

# the Y-12 times

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Volume 8, No. 9  
September 2008  
[www.y12.doe.gov/news/times.php](http://www.y12.doe.gov/news/times.php)

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Summit participants were able to witness a demonstration at the new tactical training facility at WSI-OR's Central Training Facility.

## Y-12 hosts security experts

More than 240 nuclear security professionals from the Nuclear Weapons Complex participated in the Nuclear Security Summit hosted by the Y-12 National Security Complex in September. Being chosen to host the weeklong summit was significant for Y-12. Butch Clements, vice president of Safeguards, Security, and Emergency Services, said, "We're honored to have the privilege to host this conference."

The event brought together nuclear security professionals from the National Nuclear Security Administration (NNSA), U.S. Department of Energy, U.S. Department of Defense (DoD) and Nuclear Regulatory Commission to share best practices. This conference was the first time that two annual conferences—technical and tactical—had been combined.

Bob Dewald, who coordinated the event with DoD on behalf of NNSA, painted this analogy to explain why nuclear security is so important: "If you're in a firefight and take down 99 enemy planes but lose one F-15, you'll recover. We can't afford a scorecard of 99 to 1 when it comes to protecting nuclear materials. The consequences are too great."

In addition to exchange of information, attendees toured the Highly Enriched Uranium Materials Facility and the new tactical training facility at Wackenhut Services, Inc.-Oak Ridge's (WSI-OR's) Central Training Facility.

Patrick Alsop of the Defense Threat Reduction Agency appreciated the insight provided by the tours and enjoyed seeing the Y-12, Office of Secure Transportation and U.S. Marine Corps demonstrations at the tactical training facility.

In his closing remarks, Bill Desmond, NNSA's former Chief of Defense Nuclear Security, acknowledged his "genius" in getting Y-12 to host the summit and noted that it had been an "extraordinary week."

# COMMAND CENTER MOVING FORWARD



The proposed center will replace buildings housing functions that are scattered throughout the site.

Building on the success of the Jack Case and New Hope centers, Y-12 is moving forward with plans for an additional third-party-financed facility. The proposed facility, a Complex Command Center (CCC), will consolidate Y-12's emergency services into a more ideal location.

"The need for modern, consolidated emergency management operations has been identified for more than five years," said Cynthia Woodward, program manager. "This project is an integral part of Y-12's site transformation, which ultimately will reduce the NNSA [National Nuclear Security Administration] site footprint by about 50 percent."

The proposed CCC will house the fire department, the plant shift superintendent's office, the technical support/emergency operations center and emergency management support. These functions are now scattered throughout the site in aging, outmoded facilities.

Mission need (Critical Decision-0) was approved in 2007, and B&W Y-12 selected Lawler-Wood as the developer in 2008. Work is nearing completion to receive approval of alternative selection and cost range (Critical Decision-1). Recently, a seven-person independent project review team evaluated the project and concluded, "The consensus of the review team is that the level of documentation, analyses of alternatives and project team readiness generally exceed expectations for CD-1 approval." Occupancy is expected in 2011.

## EVMS | Keeping projects and Services ON TRACK



Potable Water System Upgrades team members Melissa Portwood (left) and Dale Donald (center) provide project information to David Benton (right).

Like job hazard analyses that keep employees safe or security audits that keep information and materials secure, Earned Value Management Systems (EVMS) is Y-12's tool for project performance. EVMS spans a project's entire life-cycle—from the initial determination of mission need through planning, execution and final acceptance. The EVMS and Services organization provides planning, scheduling, estimating, risk analysis and cost engineering to ensure not only compliance but project success.

"EVMS provides the measurement of progress toward a project's completion compared to a detailed project plan," said project controls analyst David Benton, a member of the Potable Water System Upgrades project team. "Progress is then analyzed and used to forecast future project performance and identify potential problems."

Benton explained that if necessary, corrective actions can then be made to ensure that the project meets performance and quality standards and is completed on time and within budget.

The Uranium Processing Facility (UPF), Y-12's largest planned construction, is another example of EVMS at work. Crucial to UPF Project Manager Phil

Schuetz is the project control engineers assigned to the \$2.2-billion project. "I'm a believer in the basic tenant of EVMS: managing the alignment of a defined scope, schedule and budget," he said.

