



MARSHALL STAR

Serving the Marshall Space Flight Center Community

Aug. 21, 2008

NASA engineers complete engine test series for Ares I rocket

By Craig Dunn

Engineers at the Marshall Space Flight Center have completed a series of tests on a key component of the J-2X engine. The J-2X powers the upper stage of the Ares I rocket, which will launch human explorers to the International Space Station and to the moon.

The test on Aug. 15 was the last of 20 in this series, concluding the second of four planned sets of tests on the J-2X's workhorse gas generator, the driver for the turbopumps which start the engine.

The gas generator test program is designed to demonstrate the component's performance, durability and combustion environment, and to reduce risk in the design, fabrication and operation of flight hardware. The third phase of testing will begin in July 2009. The J-2X's workhorse gas generator is fabricated by Pratt and Whitney Rocketdyne of Canoga Park, Calif.

The primary objectives achieved in this series of tests were to regulate ignition timing and address stability issues in the gas chamber. During engine start, a pressurized helium system begins to turn the turbopumps, which draw liquid hydrogen and liquid oxygen propellants into the system. The propellants flow into the generator's combustion chamber, where they are sparked into life by pyrotechnic igniters installed in the side of the main combustion chamber.



NASA/MSFC

Marshall engineers completed a second series of testing Aug. 15 on the J-2X workhorse gas generator at test stand 116.

Once combustion is initiated, hot gases flow into the turbine. The combustion gas provided by the generator drives the turbomachinery, which delivers high pressure propellants to the main injector during the J-2X burn. This testing allows engineers to address stability issues that can arise during operation of the

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Emmett Given/MSFC

Marshall certified as Backup Control Center for International Space Station

From left, Bryan Snook, Mary Lawrence and Dana Weigel, part of a flight control team from the Johnson Space Center in Houston, go over International Space Station operations recently at the Marshall Space Flight Center with Joey Pirani, systems engineering team lead in Marshall's Ground Systems Development and Integration Branch. The team was in the Payload Operations Center's simulation room for an Operational Readiness Review to certify the Huntsville Operations Support Center as the International Space Station Backup Control Center. The Backup Control Center will be used by the Johnson Center flight team if a hurricane or other event shuts down the Mission Control Center. Marshall's ground team has worked nearly two years to establish these remote operations in its continued support of successful space station missions.

Three students awarded Marshall Association scholarships

By Megan Norris Davidson

Amy Gregory, Tracy McConnaughey and Terra White, all children of Marshall Space Flight Center team members, each received \$1,500 Marshall Association scholarships recently.

The Marshall Association uses membership dues to provide the annual monetary awards in technical and nontechnical fields of study to children of civil service and contractor employees who are Marshall Association members. To be considered, students must submit scholarship applications. Winners are chosen by a team of Marshall Association members.

Applicants are judged on classroom performance, SAT and/or ACT scores, extracurricular activities, community involvement and an essay on what they want to be doing 10 years from now.

"As I read the essays written by the applicants, I was reassured that the future of our nation is in good hands," said Herb Shivers, deputy director of Marshall's Safety & Mission Assurance Directorate, who serves as president of the Marshall Association. "These students are destined to be great leaders in our society."

Amy Gregory is the daughter of Melanie Gregory, a Triumph

Aerospace Co. employee who supports the Engineering Directorate's Spacecraft and Vehicle Department. A graduate of Calvary Baptist Academy in Huntsville, Gregory plans to attend Bob Jones University in Greenville, S.C.

A graduate of Grissom High School in Huntsville, Tracy McConnaughey is the daughter of Marshall's Paul McConnaughey, chief engineer in the Engineering Directorate, and Helen McConnaughey, manager of the Propulsion Systems Engineering & Integration Project Office in the Space Shuttle Propulsion Office. McConnaughey plans to attend Berry College in Rome, Ga.

Terra White is the daughter of Catherine White, a software systems engineer in Marshall's Space Systems Department in the Engineering Directorate. A graduate of Huntsville High School, White plans to attend Tulane University in New Orleans.

For more information about the Marshall Association, visit http://inside.msfc.nasa.gov/marshall_association/.

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



Emmett Given/MSFC

Former astronaut Jim Halsell, left, Marshall Center Director David King, second from right, and Herb Shivers, right, present Amy Gregory, center, with a scholarship. Gregory is accompanied by her mother, Melanie Gregory, second from left.



