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on-line

<http://www.lockheedmartin.com/michoud/>

# Mission Success Bulletin

## Full court press continues on second flight tank, ET-118

With less than two weeks to its scheduled May 30th delivery date, ET-118 finds itself the center of attention at Michoud Operations.

ET Project Vice President **Wanda Sigur** reports the tank has three critical paths: Developmental Flight Instrumentation (DFI), bipod and bellows.

DFI data will provide more information on flying without Protuberance Airloads (PAL) ramps. DFI includes accelerometers, which gauge loads, inside the cable trays on the tank. That work scope includes removing cable tray covers; bonding the accelerometers and other instrumentation; building wire harnesses in the back shop, assembling them and checking them out; routing the wires inside the Intertank to gather data and then bringing the wires out through the connectors.

Bipod work has changed little from the original Return to Flight 1 tank that flew this past summer with a bare fitting, heaters and no foam ramp. Additional work on RTF 2 concentrates on bonding and sealing wire harnesses and cables.

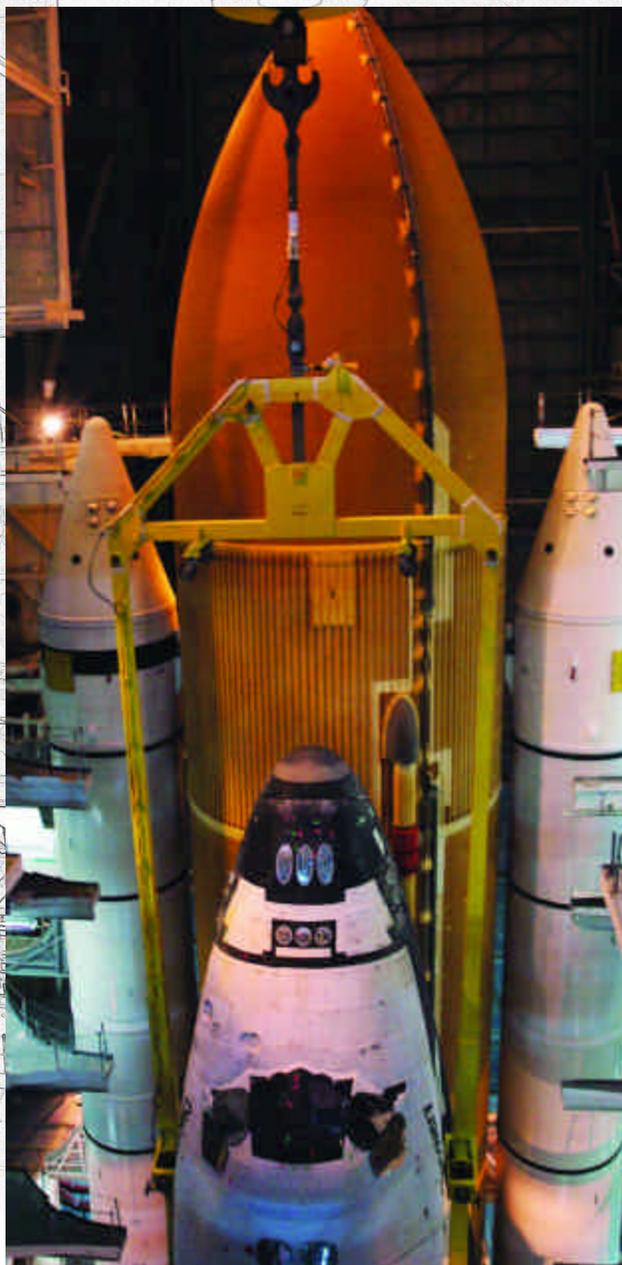
The bellows work involves TPS modifications, either pouring or spraying drip-lips depending upon which of the three bellows stations is in work – plus the installation of a heater at one location.

Sigur acknowledges the challenge to the tight timeline, noting that ET-118 is the first tank to incorporate both Return to Flight 1 and 2 modifications.

