Space Systems Company – Michoud Operations

Mission Success Bulletin

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March 16, 2006

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LOCKHEED MARTIN

March 16, 2006

Marshall Byrd
Vice President & General Manager

Michoud Operations employees:

The one constant in the aerospace business is change. Last year graphically demonstrated that fact for Michoud Operations, and 2006 will be no different.

Without a doubt, 2005 was a year that none of us will forget. We delivered flight hardware, supported a successful shuttle mission and then responded to the unexpected foam loss. Shortly thereafter, Katrina became a name for the history books and changed our lives forever.

Through it all, however, Michoud Operations achieved our financial commitments, honed our operating processes and improved our safety performance. We successfully maintained the Michoud facility, highlighted by Katrina recovery efforts that returned 1,800 employees to work in less than 100 days.

Throughout every challenge, you rose to the occasion to deliver your best. That effort was necessary, it was extraordinary and it was recognized at the highest levels of NASA and Lockheed Martin.

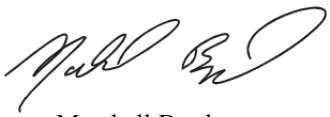
This year, the challenges are no less significant. After delivering ET-119 on February 24, the Space Shuttle team recently made the decision to replace the engine cutoff sensors in ET-119 and thereby delay the launch of STS-121 until a window extending from July 1-19.

A July launch allows NASA the opportunity to fly three missions this year, but doesn't provide us relief in an aggressive production schedule. In fact, a Michoud team should be at KSC before the end of the month to initiate the remove and replace activities.

While ET work continues, others have an eye to the future. In the next few days, Lockheed Martin will submit a proposal to design and build the Crew Exploration Vehicle, with the majority of the structural assembly planned for Michoud. Combined with Crew Launch Vehicle, a future Shuttle Derived Vehicle and other projects, Michoud is pursuing a potential $300 million in new business during 2006.

To maximize our success, we must continue to perform on the ET project, improve our skills and work safely and ethically. In our post-Katrina environment, management must demonstrate all the qualities of Full Spectrum Leadership and do what is necessary to retain our workforce. The first and most important thing we must do is to communicate openly, honestly and regularly.

The challenges are great, but in light of what we have already overcome, I have little doubt in our ability to succeed. I look forward to leading you through what I expect to be a very rewarding year.



Marshall Byrd

ET-119 is hoisted up into a checkout cell in the Vehicle Assembly Building at Kennedy Space Center.

STS-121 launch date slips to July

NASA Space Shuttle Manager **Wayne Hale** announced Tuesday that the shuttle team has decided to replace four sensors in the ET-119 Liquid Hydrogen Tank that alert Mission Control when the tank is about to run out of fuel. Despite being within manufacturing specifications, one sensor had shown a small shift in electrical resistance – a possible indicator of future failure.

Because the replacement work at the Kennedy Space Center will take about three weeks, the decision automatically bumps the STS-121 launch from the May timeframe to the next available window, July 1-19. A Michoud crew will soon travel to Kennedy Space Center to begin removing the sensors.

"It may be a problem in the manufacturing, with the ways the wires are attached to the sensor," Hale speculated at a news briefing. "We decided to take the safe route and replace the sensors."

A supplier manufactures and ships the sensors to Michoud where they are installed in both the LH2 and Liquid Oxygen Tanks. Even with the setback in launch schedule, Hale remained optimistic that the shuttle may fly three times this year.

ET-119 arrived at KSC on March 1 and had been on a fast-track schedule for the possible May launch. Several days after the tank arrived at KSC, a team from Michoud went to KSC to machine and vent additional Thermal Protection Systems (TPS) on the +Z (debris zone) on the Intertank. The team consisted of employees from Production Operations, Safety & Product Assurance and Program Management & Technical Operations.

"The team successfully completed its objectives, sanded and vented the Intertank on schedule, with no rework required," said **Michael McGehee** who led the team with **Eugene Sweet**. The team returned home last weekend.

"This group exemplifies the entire Michoud team – an unselfish display of strength and courage in the wake of ongoing adversity from the storm," McGehee said.

Meanwhile, testing to certify changes to the TPS configuration following removal of the Protuberance Airloads (PAL) ramps on the ET will be conducted over the next two months.

"These tests include wind tunnel tests of revised ice frost ramps at the Air Force's Arnold Engineering Development Center in Tennessee as well as testing in a thermal/vacuum chamber at Marshall Space Flight Center," explained **Richard Smith**, PAL Ramp Elimination team lead. "Analysis of the new configuration will also be completed during this time."

Smith said some structural tests will also take place onsite at Michoud. ■

Progress made on other tanks

Retrofitting continues at Michoud on ET-118 and ET-123, the second and third tanks, respectively, that are scheduled to fly after ET-119 launches this year with *Discovery*.

A major step took place on March 15 when Transportation and Handling crews moved ET-118 into Building 420, Cell 2. The move followed significant progress to delivery that had taken place in Final Assembly.

Bonding of the Developmental Flight Instrumentation (DFI) cable tray accelerometers has been completed for both the Liquid Oxygen Tank and Liquid Hydrogen Tank.

DFI will provide flight load data from the cable tray during ascent, according to **James Moffett**, senior manager, Mechanical Assembly.

