

Mission Success Bulletin

February 27, 2008

on-line

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

STS-122 good from launch to landing

Atlantis thundered into the sky on the afternoon of February 7 at Kennedy Space Center as Michoud employees clapped enthusiastically – another hard-fought victory won, another launch hurdle overcome.

Primed to lift off twice in December, *Atlantis* yielded to a temperamental Engine Cut-Off (ECO) system that ended the launch attempts. As a result, Lockheed Martin dispatched a 43-person crew to KSC to fix the ECO problem. The crew joined its KSC Operations brethren – along with NASA, United Launch Alliance, and United Space Alliance (USA) technicians – and did indeed curtail the intermittent ECO problems by soldering pins to sockets on a replacement feed-through connector. The fix worked perfectly as the ECO sensors passed all commands.

The STS-122/ET-125 Preliminary Post-Flight Performance Assessment reports electrical, propulsion, and structural systems all performed nominally. The ECO system functioned without a hitch on the electrical side, as did the bipod and Liquid Oxygen feedline bellows heaters, and the ET camera system.

From a propulsion standpoint, the tank experienced ten prepress cycles and pre-launch purges and the gaseous helium vent also performed nominally. Typical post-separation venting took place following ascent.

Structurally, Orbiter/ET separation went well, and the ET disposal impact point was consistent with launch predictions. The post-launch imagery assessment identified six Thermal Protection Systems (TPS) events, with losses observed as consistent with previous flight performance. Two of the events exceeded mass estimates, but the debris came off late in ascent after the critical debris time. None of the observations is related to the ECO TPS restoration work

performed on the launch pad, and no new failure modes have been identified.

“The previous two tanks to fly, ET-120 and ET-125, haven’t been easy to launch, but we’re used to these kinds of challenges,” said ET Program Manager **Wanda Sigur**. “Our people have a history of overcoming these roadblocks. Again, I thank all of those who worked the ECO problem, and all the others who have faithfully continued to work on ET-128, which is next out the door.”

Meanwhile, the next tank to fly with *Endeavour* on March 11 will be ET-126, also with a repaired ECO feed-through connector. Following the shuttle stack’s arrival at the launch pad on February 18, six days of foam closeout work remains on the ET.

Mike Holcomb, who managed the ECO crew’s two 12-hour shifts during the work on ET-125 at KSC, had nothing but praise for the crew who will complete the final closeouts. “They work hard; the days are long. When there’s an issue at the pad, it obviously takes longer to solve than at Michoud. But our KSC Operations folks and the USA people really support us and enable us to do our work. Also, those in Product Technical Support, Materials Science, Design Engineering, and the Mission Support Room worked a lot of long days to support us and work through issues that made completion of the job possible.”

Brian Knipfing, who led the effort for KSC Operations, agrees. “We’ve got two sprays left in four areas. We recovered nicely on ET-126. We’re right where we want to be.”

Launching twice in 34 days will be challenging, but the Michoud team is ready to go. ■



6S initiative reduces waste, improves work flow

6S leads to success.

6S stands for Sort, Straighten, Shine, Standardize, Safety, and Sustain. It is the foundation of all continuous improvement and a waste-reducing, flow-improving tool that focuses on improving product and service flow through the workplace.

Before you get the wrong idea, 6S is more than a clean-up activity. Clutter is a sign of waste in processes. 6S helps eliminate this waste in processes or value streams where work is done. Without clutter or waste, employees can more quickly find the tools or information to do their job.

“People often ask me: why do this 6S project?” says **Manny Zulueta**, vice president & site executive. “Why now? To me it is much more than cleaning your office. It is about identifying the work stream that one participates in, logically planning the work, and then organizing the work in such a way that it makes it easier for all the people involved in that work stream to get their jobs done.

“In every implementation I have been associated with, people were appreciative of the results. We’re serious about being lean, and this is a great way to implement lean in our daily work life.”

While removing clutter, it is not necessary to remove personal items. Employees can have photographs and plants, but these items should not be excessive, interfere with work or limit maintaining a clean workspace.

Waste eliminated by 6S creates flow and makes for a more

professional workplace. Flow is the state of value-added work always being performed on a product or service. A professional work area accentuates what customers already appreciate about Lockheed Martin as a quality contractor. Organization and standardization of work areas reduce the time it takes newer employees to understand work requirements.

A Michoud Operations 6S initiative began this past fall in Safety & Product Assurance.

“6S is an opportunity to be on the leading edge of an initiative that has energized the team and will shape our future,” believes **John Welborn**, senior manager, Quality Engineering & Reliability Assurance.

The first 6S teams led by **Matt Catrett** helped set some of the standards for 6S based upon the LM21 corporate handbooks and scorecard. “The challenge is to sustain the momentum created by the 6S events,” says Welborn. The 6S scorecard will enable Lockheed Martin to measure, to improve, and to sustain.