“It’s a lot of work to do, but we’ve done it before,” Sigur says. “As always, our crew is very much focused on the job ahead of us.”

Besides the critical path elements, ET-118 work has also included removal of the PAL ramps, modifications to the flange and longerons, and additional venting on the Intertank.

When all the work is accomplished, the tank will ship to Kennedy Space Center to serve in a back-up role to the STS-121 launch in July. The Solid Rocket Booster ship that will tow ET-118 to KSC arrives at Michoud next week with the final tank, ET-117, returning from Florida for retrofitting.



*Following the mate of the Orbiter Discovery with the ET-119/Solid Rocket Booster stack last week, the Space Shuttle will roll to the pad Friday in anticipation of a July launch. Testing in support of ET-119 continues, but most design, certification and verification tests should be completed in late May. A Design Certification Review is scheduled in early June, leading to a Flight Readiness Review in mid-June.*

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## ET-118

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At KSC, Michoud technicians from New Orleans with KSC Operations support will replace the engine cut-off (ECO) sensors on ET-118, just as they did on ET-119 in late March. The ECO sensor work will not affect the shuttle schedule.

Most of the testing under way now relates to ET-119,

but some testing directed at ET-118 evaluates the possibility of foam loss on ice frost ramps. Sigur says one option if needed is a quick modification in support of ET-118.

Moving down the line to the third flight tank – ET-123, NASA and Lockheed Martin are assessing an updated delivery date. Originally, the delivery date was August 24. Then it moved to August 7.

Sigur explains ET-123's date will move to the right because of the extent of resources applied to ET-119 to support modifications at KSC, the huge quantity of tests relating to ice frost ramps, periodic Cell A problems on ET-123 and employee availability in today's post-Katrina environment.

"Over the last couple of months, we've had a few

distractions and have had to re-direct our primary energy toward resolving things like ice frost ramp issues and emerging work at KSC.

"I'd like to say a lot of it is behind us, and I think as we get closer to flight and get through some of these critical milestones, we'll be able to start cranking out tanks again." ■

# NASA & ET management join to gut 37th home

*Crew of 12 to fly in from Sunnyvale for a week of volunteer support*

It's crunch time again. Despite an approaching deadline, employees make time to recover their community. Simultaneously, one team puts the finishing touches on ET-118, while another team helps a fellow employee take the first steps toward rebuilding.



*NASA ET Program Manager John Chapman takes down a light fixture.*

House Busters continues to be a success because working together works.

This past Wednesday, the House Busters crew crossed another one off the list – the home of **Betty Lopez** in Chalmette. People make time for the things that matter, regardless of pressing deadlines and a finite amount of time in which to accomplish them. ET Vice President **Wanda Sigur** said the House Busters event had an effect on all those who came to New Orleans to help,

including NASA ET Program Manager **John Chapman**.

"Seeing their expressions of concern with the nature of the neighborhoods in New Orleans, seeing their sympathy at what folks have to go through in making decisions about lost goods, seeing their excitement at being able to contribute – all those things made it a special day," Sigur summed up.

"The experience is nothing short of amazing to have this group of people that included NASA and Lockheed Martin managers, and other Michoud employees come to my house and work so hard," said Lopez. "We even had two Tulane students who made time during final exams to help us."

The crew hit the Lopez house "like a band of hornets" as House Busters organizer **Gordon Dyer** describes it. "If six people had shown up, it would have taken us three days, but with 22 folks – our second largest turnout ever – we knocked it out in six hours."

Documenting everything was a corporate television crew from "LM1" who came to New Orleans to report on the House Busters effort. The story will be the Focus story of next month's show.

Hurricane season approaches, the next launch is on our doorstep, the heat of summer creeps in, and yet, Michoud employees continue working together with more outside help joining the cause.

