



The X^{PR}ESS

Volume 52 Number 13 July 2, 2010

Orion returns

Dryden staff set to prepare crew module for next flight

The boilerplate crew module that was the focus of the May 6 Orion Launch Abort System Pad Abort-1 flight test at the U.S. Army White Sands Missile Range in New Mexico has been returned to Dryden. The crew module and its separation ring were airlifted to Dryden June 15 from Holloman Air Force Base aboard a Mississippi Air National Guard C-17.

Although plans did not originally call for the crew module to be reused due to the high-risk nature of the PA-1 test flight, the module and its systems survived the test with only minor damage, according to Orion Abort Flight Test project manager Brent Cobleigh, so can be put to further use.

“The success of the PA-1 launch has opened an opportunity to re-fly the PA-1 crew module on another launch abort test flight in 2012, which will save time in the schedule and significantly lower costs,” Cobleigh said. “The NASA team is putting together plans for this flight, which would test the launch abort system at a point in the ascent trajectory, near the speed of sound, where structural loads are very high.”

Cobleigh said Dryden engineers and technicians will spend several months inspecting and re-qualifying



ED10 0157-26

NASA Photo by Tony Landis

Above, the Orion PA-1 flight test crew module is unloaded from a Mississippi Air National Guard C-17 at Dryden after a ferry flight from Holloman Air Force Base, near White Sands Missile Range in New Mexico.



ED10 0157-50

NASA Photo by Tony Landis

At left, the Orion PA-1 test module is moved carefully into the space shuttle hangar, where Dryden crews will prepare it for another flight research mission.

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G-III mission is complete

Aircraft's busy schedule includes Gulf spill imaging

After a brief respite, NASA's Gulfstream III aircraft with a sophisticated synthetic aperture radar slung under its belly flew to the Gulf of Mexico June 22-24 for a brief series of radar imaging missions over the Gulf oil spill area.

The flights followed up on previous imaging missions, flown several weeks ago at the request of NOAA, by NASA's ER-2 science aircraft carrying an AVIRIS spectrometer. The G-III carries an active L-band synthetic aperture radar, or UAVSAR, developed by



ED07 0042-05

NASA Photo by Lori Losey

The G-III flies a checkout flight over the high desert near Dryden.

NASA's Jet Propulsion Laboratory and operated while the aircraft flies at about 40,000 feet altitude.

The G-III flew the oil spill survey flights from staging bases in Pensacola, Fla., and Ellington Field near Houston. It departed the Dryden Aircraft Operations Facility in Palmdale, Calif., June 22 for Naval Air Station Pensacola, flying several survey lines, or tracks, with the UAVSAR during the six-hour flight. Two similar flights were made

See Mission, page 7

Kids visit parents' busy workplace

Children of Dryden employees had a chance June 24 to see where their parents work and enjoyed some rare opportunities to get first-hand looks at the center's unique aircraft.

They toured the NASA 747 Shuttle Carrier Aircraft and crew transfer vehicle, **at right**, and inside hangar 4802 they saw the Orion crew module, used recently in a launch abort flight test at White Sands Missile Range, N.M.

In addition to sitting in an F/A-18 and flying a simulator, students were treated to the Discovery Dome, where they learned more about the stars. **Below right**, public affairs specialist Leslie Williams teaches enthusiastic kids about what astronauts eat in space.

Young visitors also had an opportunity to help launch a weather balloon and learn about its use in determining weather conditions. **Below left**, Mark Leseberg, an experienced radio control aerobatics pilot who has won numerous national and international aerobatic competitions, demonstrates his craft.



ED10 0170-65

NASA Photo by Tom Tschida



ED10 0170-51

NASA Photo by Tom Tschida



ED10 0170-11

NASA Photo by Tom Tschida

Shuttle program bestows 2 awards

George Grimshaw, Dryden space shuttle manager, was recognized with a Launch Directors Award for his role in ensuring the Edwards inside runway 22R/04L was ready for Endeavour's STS-126 landing.