Since completing 6S activities in the Safety work area, efforts have now moved into Production Operations and Engineering where teams led by **Craig Dooley** and **Va’Jeanne Cola**, respectively, are now at work.

More information about 6S and other LM21 tools and activities can be found on the LM21 website at <https://lmc2.maf.nasa.gov/wpmu/lm21/> ■



Before 6S



After 6S



Honorees named for STS-123 launch

Program Mgmt & Tech Ops

Pam Gremillion
Charles Holding
Deadra Rayford

Safety & Product Assurance

Joe Major

Production Operations

John Ellis
Tom Kilroy
Tim Livingston
Jim Louis
James Riley

Facility Ops & Services

Arthur Boudreaux
Bill Olson

Business Operations

Marty Hrovat
Tom Price

Huntsville Tech Operations

Ken Ezell

ET Supplier

Steve LaBrecque

Citizen soldier visits Michoud from tour of duty in Iraq

S&PA throws lunch for Lockheed Martin serviceman on leave.

For the past six months, Lockheed Martin employee **Dustin Lizana** has worked as a helicopter repair crew chief for the Army National Guard at Camp Anaconda in Balad, Iraq. When not serving his country, he is an inspector in Safety & Product Assurance.

Several weeks ago, when he returned home on two weeks leave to see his wife and young son, his S&PA mates threw a special luncheon in his honor.

"I chose this time for my two weeks leave because I wanted to see my son on his first birthday, which happens to be Mardi Gras this year," smiled Lizana.

Thirty of his fellow employees welcomed him home with a feast of redfish and speckled trout, potato salad and dessert served up by **Bill Lacy** who cooked and caught most of the fish. It was a warm event, with many of Lizana's work friends greeting him with hugs and thanks for his service.

"Dustin's a good guy; he's out there serving his country, and we wanted to do something special for him so that he would know we're thinking about him," said **Rick Hinson**, his S&PA manager.

During lunch, a slide show played in the background showing scenes of Lizana in Iraq, posing with his Army buddies and working on helicopters. He said his unit of about 100 soldiers is busy, often working seven days a week repairing the Black Hawk, Apache and Chinook helicopters that fly many night missions.

How dangerous is it? From time to time insurgents attack the perimeter of the camp with mortar rounds, but it's not that bad, he said, and at times can be quiet. Lizana began his duty in Kuwait, then moved to Iraq, and soon may be stationed in Afghanistan.

Many of his friends asked about life in Iraq. "The Army does a lot to make them comfortable," he replied. "They put on USO shows all the time, hold softball tournaments. They try to make it good for us."

He isn't allowed to leave camp, but really doesn't want to

because "everything is there for you. The camp is huge, thousands of soldiers there."

Lizana, who still has six months to serve before his one-year tour of duty ends, said he was especially touched after receiving a Lockheed Martin care package just before Christmas. The Employee Volunteer Organization recruited 110 volunteers to stuff the 10,000 care packages for the troops on December 1.

"Morale was low at Christmas when soldiers missed their families," Lizana remembered. "But we received packages from all over. People love 'em."

With luck, Lizana will be back together with his wife and son next Christmas. ■



Home on two weeks leave, Dustin Lizana chats with Paula Hartley, director, Safety & Product Assurance, about his Army experiences in Iraq.

2008 LMLA Board



This year's board members for the Lockheed Martin Leadership Association – Greater New Orleans Chapter of the National Management Association include from bottom clockwise: Don Romero, president; Karen Poy, vice president; Dana Smith, professional development; Kevin Barré, American Enterprise Speech Contest; Heather Wixom, membership; Steve Stefancik, parliamentarian; Carrie Sims, secretary; Paul Hirsch, treasurer; Jennifer Ireland, recognition & awards; and Leonard Wiggins, programs. Not pictured are Chip Howat, communications; and Albert Porre, community service.



EVO leadership for 2008



The new board for this year's Employee Volunteer Organization includes front row from left: Michael Sentino, LMents representative; Glinda Caston; Leonard Wiggins, president; Carolyn Baringer, ex-officio; and Raynard Bender, vice president. Back row: Netsy Wheeler; Hank Knighton; Albert Poree; Rogers Whitlock; Ashley Black, secretary; and Jennifer Ireland, treasurer.



Shall we dance? Classes take off at Michoud

A dance class – who would have thought?

They gathered in December for their first group dance class. Thirty-seven hardy souls showed up to meet their instructor, professional dancer **Nathalie Gomes** from France.

Employees came from Lockheed Martin, USDA, and the Coast Guard with one purpose in mind – to learn to dance. They took a poll that first meeting and decided to first learn a Latin dance, the Salsa. If you're looking for square dancing, this probably isn't your class.