Ray Patterson, project manager for the Highly Enriched Uranium Materials Facility (HEUMF), stressed the importance of the EVMS trend program. "On HEUMF, we have a very active trend program that keeps the project manager and the cost account managers well informed of contingency utilization," said Patterson. "As a result, there have not been any major surprises when we have done project reforecasts."

# 7S PROCESS CREATES ORDER AND CLEANLINESS

When Lara Justice and Ron Graves started the 7S process in their work area, the situation they had inherited was difficult, to say the least. Their tools were in a disorganized pile on a small cart, and the items that came to them for repair were scattered on the floor around the work area. With no shop area, Justice and Graves had to work on the floor. "It was miserable," said Justice. "My back hurt. I couldn't see anything. I had to dig for the tools I needed. It took forever to do the job."

Graves and Justice's work area now is equipped with a work bench, chairs and a shadow board. Each tool and piece of equipment has a labeled place, and the repair items are separated according to the type of work needed and arranged for efficient work flow. According to Graves, the best part of the process is the organization. "Everything is organized," he smiled. "It is a good place to work." Graves and Justice also are proud to explain that, thanks to a more efficient work environment, they are able to accomplish almost twice as much work now.

The 7S process—which stands for sort, set in order, shine, standardize, safety, security, sustain—also contributes to improved quality. Before the 7S process, the rejection rate at the workstation was about 75 percent. Now the area boasts an acceptance rate of almost 87 percent.

Application of 7S began in late May. By the end of July, all 862 Production employees had been trained in the 7S process. Eventually, 7S will be instituted in all Production areas.



Ron Graves and Lara Justice benefit from implementing 7S. "I'm a neat freak. This is a more pleasant environment," said Justice. "I don't feel as stressed."

## Taking the smart route

You might think that to procure a new production item, you might need to flip through a machine catalog and pick out one that catches your eye. Or, you might think it would be cheaper and faster to overhaul an old piece of equipment. However, either option might drive up the life-cycle cost of operating the machine, increase the cost of procurement and take longer to become operational on the shop floor. Instead, smart procurements ensure that everything selected is carefully evaluated to maximize compatibility with existing systems that are still productive and replace/upgrade those that are no longer effective.

The Y-12 Throughput Improvement Plan (YTIP) seeks to eliminate bottlenecks in the manufacturing process by identifying additional capacity needs, streamlining processes and replacing legacy equipment and systems. Two equipment projects were recently identified and completed for Depleted Uranium Production: a new Chucker lathe and a Wire Feed Electrical Discharge Machine (EDM) were procured, installed and put in action.

The new EDM was chosen to provide state-of-the-art metal removal. The machine manufactures the smallest specimens to the largest production requirements. It replaced two old EDMs that were no longer supported by the vendor.

The Hardinge lathe was chosen to provide added production capacity for specific part types. It was installed adjacent to a similar lathe that was recently procured and has demonstrated excellent repeatability and accuracy.

The EDM and Chucker lathe teams employed the YTIP philosophy all the way back to creating procurement specifications. The result not only made production better, cheaper and faster, but also minimized the cost and time of the procurement itself.



Y-12 machinist Mark Sherrod works with the new efficient, high-precision Hardinge lathe.

# What's Happening



Brenda Hunter, director of Internal Audit, was one of nine award winners recently honored at the YWCA Knoxville's 24th annual Tribute to Women. Hunter won in the business and government category. She serves on the board of the Knoxville Opera, Historic Tennessee Theatre, Club LeConte and Men of Tomorrow. "It's an honor to receive this recognition. I enjoy working with community organizations and hope others share with organizations in their areas," Hunter said.



Sarah Campbell of Knoxville and Beth Henry of Clinton are the 2008 recipients of the McDermott International Scholarships. McDermott is one of the parent companies of B&W Y-12. Each student will receive \$1,500 per year for four years of college-level study.

Campbell, a graduate of South-Doyle High School, is the daughter of Steve Campbell (Engineering) and Susie Campbell. She plans to attend Maryville College and major in mathematics.

Henry is the daughter of Nathan (Quality Assurance) and Paula Henry. She is a graduate of Anderson County High School and will be attending Tennessee Technological University, where she will major in chemical engineering and minor in chemistry.