Thermal Protection Systems spraying and trimming will continue on ET-118's longerons, which are attachment points for the thrust struts. The work is verified in part through the dissection of a mock-up panel and plug pull activities that are ongoing.

Technicians also will continue installing the drip lip to reduce ice formation on the bellows. Michoud is scheduled to deliver ET-118 to NASA on May 30.

Continued on Page 3

Corps begins work to rebuild levees

With the start of hurricane season only about ten weeks away, will the levee system protecting the Michoud Assembly Facility be ready to thwart off another storm surge?

"Yes," says **Pat Trudel**, project engineer with the U.S. Army Corps of Engineers.

The Corps has contracted with Boh Brothers Construction to begin work on rebuilding NASA's flood-protection system at the Michoud Assembly Facility to the level that was in place prior to Katrina – and to complete the work by June 1.

"NASA's levee system sustained considerable damage due to Hurricane Katrina," says Trudel. "Without the repair work, the facility will be at risk, certainly."

The levees suffered damage when Katrina scoured large sections of the earthern levee that supports the concrete 'I' wall, and four barges broke loose from their moorings and ran up on the levee, breaking the 'I' wall during the storm.

At no time during the storm did Michoud's levee system breach, although storm surge overtopped the levees in two places.

While examining the Michoud levee renovation plan, Rogan Bernard (right), construction engineer with Facilities & Environmental Operations, points out graded fill that will shore up the west flood wall to Brad Reidenauer of Boh Brothers.

Boh Brothers is currently conducting a site survey of the levees, and preliminary data also shows that some areas of the levees may have settled as much as five feet in the three-plus decades since they were first built.

Trucks will begin hauling in several hundred thousand cubic yards of clay and dirt later this month to build up the earthen levee to within no less than five feet of the top of the concrete wall. Then a concrete slab will be poured along the protected or facility side of the wall to prevent future scouring in hurricane seasons to come.

On the flood or waterway side of the levees, a flowable concrete fill will be used to cover the exposed sheet piles, followed with an anti-scour system laid on top.

Once completed, the levees will stand 17 feet high again, just as they did when built in 1971. ■

Tank Progress

Continued from Page 2

The third tank scheduled to fly, ET-123, moved into Cell A of the Vertical Assembly Building for flange retrofitting earlier this month. The cell had been empty since ET-122 was removed following roof damage from Katrina's winds.

Currently, technicians are removing foam from around the flange.

Bolts that join the LH2/Intertank flange together are being changed out and reversed, Moffett explained, and much of that work has been completed.

Technicians will then apply a sealant on the bolts to eliminate any liquid nitrogen leak path. Finally, technicians will spray/inject a foam application around the bolts.

Later, technicians will vent other areas of the Intertank foam. These combined steps help reduce both the probability and size of any potential foam loss. ET-123 is scheduled to move from Cell A to Final Assembly on May 12 and later go to Building 420 prior to shipment to KSC. ■

Progress to date

23	**employee homes gutted**
2,008	**volunteer hours worked**

Blood Drive next week

The USDA will hold its first blood drive of 2006 from 8 a.m. to 3 p.m. March 22 & 23 in Building 351.

All Michoud employees are welcome to donate during this drive.

Lockheed Martin held its first blood drive in late January and collected 298 pints, which after testing and processing benefited 894 patients.

Please e-mail **Boni Palazzo** at ***Pal0726@cox.net*** at The Blood Center if you would like to donate the gift of life next week.

Lockheed Martin donated $10,000 to The Blood Center soon after Hurricane Katrina to replace equipment and supplies that the center lost during the storm.

THE BLOOD CENTER
Serving you for life!

Remaining Blood Drives
May 22-26 — LM
July 19-20 — USDA
September 18-22 — LM
November 15-16 — USDA

Lockheed Martin to exhibit at Auto Show

2006 New Orleans AUTO SHOW
MORIAL CONVENTION CENTER
Rebuilding New Orleans!

Visitors to the 2006 New Orleans Auto Show at the Morial Convention Center will have an opportunity to learn about America's future space exploration plans in a display sponsored by Lockheed Martin.

A limited number of free tickets for the March 24-26 event are available for Michoud Operations employees on a first come, first served basis (limit two per employee). Tickets may be picked up from the SFA office at 103-2, Column J-1, or at 350-2, Column S-2.

2006 New Orleans Auto Show hours

Friday, March 24	1pm – 10pm
Saturday, March 25	10am – 10pm
Sunday, March 26	11am – 6pm

Lockheed Martin participates in Tulane Engineering Week

Glen Dobbins (from left) and Dana Smith of Human Resources staffing discuss opportunities at Michoud Operations with engineering students Brandon Carey and John Dendy.

Louisiana registry on-line

Displaced Louisianans can register for housing funds at ***www.louisianarebuilds.info*** on the Louisiana Recovery Authority's website. Gov. **Kathleen Blanco** is urging residents who qualify to register early so when Congress passes the legislation they will be ahead in the process.

LOUISIANA RECOVERY AUTHORITY

The state is billing the registry as the "first stop on the way home for displaced Louisiana residents and businesses."

You'll need certain mortgage, insurance and banking information when filling out the registration form.

You can also get to the form by going to ***www.lockheedmartin.com/maffamily.*** ■

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