Two months later having "mastered" the Salsa, they are ready for their second dance, the Swing. The class, which is free, meets at 4 p.m. Tuesdays in Building 351.

Dancing experience doesn't matter. Just bring a desire to learn even if you have two left feet. "Lots of fun, no pressure, come join us, we'll be dancing the Swing for at least two months," says **Jeremy Bordes** who helped organize the class.



Spinning around the floor dancing the Salsa are Lockheed Martin's Barbara Keezell and Dave Seeger.

After the number of dancers dropped some during Carnival, Bordes expects the popular Swing to attract more people.

Classes go like this. First, Gomes explains the history of a particular dance, then picks a student and demonstrates the movements, then watches her

protégés step out on a few test runs.

"Then it's time to turn on the music, and you're pretty much dancing," explains Bordes. Pick a partner, any partner. The odds stack up well for the guys – usually a 2 to 1 ratio.

"Nowadays when I go to weddings, I don't have to sit on the sidelines, wishing I could dance," Bordes relates. "My friends' wives come up to me and say, 'My husband doesn't mind, but I want to dance with you.'"

Lisa Blaum remembers the first class. "Everyone had smiles on their faces, the joy in the room, the music – you could feel it. It was really what we needed. Dancing takes your mind off things. You're genuinely happy and having fun. And you get to meet people from the other organizations."

Bordes says he and Health Services Manager **Kathy Eaton** hatched the dance class idea while tossing around ways for employees to stay active. So far things have shuffled along well. ■

Lockheed Martin also offers other activities to keep you moving and stretching. All are free except Weight Watchers.

Yoga
Yoga
Jazzercise
Weight Watchers at Noon
(\$186 fee for 17-week series)
Fitness Center

4-5pm Tuesday
4:30-5:30pm Thursday
4-5pm Monday & Wednesday
11am Thursday

Open 24/7

Bldg 351 Executive Dining Room
Bldg 351
Bldg 351
Bldg 350/1/Conference Room 12

Bldg. 320

Orion team proceeds to next review in May

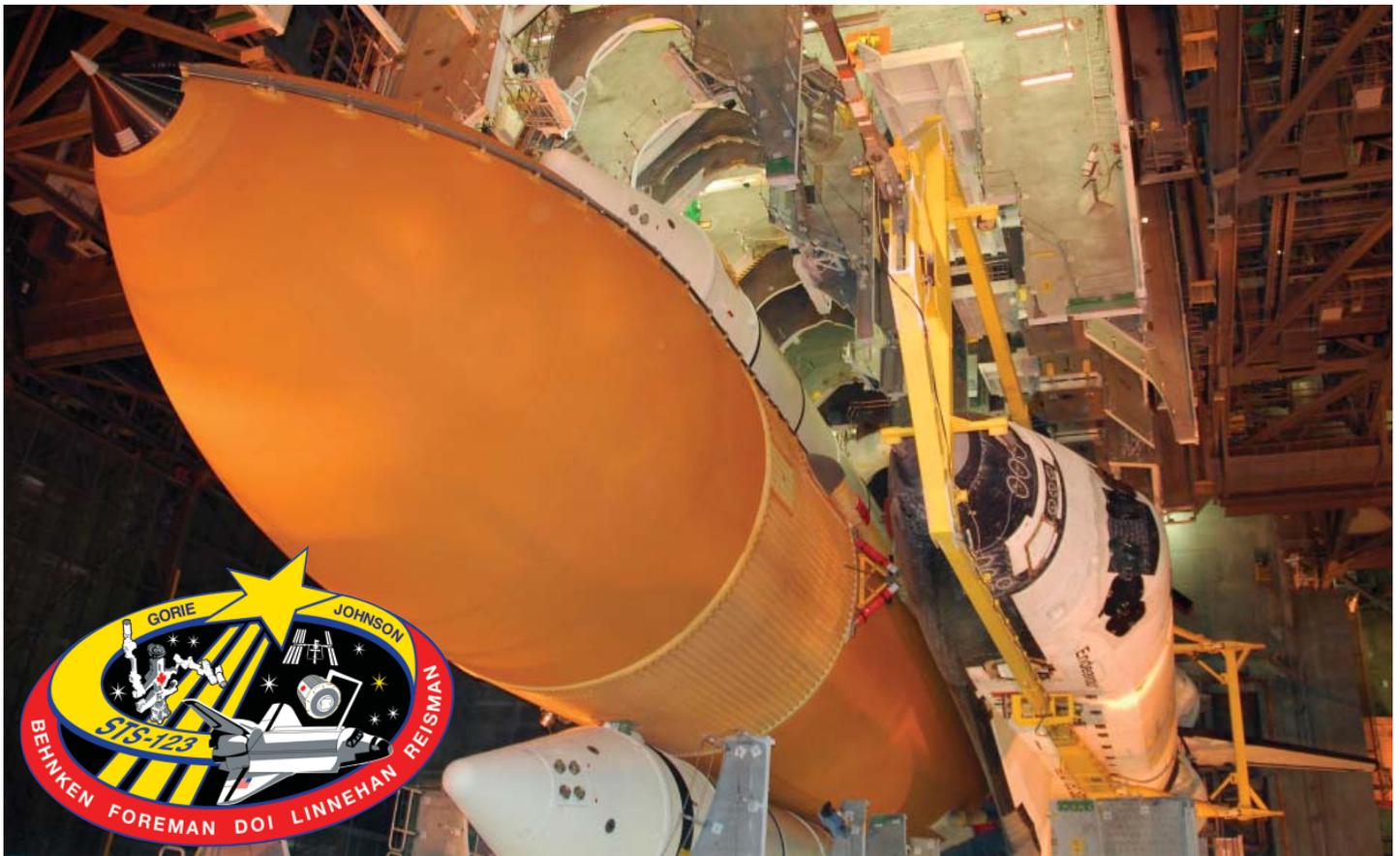
In January, the *Orion* team wrapped up a Periodic Technical Review (PTR-1) for Flight Test Pad Abort-2 and two Ascent Aborts. The meeting focused on test objectives and requirements and the verification approach. Attendees also reviewed manufacturing and procurement processes and the release of drawings for each pad abort and ascent abort flight test article.

