Congressman Vitter tours Michoud Assembly Facility
Vows support for X-33, Composites and NCAM

U.S. Rep. David Vitter (R-La) recently took his first look at the Michoud Assembly Facility since being elected to Congress in 1999. The Congressman toured the ET production line and noted employees’ exemplary production and safety records.

“The stakes under this roof couldn’t be higher,” Vitter said. “We’re talking about human lives, the astronauts. And we’re talking about a key national mission and national prestige. And you have come through year after year with a pure 100 percent success rate.”

Lockheed Martin and NASA representatives also updated Vitter on the National Center for Advanced Manufacturing (NCAM) and projects such as Friction Stir Welding.

Vitter said he sees Michoud as a great story of cutting edge, high-tech activity, especially with the new composite materials and advanced manufacturing processes.

Michoud Operations President Dennis Deel thanked Vitter for supporting the Space Shuttle, X-33 and NCAM.

9/80 to become standard work week

Following a successful six-month pilot program, Michoud Operations has taken the next step to full implementation of the Alternate Work Schedule.

Exempt salaried employees are currently being surveyed for their thoughts on the recent 9/80 pilot program. Employee inputs are due August 31.

Assuming a positive response to the survey, a recommended plan for full implementation of the Alternate Work Schedule will be forwarded to corporate headquarters for final approval. In order to maximize efficiencies and align with the Astronautics Operations day off, the proposed Alternate Work Schedule will be reduced to a primary track with a common Friday off, beginning in October.

All employees, except those designated as supporting production requirements, individuals on non-standard work weeks and those with demonstrated hardships, will be required to participate on the primary track of the 9/80 program.

Production Operations will work with Facilities, Engineering and Product Assurance to define support requirements necessary for the common Friday off. The home shops will be responsible for developing a support plan employing overtime, a secondary 9/80 track or use of a non-standard work week to meet the production requirements.

An October start date will coincide with a reprogrammed Electronic Time Card (ETC) that will allow the recording of standard nine-hour workdays. Subject to final corporate approval, additional information and review of new ETC procedures will be scheduled for the end of September.
**Build Process Teams get results in second year**

Forty-seven Build Process Teams (BPT) are doing their part to improve External Tank production. Already, they’ve submitted close to 800 improvement ideas and suggestions. “Some time ago, we recognized the need to improve our cost and schedule performance and improve our processes on the ET project,” said Mike Javery, director, Manufacturing & Test. “Through the concerted efforts of Build Process Teams, we are accomplishing these goals.”

“BPT strategy focuses on two key areas: 1) Identify and co-locate personnel in shop areas and 2) use a team-based management approach to support activities required to build tanks. The concepts were doable, but did not come without some reservations. “The practitioners really didn’t have a lot of visibility to the business side of production,” said Cheryl Iwanczyk, BPT Administrator. “So we focused the team’s attention on performance metrics at a Production Operations level, then at a departmental level and ultimately at departmental ‘experts.’”

“Employees have come to appreciate the support the BPT concept, because it is one of their vehicles for communicating with management,”Iwanczyk said. “In addition, changes to work processes are documented on the BPT web page and are available to employees. “BPTs are still very young, only a year, year and a half old. The teams are very creative though and, therefore, they’re learning more and more about improving our processes.”

(For more information about BPTs, visit the Ops website at gumbo.mnf.nasa.gov/360/home/index.htm.)

**Michoud readies for ISO upgrade**

The first assessment for new ISO 9001:2000 requirements is September 2003. Employees who have trained on the new standard will be the change agents and departmental expert for the transition.

