4, $230. 683-7007

Garbage compactor, residential, brown, $300 obo. 852-5595

Maytag washer, dryer, white, $400. 259-1523

Timberline mountain bike; wheelbarrow; Sunbeam Grill Master grill; Kenmore refrigerator, washer, dryer. 479-9762

Portable kitchen island, granite top, $150. 527-8116

Oak entertainment center, fits up to 46-inch widescreen, $500; Sears X-cargo carrier, $125. 655-2548

Mirage speakers, two OM-7 towers, two Omnisat satellite speakers, stands, $1,500. 679-2165

Antique Art Deco wardrobe, clothing rod, shelves, $300 obo. 882-3895

Baldwin piano, black, upright, $700. 338-9840

Futon bunk bed, twin/full, black metal, $100 obo. 425-3727

1915 Edison Disk phonograph, Model A-250, working condition, $600. 461-0903

Trek 1200 56cm road bike, $300 obo. 843-513-7939

Two John Deer commercial mowers, $4,000 each. 859-9940

Full-length sofa, love seat, $350. 541-3485

Baby Einstein aquarium floor gym, $35; activity center, $40. 880-3737

AMF slate-bed pool table, accessories, $600; three-piece pool room furniture, maroon oak, $150. 656-0559

Firewood from downed trees, you cut and haul. 325-0085

Maytag washer/dryer set, $250. 679-6319

High-back camper shell, for 8-foot truck bed, $75 obo. 658-3960

Tweed sofa, chair, ottoman, $60; sofa tables, $90; cherry entertainment center, $200. 837-4246

Vehicles

2007 Camry LE, moonroof, electric windows/seats, four cylinder, 15k miles. 614-3190

2006 BMW 325i, white/tan, 37k miles, $23,900; 2002 Nissan Frontier, king cab, $8,500. 883-6894 or 468-6894

2006 Mazda MX-5 Miata, silver, new tires, recent service, 18,600 miles, $16,850. 714-3742

2005 Nissan Altima, 2.5 S, 9190 miles, $15,000 OBO, 539-7122

2005 Ford Five Hundred Limited, pueblo gold, leather, moonroof, 44k miles, $15,000. 975-1667

2002 GMC Envoy, black, sunroof, luggage rack, $6,800. 776-9165

2002 Suzuki XL, seats seven, $7,400 obo. 783-6278

2002 Dodge Grand Caravan SE minivan, DVD, leather, chrome wheels, electric sliding doors. 852-6952

2001 Kawasaki Bayou 300 4x4 four wheeler, $2,700. 828-9798

2000 Maxima GLE, tan, leather, CD, sunroof, 111k miles, $7,545. 603-6178

1999 Toyota 4-Runner Limited Edition, white, brown interior, sunroof, CD, A/C, $7,000. 694-1260

1999 Suzuki Intruder 800, 10k miles, helmets, leather, $4,000. 837-6776

1998 Volvo V70, 213k miles. 509-0480

1996 Yahama WaveRaider 1100, two seater, three cylinder, 110HP, trailer, $1,800. 558-6667

1987 Pontiac Fiero, low miles, just serviced, $1,500 obo. 658-8103

Wanted

Bowling teammates, needed for Wednesday evening Redstone league, starts in September, men, women, couples. 417-5265

Giant clam shell, half. 533-0503

Bunk bed, ladder. 539-4449

Portable pressure washer. 313-0674

Excavation work for a swimming pool. 468-0854

410-gauge shotgun shells, any shot size or slugs, 2 1/2 or 3 inches. 828-1234

Nintendo DS Lite. 658-9784

Free

Two parakeets, cage. 232-1315

HIRAD

Continued from page 1

heavy the rain is and the temperature of the ocean surface — more indicators of hurricane characteristics."

Strong winds sweep and swirl across ocean waves, whipping up foamy white froth. The imaging radiometer measures microwave radiation naturally emitted by this froth; the stronger the winds, the more froth and the more microwave radiation.

The imager offers greater flexibility, efficiency and data sampling than other existing sensors. The system is compact and light-weight, suitable for an airplane or small satellite mission. The compact size is made possible by HIRAD's "stacked patch" design — sensors are arranged in postage stamp-size stacks, four sensors per stack, placed in 10 arrays, or rows. This design allows the imaging radiometer to sample a wide swath of ocean surface during each pass. The sensor stacks allow the imager to sample, simultaneously, multiple microwave frequencies — something no other sensor can do.

"The instrument currently used by the National Oceanic and Atmospheric Administration can only measure one line of surface winds directly under an aircraft," said Miller. "HIRAD can make observations over a much larger area with each pass. Its observations will not only give weather officials more and better real-time information on storm strength, but by mapping the two-dimensional structure over an area tens of kilometers wide, it will also help them determine how the storm will develop and where it will go. All of this adds up to more advanced warnings to the public."

Marshall's Robbie Hood, a former HIRAD principal investigator who is still involved in its development, explained how the instrument "sees" through clouds. "The frequencies we use penetrate through the clouds and rain," she said. "By using four of those frequencies, we can separate the effects of wind speed, rain rate and sea surface temperature and measure each accurately."

Conducted in Marshall's Anechoic Chamber, the recent tests will prove the soundness of the sensor's concept and design. Lead engineer Mark James explained why the chamber was used for testing.

"The chamber uses a radio frequency damping material originally derived from acoustic damping designs used in sound-proof rooms," he said. "This material helps minimize microwave reflections, or echoes, and eliminate electromagnetic interference, providing a very 'quiet' area for testing to prevent interference from other sources. That's a must for us to be able to fully characterize the HIRAD antenna."

David Higginbotham/MSFC

Mark James, Marshall's Hurricane Imaging Radiometer lead engineer, adjusts components on the rear of the HIRAD antenna before a test run.

According to Hood, the imaging radiometer performed well in the tests. "We are still reviewing our test data, but so far HIRAD is passing with flying colors."

The team's next challenge is to build flight hardware.

"We have to build the real thing," said Miller. "This is just a test unit — a laboratory prototype. The real thing will be more compact and lighter weight than this one."

The team hopes to have the "real thing" ready to fly checkout tests on a NASA airborne mission by fall 2009. They are is aiming to fly the first hurricane experiment, a NASA-sponsored aircraft field experiment, in 2010, but HIRAD will have to compete with other instruments that might be considered for the flight.

"We've got top-notch personnel who are working long hours to help that happen," said Miller. "We all know that HIRAD is an extremely valuable instrument that needs to be placed in the hands of weather officials so it can do its work — saving lives."

Coulter, a Schafer Corporation employee, supports the Office of Strategic Analysis & Communications.

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