Based on the exit criteria requirements set for the review, the *Orion* program received authorization to proceed to PTR-2, which will take place in May of this year with special emphasis in the area of requirements validation and verification, risk management, manufacturing, and facilities readiness.

Shown on the right is the forward bulkhead of the Crew Service Module Ground Test Article, a component of *Orion*'s developmental hardware. On display during PTR-1, the bulkhead will be used for structural test and developmental activities. ■



Pictured with the bulkhead are Dr. Milt Silveira, (left) former NASA chief engineer, and John Healey, former program manager at Rockwell. The two, both members of the legacy engineering team from the Apollo program, gave a motivational talk to the Orion team. Silveira worked on all manned spacecraft programs from Mercury to Space Station. His responsibilities included aerodynamics, heating, thermal protection, trajectories abort, and normal landing. Healey was involved with the Apollo Command Service modules and the Saturn V second stage.



External Tank-126 mates with Orbiter

What a view of ET-126 as Space Shuttle Endeavour is lowered into place for its mating with the tank and the Solid Rocket Boosters on February 12 at Kennedy Space Center. After Endeavour arrived at the launch pad February 18, a team of Michoud workers returned to complete the closeout work on the Engine Cut-Off (ECO) system feed-through connector to prepare STS-123 for its March 11th liftoff. The mission will deliver the first section of the Japanese Kibo laboratory and the Canadian robotic system, Dextre, to the International Space Station.

Employee team produces award-winning mosaic

Lockheed Martin – Michoud won second place in a corporate-wide Diversity competition to create a mosaic artwork that would showcase Michoud's diversity. Unveiled at Diversity Day activities on August 7, the collage represents the collective strengths of Michoud Operations. Mounted on a 1/4-inch aluminum-lithium panel, the same material used in ET production, the artwork illustrates the support of Lockheed Martin employees nationwide who helped in the aftermath of Katrina and our recovery. It also underscores the Mission Success teamwork it took to produce ET-119 for the next shuttle flight in 2006. Pictured from left are graphic artist Jon Irving and past and current Diversity Council members Karen Sanchez, Pat Powell, and Reggie King.



Milestones *Employees celebrating anniversaries with Lockheed Martin in March 2008*

30 Years Hassan Boroujerdi Walter Jones Anthony Ponceti	20 Years Larry Knauer Charles Poolson Garrey Watkins	5 Years Michelle Currie Dustin Duke David Smith
25 Years Victor Atkins Earl Corley Victor Dyer Judith Green Scott Johnson Kenneth Miller David Newman Jeremiah O'Rourke	15 Years Cynthia Pustanio Michael Sisler	10 Years Norma Bute Michelle Morlier

*Note to Retirees

If you wish to still continue receiving the *Mission Success Bulletin*, please contact Lorri Manning at 504-257-1134 to confirm your address.

Michoud Leadership Team and HR to Host LM Invitational Job Fair

Human Resources will hold the first of several on-site invitational job fairs on Thursday, March 6. This initial event will target Facility Operations & Services and Business Operations personnel.

Approximately 200 open job positions in Space Systems' Human Space Flight Line of Business are listed on-line at <http://maflm509.maf.nasa.gov/308x/hrweb/>

In preparation to attend a job fair, interested employees must update their resumés and apply for specific positions in advance at LM Careers in the LMPeople system.

Information on upcoming job fairs will be made available as planned. Contact your department administrator for additional details.



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LOCKHEED MARTIN



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