President and General Manager Darrel Kohlhorst (right) tours a lab that is part of the new National Forensic Academy. After the \$1.2 million upgrade, the 18,000-square-foot Law Enforcement Innovation Center in Oak Ridge was dedicated in August. Y-12 is a partner in the cutting-edge center that trains law enforcement officers from all over the country.



## EO program offers something for everyone

Have you noticed the Environmental Officer (EO) program has become a resource for *all* Y-12 employees?

"The program is continually improving to assist employees in fulfilling their roles of responsible stewardship of our natural and cultural resources," program coordinator Ivy Lalonde said.

The program now offers monthly seminars that are open to all employees. Guest speakers from environmental agencies and within Y-12's environmental groups present

ways to conserve energy, recycle, minimize waste and be an environmental advocate.

Mark Peterson of Oak Ridge National Laboratory, Paula Mitchell of the Tennessee Department of Environment and Conservation, and Sally Browning of EnergySolutions have been guest speakers. Jonathan Overly with East Tennessee Clean Fuels Coalition is slated for the Oct. 7 seminar.

Lalonde said, "Our environmental officers [more than 30] help communicate environmental regulatory requirements and promote

Y-12's Environmental Management System as a tool to improve environmental performance.

"The environment is something we all can help improve, so we want all employees to take advantage of these informative seminars," Lalonde concluded.

To learn more about helping the environment, attend these monthly sessions. They are announced on YSource a week or so before the event. For more information, contact Lalonde (ilm; 574-1547).



Pictured are Y-12 attendees at the Tennessee Labor-Management Conference held in August in Nashville. Several Y-12 labor-management partnering efforts with the Atomic Trades and Labor Council, United Steel Workers and the Knoxville Building and Construction Trades Council bargaining units were recognized with a Best Practices Award at the conference.



U.S. Rep. Zach Wamp speaks at the dedication ceremony for the newly renovated and reconstructed Oak Ridge High School. Dedication aptly described the \$61 million project that began with an informal conversation in 2002, ran its course with speed and tremendous community backing and culminated in the August ceremony. Pledging \$5.5 million early in the campaign, B&W Y-12 (\$1.1 million pledge), UT-Battelle, Bechtel Jacobs, Oak Ridge Associated Universities and Wackenhut Services were major contributors to the fundraising efforts.

"Our ceremony today is much more than a dedication of new buildings and equipment. On behalf of the school's students, faculty and staff, I am enormously grateful for the support of the individuals and corporations that made possible the largest school renovation in Tennessee history. This school is our community's greatest asset," said Chuck Carringer, Oak Ridge High School principal.



Adaptive Methods, based in Centreville, Va., signed a licensing agreement in August with Y-12 to build and sell the Rapid Deployment Shelter System (RDSS). Adaptive Methods plans to open a factory to produce the systems in Chattanooga. The technology was developed at Y-12 by Lee Bzorgi at the request of the U.S. Army and is a portable disaster shelter that can be deployed for humanitarian assistance and disaster relief.

"This joint venture ... is a model of successful technology transfer," said U.S. Rep. Zach Wamp.

The Enterprise Center, a non-profit technology transfer firm in Chattanooga, assisted in identifying the RDSS technology. Y-12 also signed a Memorandum of Understanding with the Enterprise Center.

Front row, left to right: Keith Buckner, Adaptive Methods; Randy Spickard, B&W Y-12; Wayne Cropp, Enterprise Center; and Llew Wood, Adaptive Methods. Back row, left to right: Chattanooga Mayor Ron Littlefield; Hamilton County Mayor Claude Ramsey; and U.S. Rep. Zach Wamp.

## And the winner is ... Y-12

The Industrial Appreciation Award was captured by Y-12 at the recent Association for the Advancement of Cost Engineering's annual meeting in Toronto. Jennifer Bates of the Science, Technology and Partnerships division accepted the award, recognizing Y-12's exceptional support to the cost engineering profession and to AACE International's aims and objectives.

In 2001, B&W Y-12 implemented earned value management (EVM) practices for construction projects and weapons

refurbishment programs, resulting in numerous cost and schedule efficiencies. Y-12 achieved EVM certification from the U.S. Department of Energy in September 2007 for U.S. Congress line-item projects greater than \$20 million.

