



National Aeronautics and Space Administration

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# Roundup

It's a  
bird...  
It's a  
plane...  
It's  
Super  
Guppy!

JSC's Aircraft Operations Division uses a unique tool—the Super Guppy—to transport all sorts of oversized cargo. These photos show a damaged NASA T-38 being loaded into the Guppy, which has the largest diameter cargo compartment in the world and a hinged nose that opens more than 200 degrees. The Guppy has also carried space station components and other bulky payloads throughout its NASA career.



NASA/Markowitz JSC2006E13276

NASA/Markowitz JSC2006E13275

## Space Center Roundup

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The Soyuz TMA-8 capsule was mated March 27 to its booster in preparation for the March 30 (Kazakhstan time) launch carrying the Expedition 13 crewmembers.

NASA/Ingalls JSC2006E11321

Expedition 13

# FROM THE director

A MESSAGE FROM CENTER DIRECTOR MICHAEL L. COATS



## Hurricane season

Hurricane season is once again upon us. While Rita spared us a direct hit last year, we all saw the incredible devastation caused by Katrina in Louisiana and Mississippi. One of my biggest concerns is that because of Rita's "false alarm" and the severe problems of the evacuation, many people will decide to ride out the next storm. I would remind everyone that your first responsibility is for the safety of your family and yourself. I sat through Hurricane Alicia in 1983 with my family, which was only a Category 3 storm, and lost half our house when a small twister tore off a corner of the roof and torrential rains caused the ceilings and walls to crumble. After surviving for 10 days with no power, and hence no air conditioning in August (I think my wife missed the ice more than anything), we elected thereafter to evacuate early whenever a hurricane threatened Houston. We used each event as an opportunity to take our daughter and son to see different colleges in Texas. Our daughter ended up going to Baylor, which I'll always associate with Hurricane Gilbert.

A Category 4 or 5 storm is deadly serious, as evidenced by the overwhelming destruction in New Orleans and along the Mississippi Gulf Coast. In a worst-case scenario, much of this area could be under several feet of water, including as much as 12 feet here at JSC. Unfortunately we seem to be in a cycle of frequent and strong hurricanes, so there may well be several major hurricanes this season. We will close the Johnson Space Center as soon as we reasonably can if a major hurricane threatens us, but by the time it's an obvious threat and meets the "Level 2" closure criteria (meaning a "high probability that severe weather conditions pose a threat to the center within 36 hours") the evacuation routes will be crowded. The JSC policy has always been to encourage "liberal leave" for anyone desiring to evacuate early. To be clear, this means you may have to take some personal vacation days until JSC officially closes. During my 20 years in Houston I learned to put aside a few "hurricane vacation days" to evacuate early with my family. Please review the latest updated hurricane plans and procedures. If you have any questions, be sure and let us know. One lesson we've learned is to be prepared in case you have to evacuate, and when you do make the decision to leave, LEAVE NOW! Family has to come first.

*Look for a special JSC hurricane emergency planning brochure in May.*

## JSC's storytellers

by Brad Thomas

**I**t is the job of the Office of Communications and Public Affairs (PAO) to provide information about Johnson Space Center and NASA to internal and external audiences. PAO's 70 team members provide information on all aspects of JSC through numerous avenues—television, media relations, the Internet, a speaker's bureau, special events and internal communications.

Even though it is one event, a space shuttle mission is among the group's greatest challenges. As with many mission support functions at JSC, PAO's preparations for a particular mission can begin more than a year before launch and the amount of mission-related work increases over time. Once a space shuttle lifts off, PAO team members begin about 11 to 14 days of intense story-telling.

PAO News Chief James Hartsfield said a shuttle flight focuses and strengthens the PAO team. Although other projects must still be supported, they sometimes have to take a back seat. "When we fly a shuttle mission, we all turn our attention to that mission," he said.