A team of Lockheed Martin employees arrives this week from Sunnyvale for a week of House Busting duty. Their presence, as well as the participation of future volunteers, will help substantially complete those homes on the list with the greatest need before House Busters concludes its "busting" phase on July 1. ■



*Lockheed Martin ET Program Manager Wanda Sigur scoops up sheetrock.*

# Are you ready for hurricane season?

The city of New Orleans has posted its 2006 Emergency Preparedness Plan at <http://secure.cityofno.com/portal.aspx?portal=46&tabid=38> The plan has many different ingredients and includes evacuation guidelines, maps and personal plans for food, pets and boats.

A Family Disaster Plan is also part of the city's hurricane preparedness website and reminds residents to have, among other things, enough drinking water, prescription medicines, cash, flashlights, batteries, insect spray, matches, a portable radio, first aid kit, ice chest and gasoline for a vehicle.

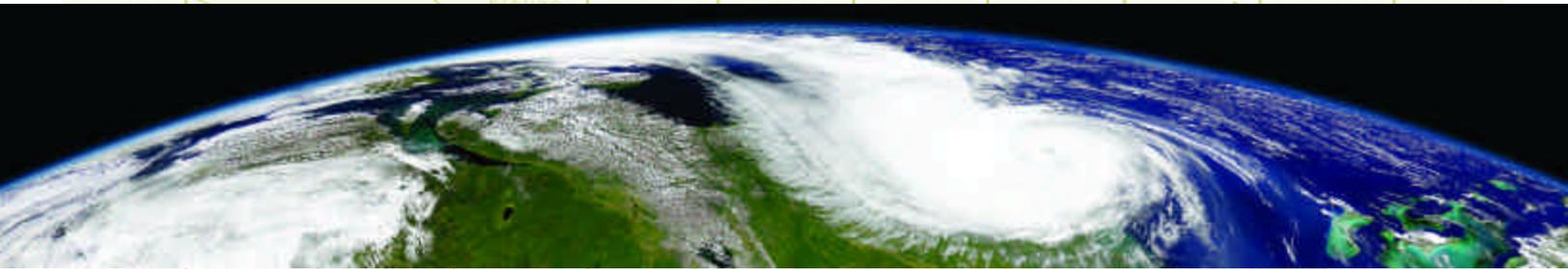
Michoud Operations employees can always check the status of the facility by going to [www.mafstatus.com](http://www.mafstatus.com) or calling 257-1MAF or 1-800-611-3116. Also, a new website established after Hurricane Katrina provides information to employees and families at [www.lockheedmartin.com/maffamily](http://www.lockheedmartin.com/maffamily) For on-site emergencies, employees can call 7-2333.

If local telephone lines are out or it's an event of national or corporate-wide significance, employees can go to [www.lockheedmartin.com](http://www.lockheedmartin.com) for information on the corporation's response.

Finding employees and making sure they were safe was a big problem after Hurricane Katrina. This is critical in providing support and communicating information about work impacts and schedules.

Visit LMPeople at <https://lmpeople.lmco.com> on the Intranet or <https://www.lmpeople.com> on the Internet to update your personal information. Enter home and cell numbers where the company might be able to reach you in an emergency and an Internet e-mail address that you can access if you evacuate.

In the "Emergency Contacts" area, enter additional phone numbers and addresses – beyond your spouse or immediate family member – to include other relatives or friends. ■



## Corps expands scope of work on levee repair

If you have driven down Saturn Boulevard over the past few weeks, you probably have noticed the sheet piles being driven on the outside of the east floodwall near the pumping station.

The floodwall there is not in danger of failing. Rather, the U.S. Army Corps of Engineers determined during the original levee inspection prior to the start of repairs that the earthen berm between the Michoud Canal and the drainage canal was not wide enough to support the planned levee expansion.

"Boh Brothers is driving 80-foot sheet piles down 60 feet," said **Rogan Bernard**, Facilities & Environmental Operations construction engineer. "The work extends along 1,300 feet of the eastern

floodwall and 300 feet along the southern levee."