"EVM is a management tool that uses a snapshot in time to evaluate a project or program against the original plan. It's an early warning system to detect deficient or endangered progress, and it reveals potential problems," said Tim Earith of Programs and

Quality division. "Earned value is expressed in dollars or hours and answers the question: How much progress did I make against my original plan?"

AACE International is a professional society for cost estimators, cost engineers, schedulers, project managers and project control specialists with more than 6,000 members worldwide. Y-12 supports its many employees who are members of the East Tennessee Section of AACE International. The East Tennessee Section nominated Y-12 for this award.

# Flu – what’s the difference?

As much as we don’t want to admit it, flu season is around the corner. In today’s society, we hear about various types of flu, but do you know what they are? Below is a description of several types.

Seasonal flu – an infection causing mild respiratory symptoms. This flu is contagious but can be prevented by getting a flu vaccination each year. Occupational Health Services (OHS) will offer employees the flu vaccine in November.

Avian flu – an infection caused by avian (bird) flu viruses. These viruses occur naturally among birds, but infections can occur in humans. However, the risk of contracting flu from infected birds is generally low for most people.

Pandemic flu – a global disease outbreak. A flu pandemic occurs when a new flu virus emerges and has little or no immunity in the human population. It causes serious illness and spreads worldwide. In 1918 and 1919, there were three waves of a flu pandemic. In the U.S. today, health professionals are concerned that the avian H5N1 virus represents a significant threat to humans. There has been no sustained human-to-human transmission of the disease to date, but the concern is that H5N1 will evolve into a virus capable of human-to-human transmission, creating a worldwide pandemic.

While there is no way to predict a pandemic and because there is concern about the H5N1 virus, government agencies, companies (including Y-12), counties and states are preparing pandemic plans.

Watch for a roll-out of Y-12’s Pandemic Plan and associated procedure in the near future.

If you have questions about the types of flu or what Y-12 is doing to prepare for a possible pandemic, contact OHS’s Nancy Underwood (241-2776) or Dr. Otis Cosby (574-1571).

# The nurse is IN

There are stacks of blue sheets to indicate the number of patients scheduled for today. There are rubber gloves and a blood pressure cuff, plus a computer and lots of files. It’s a typical afternoon in the office of Melissa Davis, a nurse in Y-12’s Occupational Health Services.

Davis has been at Y-12 for a little over a year. In fact, she’s the senior staff nurse since her two predecessors retired this year. She had to face the daunting task of learning their 41 years of occupational health nursing experience as soon as she got here!

Davis and the other two nurses in the office work as a team, along with the nursing supervisor, doctors, physician’s assistants, nurse practitioner, lab technicians and psychology staff who share the offices in Jack Case Center. They function together through routine days as well as more hectic times.

An exciting part of the job is participating in practice drills to prepare for emergency events. They act out accident scenarios and care for “patients” just as they would in a real emergency. She pointed out, “A regular hospital nurse would not know what to do” in such situations. The practice drills, along with specialized training such as RadWorker II and REAC/TS, keep her on her toes and ready to respond to any situation at any time.



Nurse Melissa Davis takes Lisa Xiques’ blood pressure. Davis’ job involves dealing with injuries and illnesses, as well as with physicals and allergy shots.