### MISSION PREP

During non-mission periods, PAO mingles its shuttle preparation activities with day-to-day operations. The preparations include the creation of press kits, Web pages, video productions, collateral materials and graphics. Most of this work is performed in Buildings 2 North and 2 South. PAO team members also participate in mission simulations and attend flight control team meetings and planning sessions, ensuring public affairs activities are integrated into the flight

plan. Opportunities are identified and planned that will allow the media to interview the crew in-flight, and a comprehensive television schedule of mission events and broadcasts is produced.

The non-shuttle-related activities are numerous. They include space station support, media campaigns, protocol tours, public affairs support for all of JSC's directorates, internal communications and production of collateral materials such as fact sheets and posters. PAO also sends its team members and volunteers from around the center to work at offsite events, such as the International Festival, the Houston Livestock Show and Rodeo and the NBA All-Star Jam Session.

Meanwhile, there are PAO team members in Building 4 who work closely with the Astronaut Office. They handle local, national and international interview requests for the Astronaut Office and provide public relations advice and counsel to astronauts and management.

PAO also supports the Astronaut Appearance Office. Flight Crew Operations PAO Representative Doug Peterson said they assist in the process of scheduling astronaut appearances. NASA's astronauts make about 800 appearances per year. "No matter if we are flying or not, astronauts still go out to speak," Peterson said.

Peterson said regardless of whether a mission is imminent, there are a number of media requests to interview and film flight crews.

*A camera operator catches the action for the Public Affairs Office.*

continued on page 4

“On the media side, there is a steady stream of documentaries,” Peterson said. “We help coordinate visits, assess proposals and serve as liaison for the astronauts,” Peterson said. “Our primary goal is to get good coverage without letting it interfere with crew training.”

About six weeks before a scheduled shuttle launch, PAO holds preflight briefings for media featuring the crew, flight controllers and Space Shuttle Program managers. These briefings explain the flight’s activities and objectives and help media plan their coverage. The mission press kit is usually released at this point. The briefings usually mark a milestone in preflight activities.

### PRIME-TIME NARRATION

Even though PAO’s preparations for a mission are extensive, the pace of support changes instantaneously once the journey to space begins.

Like numerous groups at JSC, PAO provides 24-hour support for shuttle missions in orbit, but there is one source of mission support that sets the stage for the other areas in PAO. “There is one primary stream of information during a mission: the broadcast stream from Mission Control,” Hartsfield said.

NASA TV provides around-the-clock coverage of a space shuttle mission, with a member of the Public Affairs team providing commentary from inside the Mission Control Center (MCC). Periodic news conferences, with key program managers and flight operations personnel, are also broadcast during the mission.

The commentator is a member of the MCC team and has the call sign PAO, which stands for Public Affairs Officer. The PAO in Mission Control provides mission commentary to explain air-to-ground transmissions and flight control operations to the media and public, and essentially acts as the interface between MCC and the outside world.

Kyle Herring is JSC’s lead commentator. He said that a commentary team is usually assigned a year in advance, and that serving as a commentator in Mission Control requires extra effort due to the subject matter and the nine-hour shifts on console. “Learning about the mission is critical. You study like you are in school,” Herring said. “From a broadcasting standpoint, it is the only position that stays on for nine hours.” During a shuttle mission, the commentator must follow what is taking place in both the station and shuttle flight control rooms.

When the shuttle is not in flight, PAO produces a daily live broadcast and commentary to update the progress of expeditions aboard the International Space Station. Similar broadcasts are produced live for all dynamic station activities, like dockings and spacewalks. PAO also produces a live broadcast of Soyuz launches and landings that include astronauts, a task that includes sending PAO personnel to Moscow and Kazakhstan.

Hartsfield said NASA TV is primarily designed to serve the media, providing commercial outlets with the

information and imagery they need to cover a mission. But many cable and satellite providers also offer NASA TV to their viewers.

### FILLING IN THE GAPS

PAO’s hub during a mission is in Buildings 2S and 2N. The television and audio control rooms are located in 2S, where most of the NASA TV “behind-the-scenes” work takes place.

PAO’s NASA TV personnel produce on-orbit crew public affairs events during a mission in addition to the continuous live broadcast of activities. Some of the in-flight events can involve three different media organizations during a 20-minute time slot or, when international crew members are involved, with media at multiple locations around the world.