Grimshaw, center at right, received the award from Kennedy Space Center convoy commander Ted Mosteller, left, and Brig. Gen. James Hogue, director of the Edwards Space Shuttle Contingency Response Team.

Shuttle operations planned to use the inside runway beginning with STS-124, but the STS-126 landing was the first and only one made there. Rain and ponding water in the area of the runway lights were a concern, and technicians monitored the situation. By landing day, the water had dissipated. Despite some muddy areas, technicians were able to walk out to both sites and have the landing lights ready.

In a related activity, recently retired Edwards Air Force Base airspace manager Bill Gries was honored with a NASA "Silver Snoopy" award for his service as coordinator of space shuttle



ED10 0128-07

NASA Photo by Tony Landis



ED10 0152-1

NASA Photo by Tony Landis

landing contingency support. Above, NASA astronaut Marsha Ivins presented the award to Gries at Dryden June 14. A former air traffic controller at Edwards, Gries coordinated all space shuttle

landing support activities from the high desert area, including those at the Naval Air Warfare Station at China Lake, the Army's Fort Irwin and Edwards.

Quilted with love, for a friend



Friends and colleagues of Dryden switchboard operator Annette Pitre turned NASA and Dryden t-shirts into a quilt they hope will keep Pitre warm during her extended leave due to illness. Shirt contributions came from Arcata Associates and Code T employees, with Kelly Perez and Desiree Sylvia heading up the effort.

ED10 0141-1

NASA Photo by Tony Landis

News at NASA

Wanted: Space lofts

NASA is challenging college students to design concepts for inflatable habitat lofts for the next generation of space explorers. The winning concepts may be applied to the exploration habitats of the future.

The X-Hab Academic Innovation Competition is a university-level challenge designed to encourage further studies in spaceflight-related engineering and architecture disciplines. This design competition requires undergraduate students to explore NASA's work to develop space habitats, while also helping the agency gather innovative ideas to complement current research and development.

Students will design, manufacture and assemble an inflatable loft that will be integrated into NASA's operational hard-shell prototype lab unit. The competition winner will participate in a demonstration of the submitted design during the 2011 Desert Research and Technology Studies, or a similar field test next summer.

NASA's Exploration Mission Directorate and the Office of the Chief Technologist's Innovative Partnerships Program are sponsoring the challenge. NASA is dedicated to supporting research that enables sustained and affordable human and robotic exploration. The competition contributes to the agency's efforts to train and develop a highly skilled scientific, engineering and technical workforce for the future.

Information about competition registration and requirements is available at <http://www.spacegrant.org/xhab>.

NASA honors some of Dryden's finest

A June 22 NASA Awards ceremony recognized a number of Dryden individuals and teams. Woodrow Whitlow, associate administrator for the NASA Mission Support Directorate, also attended the ceremony and helped deliver the awards to recipients.

Exceptional Achievement Medal

Ralph A. Anton

The medal was awarded for exceptional achievement and significant contributions in the activation of the Dryden Aircraft Operations Facility in support of the Agency's programs and initiatives.



Ralph A. Anton

Gabriel Baca

The honor was bestowed for exceptional coordination in early completion of Orion Abort Flight Test launch complex buildings, launch pad, gantry and launch services pad at White Sands Missile Range, N.M.



Gabriel Baca

Congratulations to all the winners

Pamela Chabelal

The medal was awarded for exceptional achievement for significant performance and contributions to the Agency for the past 21 years.



Pamela Chabelal

James Hillman

The honor was bestowed for exceptional dedication and support during the execution of Dryden's construction award for the first Silver building at Dryden.



James Hillman

Exceptional Service Medal

Gary Beard

The medal was awarded for exceptional sustained service as an aerospace technician, group lead, and branch chief on unique, highly modified aircraft and aerospace vehicles.