Michoud has adopted a plan with British Standards Institution to achieve upgrade certification in four assessment audits by March 2003. For instance, the Dome Weld Subassembly Area BPT identified resources that allowed the team to purchase a 7.5-ton crane to safely lift the 5005 cap trim tool onto the 5005 tool, thus improving safety and reliability. Also, the Mechanical Assembly team’s investigation of Non-Conformance Documents led to an improved work table set-up that helped prevent defects and rework on intertank mainframe subassemblies. “Employees have come to support the BPT concept, because it is one of their vehicles for communicating with management,”Iwanczyk said. “In addition, changes to work processes are documented on the BPT web page and are available to employees. “BPTs are still very young, only a year, year and a half old. The teams are very creative though and, therefore, they’re learning more and more about improving our processes.”

(For more information about BPTs, visit the Ops website at gumbo.mnf.nasa.gov/360/home/index.htm.)

**Paula Hartley and Riki Takeshita examine Friction Stir Pull Weld samples. The U.S. Patent and Trademark Office recently granted their process a patent, which earned them cash awards and immeasurable personal satisfaction.**

**Patents grant personal and company rewards**

Their idea was born during the long and challenging days of Super Lightweight Tank development. In order to repair weld defects inherent to fusion welds, Michoud Operations was experimenting with friction stir welding (FSW) and a plug welding technique, where a plug was pushed into the hole to repair the exit hole created by the FSW process.

Unfortunately, the internal tooling required to offset the loads of the push would be cost prohibitive on a majority of the External Tank surfaces. “Perhaps we should pull the plug rather than push,” they thought, eliminating the need for the costly tooling. The seed had been planted for a future patent.

The idea was publicly disclosed in 1996 during the development stage. The following year, Paula Hartley and Riki Takeshita, in a teaming environment, officially applied for a patent to the U.S. Patent and Trademark Office for their FSW Pull Plug Welding Process. Since that time, their team has spent countless hours improving the process and hoping for an eventual application on the ET. “If I feel we could make the process work on the ET, then it would be a worthwhile process,” Takeshita said. In parallel, they spent numerous hours filling out applications and filing reports essential to the patent process. Last month their waiting ended – the patent office officially notified Hartley and Takeshita that their process had been granted a U.S. Patent. Michoud Operations recognizes “worthy inventions and ideas with a plaque and a $500 cash award.

“It’s so cool”, Hartley exuded, “my rocket scientist, you are still eligible to earn cash for your ideas. "While walking out on the factory floor, you may see a widget that could be improved; don’t assume that someone has already had the idea – declare it," Hartley added.

Remember, cash awards can be presented for ideas even if the idea is not selected for a patent application. Employees can report ideas to Gary Willett for review at 74-786. Remember, cash awards can be presented for ideas even if the idea is not selected for a patent application. Employees can report ideas to Gary Willett for review at 74-786. Moreover, if the patent is issued, competitors must pay yearly licensing fees to use it.

Intellectual property is a strong competitive edge for any company. Not only does a patent protect its technology, but if the patent has been granted, competitors must pay yearly licensing fees to use it. Recently, Space Systems Company increased cash awards for acceptance of a patent application from $500 to $3,000. “The idea is now protected,” Hartley said.

Now, with their first patent proudly in hand, Hartley has just learned that her second FSW patent has been awarded and Takeshita is currently developing a second idea that has potential for patentability. Takeshita sums it up simply, “patents are a big feather in your cap; they make you feel good as an engineer!”
Process begins for Year 2003 scholarships

If you have a high school junior who wants to compete for a Lockheed Martin college scholarship, now is the time to make sure your student signs up to take the PSAT/NMSQT in October 2001. The Lockheed Martin Merit Scholarship Program awards $3,000 per year for up to four years of undergraduate study to National Merit Finalists who are the children of Lockheed Martin employees. Students expecting to graduate in the spring of 2003 must take the PSAT/NMSQT as juniors when their school chooses – either Oct. 16 or Oct. 20 this year. If their scores are high enough to qualify as Merit Finalists, they will be notified by the National Merit Scholarship Corporation in the fall of their senior year and encouraged to submit a Merit Scholarship Application. Lockheed Martin no longer requires a junior year application form.