Once finished, Boh Brothers will back-fill the gap between the wall and sheet piles with earth.

The canal will also be narrowed near the pumps' intake, then lined with a fabric material and topped with rocks.

During Hurricane Katrina, the tidal surge scoured away the base of the east floodwall, exposing the tops of the sheet piles. Boh Brothers will use flowable concrete to repair the damage. However, the Corps has determined that an additional five feet of fill, followed with an anti-scour system is needed to strengthen the floodwall.

All this additional work has pushed the completion date from June 1 to September 1.

"That's just an arbitrary date; we believe all of the work will actually be done by mid-summer and the Michoud facility will be ready for this hurricane season," Bernard said.

Work continues on the protected side of the eastern wall. Fifteen dump truck loads of fill are being brought in every hour to raise the

levee's embankment.

To prevent erosion, a hydro-mulching process will be used, where the grass is literally sprayed on top of the dirt.

Looking down the road, new FEMA guidelines are dictating that by 2010 all of Michoud's levees will need to be raised an additional five feet. ■

*Construction engineer Rogan Bernard looks on as Boh Brothers drives 80-foot sheet piles that will further protect Michoud's floodwall system on the discharge side of the pumping station.*



# Engineers guide teams in robotics competition

The air was electric and the crowd deafening as competition got under way at the FIRST Robotics regional in Houston several weeks ago. In all, teams from 54 high schools had built robots and now were competing against each other.

Founded in 1992, FIRST (For Inspiration & Recognition of Science & Technology) Robotics promotes engineering and science as a career among high school students and generates \$9 million in scholarships annually.

This year's game, "Aim High," pitted robots from opposing teams playing against each other. Their objective – out score the competing team by shooting 7-inch nerf balls into the high goal, by rolling balls into low goals or by blocking shots defensively.

Lockheed Martin engineers mentored six of the schools that represented southern Mississippi and Louisiana. One of them – Picayune/Pearl River Central High, a veteran team with five years experience – came home the overall winner and advanced to the national championships in Atlanta, before being knocked out of the competition. A seventh team participated in the Peachtree Regional in Georgia.

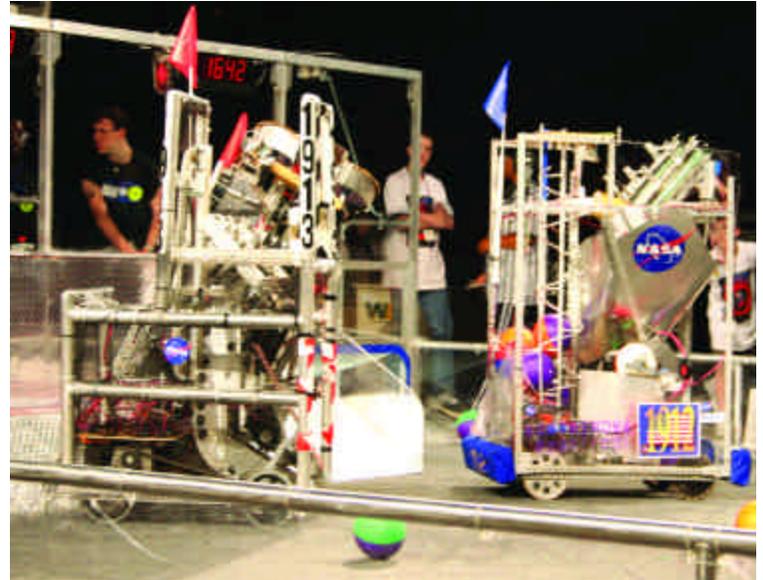
"For a rookie year, nearly half of the teams finished in the top half of the competition, and that makes me feel good," said **Curtis Craig** who coordinated efforts with ten other Lockheed engineers in mentoring the high school teams.