Gary Beard

Glenn A. Bever

The honor was bestowed for recognition of exceptional sustained engineering excellence and demonstrated leadership in support of NASA's flight research and science missions.



Glenn A. Bever

Joseph W. Pahle

The medal was awarded for exceptional service in developing the upgraded Research Flight Control System computer on F/A-18 no. 853, thereby maintaining an important national research capability.



Joseph W. Pahle

Rosemary R. Sanchez

The honor was bestowed for outstanding administrative support and exemplary customer service.



Rosemary R. Sanchez

Daryl W. Townsend

The medal was awarded for exceptional service as an aerospace technician and crew chief on many unique, highly modified aircraft and aerospace vehicles at Dryden.



Daryl W. Townsend

Exceptional Administrative Achievement Medal

Sandra S. Meske

The honor was bestowed for exceptional achievement and significant contributions in the activation of the Dryden Aircraft Operations Facility in support of the Agency's programs and initiatives.



Sandra S. Meske

Outstanding Leadership Medal

Brent Cobleigh

The medal was awarded for outstanding leadership and dedication in the advancement of NASA's missions, including Atmospheric Research, Earth Science, and Exploration Systems.



Brent Cobleigh

Mark A. Skoog

The honor was bestowed for unparalleled technical leadership while envisioning and developing revolutionary collision avoidance technology that will save thousands of lives.



Mark A. Skoog

Exceptional Public Service Medal

James C. Ledford Jr.

The medal was awarded for exceptional support during lease negotiation and activation of the Dryden Aircraft Operations Facility and outstanding support of NASA's Education program at the Aerospace Education Research and Operations – or AERO – Institute in Palmdale.



James C. Ledford Jr.

Kenneth J. Szalai

The honor was bestowed for exceptional leadership in enabling the development of a unique national asset – the NASA and Northrop Grumman Global Hawk.



Kenneth J. Szalai

Group Achievement Awards

Dryden Aircraft Operations Facility Fabrication Team

The honor was awarded for an exceptionally talented, innovative, determined and dedicated manufacturing professional team that met challenges of beginning the Dryden Aircraft Operations Facility. Team leader Alan Crocker accepted the award for the team.

Dryden Space Shuttle Landing Aids Transition Team

The recognition was bestowed for outstanding performance transitioning the Space Shuttle landing aids to the temporary

runway at Edwards Air Force base, culminating in the safe landing of the STS-126 mission. Team lead George Grimshaw accepted the honor for the team.

ePDS Development and Implementation Team

The honor was awarded for dedication in developing and implementing the Electronic Position Description System. Team lead Patsy Smith accepted the award for the team.

NASA Very Large Air Tanker Team, or VLAT

The recognition was bestowed for exceptional achievement between government and industry

toward developing operational recommendations for airworthiness and mission compatibility in fighting forest fires. Team lead Mark Dickerson accepted the honor for the team.

Dryden Flight Operations Directorate

The honor was bestowed for outstanding flight operations, including more than 1,000 sorties from Edwards Air Force Base and Palmdale, two space shuttle landings, and the 2008 U.S. General Services Administration Federal Large Program Flight Operations Award. The team leader for the team was Lawrence Davis.

Length of Service Awards

35 Years

The following people were recognized: John V. Breiding, Gary D. Carlson, Linda E. Gaugler, Steven L. Lighthill, Gary R. May and Rosemary R. Sanchez.

William H. Fredriksen, Craig S. Griffith, Wolf B. Hack, Don L. Hermann, Darlene Homiak, Charles J. McKee, Jan Elaine Purifoy, Sarah L. Sanders and Ronald M. Wilcox.

Charles W. Johnson, Walter E. Klein, Joseph L. Piotrowski, Steven F. Robinson, Charles E. Rogers and Robert D. Sakahara.