Students should provide the names of their parent’s employer as Lockheed Martin on the senior year Merit Scholarship Application. This step identifies potential National Merit Finalists for consideration of Lockheed Martin-sponsored awards. High school students who expect to graduate in the spring of 2002 must have taken the PSAT/NMSQT in the fall of 2001 as juniors. Scholarship selection is based on a combination of academic and extracurricular achievements, community service, a self-descriptive essay and the high school’s recommendation. Awards are announced in April of the students’ senior year. Students may pick up a copy of the PSAT/NMSQT Student Bulletin and a practice test from their high school early in their junior year. Additional information on the Lockheed Martin Merit Scholarship program can be found at: http://www.lockheedmartin.com/about/community_relations/scholarships.html

Think Light weight-loss program advises how to shed those pounds

Love to eat, wish you were thinner, but don’t like to exercise? Then “Think Light,” a weight-loss program recently introduced at Michoud is the one for you. Health Services introduced the pilot this summer in response to the alarming increase of employees struggling with obesity, diabetes, and high blood pressure. Conducted by the facility’s medical staff, the program provides recipes and gets rave reviews and results from participants.

Tammy Bourgeois, Program Management & Technical Operations, highly recommends Think Light. “It uses the recipes because the dishes were so good. I feel great. I think the exercise is a definite help in giving me more energy.” Exercise plays a major role in weight loss, but it doesn’t have to be a grueling workout. “Use dumbbells while you watch TV,” suggests Kelly Hebert, Health Services. “You’d be surprised how much your body burns doing this type of activity.”

The staff provided the Think Light group with an in-depth review of the exercise equipment located at Michoud. Hebert points out the review enabled the group to use the equipment with confidence, why?

Jenni Buquet (second from right) and Donna Contois, members of the Board of Education introduced the award for Lockheed Martin. Carolyn Sanders-O’Hare (left), principal of Efferson Elementary School, looks on with Glenni Buquet, and Donita Contreras.

Think Light

The Louisiana Department of Education recently honored Lockheed Martin Michoud Operations for educational support. Think Light

The National Center for Advanced Manufacturing or NCAM continues to evolve as a facility for personal training, development and manufacture of large structures using advanced materials and technologies. A partnership among NASA, the state of Louisiana and the University of New Orleans, NCAM resulted from a Lockheed Martin initiative. The latest NCAM activities include the following:

• The state of Louisiana accepted the Fiber Placement Machine on order from Ingersoll Milling Machine Company in Rockford, Illinois at a signing ceremony on August 29. After disassembly and painting of subcomponents, Ingersoll will begin shipping the machine to Michoud in late September

•Fall semester NCAM classes – Intermediate Engineering Analysis and Mechanics of Aerospace Composites – taught at Michoud by UNO professors began August 28 in Building 420, second floor.

•The Louisiana Legislature recently allocated $7 million over the next several years for acquisition of NCAM manufacturing equipment.

Composite liquid oxygen tank undergoes proof tests at Marshall

A joint Lockheed Martin/NASA effort has led to the successful initial testing of a composite tank with liquid oxygen (LO2) at Marshall Space Flight Center. This is the first large-scale cryogenic composite tank built of a composite material that is compatible with LO2. Through August 24, the tank had successfully completed three proof tests at 112.5 PSI – the first with liquid nitrogen, the second tank with LO2.

During testing the tank endures thermal and pressure extremes that simulate flight conditions for a LO2 tank. Lockheed Martin designed and built the composite tank at Marshall and Michoud Operations; and NASA is responsible for testing. The tank will continue testing with LO2 to show Second Generation Launch Vehicle mission life capabilities.

“Proving this technology — a full scale liquid oxygen tank made of liquid oxygen compatible composite material — in a ground test will be worth the two months and $7 million it took,” said Matt Wallo, Michoud project manager. “We hope these advances will soon transfer into space hardware.”