## SERVICE



## NNIVERSARY

### September 43 years

**Quality Assurance:** Homer L. Tucker

### 42 years

**Engineering:** Kerry A. Maulden

**Facilities, Infrastructure and Services:** Otis D. Boyd

### 41 years

**Facilities, Infrastructure and Services:** Douglas H. Kitchen

### 40 years

**Engineering:** Luther E. Galyon Jr. and James D. May

### 30 years

**Applied Technologies:** Robert L. Bridges

**Budgets:** Dianne D. Hamblen

**Engineering:** Eric O. Covington

**Environment, Safety and Health:** Donald E. Bohrman

**Facilities, Infrastructure and Services:** Gary L. Eicher, Freddie A. Gouge and William W. Shewbrooks II

**Information Technology:** Emma S. Jones and Julia A. Rupert

**Production:** Patricia L. Dulaney

**Public Affairs and Communications:** Terry L. Marlar

**Quality Assurance:** Wayne A. Randles

**Safeguards, Security, and Emergency Services:** Kathie A. Hensley, Kathy H. Meng and Elmer E. Stevens

### 25 years

**Engineering:** David D. Bunton

**Facilities, Infrastructure and Services:** William E. Bryant

**Production:** Richard J. Dilly, Alan F. Moore and John D. Williams

**Public Affairs and Communications:** Susan E. Hughes

**Quality Assurance:** James H. Norvell, Mary E. Roy and Kenneth A. Thompson

### 20 years

**Environment, Safety and Health:** Kathy J. Boatman, Diana C. Duran and Johnny M. Skinner

**Production:** Deborah R. Braden and Joey S. Griffith

**Public Affairs and Communications:** Rebecca L. Williams

**Safeguards, Security, and Emergency Services:** Michael C. Goins and Mary N. Tilley

# Seen any good videos lately?

Y-12's Video and Videoconference Services department recently received awards in two international competitions for exceptional videos created during the past year. This talented troupe walked away with seven prestigious awards. Congratulations to Y-12's Larry Gibbs, Casey Guinan, Marvin Payne, John Ridley, Mike Watkins and numerous subcontractors who lend their talents upon request as makeup artists, grips, gaffers, producers, directors and videographers.

Entry	Category	Award
<i>Access Rate Control System</i>	Informational	Award of Distinction
<i>All Hands Threat Video</i>	Creativity/Editing	Award of Distinction
<i>Beryllium Awareness</i>	Instructional	Award of Excellence
<i>Day of Volunteering 2007</i>	Employee Communication	Honorable Mention
<i>Rapid Deployment Shelter System</i>	Informational	Honorable Mention
<i>Safety Solutions 2008</i>	Safety	Award of Excellence
<i>This is Y-12</i>	Corporate Image	Award of Excellence

The Hermes Creative Awards competition recognizes creative concepts, writing, design and execution of informational materials, and the Videographer Awards competition honors all aspects of video production, television commercials, news, programming and emerging media.

Although much of their work cannot be entered in competitions, John Ridley, supervisor of Video and Videoconference Services, commented, "We are competing against a lot of the 'big boys' and are doing well. Video productions are quite involved, and we produced 71 last year."

"These competitions are a form of professional development. We enter to get the judges' opinions about our editing, photography, videography, lighting, sound, and the mix of elements we use to tell a story," said Mike Shepherd, manager of Multimedia Services.

## Balloons over the ocean

Carl Lyster of Facilities, Infrastructure and Services can't get away from his work. He's an electrician who maintains analytical equipment, air conditioning systems and such. Service on much of the equipment is not available outside Y-12.

In his off time, Lyster is still engrossed in electronics. As part of a University of Tennessee (UT) team, he has worked for three years on the computer and radio equipment to send an unmanned high-altitude balloon across the Atlantic Ocean. What he brings to the team is impressive—30 years of fixing computer hardware; contacts with Y-12 physics, chemistry and engineering experts; a minor in chemistry himself; and a home laboratory. "I'm able to design and build the circuit boards for very little cost," he said.

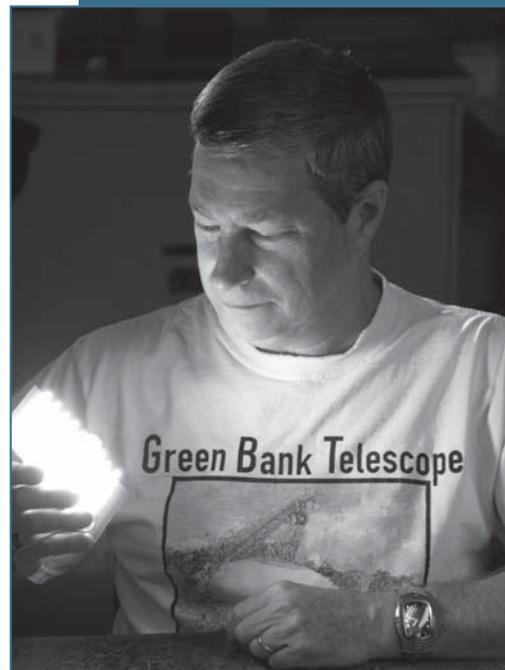
A challenging design it is. The 30-foot-tall helium balloon and its computer system must function in temperatures as low as minus 70 degrees Fahrenheit. "The biggest problem is frozen batteries," said Lyster. Still, the best time to launch is cooler weather to take advantage of high winds in the dipping jet stream. "We need to get across the ocean quickly," he explained, "because the batteries only last five days."