Participating teams are assigned the FIRST Robotics' engineering challenge and have only six weeks to plan, design, "prototype," build, test and "practice" a robot in answer to the competition problem.

The mentors met with the students as often as three times a week and even more frequently as the competition drew near.

"We try to help the students as much as we can," said Craig. "We give workshops and teach classes on the specifics of engineering."

"It's a lot of fun," explained **Travis Smith** who helped mentor a New Orleans team. "We get to work with the kids on something that will help them in college, and we're playing with pretty expensive robots."



*Robots from Covington High (red flag) and Northshore High (blue flag) battle each other at the FIRST Robotics regional meet in Houston.*

Hurricane Katrina prevented many of the local veteran teams from participating in this year's competition. That may change next year, as NASA is posting a \$150,000 grant to hold a FIRST Robotics regional competition in Louisiana, possibly at the UNO Arena.

Listed below are the participating schools and their Lockheed Martin mentors:

- New Orleans Center for Math & Science – **Victor Brown, Travis Smith**
- Salmen High – **Keith Joiner, Norm Elfer and Darren Kearney**
- Covington High – **Scot Marshall**
- Northshore High – **Riki Takishita**
- Picayune/Pearl River Central High – **Don Pollitz**
- Bogalusa High – **Curtis Craig**
- McMain High – **Duy Pham**

# Space Day at Jefferson Elementary

"And this is where space tourists would check in." *Ian Lyell (from left), Nikalia Johnson and Mason Hodge explain their "Space Wizard Hotel" to Lockheed Martin judges and mentors Johnny Seither and Jerry Majors. The 4th grade group captured first place for their project, part of a series of activities celebrating Space Day at Jefferson Elementary. Space Day encourages students to learn more about science, math and technology and to remember our country's space pioneers.*



SPACE DAY

# Lockheed Martin joins Habitat

If you find that your interests are beginning to shift to house "construction" rather than "destruction," you might want to volunteer for a Habitat for Humanity work day on your off day.

This Friday, Lockheed Martin employees can join Habitat volunteers at 6 a.m. at the corner of Washington and Cleveland Streets in Slidell where Habitat is building four homes. Come on out early

and be a part of the rebuilding in your community.

WDSU-TV plans to cover the event "live," and Lockheed Martin will be featured on Channel 6. Habitat provides lunch.



Wear your Lockheed Martin T-shirt. Volunteers usually finish up shortly after lunch since they begin so early. ■

## Thank you, volunteers!



At the Annual Appreciation Luncheon, 11 employees were named Outstanding Volunteers of the Year. They include from left: Alfred Donaldson, Glen Dobbins, Scot Marshall, Erin Bowman, retiree Carmela Kaminski, Ron Baillif, Linda Savage-Regan, Ed Penegy, Glen Gilmore and Ken James. Not pictured is Nathan Loper.

**Blood Drive**

**Count Yourself a Hero**

Did you know that with every blood donation, you can save up to three lives? That's why donating blood is often referred to as "giving the gift of life."

Donors can make one of four choices during Lockheed Martin's May 22-26th Blood Drive:

1) Unlimited blood coverage for four family members or four others for a year

- 2) Replace a unit of blood that someone has used (bring patient's name and hospital)
- 3) Designate your donation to the "From the Heart Club" to help send children with cancer and hematological disorders to camp for a week
- 4) Receive a T-shirt

If 25 percent of Lockheed Martin employees participate in the blood drive, every

employee will receive \$2,000 worth of blood coverage.

Blood Drive hours:

**Bldg 351 East Cafeteria**  
Monday & Tuesday  
8 a.m. to 3 p.m.

**Bldg 102 Special Events Room**

Wednesday & Thursday  
8 a.m. to 3 p.m.

Wednesday  
3 to 5 p.m. for 2nd Shift  
Friday - Noon to 3 p.m. ■

Mission Success

**Bulletin** *on-line*

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