The composite tank is 9% feet long, 4% feet in diameter and weighs less than 500 pounds, which represents an 18 percent weight savings over a metal tank of similar construction. Reducing the weight of future reusable launch vehicles — thus lowering the cost of launching payloads into orbit from $10,000 to $1,000 per pound — is a NASA goal. Michoud and Lockheed Martin have worked together since 1997 to develop the approach and test methods for demonstrating composite LO2 tanks. The two tested the material extensively following a building block approach. This approach involves coupon testing, progressing to panels, then to specific tank type interfaces and joints, scaling up to open bottles, and finally to the large scale tank.
MILESTONES
Employees celebrating July and August anniversaries

30 years
Robert Campbell
Walter Meyers
Jerry Pilet
Robert Rendall
Terry Roche
J ohn Stanley
Philip Terranova
Gerald Wellesly
Charles Williams
George Wilson

25 years
William Bickham
Raymond Clark
Benjamin Ducre
Emmet Galyon
Kay Gasey
Brian Guggenheimer
J esse Huggins
Harold Hurst
Lloyd J ohns
Lucius Latel
Jack Maxwell
David McCall
Everett Mitchell
Philip N ameth
Tommy Navarino
Richard Oramus

20 years
J ohn Anderson
Charlie Arrington
Robert Atkins
Paul Ball
Steven Barriere
Liddy Breeford
Darryl Brown
Douglas Burrell
J ohn Burrell
Laron Calhoun
Eric Champagne
Ronald Clark
Charles Culver
George Davis
Carl DeLand
David Dorn
Curtis Doucette
Daniel Ferrari
Danna Flower-Kraft
Raymond Gudry
Fletcher Harris
Herbert I vins
Timothy Jani
Robert J ames
Louis J ohnson
Thomas Kilroy
J ames Laskey
Alvin Lewis
Deborah Liel Ble
Richard Little
Mohammed Masoodi
Harley McPeek
Thomas Mclachlin
Vincent Morales
J ohn Morton
J onas Notes
Robert Olson
Shahrokh Panik
Carlton Pearl

25 years
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Walter Meyers
Jerry Pilet
Robert Rendall
Terry Roche
J ohn Stanley
Philip Terranova
Gerald Wellesly
Charles Williams
George Wilson

20 years
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Charlie Arrington
Robert Atkins
Paul Ball
Steven Barriere
Liddy Breeford
Darryl Brown
Douglas Burrell
J ohn Burrell
Laron Calhoun
Eric Champagne
Ronald Clark
Charles Culver
George Davis
Carl DeLand
David Dorn
Curtis Doucette
Daniel Ferrari
Danna Flower-Kraft
Raymond Gudry
Fletcher Harris
Herbert I vins
Timothy Jani
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Louis J ohnson
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J ames Laskey
Alvin Lewis
Deborah Liel Ble
Richard Little
Mohammed Masoodi
Harley McPeek
Thomas Mclachlin
Vincent Morales
J ohn Morton
J onas Notes
Robert Olson
Shahrokh Panik
Carlton Pearl

MISSION SUCCESS BULLETIN
Volume 20, Number 4
August 30, 2001
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Mission Success Bulletin is published by the Communications Department.

Five selected for Peer Awards
Five Michoud Operations employees in Huntsville Technical Operations recently received Peer Awards at the Engineering Directorate Awards at Marshall Space Flight Center. Eddie Bass (from left), Martha O’Brien, Melanie Johnson, Ed Kirch and Dwight Cox were honored for consistently exceeding performance standards while supporting the vision of engineering excellence and Mission Success.

Mary Officer
10 years
Craig Dooley
Daniel Morris
Gary White

5 years
Brian Antonak
Gary Bennett
Lisa Berpoy
Lisa Bonson
Kenneth Bonstede
James Conace
Chad Dragan
Eric Guedner
Francis Hustain
Walter Loop
David McCary
Keith McGuire
J ames Miller
Richard Pitre
Karen Richardson
Alden Roche
Robert Shap
Riki Takeshita
Wallace Twitchell

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