A flurry of activity is often found in 2N’s newsroom. The newsroom staff provides background and timely information to the media. The newsroom is sometimes open 24 hours a day, as it was during STS-114.



*Catherine Borsché, writer, Joanne Hale, Space Center Roundup editor and Kendra Phipps, JSC Features editor.*

NASA/BHR JSC2008E14032

Newsroom personnel can spend hours on the phone fielding questions from media around the world or holding face-to-face conversations with reporters. The newsroom team members gather information for and prepare status reports, press releases and briefings.

Working with the newsroom are other members of PAO who escort and assist media who set up shop on site. During STS-114, dozens of media from around the world were located in the Teague Auditorium Lobby and at Building 9. A number are expected to visit the center again for STS-121.

While media have visited JSC for decades, a relatively new tool at the disposal of PAO is the Internet. Hartsfield said the Internet has caused the biggest change in the way things are done during his 18 years with NASA. “The Internet is a great pipeline to the public,” Hartsfield said. “The Internet team strives to put out a product that directly reaches the general public, is easily understood and is interesting.”

The five-member Web team can provide information to the media and public within a matter of minutes. The team provides information via www.nasa.gov and spends months building pages, preparing graphics and creating features in preparation for shuttle and station missions. During a 10-day shuttle mission, hundreds of updates can take place, including summaries of events, up-to-the-minute snippets, graphics and features. Similar updates take place during dynamic space station operations.

The Internal Communications Team, whose primary job is to keep the JSC workforce informed on day-to-day activities, must continue to do its regular job and provide mission support. This support can involve creating special editions of the Roundup, writing stories for JSC Features or lending a hand to the newsroom or Web teams.

After the shuttle lands, there are still several public relations events that PAO supports, such as the crew return ceremony at Ellington Field and events around the country during the next month or so.



*Public Affairs Writer/Producer Tim Allen (left) and Camera Operator Tom Youngblood film an event in the Teague Auditorium.*

NASA/BHR JSC2008E14029



*Public Affairs Audio Engineer Greg Wiseman works in the Audio Control Room as Live Television Producer Victor Scott is at the board in the Production Control Room during International Space Station commentary.*

NASA/BHR JSC2008E14035

As it does for many teams at JSC, Hartsfield said a space shuttle flight pulls PAO together and boosts morale.

“The day after a flight has landed, everyone is always exhausted. But there is no better feeling than the pride many in PAO feel when they look back at the job they just completed and the teamwork it took to make it happen,” he said.

# Expedition 13

by Donna Lin

**IT HAS BEEN** nearly three years since the International Space Station (ISS) has seen a long-duration crew of three. Two-person crews replaced three-person crews in 2003 to conserve supplies normally carried to the space station by shuttles. That may change with Expedition 13.

Expedition 13 is headed by commander Pavel Vinogradov, representing Roscosmos, the Russian Federal Space Agency (RFSa). He and astronaut Jeffrey Williams, flight engineer and NASA science officer, launched on a Soyuz spacecraft in March from the Baikonur Cosmodrome in Kazakhstan, Russia.

Vinogradov and Williams will be joined in July by their third crewmember Thomas Reiter, a European Space Agency (ESA) astronaut who will fly into space on the upcoming STS-121 mission.

Brazilian astronaut Marcos Pontes launched with Vinogradov and Williams, spending eight days on the station under a contract with RFSa. Pontes returned to Earth with the Expedition 12 crew, composed of commander Bill McArthur and flight engineer Valery Tokarev.

The six-month stay of Expedition 13 will focus on station assembly preparations, maintenance and science in microgravity. Having a third member onboard will enable the crew to work with experiments across a wide variety of fields, including human life sciences, physical sciences and Earth observation as well as education and technology demonstrations.

The crew currently has three spacewalks planned, one U.S. and two Russian. The spacewalks will focus on continued outfitting of the station to prepare external hardware for the addition of station elements and tending to external science experiments. One spacewalk, to be performed by Williams and Reiter, will repair existing and install new components on the station. Vinogradov and Williams will execute two spacewalks in August to deploy and retrieve various payloads outside the Russian segment.