30 years

The following were recognized: Robert F. Antoniewicz, Gary E. Beard, John J. Bresina, Nancy J. Campbell, Alexis Castelazo, Ellen E. Christmann, Keith A. Day, John H. Del Frate, Lydia Dorfman, Tracy J. Edmonson, Paul I. Everhart,

25 years

The following were recognized: Tracy L. Ackeret, Connie S. Bosworth, Antonio E. Branco, Thomas Cronauer, Karen Estes, Mary Alice Grossman, Connie Mari Howell-Hines, Larry D. Hudson,

20 years

The following were recognized: James Arthur Adams, Carmen Arevalo, Randall H. Button, Wayne Austin Dedafoe, Sandra S. Evans, Jeanette H. T. Le, Robert Navarro, Ken Norlin, Allen R. Parker and Leslie A. Williams.



ED10 0106-123

NASA Photo by Tony Landis

Above, the Mars Science Laboratory descent stage radar attached to this Wolfe Air Aviation helicopter's nose gimbal was the focus of recent testing at Dryden. Below left, a computer-generated image shows the MSL descent stage lowering the rover Curiosity to the Martian surface using the skycrane maneuver.

Edwards doubles as Mars

By Gray Creech

Dryden Public Affairs

Dryden recently provided logistics and range support for a Jet Propulsion Laboratory team's test of a landing radar system for the next Mars rover mission. The test was conducted adjacent to Dryden's Edwards Air Force Base facilities.

Testing for the JPL-managed Mars Science Laboratory, or MSL, project included suspending a full-scale engineering model of the MSL rover from a helicopter and flying pre-planned flight trajectories over Rogers Dry Lake to simulate the rover's descent stage, which will carry the rover to the Martian surface. Engineers from JPL sought to verify that the radar will provide accurate altitude and velocity measurements

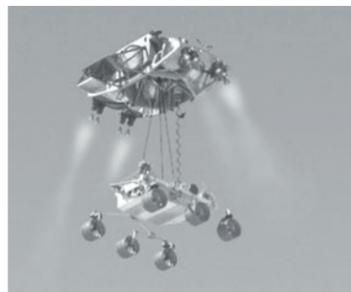


Photo courtesy JPL

on Mars and that the suspended stage's radar capability to accurately calculate the rover's descent speed for a safe, on-target landing.

"Dryden offers a unique location to perform testing of this kind," said Carrie Rhoades, Dryden flight

See Mars, page 8



ED10 0106-21

NASA Photo by Tony Landis

Above, Brian Lataille of Wolfe Air Aviation, left, and JPL's Charles Fisher prepare the MSL descent radar on a helicopter nose gimbal during flight tests at Dryden. The six disks visible in the foreground are the radar's antennas.

Roy Estess, former Stennis director, dies suddenly at 71

Roy Estess, a former center director at Stennis Space Center, Miss., died suddenly June 25 from effects of an insect sting.

"We mourn the loss of a great former NASA leader, and my personal friend," said Administrator Charles Bolden in a statement to agency employees. "Roy was well known and respected throughout the NASA family. He came from an era when NASA engaged the imagination and hope of the world, a time when our leaders transformed our deepest aspirations into reality. "In that same spirit, I ask all who knew Roy to celebrate his many accomplishments and the hopefulness for the future that was his legacy to everyone."

Estess began his 37-year NASA

career in 1966 as a test engineer at Stennis, known then as the Mississippi Test Facility. He worked on rocket engines for the Apollo program and was a pioneer in space exploration, serving the agency in several key management positions.

In 1989, Estess was named Stennis center director, a position he held until 2002. Following his retirement, he remained a strong advocate for NASA and space exploration. He was a champion of the Infinity Science Center and visitor attraction, currently being built near the Stennis gates, and served on its board of directors.

In lieu of flowers, contributions may be made in his name to the Boy Scouts of America, PBAC, Hattiesburg, MS 39401.

Mission ... from page 2

June 22 and 23 before the aircraft returned to the DAOF June 24.