Emmett Given/MSFC

Tracy McConnaughey, center, receives a scholarship from Halsell, left; King, second from right; and Shivers, right. Paul McConnaughey, second from left, accompanied his daughter to the presentation.



Emmett Given/MSFC

Shivers, right, awards a scholarship to Terra White, second from right. White's father, Bob White, left, and mother, Catherine White, second from left, attended the presentation.

J-2X Test

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combustion chamber and will allow engineers to develop a clean design for the J-2X engine.

Beginning in 2015, the Ares I rocket will carry the Orion crew capsule and as many as six astronauts and small payloads to the International Space Station. During the first two-and-a-half minutes of flight, the first stage booster will power the vehicle to an altitude of about 189,000 feet, or 36 miles, at a speed of Mach 4.8. After its propellant is spent, the reusable booster will separate, and the upper stage's J-2X engine will ignite — powering the Orion to low Earth orbit at an altitude of about 425,328 feet, or roughly 80 miles.

The workhorse gas generator test series is an essential step in development of the J-2X engine. More than 50 tests have

been performed on the generator to date. This generator was manufactured to be more durable than the generators that will be used in the J-2X engine, allowing it to withstand numerous tests.

NASA's Johnson Space Center in Houston manages NASA's Constellation Program, which includes development of the Ares I rocket, the Ares V heavy cargo launch vehicle, the Orion crew capsule, and the Altair lunar lander. Marshall manages Ares projects for the agency.

For an image of the workhorse gas generator testing, visit <http://www.nasa.gov/ares>.

For information about NASA's Constellation Program, visit <http://www.nasa.gov/constellation>.

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

Safety & Mission Assurance Directorate honors employees as 'Essential Pieces' to the organization

By Megan Norris Davidson

The Marshall Space Flight Center has always been America's "go-to" place for putting people and payloads into space, and one center organization recently honored its team members for helping make that happen — safely.

Marshall's Safety & Mission Assurance Directorate, which provides and supports mission-critical safety and mission assurance functions for all center projects, paid tribute to more than 100 civil service and contractor team members at the organization's annual Employee Appreciation Day on Aug. 14 at Activities Building 4316. The theme for the event was "You're an Essential Piece to S&MA."

More than 200 people attended the event, which kicked off with team-building activities and introductions by Safety & Mission Assurance Directorate Director Roy Malone. "It is wonderful to set aside time to celebrate all of the great accomplishments S&MA team members have worked for over the last year and honor the people who make S&MA and the center successful," Malone said.

Nelson Parker, deputy director for program assurance, acknowledged several significant accomplishments of the directorate over the past year. Herb Shivers, Safety & Mission Assurance deputy director, presented the awards. Group Achievement Award winners were:

- **Freedom Star Mishap Recovery Team**, for outstanding accomplishments in determining the causes of the mishap injury that occurred on board NASA's recovery ship, Freedom Star, during the STS-116 solid rocket booster retrieval.
- **First Stage Expendability Assessment Team**, for outstanding reliability and safety assessment of an expendable versus reusable Ares I and Ares V first stage solid rocket booster.
- **Ascent Risk Analysis Team**, for exemplary achievement in the performance of the Ascent Risk Analysis, directly supporting the Ares Projects' System Requirements Review and the System Definition Review.
- **Upper Stage Common Bulkhead Analysis Team**, for outstanding achievement in analyzing, documenting and presenting the technical and safety risks of the Ares I upper stage common bulkhead, an internal partition that will separate liquid hydrogen and liquid oxygen tanks.

Brian Brown received a Center Director's Commendation for dedicated and exemplary participation and performance in support of the failure investigation of the reusable solid rocket booster operational pressure transducer. The transducer helps to determine the time of separation of the solid rocket boosters from the orbiter. Brown also was honored with the Professional Development Road Map Award for meeting all requirements in the S&MA Professional Development Road Map process, resulting in novice-level qualification as a system safety engineer. Paul Teehan received the



David Higginbotham/MSFC

Marshall team members enjoy food and festivities at the Safety & Mission Assurance Directorate's annual Employee Appreciation Day on Aug. 14 at Activities Building 4316. The organization honored more than 100 civil service and contractor team members.

Exceptional Achievement Medal for significant contributions to the reusable solid rocket motor and solid rocket boosters projects.

Three team members received Years of Service awards for their dedication to the Marshall Center. Chris Reinecke and Rick Williams were each recognized for 25 years of service, and James Rogers was honored for five years of service.