Vinogradov, serving as mission commander, will oversee the day-to-day operation of the Russian portion of the station and maintenance, as well as the well-being of his crew. He said that paying close attention to the upkeep of the space station is important not only because of the monetary value of the station, but the investment of knowledge and human labor that has gone into it.

“A small crew of two people creates a situation where even the smallest detail gains significant importance,” he said. “[During] a long spaceflight, you have to make sure that you pace yourself, that you distribute your strength sort of evenly throughout the flight and build the proper relationship with your crewmates.”

Vinogradov graduated from the Moscow Aviation Institute in 1977 and received the qualification of computer systems analyst in 1980. He has logged 11 hours in L-39 training airplane, and has completed 29 parachute jumps.



NASA astronaut Jeffrey N. Williams, Brazilian astronaut Marcos Pontes and cosmonaut Pavel V. Vinogradov, Expedition 13 commander, wave goodbye to the cameras at the launch pad in Baikonur, Kazakhstan as they board the launch vehicle.

He is no stranger to spaceflight, having performed a 198-day spaceflight as the Expedition 24 prime crew flight engineer onboard the Soyuz TM and Mir station from Aug. 5, 1997 to Feb. 19, 1998. Vinogradov also conducted five spacewalks during his mission.

As the flight engineer for Expedition 13, Williams is responsible for the operation and maintenance of the U.S. segment of the station. He will also contribute to the science and research projects planned, and prepare for the arrival of space shuttles and payloads while on the station.

Williams said the tasks he will undertake on the station are challenging because of the wide range of responsibilities he and his crewmembers must face.

“The big challenge comes in integrating all of [our responsibilities], keeping up, and covering a broad spectrum of work and tasks and responsibilities as we go through the six months,” Williams said.

Williams received his bachelor's degree from the U.S. Military Academy in 1980 and a master's degree in aeronautical engineering from the U.S. Naval Postgraduate School in 1987. He has logged over 2,500 hours in more than 50 different aircraft. Williams served as the flight engineer and lead spacewalker on STS-101 from May 19 to 29, 2000, completing a spacewalk during the mission.

Reiter, a flight engineer for Expedition 13, is the first non-American and non-Russian long-duration crewmember. Representing ESA, Reiter's presence on the space station provides the crew with the extra labor necessary to focus more on assembly efforts, rather than maintaining the station alone.

He will assist in maintenance of onboard systems in the Russian side of the station, and will perform repair work as necessary on the U.S. side. Reiter will also perform a spacewalk with Williams, installing two platforms containing materials that will later be examined for effects from exposure.

Reiter said that although his presence on the space station is a major milestone for ESA and the space station partners, it is just the beginning.

“Even though there have been a lot of my colleagues to the station in the last years, only for [a] short time, this is a moment that also signifies the station [may] get a little bit more international,” he said. “In the future there will be more of my colleagues from ESA, from the Japanese space agency, and also from the Canadian Space Agency...and the agencies that are involved in the ISS program.”

Reiter graduated from the Armed Forces University in Neubiberg, Germany, and the Empire Test Pilots School in Boscombe Down, England, in December 1982 and December 1992, respectively. He has a master's degree in aerospace technology. Reiter's flight experience includes more than 2,300 hours in more than 15 aircraft. He served as onboard engineer for the Euromir 95 mission, completing two spacewalks from Sept. 3, 1995 to Feb. 29, 1996.

The advantages of having a three-person space station crew are echoed in the words of Williams, who said that a third crewmember would allow the accomplishment of work outside of daily station operations.

“Getting back to a crew of three will help us [to] be able to accomplish more,” he said. “We will be continuing with the assembly of the space station, to get it up to its full capability with the resuming of regular space shuttle flights, which is important to meet the Vision for Space Exploration.”