The earlier ER-2 flights with an AVIRIS spectrometer focused on the thickness and composition of oil in Gulf waters. The G-III flights centered on the coastal areas extending from western Louisiana to the Florida Keys that are being impacted by the spill, as well as significant regions over the oil slick itself. Flights over the coastline and oil slick are coordinated with ground and surface ship measurements.

The radar provided a unique set of measurements that will help

improve discrimination of oil slicks over water, determination of the oil slick's properties, the extent of oil penetration into the sensitive coastal ecological zones and provide baseline data for studies on persistence, location and damage-recovery processes for various coastal ecological zones.

The G-III aircraft and its pod-mounted radar returned to Dryden June 17 after participating in the 17-day Canadian Experiment for Soil Moisture in 2010, or CanEX SM10, mission in Saskatchewan, Canada.

Summer workshop on tap

The Dryden education office will offer a Bohn-Meyer Math and Science Odyssey summer event, "Elevating Aeronautics," July 19-23 at the AERO Institute in Palmdale.

The event is open to students who will enter seventh grade in the fall. Participants will join a NASA team to develop an aeronautic design challenge and work alongside engineers to see it become reality.

Students will be commissioned to

create and design a foam-wing glider that will then be tested for flight in competition held at the Dryden Aircraft Operations Facility in Palmdale. The event will culminate in students visiting Dryden.

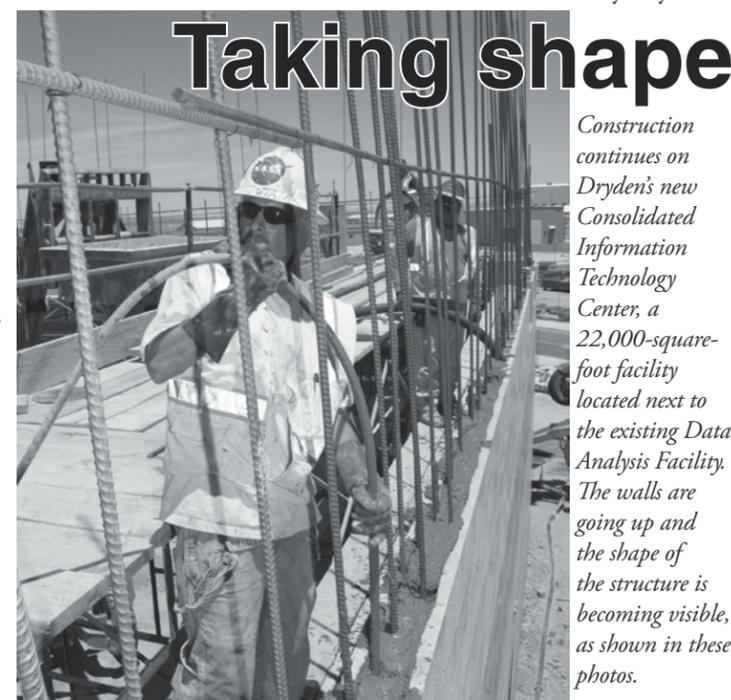
Hours for the workshop will be 8 a.m. to 4:30 p.m. Registration materials and additional information are available from Sara Cutts, Education Resource Center coordinator, 661-276-3992 or sara.cutts@nasa.gov.



ED10 0164-04

NASA Photo by Tony Landis

Taking shape



Construction continues on Dryden's new Consolidated Information Technology Center, a 22,000-square-foot facility located next to the existing Data Analysis Facility. The walls are going up and the shape of the structure is becoming visible, as shown in these photos.

ED10 0164-15

NASA Photo by Tony Landis



ED10 0164-02

NASA Photo by Tony Landis

Mars ... from page 6

flight operations engineer. Rhoades manages MSL project activity at Dryden. "We have restricted airspace and a large dry lakebed that is useful in simulating several Mars-like features. Dryden is also conveniently close to JPL, so troubleshooting the system and fixing any issues has been relatively easy."