Nominated by organization team members for their outstanding contributions to the directorate and the Marshall Center, peer award winners included:

- Shirley Blair and Marie Webb, Excellence Award
- Rick Williams and Teresa Colgan, Teamwork Award
- Kyle Daniel and Dave Burks, Safety Award
- Paul Teehan and Danny Jones, Integrity Award
- Dave Spacek and Rick Sizemore, NASA Family Award
- Amy Schilling, Mike Gregory and Kent Schock, Resident Management Office of the Year
- Corey Harrell and Lauren Nouis, S&MA Rookie of the Year
- Chris Cianciola and Glen Hatfield, S&MA Most Valuable Player of the Year
- Joel Anderson, S&MA Chief Safety and Mission Assurance Officer of the Year
- Ros Strickland and Mike Kennedy, S&MA Team Lead of the Year
- Jenny Holmes, Cyndi Kilgore and Sandra Houston, S&MA Management Support Assistant of the Year
- Paul Teehan and Rick Sizemore, Manager of the Year

"Recognizing team members with these awards helps us to appreciate one another and recharge our batteries for mission success in the years ahead," Malone said.

Davidson, an AI Signal Research Inc. employee, supports the Office of Strategic Analysis and Communications.

Hatch Act restricts political activities of federal employees

From NASA Headquarters

With the 2008 election cycle approaching, NASA civil service employees may wish to participate in election-related activities.

This is a brief summary of the restrictions imposed on federal employees with respect to political activities — that is, activities directed toward the success or failure of a candidate for partisan political office or a partisan political party or group.

The political activities of executive branch employees have long been restricted by a law known as the Hatch Act. In 1993, Congress amended the Hatch Act, allowing most federal employees to take an active part in political management or in political campaigns. However, some employees continue to be prohibited from engaging in partisan political activity, and all employees face at least some restrictions on their conduct.

General schedule, non-career and certain other employees

Most employees may participate in most types of political activity on their own time. This category includes general schedule, senior level, Schedule C, NASA excepted and non-career Senior Executive Service employees.

Specifically, these employees may:

- Assist in voter registration drives
- Express opinions
- Contribute money
- Attend fundraisers
- Join or attend rallies, meetings, parties and clubs
- Sign nominating petitions
- Campaign for or against candidates or questions
- Make campaign speeches
- Distribute campaign literature

However, some activities remain prohibited. Specifically, employees may not:

- Use official position to interfere with an election
- Solicit, collect or receive political contributions (unless both individuals are members of certain kinds of labor or employee organizations and the one solicited is not a subordinate)
- Knowingly solicit or discourage political activity of someone who has business with the government
- Engage in political activity while on duty, while wearing a uniform or official insignia, or using a government vehicle

The restriction on conduct of political activities while on duty prohibits, among other things, the wearing of campaign buttons and the placement of posters in work areas. It does not prohibit bumper stickers on privately owned vehicles parked in a NASA parking lot or garage.

Career members of the Senior Executive Service

Career SES may not engage in partisan political activity. This is a significant additional restriction. These employees may:

- Attend political rallies and meetings
- Join political clubs or parties
- Sign nominating petitions
- Campaign for or against referendum questions, constitutional amendments and municipal ordinances

However, most political activities are prohibited. Specifically, career SES employees may not:

- Campaign for or against candidates or slates of candidates in partisan elections
- Make campaign speeches for candidates in partisan elections
- Solicit or receive contributions for partisan political organizations
- Collect contributions for or sell tickets to political fundraising functions
- Distribute campaign material in partisan elections
- Organize or manage partisan political rallies or meetings
- Hold office in partisan political clubs or parties
- Circulate nominating petitions in partisan elections
- Take part in deliberations or proceedings of party conventions or convention committees
- Register voters on behalf of a particular political party

Further information on how the Hatch Act applies to federal employees can be found on the U.S. Office of Special Counsel Web site at http://www.osc.gov/ha_fed.htm. Neither this brief summary nor materials produced by the Office Special Counsel are a substitute for individualized advice.

In the event of any uncertainty on the application of the Hatch Act, employees should contact the Office of the General Counsel or contact Pam Bourque in the Marshall Space Flight Center's Office of the Chief Counsel at 544-0024 or pam.bourque@nasa.gov.

Interacting with presidential campaigns

In this presidential election season, it is important to remember that federal employees working in their official capacity should be mindful of the way they interact with political campaigns.