Upon the shuttle's arrival, Reiter's equipment will be transferred to the Soyuz and the shuttle crew will begin to move its payload to the station. The shuttle crew will immediately berth the Multi-Purpose Logistics Module, transferring its supplies, equipment and space parts to the space station. Equipment on the station that is no longer in use will be moved onto the space shuttle to return to Earth. STS-121 crewmembers will also perform three spacewalks while onboard the space station.

In addition to the Expedition 13 crewmembers assisting in these operations and supporting the STS-121 crew in completing the



Astronaut Jeffrey N. Williams, left, flight engineer and space station science officer for Expedition 13, smiles for the camera onboard the space station. At right, Brazilian Space Agency astronaut Marcos Pontes uses a computer in the Destiny laboratory of the space station.



Cosmonaut Pavel V. Vinogradov, Russia's Federal Space Agency Expedition 13 International Space Station commander, completes the traditional signing of a bedroom door at the Cosmonaut Hotel in Baikonur, Kazakhstan.

spacewalks, Vinogradov and Williams must also undertake a special task to photograph the underside of the orbiter as it approaches the station to dock.

“As [the shuttle] approach[es] for docking, [it] will literally do a somersault end over end,” Williams said. “During that time we will take 150 or more photographs, which will then be immediately downlinked to the ground so the engineers can analyze the photography for any potential damage.”

Vinogradov said his crew will help set the tone for future partnerships and collaborations between different countries and teams.

“It's even hard to believe now, hard to imagine how we worked in different countries, each in our own corner,” he said. “It's not only Russia and [the] U.S., but it's Europe, Canada, Japan; we're so much better integrated. And if we have more areas like that, I think it would benefit the world at large.”

# Trekking through the final frontier

by Catherine E. Borsché



NASA, STS113-308-002

*Astronaut Michael E. Lopez-Alegria, STS-113 mission specialist, participates in the mission's second scheduled spacewalk to perform work on the International Space Station. The space shuttle Endeavour, docked to the Pressurized Mating Adapter 2, is visible below Lopez-Alegria.*

Trekking through low-Earth orbit seems to begin with a single step—or more appropriately, a single bound from the airlock. But for all the ease and floating you see on TV, enormous preparation has taken place to ensure an astronaut's spacewalk appears effortless.

The Extravehicular Activity (EVA) Office works across various programs and organizations to orchestrate a seamless spacewalk. The amount of collaboration that goes into each spacewalk is a testament to the group's dedication and hard work, even years before an actual spacewalk debut.

"Pulling together all the pieces necessary to implement a series of EVAs is a significant effort by a team of very talented individuals from multiple organizations across the center," Stephen Doering, manager of the EVA Office at Johnson Space Center, said. "They each have a vital role to play in ensuring the safety and success of the EVA in support of the International Space Station and Space Shuttle Program requirements."

An EVA plan, in most cases, is hatched far in advance of the actual spacewalk execution.

"Some of the EVAs that we're executing now we've established the requirements for in the late 1980s," said Nancy Patrick, Detailed Test Objectives 849 sponsor and principal investigator. "But I'd say it's more like two years beforehand if it's a brand-new task that we hadn't thought of before and we need to build some new hardware to support it, train crews and figure out how to do it and write the procedures for it."

Once the plan is in motion, crew assignments determine how hardware and training tasks are fleshed out.

The juggling of spacesuit hardware is a delicate give-and-take process in itself.

"We track and plan out the suits and the tools that we're flying for the flight, making sure that we've got the right-sized suits for the increment crews that are going up and [look at] how we can interchange hardware to stay within life," Kenneth Kruse, EVA Logistics manager, said. Though it may come as a surprise, suits have expiration dates just like the food one buys at a grocery store. The EVA Office monitors the condition of all its equipment to ensure it is safe and suitable for the rigors of flight, or "within life."

Kruse indicated that instead of just bringing all new hardware up for a particular flight, the EVA Office looks at what

hardware is already on orbit that could possibly fit the new crew for their spacewalks.

The EVA professionals working under the Mission Operations Directorate are unique because they train the astronauts for their spacewalks and are also responsible for flight control duties during missions.

"Once the crew's assigned, we are involved with them from the very beginning, all the way through the flight and post-flight," Paul Boehm, EVA flight controller and instructor, said.

