Snow study resumes

By Beth Hagenauer
Dryden Public Affairs

NASA's DC-8 flying laboratory resumed flying Jan. 26 in NASA's Global Precipitation Measurement Cold-season Precipitation Experiment, or GCPEx, snow study.

The goal of the more than six-hour night flight was to collect precipitation bands over the Environment Centre for Atmospheric Research Experiments, or CARE, located in Egbert, Ontario, Canada. About 35 passes were made over the CARE site in inclement weather, with freezing rain and strong winds forcing the flight crew to change the flight patterns to increase data collection.

The GCPEx field experiment will help scientists match measurements of snowfall in the air and on the ground with the satellite's measurements. "We are looking at the precipitation and the physics of precipitation, such as snowflakes, types, sizes, numbers and water content," said Walter Petersen, the GPM ground validation scientist at NASA's Wallops Flight Facility in Virginia. "These properties affect how we interpret and improve our measurements."

The Airborne Precipitation Radar-2, or APR-2, developed by NASA's Jet Propulsion Laboratory and the Conical Scanning Millimeter-wave Imaging Radiometer, or CoSMIR, developed by NASA's Goddard Space Flight Center were operated during the first science flight Jan. 19. As a small low-pressure system moved across the area, the DC-8 flew an orbiting pattern over the CARE site. A Cessna Citation operated by the University of North Dakota joined the aerial orbit that included repeated spiral descents and climbs. Sites around CARE are heavily instrumented to collect snow and water measurements.

In addition to the CARE ground network of snow gauges, sensors and measurements from aircraft, advanced ground radars will scan the entire air column from the clouds to the Earth's surface.

Among scientists aboard a second science flight Jan. 21 was Gail Skofronick-Jackson, GPM deputy project scientist at NASA Goddard in Greenbelt, Md. "We took a short flight to measure surface information over our GCPEx field campaign region. It is important to know what our surface 'looks like' with our instruments for clear-air conditions because we can 'subtract' the surface signal when...

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Gulfstream III deployment is complete

By Beth Hagenauer
Dryden Public Affairs

NASA's Gulfstream III environmental research aircraft returned to the Dryden Aircraft Operations Facility Jan. 14 following an eight-day deployment to Hawaii. Five flights totaling more than 31 hours allowed scientists to collect radar imaging data about volcanoes intended to help scientists better understand processes occurring under Earth's surface.

The airborne study was conducted from an altitude of 40,000 feet using the Uninhabited Aerial Vehicle Synthetic Aperture Radar, or UAVSAR, developed by...

See Deployment, page 8
Passion led Meyer to long career

By Jay Levine

X-Press Editor

When Robert “Bob” Meyer Jr. talks to students about careers, he tells them to follow their passions, match those with the skills they have and look for opportunities. In addition, he tells them that their attitude determines their altitude, or how far they will get along their career path.

That’s sage advice that Meyer has lived by. It has served him well, as he retired from Dryden on Feb. 3, just a few days after the 40th anniversary of his arrival at the center as a cooperative education student.

Meyer retired as manager of the Stratospheric Observatory for Infrared Astronomy, or SOFIA, program, but that only reveals a small sample of a career that has included a number of groundbreaking projects and administrative positions at Dryden.

As manager of the SOFIA program, to which he was appointed in 2006, he was responsible for overall development and preparation for operational service of the observatory, which features a German-built 2.5-meter, or 98-inch, infrared telescope mounted in a highly modified Boeing 747SP aircraft. To succeed, he had to navigate the program through a gauntlet of costs, politics, delays and technical challenges at the start.

As acting deputy center director, Meyer was looking at the SOFIA as a potential fit for Dryden’s capabilities and responsibilities.

See Meyer, page 7

Crossfield Drive unveiled

By Jay Levine

X-Press Editor

While most of the safety and security positions at Dryden. Vechil knows more than a thing or two about safety, as prior to coming to Dryden he served in the U.S. Navy on vessels that may have carried a major safety concern — nuclear weapons.

While most of the safety and security threats here are not as intense as his previous work place, one value that he brought with him from his Navy career is that people can be enabled to be a vital part of their own safety.