Information provided to any presidential campaign should be handled in the same manner as inquiries from the general public. Presidential campaign requests for anything other than information readily available to the public should be reported to and approved in advance by the NASA General Counsel before being answered.

This policy does not affect incidental, social or personal contacts between NASA employees in their private capacities and acquaintances who work for a campaign, nor does it prevent or cover off-duty political activities of NASA employees in their private capacity to the extent permitted by federal law.

If you are contacted by a presidential campaign for reasons other than a request for publicly available information, or if you have questions regarding this guidance, please contact the Office of the General Counsel at 202-358-2465 or e-mail ethicsteam@hq.nasa.gov.

Michael C. Wholley
NASA General Counsel

Moving toward NASA's 50th anniversary ...

This year, NASA marks its 50th anniversary on Oct. 1. On Aug. 27, 1958, President Dwight D. Eisenhower signed Public Law 85-766, which included \$80 million for NASA — \$50 million for research and development, \$25 million for construction and expenses and \$5 million for salaries and expenses.



Classified Ads

To submit a classified ad to the Marshall Star, go to Inside Marshall, to "Employee Resources," and click on "Employee Ads — Submit Ad." Ads are limited to 15 words, including contact numbers. No sales pitches. Deadline for the next issue, Aug. 28, is 4:30 p.m. Thursday, Aug. 21.

Miscellaneous

John Deere comforter, full/queen, bed skirt, pillow shams, valance, \$75. 837-7465

Wooden waterbed headboard, king, \$50; oak computer armoire, \$100. 684-6308

Bicycle trailer/stroller, for two, \$75; Little Tykes outside slide, \$25. 684-6308

Exterior paint, latex, 15 gallons, gray/green, \$75; five cattle panels, 12 feet, \$60 each. 259-1523

Yukon hyper-extension lower-back exercise machine, \$100. 880-6335

Jeff Zimmerman designer sofa, large, floral, down filled, \$500. 536-5132

Brookstone iSqueeze calf/foot massager, \$275 obo. 325-2622

Coffee table, <http://home.mchsi.com/~jscottm/furniture.htm>, \$100. 828-9651

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

Lowe Alpine backpack, \$200; North Face sleeping bag, \$50; air filter, \$15; carpet kit, \$50. 658-8241

Whirlpool dishwasher, black, model #DU1145, \$150; range, overhanging microwave, \$40; drawing table, \$10. 931-374-2130

Pearl percussion bell kit, for beginning band, \$200. 882-3753

Stainless countertop storage tank, for distiller, automatic high-level control, faucet, 5x21x13 inches. 883-8257

Kenmore Series 90 washing machine, \$150; washer/dryer set, \$300. 345-9555

Revelations .22 LR scoped, \$70; Traditions .50-caliber cap lock, accessories, \$120; 12-gauge SxS, \$300. 684-1380

Solid cherry wall entertainment center, 5x5 feet, fits up to 27-inch TV, \$500 obo. 722-3141

F78-14ST tires, rims, \$50 pair; metal dog kennels, \$35 each; XL dog kennel, \$45. 652-5177

Bristol race tickets, Aug. 23, Night Sharpie 500, \$275. 682-6325

Nine Ping Eye2 golf clubs, green dot, steel shaft, \$250; Ping walk bag, \$15. 683-3397