To prepare for a mission the crew undergoes a wide variety of intensive training.

Boehm's group conducts exercises, such as vacuum chamber runs with the astronauts, which work to familiarize astronauts with their spacesuits. But the vacuum chamber is not the only platform used to prepare an astronaut for a spacewalk.

"We go through all the training aspects; we do training in the Virtual Reality Lab and the Neutral Buoyancy Lab (NBL), a lot of tabletop [sessions] looking at hardware," Tomas Gonzalez-Torres, STS-121 EVA flight lead, said. "We fly down to the Cape [Canaveral] with the crew to see the hardware, and after the training is complete, we sit on console."

The training that the astronauts receive in these state-of-the-art facilities help make the actual spacewalk easier.

"Basically, there's no one facility that gives you full training to get ready for the EVAs, so what we do is kind of piece together different aspects from different facilities," Gonzalez-Torres said. "For example, the NBL gives you the suited aspect, so we can put the crew inside the suits and pressurize the suits to give them that feel. It's also physically demanding, so it's good practice for them. They can also see all the mockups, the worksite and actually perform the tasks as they will perform them on orbit."

Flexibility is the key when it comes to preparing for any mission, especially shuttle. Launches slip—and can slip to the point of major reshuffling efforts.

"One of the big things is working with different groups, saying, 'Okay, we expected to launch here and now we're going to launch a couple months later.' Maybe that puts us in a different increment," Aaron Mears, EVA

flight manager for STS-121, said. "Now not only are we doing our EVAs, but we have to prepare the increment for their EVAs in regards to spacesuit tools and hardware."

"Obviously, training is a big part of it as well, so we work closely with the Mission Operations Directorate with scheduling impacts in regards to training and NBL runs," Mears said. "You get real busy as you get close to a flight, and then if it slips everyone kind of has this 'OK, let's slow down and catch our breath' thing. But you don't want to do that for too long, because you know you're going to get busy again."

With the fluidity of flight plans and training, teamwork ensures the smooth coordination of spacewalks for the EVA Office. Because the shuttle and station programs are so intertwined, each affects the other. As Mike Hembree, Increment 13 EVA manager, explained, not only do you have to negotiate within different organizations, but you also have to negotiate plans and changes with international partners such as Russia. The Russian Federal Space Agency is "currently designing a new version of the Orlan spacesuit, and we're helping to provide some requirements that we'd like to see to help it become integrated more in line with U.S. tools," Hembree said.

When the astronaut finally gets out of the airlock and ventures into space, all the training and coordination is well worth the successful completion of the spacewalk tasks.

"It's interesting, because we've gone through so much training and we've seen these guys do this in the water so many times, a lot of times it feels like we're just back at the NBL. The neat part is you get to see the sunrise, sunset cycle, so you know that it's real, and obviously you're sitting in Mission Control," Gonzalez-Torres said. "And a lot of times we've heard the crew say that basically the only thing missing [is] the divers."

For the professionals working in and with the EVA group, the culmination of a spacewalk is the epitome of their dedicated efforts.

"We know this is what we've all been working toward for many years, and we want to make sure we do the best job possible," Gonzalez-Torres said. "Everybody remains very focused and excited at the same time."



NASA Blair, JSC2005EU2588

*European Space Agency astronaut Thomas Reiter of Germany, attired in a training version of the shuttle launch and entry suit, simulates a parachute drop into water during an emergency bailout training session at the NBL. Specialized training facilities such as the NBL help simulate the spacewalking environment for astronauts prior to the mission.*

# It 'makes' a village

by Kendra Phipps

Johnson Space Center has often been likened to a college campus, or to a small city. The comparison is not far off: Among its tree-lined walkways, JSC employees can find office buildings, shops, a medical clinic and a gym, not to mention utility systems and emergency services.

Like any community, JSC needs a talented behind-the-scenes team—in this case, the Center Operations Directorate (COD)—to keep things running smoothly.

“I enjoy keeping the center looking nice, building new stuff and keeping the old stuff working,” said COD Director Joel Walker. “It’s a challenge, but it’s a fun challenge.”