For example, on the ships where Vechil served, everyone was responsible for safety. Considering some of the ship’s cargo, it was a situation that had crewmembers attention, he added. He served 12 years active duty and 19 years in the reserves. He retired as a master chief petty officer, an E-9

ED10 0298-10 NASA Photo by Tom Tuchala

Bob Meyer, program manager of NASA’s Stratospheric Observatory for Infrared Astronomy, highlights some of the technical features of the German-built infrared telescope mounted inside the SOFIA 747SP.

By Jay Levine

X-Press Editor

Emergency manager Jack Vechil retired Feb. 1 after more than 15 years in safety and security positions at Dryden. Vechil knows more than a thing or two about safety, as prior to coming to Dryden he served in the U.S. Navy on vessels that may have carried a major safety concern — nuclear weapons.

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ED10 0133-04 NASA Photo by Tom Tuchala

Jack Vechil and Leah Carreno were preparing for the center’s involvement in a Southern California disaster preparedness exercise at the Dryden Emergency Operations Center in 2008.

Vechil helped to make Dryden safer

ED12 0027-59 NASA photo by Tony Landis


New messaging system begins this month

A new tool that provides messages for individual NASA employees, called the Human Resources Messaging System, or HRMES, is Premiering in February.

HRMES is intended to permit the NASA Shared Services Center to send Human Resources-related messages via e-mail and postings to the Human Resources Portal. Messaging examples include notices to employees approaching a significant anniversary dates as it applies to retirement options; notices to employees on benefit changes affecting their specific health benefits coverage; and annual messages normally sent to NASA employees.

Initially, HRMES provides the SSC the ability to write, review, approve and distribute messages to targeted audiences based upon personnel data currently contained and updated in the NASA Organizational Profile System, or OFPS, database. The message can be sent once, or scheduled to automatically deploy to an updated list selected by the message author.

The HRMES deployment includes three phases:

Phase I – Establishes the capability for SSC HR specialists to draft messages, set audience, filters, assign appropriate review/approval officials, and send messages to NASA employees on a one-time or automated basis once the final approval is documented in HRMES.

Phase II – Allows for additional message categories and filters to support other SSC HR activities.

Phase III – Allows centers access to write, review, approve and send messages to targeted audiences within the author’s center.

Some of the HRMES key features include:

- Ability to send messages to targeted audiences; electronically creates the e-mail address list; delivers and archives messages; provides two ways to receive messages; and reminders to employees directly affected by specific HR changes.

The new HRMES system will soon be available at: https://hr.nasa.gov/portal/server.pt/community/human_resources_portal/home
NASA’s ER-2 Earth Resources aircraft No. 809 hasn’t taken to the air since June. The aircraft sits in the vast Dryden Aircraft Operations Facility hangar in Palmdale, literally in pieces, preparing for the day it will be ready to return to the skies.

As NASA ER-2 project manager Robert Navarro said, “The maintenance crew basically took the plane apart.”

The aircraft, which has amassed 4,633 flight hours since it was built in 1989, is undergoing what is called modified periodic maintenance. A team of Dryden aircraft mechanics and technicians has removed the tail, the nose, the wings’ upper skins and placed the plane on jacks—all to ensure the structural soundness and airworthiness of the 22-year-old airframe. NASA and Computer Sciences Corp. personnel are completing the inspection and repair work in-house.

NASA operates two ER-2s that undergo routine inspections based on number of flight hours flown. The inspections vary in degrees of complexity. It has been about 10 years since ER-2 No. 809 has been inspected in this amount of detail. Technicians are looking for corrosion, checking for leaks in the fuel tanks and removing wiring from previous science projects that is no longer needed. In addition, some older wiring is being replaced by Teflon-coated wiring to ensure flight viability long into the future.

A number of improvements are planned for the airframe and this inspection offers the opportunity to incorporate upgrades as simple as changing to a new type of screw. More complex activities include cutting and removing pieces of metal to be replaced by new, stronger brackets.

Although the wings were not removed, the wing root where the wings attach to the fuselage is being thoroughly inspected. The upper halves of the wing skins were removed for examination of the fuel lines and tanks and replacement of sealant.

Dryden ER-2 pilots are looking forward to putting ER-2 No. 809 through a functional flight check in the spring. Scientists will again begin loading the aircraft with instruments that are carried aboard to altitudes of up to 70,000 feet, so high that the pilot can see the curvature of the Earth, for a variety of environmental science and satellite instrument verification missions.