Vehicles

2008 Maxima SL, blue, 10k miles, \$24,500 obo; 1995 Windstar, 136k miles, \$2,750 obo. 520-2802

2007 Mitsubishi Eclipse, red, black interior, five speed, four cylinder, sunroof, 25k miles, \$16,900. 776-8785

2007 Suzuki Quad 4 ATV, black/burgundy/silver, \$4,500 obo. 457-9709

2006 Honda CRF230F dirt bike, \$1,950 obo. 776-4741

2006 Lexus GS300, blue, custom wheels, navigation system, sunroof, 51k miles, \$27,000 obo. 797-8322

2006 Nissan Pathfinder, bronze, tan leather, all power, heated seats, 40k miles, \$17,900. 337-5172

2004 Nissan Maxima 3.5SE, dark blue, loaded, tint, alloy wheels, sunroof, 70k miles, \$19,800. 325-4446

2004 Chevy 1500 LT, extended cab, four door, tow package, leather heated seats, \$16,000. 509-2536

2004 Yamaha V-Star Classic motorcycle, 1100cc, green LED, 41mpg, 9k original miles. 874-3355

2003 Acura RSX, gray, 35mpg, five-speed manual, alloy wheels, moonroof, leather, 79k miles, \$8,990. 652-5274

2003 Club Car golf cart, 48 volts, windshield, \$1,750. 682-6326

2002 Kia Sportage 4D, 4WD, hunter green, 65,439 miles, \$4,200. 426-5541

2002 Suzuki XL, seats seven, \$8,000. 783-6278

2002 Nissan Frontier pickup, king cab, bed liner, auto, 53k miles, \$8,500. 883-6894 or 468-6894

2001 Honda CRV LX, black/gray, new timing belt/battery, 105k miles, \$7,900. 883-6894 or 468-6894

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

2000 17-foot Jon boat, 1997 40HP motor, electric start, 2000 trailer, \$4,500 obo. 653-2533

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

1999 Toyota RAV4, 4WD, red, 130k miles, \$5,500. 508-0838

1996 Mercury Sable LS, \$500. 656-4637

1993 Ford Explorer Limited Edition, white, gray leather interior, \$3,000. 656-4637

1991 Buick LeSabre, burgundy, burgundy interior, 160k miles, \$750 obo. 655-2913

1987 Bronco, automatic, 4x4, no air, power brakes/

steering, \$1,800 obo. 653-2533

1972 Honda CB350 motorcycle, new tires, seat, cables, 13k miles, \$850. 883-8340

1965 Piper Cherokee 180, autopilot, Garmin 430 GNS, IFR rated, \$52,000 obo. 426-0856

1310 Ford tractor, 20HP diesel, 5-foot King Kutter finishing mower, \$4,100 obo. 714-4974

Honda Foreman ES, 4x4, \$3,200. 975-0068

Wanted

Four Auburn vs. Tennessee tickets, Sept. 27. 726-0278

Four tickets, LSU/Troy football game, Sept. 6; two tickets, Auburn/LSU game, Sept. 20. 880-6563

Rocker or glider chair, ottoman, tan/beige, good condition. 658-5684

Trampoline, safety closure, good condition. 658-5685

Repair to "Spirit of '76" pinball machine, old Westinghouse Coca-Cola machine. 772-1199

Boxer puppy, vaccinated, dewormed, for small child. 503-4325

Homes/offices to clean; elderly/children sitting. 651-4723

Bowlers, men or couples, Redstone Lanes, Wednesday evening league. 544-9056

Free

25-inch console color TV, remote, you pick up. 931-993-7768

8-week-old bulldog/boxer mix puppies, male, female. 303-4900

Dying 100-year-old oak tree, for firewood, you cut, will help load. 318-1789

Found

Cell phone ear piece, microphone, Building 4200 area, Aug. 12. 544-4680

Shuttle Buddies to meet Aug. 25

The Shuttle Buddies will meet at 8:30 a.m., Aug. 25, at Mullins Restaurant on Andrew Jackson Way. For more information, call Deemer Self at 881-7757.

'Mythbusters' to debut NASA-themed episode Aug. 27

By Rick Smith

Were the Apollo moon landings a hoax?

That's not a question one normally hears around the Marshall Space Flight Center. But last January, the cast and crew of "Mythbusters" came to Marshall to ask it — and test it in their own inimitable style — in hopes of clearing up the conspiracy theories once and for all.

The popular science series' findings will air in a NASA-themed episode to debut Aug. 27 at 8 p.m. CDT on the Discovery Channel.

"Mythbusters" hosts Grant Imahara, Kari Byron and Tory Belleci — aided by Marshall engineers in the Experimental Fluids and Environmental Test Branch — conducted tests using several of the center's world-class vacuum chambers in Building 4619. They tested the behavior of objects in an airless environment, from feathers to American flags. Belleci even took "one small step" in simulated lunar soil — to determine what a true astronaut boot print would look like when planted on the moon's surface.

The tests focus on points of contention among hoax theorists, who say video taken on the moon by astronauts Neil Armstrong and Buzz Aldrin, among others, reveals ways in which NASA faked the moon landings. Do flags really flutter in a vacuum? Can lunar soil hold a footprint? Tune in to find out.

The hour-long episode will repeat Aug. 28 at 12 a.m. and 9 p.m., and Aug. 29 at 1 a.m. For more information about "Mythbusters," visit <http://dsc.discovery.com>.

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



Emmett Given/MSFC

"Mythbusters" Kari Byron, left, and Grant Imahara prepare an experiment to bust moon-hoax myths at Marshall. The video taping of the Marshall portion of the "Mythbusters" episode took two, 12-hour days in January.

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