The most recent launch in March 2008 fell about 200 miles short, near the coast of Ireland. It was the UT Amateur Radio Club's fourth test flight since 2005, and they hope to try one more. One improvement will be in the insulation. A successful crossing would be the first for an amateur group.

You can follow the team's progress at [www.spiritofknoxville.com](http://www.spiritofknoxville.com).

“Competitions show us how we stack up against our peers in industry. ... We're a small, efficient, cost-effective and creative team.”

John Ridley  
Video and Videoconference Services



Carl Lyster holds a solid-state light panel he fabricated as a tracking light for transatlantic balloon flights.

**2008 Y-12 United Way  
Campaign Kickoff**  
Live United. Give United.

Oct. 7

11 a.m., JCC Courtyard

Contact: Beth Green  
(sce; 574-2125)

**2008 Knoxville  
Race for the Cure**

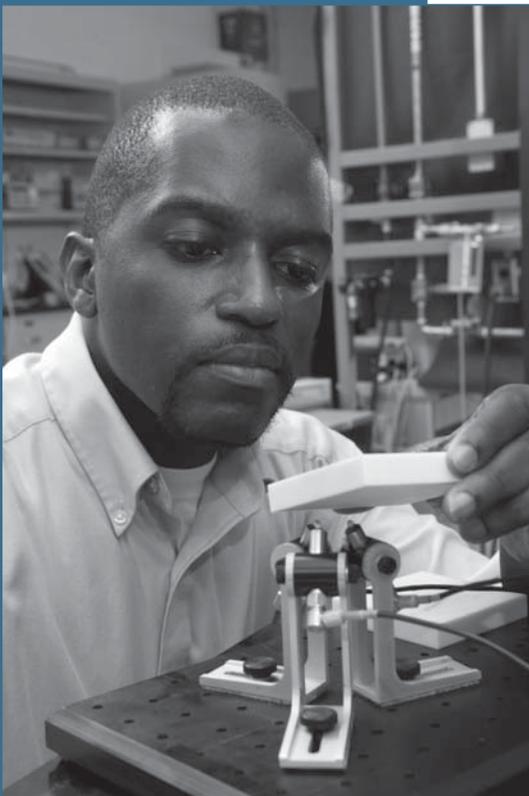
Oct. 11

8:30 a.m., World's Fair Park

Contact: Bridget Correll  
(bif; 241-4287)

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Permit #36  
Powell, TN



Anthony Belvin works with the air-coupled ultrasonic wave system he helped develop for Pantex.

## Seeing what's inside

Anthony Belvin of Applied Technologies studies materials, and he has to be resourceful. "We can't always buy the latest equipment so we have to find ways of using what we have," he said.

Belvin, a mechanical engineer, collaborates mostly with Product Certification engineers on nondestructive evaluation methods, such as ultrasonics. Because they can be transmitted through the air, ultrasonic sound waves are attractive in areas where moisture can compromise quality.

One example is electromagnetic acoustic transduction (EMAT), which gives a very clear picture. Collaboration among Applied Technologies, Product Certification, Information Technology and others led to full use of EMAT at the electron-beam weld inspection station.

Another example of Belvin's work is air-coupled ultrasonics. The technique developed in collaboration with Pantex and Lawrence Livermore National Laboratory shaves the time to inspect high-explosive components from several days to an hour or less.

Currently he is working on the phased array technique to determine quality of cast uranium components. A phased array system steers the sound around interferences like large grains and cracks. "Think of it as driving around a house surrounded by trees," he said. "As you move by, you get different blockage from the trees. We collect all the individual images to get a complete picture of the house without any of the blockage."

What does he see as key to his work? "Interaction between Applied Technologies and Production is essential," he said. "We have to understand the operating areas and how things work together. To be most effective, we can't be limited by tunnel vision."