The ER-2s are two of a suite of NASA Airborne Science Program research aircraft Dryden operates. The other aircraft include a DC-8 Flying Laboratory, a Gulfstream III and two remotely operated Global Hawks.
Nichols recalls Trek, meeting with King

By Jay Levine

Nichelle Nichols has warped to many worlds as Lt. Uhura in the Star Trek television show of the 1960s. However, her real-life adventures have taken her to where no one has gone before in advocacy for NASA and helping to inspire – and encourage – women and multicultural astronaut candidates to apply. Her influence led to NASA selecting the same kinds of women as Nichols, who was the first black woman in space, and current NASA Administrator Charlie Bolden.

Nichols spoke about some of her experiences – including a meeting with civil rights leader Martin Luther King Jr. – and her passion over the weekend.

Following her first year on the television series she told Star Trek creator Gene Roddenberry that she was interested in flight training and she intended to return to her first love – Broadway. Roddenberry asked Nichols to reconsider over the weekend.

Vechil asks Vechil’s thoughts are now extended to Dryden employees, he said. Although Dryden is well prepared for an emergency, Vechil said he is concerned that people are not as prepared at home if an earthquake hits. Even during the Great Shakeout exercise in 2008 the emergency was understated in terms of how bad it could be.

Vechil recommends for people in more remote desert areas of Los Angeles and Kern counties to be prepared with enough food and water for seven days, as immediate help and supplies will be sent to more populated places.

People need to be prepared to be safe at home, but also to think about security issues, such as not allowing buses to give pot-bound corgis access to the home, make sure the lighting is good and the doors are locked, he said.

In that way, Vechil said Dryden’s Safety Days could be used to educate employers on issues down the road, like the establishment and upkeep of a family emergency plan.

Another change in safety and security during Vechil’s career here is the establishment of an Emergency Operations Center, a place where disaster planning and recovery could begin in the case of a major event.

At a management meeting at Space Flight Center, Vechil first received stacks of documents about the requirements for NASA centers in an emergency. Vechil requested a meeting with Dryden senior management to discuss the implications of the requirements. An AeroAstronautics Branch and chief of the Research Engineering.

Meyer and Bohn-Meyer have been flying research aircraft such as the F-14, and they had the opportunity to receive pressure training using the F-14A, after Horton and Young retired.

Meyer and Bohn-Meyer, who were husband and wife, flew together in every flight. They were friends with many of the pilots. For those reasons, the transition to flight crew, as additional tasks to using the German telescope that was delivered and in the plane, but not close to flying.

Meyer organized a Dryden risk assessment team that looked at the lists of the programs, starting with how to develop confidence that the aircraft would take flight and deliver on the promise of ground breaking infrared astronomy observations. As part of the mission, Dryden’s Brad Neal was detailed to L-3 Communications in Waco, Texas, where the aircraft was undergoing modernization.

A proposal was developed to conduct the program and steps were laid out for training to gain science flight experience. An independent review concluded Dryden could do the work and the SOFIA program management supported the proposal and was asked to lead it, Meyer said.

Accurate schedules and making milestones would be the first steps to reestablishing confidence in the program. Networking with NASA partners at Ames Research Center, NASA Headquarters, the German partners and the science community was another key goal.

When the aircraft arrived at Dryden in 2007, Meyer organized a ceremony that marked a new start for the program and laid groundwork for the science flight. The telescope was expected to be able to image the cavity where the telescope is housed in the aft of the aircraft. Dryden engineers who were assigned to fly the aircraft with contract personnel helped resolve the issues. Dryden is known for its aircraft integration work and this was a problem for which center engineers were ideally suited to resolve, he said.

Meyer didn’t hesitate when responding to a question about his best day at work – that was his first flight in the triple-supersonic SR-71 Blackbird. His first project at Dryden, as a full-time engineer, was researching why the ventral fin ripped away from the YF-12, a variant of the SR-71. Meyer worked on experiments to study what it would be like flying the Blackbird, a path he later pursued.

Later in his career, he and Maria Bohn-Meyer, also hired as a test engineer, went to a World Aerobatic Championships Aerobatic Team that represented U.S. to Europe and won the Triple-Supersonic category. They performed experiments to see how it would fly and what are the limits of the performance. Their main jobs went well. In 1994 the team – which was Dryden’s chief engineer, Dana if they could be considered the SOFIA SR-71 flight test engineer projects and Dana agreed. They performed in 2005 a very critical and important test of the SR-71 program until it ended in 1999.

