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 cost,” 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 Orion returns

Dryden staff set to prepare crew module for next flight

See Opportunity, page 8

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.

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.
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 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 June 23 and 24.

See Mission, page 7

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 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 Department of Defense facilities in the high desert area, including those at the Naval Air Warfare Station at China Lake, the Army’s Fort Irwin and Edwards.

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 Leaebeg, an experienced radio control aerobatics pilot who has won numerous national and international aeronautical competitions, demonstrates his craft.

Quilted with love, for a friend

Friends and colleagues of Dryden switchboard operator Annette Pire turned NASA and Dryden when into a quilt they hope will keep Pire 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.

Information about competition registration and requirements is available at http://www.spacegrant.org/shab.
Congratulations to all the winners!

**Exceptional Achievement Medal**
- **Ralph A. Anton**
  - The medal was awarded for exceptional achievement and significant contributions to the activation of the Dryden Aircraft Operations Facility in support of the Agency’s programs and initiatives.

- **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.

- **Joseph W. Pahle**
  - The medal was awarded for exceptional service in developing the upgraded Research Flight Control System computer on F/A-18 no. 8535, thereby maintaining an important national research capability.

- **Rosemary R. Sanchez**
  - The honor was bestowed for outstanding administrative support and exemplary customer service.

- **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.

**Exceptional Service Medal**
- **Gary Beard**
  - The medal was awarded for exceptional sustained service as an aerospace technician, group lead, and branch chief on a unique, highly-modified aircraft and aerospace vehicles.

**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.

**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.

**Outstanding Leadership Medal**
- **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.

**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.

- **ePDS Development and Implementation Team**
  - The honor was awarded for development in dedicating and implementing the Electronic Position Fixing System. Team lead MaryMagnitude 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 Cizmek accepted the honor for the team.

**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.

- **30 Years**

- **25 Years**
  - The following people were recognized: James Arthur Adams, Carmen Avravos, Randall H. Button, Wayne Austin Dedato, Sandra S. Evans, Janette H. T. Le, Robert Navarro, Ken Norlin, Allen R. Parker and Leslie A. Williams.

- **20 Years**
  - The following people were recognized: James Arthur Adams, Carmen Avravos, Randall H. Button, Wayne Austin Dedato, Sandra S. Evans, Janette H. T. Le, Robert Navarro, Ken Norlin, Allen R. Parker and Leslie A. Williams.
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 of us to remember and 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, Huntsville, MS 35801.

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 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 CanX 5M10, mission in Saskatchewan, Canada.

Summer workshop on tap

The Dryden education office will offer a Bohm-Meyer Math and Science Odyssey summer event, "Elevating Aeronautics,” July 19-23 at the AERO Institute 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 Curtz, Education Resource Center coordinator, 661-276-3992 or sara.curtz@nasa.gov.

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.

ED100166-21 NASA Photo by Tony Landis

ED100166-20 NASA Photo by Tony Landis

ED100166-21 NASA Photo by Tony Landis

ED100166-20 NASA Photo by Tony Landis

ED100164-04 NASA Photo by Tony Landis

ED100164-15 NASA Photo by Tony Landis

ED100164-02 NASA Photo by Tony Landis
Mars... from page 6

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 descent stage will then depart to a preplanned crash after releasing Curiosity with its wheels on the Martian surface, the cables, leaving Curiosity with a preplanned crash after releasing Curiosity, on cables directly to the planet’s surface in a maneuver named the “skycrane.”

The unique, rocket-powered descent stage on which the radar will gimbal system, mimicked the MSL radar on a special nose-mounted gimbal system, providing an ideal testbed for verifying MSL radar performance in our field tests at other Mars-like locations, including Amboy Crater, Cadiz Sand Dunes and Death Valley,” said Lee added, referring to other Mojave-area sites.

The new skycrane 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 skycrane 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 Gyrion gimbaled 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/.

July 1, 1966 – Lt. Col. Robert Rushworth made an emergency landing at Mud Lake, Nev., in X-15A-2 (56-6671), Roushworth’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 towed back to Edwards.

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.

“T or 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,” said Lee added, referring to other Mojave-area sites.

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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.