COD is responsible for the center’s facilities, security, utilities and environmental efforts. Its employees keep the power running, prepare for emergencies, upgrade equipment, negotiate export agreements and check up on the center’s wildlife. In many ways, their work frees up the rest of the JSC team to focus on human spaceflight.

The group’s work is important every day of the year, but like many organizations on site, things start to shift when a space shuttle mission draws near. Extra effort goes into certain areas—for example, JSC security.

“We increase our security posture; we turn things up,” said Alan Mather, chief of COD’s Protective Services Division. Protective Services encompasses JSC’s Security Branch, as well as Emergency Management and International Services.

The mission-related security enhancements come in the form of heightened awareness at the center gates, as well as additional guards stationed in key areas like the Mission Control Center and the Astronaut Quarantine Facility. Mather said that some administrative work increases in the weeks before a mission, as more visiting media and guests arrive.

“We also prepare (security information) packets for astronauts’ families,” said Mather. Closely tied with the Security Branch is the

Emergency Operations Center (EOC), which works to prepare JSC for potential crises. The EOC coordinates contingency plans and acts as a central information source in case of an emergency.

The International Services Office also has plenty to do in preparation for a mission. Employees who are traveling to the shuttle’s international abort-landing zones need security briefings, which the office provides, and shuttle payloads need all the proper export certifications and documentation. The office’s counterintelligence group also maintains a diligent search for potential safety threats.

“We’re always evaluating the overzealous fans that send letters or try to contact astronauts,” said Mather. “We look at all those types of communications and e-mails, especially the ones that are a little over-the-top. That’s an ongoing effort.”

Also ongoing are the efforts by COD’s Environmental Office to keep JSC in line with all environmental regulations. The group monitors JSC’s air pollution, waste emissions and spills, and also seeks out and implements new conservation solutions.

When shuttle missions approach, the Environmental Office maintains its usual duties and also keeps an eye on mission-related waste materials—a job that recently became a little simpler.

“Since all flight film comes back to JSC, our biggest mission-related issue used to be the photo lab,” said Environmental Project Specialist Sandy Parker, referring to the chemical processes needed to develop thousands of mission photos. “We worked with them to produce the new zero-discharge system, and that has eliminated a lot of environmental impact. With the new system, everything is recycled.”

Parker said that effort speaks to NASA’s overall commitment to conservation. “I feel that NASA tries to do the right thing as far as protecting the environment, and that’s really important to me,” she said.

In the middle of complex mission preparations, it might be easy to overlook a common-sense item on the checklist: making sure the electricity stays on. Fortunately, COD is on top of that, too. The directorate’s Facilities Management and Operations Branch handles the backup power plant, housed in Building 48, as well as the central heating and cooling systems in Building 24.

Sheila Powell, the deputy chief for Facilities, said that the



**Top photo: Joe Ochoa, Training Chief Operator for Computer Science Corporation, operates the diesel generator in Building 48. Above: Willie Dean, Building 48 Operator for Computer Science Corporation, and Ochoa work on the diesel generator.**



**Team members work on the Building 48 Cooling Tower.**

group goes into “mission mode” 37 days before launch, following checklists and conducting mission readiness reviews. Then, two weeks out, some of the group’s normal work functions are shut down in favor of mission support.

But what if something breaks in the emergency power plant? COD’s Logistics Branch covers that contingency, making sure that mission-critical spare parts are stocked before the shuttle ever leaves the ground.

“We have backups to make sure that they can do any repairs that they need,” said Logistics Chief Linda Massey.

While some of COD’s everyday work gets postponed during a shuttle mission, the goal is to keep things as seamless as possible for the JSC workforce.

“We just try to keep things predictable and stable,” said Walker.

By letting the JSC team focus on spaceflight instead of spare parts, COD plays a crucial role in moving towards the Vision for Space Exploration. Each flight is a step closer, and Mather said his team is proud to be a part of it.

“Everybody enjoys doing it—this is what we live for, what we work for,” said Mather. “Everybody likes to be flying.”