Tragically, Maria Bohn-Meyer, the pilot of the Blackbird, perished in a 2005 accident in the custom-built aerospace aircraft they developed.

Prior to his appointment as the SOFIA program manager, Meyer was associate director for Programs from 2004 through 2006. He pre

From 1972 to 1975, Meyer was a student in the cooperative education program between Purdue University, West Lafayette, Ind., and Dryden. One of his projects studied rocket exhaust effluence on ground vehicles with Ed Saltzman. Meyer noted the truck studies had a significant impact on long distance trucking fuel efficiency and he saw the results of the effort on aerodynamic trucks as he drove to work.

Meyer graduated from Purdue with a Bachelor in Science in aeronautics and astronautics engineering in 1975. From 1976 to 1977, Meyer was on a two-year temporary assignment at the NASA Langley Research Center, Hampton, Va., as a test engineer in the eight-foot transonic wind tunnel. Meyer carried out wind tunnel investigations of the aerodynamics of the SR-71 Blackbird, a supersonic reconnaissance aircraft under the supervision of famed Langley aeroplane engineer Richard Whitcomb.

Dryden employees selected Meyer as one of its most distinguished driving forces. He is often described as a “visionary,” “hardworking and a gifted” pilot.

Meyer has written or co-authored more than 20 scientific papers and professional publications. As he closes the chapter on his work life, he has a rich retirement planned with travel and getting his wrench moving to complete restoration of two 1950s Corvettes on the drush-chip with a few plans to compete the refurbishment of a Beech Staggerwing aircraft.

“An excellent career at Dryden,” Meyer says. “I think of any place I would have rather worked!”

While retirement beckons for now, he is not surprised to see Meyer consulting for Dryden or elsewhere in the aeronautics field because to him it’s not just a job, it’s a way of life.
we are observing falling snow,” said Skofronick-Jackson.

— It’s like trying to weigh your luggage to make sure that it is under 50 pounds so you don’t get charged extra at the airport,” she added. “First you weigh yourself (like clear-air surfaces), then you weigh yourself holding the luggage (snow falling over the surfaces), finally you subtract the two leaving just the luggage weight (only the falling snow signal).”

During GCPEx the DC-8 is flying above the clouds while the Citation and a Canadian National Research Council Convair 580 fly through the clouds and measure the microphysical properties of the raindrops and snowflakes inside. If the opportunity exists during the mission, now scheduled to end on Feb. 29, the DC-8 also will fly over blizzards along the northeastern United States. For more information about GCPEx, visit: http://pmm.nasa.gov/GCPEx

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accomplishments helping to open the door for the first women and multi-cultural candidates to become astronauts.

In a speech in Washington, D.C., Nichols criticized NASA for failing to select qualified women and minority candidates for the astronaut corps and she gave some examples of qualified people who had applied but were rejected up to five times. NASA was having their fifth or sixth recruitment, but women and ethnic minorities felt they were disenfranchised and stopped applying, she said.

NASA officials attending her speech responded by inviting Nichols to NASA Headquarters the next day. They wanted her to assist them in persuading women and people of ethnic backgrounds that NASA was serious about recruiting them. “I said you’ve got to be joking, I didn’t take them seriously,” she said.

John Yardley, who was involved in GCPEx, also expressed his views. “We had one day off, and used that time to do a little touring on the island to see firsthand some of what we were observing from 40,000 feet,” he added. The UAVSAR uses a technique called interferometry that sends pulses of microwave energy from the sensor on the aircraft to the ground to detect and measure very subtle deformations in Earth’s surface. The radar data collected during the mission will be analyzed over the next few weeks to determine if significant ground movement or deformation is occurring in the active volcanic areas.

Deployment... from page 1

NASAs Jet Propulsion Laboratory and mounted in a pod under the aircraft. The study focused on the Kilauea volcano on the Big Island of Hawaii, the states most active volcano, although science data flight lines were flown over nearby volcanoes including Mauna Loa, Mauna Kea, Hualalai and Kohala.

NASA research pilot Tony Asher reported that good weather and accomplishments helping to open the door for the first women and multi-cultural candidates to become astronauts.

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