The helicopter, carrying the MSL radar on a special nose-mounted gimbal system, mimicked the MSL descent stage on which the radar will be mounted during the mission to Mars. The unique, rocket-powered descent stage will lower the rover, named Curiosity, on cables directly to the planet's surface in a maneuver dubbed "sky crane."

The descent stage will then depart to a preplanned crash after releasing the cables, leaving Curiosity with its wheels on the Martian surface, ready to begin its search for ancient

habitats.

"Our JPL team is thrilled to have accomplished this critical radar field test at Dryden," said Steven Lee, MSL Guidance, Navigation and Control Systems manager. "The large, flat expanse of Rogers Dry Lake provided an ideal venue for our initial tests. The Dryden team did a great job accommodating our logistical and flight support needs, from hangar space to flight clearances."

"Preliminary results indicate the radar performs as expected and we look forward to continuing our field tests at other Mars-like locations, including Amboy Crater, Cadiz Sand Dunes and Death Valley," Lee added, referring to other Mojave-area sites.

The new sky crane landing method was chosen for the next Mars mission because Curiosity will be the largest rover yet sent

to the Red Planet. It's too large for the airbag-cushioned landing method used in NASA's 1997 Mars Pathfinder mission and the twin Mars Exploration Rover landings in 2004.

Also, MSL mission landing requirements call for touching down at a more precise point on Mars than did those of previous rover missions, and the sky crane method was considered the best option for achieving such precision landings.

Starting in 2008, a series of MSL developmental flights were flown at Dryden with the center's F/A-18 to collect environmental control system data to help validate the MSL radar system. In one test series, the F/A-18 carried a Quick Test Experimental Pod housing the radar's environmental control hardware to an altitude of 47,000 feet and made a series of dives to simulate a high-speed

entry into the Martian atmosphere. More of these flights are scheduled in the coming months to support JPL in further verifying MSL radar performance.

Mars Science Lab mission components such as Curiosity, the descent stage, the cruise stage and the aeroshell are currently undergoing assembly and testing at JPL in Pasadena, Calif., in preparation for an autumn 2011 launch. Curiosity is scheduled to reach Mars in the summer of 2012.

Wolfe Air Aviation, Pasadena, provided the Eurocopter AS350 helicopter and crew for the tests. The helicopter's Gyron gimballed mounting system, provided by Nettman Systems International, is ordinarily used to carry aerial video camera equipment for the motion picture industry.

The MSL mission page is at <http://marsprogram.jpl.nasa.gov/msl/>.

Opportunity ... from page 1

all the crew module systems, including the flight control computers, navigation systems, instrumentation and parachute systems.

The launch abort system developed for the Orion is being designed to offer a safe and reliable method of removing an astronaut crew from danger should an emergency occur on the launch pad or during a spacecraft's ascent to space.



July 1, 1966 – Lt. Col. Robert Rushworth made an emergency landing at Mud Lake, Nev., in X-15A-2 (56-6671), Rushworth's last X-15 flight. The wing of the X-15 sliced into the top of a camper on the highway while the plane was being trucked back to Edwards.

SD renamed the X-Press

The Special Delivery is again being called the X-Press to simplify and unify the X-Press group of publications and Web products. The primary purpose of the X-Press remains the same: to communicate Dryden activities to the workforce, retirees and the public.

The various X-Press publications, including the Special Delivery, X-tras, Special Edition X-Press and Aerovations, were added over the years to meet Dryden's special needs and allow for more in-depth coverage of select topics. The X-Press was originally published as the National Advisory Committee for Aeronautics High-Speed Flight Station News on February 25, 1955. The publication's name was the X-Press beginning with the second issue on March 11, 1955, and it was printed monthly. The volume number on this week's issue continues the sequence established with the original publication.

To suggest story ideas, contact editor Jay Levine at ext. 3459.

X-Press Special Delivery is published the first and third Fridays of each month for civil servants, contractors and retirees of the Dryden Flight Research Center.

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