Urbon takes command of SSC Charleston
Hail Capt. Bruce Urbon and Farewell Capt. Red Hoover
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On the cover
Photos on inside front cover by Tim Egbert.
Back cover art by Araceli Roach.
It is an honor for me to take the helm at this great command. Under Capt. Red Hoover’s strong leadership, SSC Charleston has made tremendous strides in many areas, and he has laid a solid foundation for success for SSC Atlantic. I intend to continue in the tradition of providing quality products and services to our customers.

While there are many new faces and names to learn, I’m no stranger to SPAWAR. In 1997 I was assigned to the SPAWAR Space Field Activity, serving as a systems engineer on a reconnaissance satellite acquisition program. Then in 1999 I was assigned to SPAWAR PMW-159 as Fleet Support Officer and Program Manager for the Next Generation Command and Control Processor (NGC2P). Since 2006 I’ve worked with the SSC Charleston Tidewater team as director of Type Commander (TYCOM)/Combatant Commander (COCOM) Operations, heading the command’s new Fleet Support Office and serving as the competency lead for 4.0 Logistics and Fleet Support.

My operational background includes service as First Lieutenant and then Main Propulsion Assistant in the frigate USS Miller (FF-1091), followed by a tour as Navigator in the Second Fleet Flagship USS Mount Whitney (LCC-20). Just prior to reporting to SSC Charleston last year, I served as the Combat Systems Officer aboard the aircraft carrier USS Theodore Roosevelt (CVN-71).

Following postgraduate school, I was assigned to the Office of Naval Research as Program Manager for the Precision Signal Intelligence (SIGINT) Targeting System (PSTS) Advanced Concept Technology Demonstration (ACTD). With education and experience in the space field, I am a member of the Navy’s Space Cadre. In 2002 I was assigned to the Fleet Technical Support Center, Atlantic (FTSCLANT) as Combat Systems Department Head.

My time serving SSC Charleston in Tidewater has been incredibly rewarding, and I feel very fortunate to be a part of this team at this pivotal time in its history. We have great and exciting times ahead. The next few years will bring many changes as we go forward as SSC Atlantic, and of course the normal, day-to-day support we provide to our customers will continue. Whether traveling halfway around the world to set up an Internet café or operations center, or working right here in our own “back yard” integrating MRAP vehicles, I know our SSC Charleston team of government, military and industry partners will provide outstanding service to our Navy and our nation. I am extremely proud to be a part of this SPAWAR team that is truly making a difference.
LAST CALL

from Captain Red Hoover

As you read this, you have a new commanding officer who is ready and able to lead you to new successes in the next few years. I am confident Capt. Urbon will make you proud of his abilities and his leadership.

It was three short years ago that I stood before many of you and said how truly excited I was about the opportunities ahead. I can hardly believe those three years passed so quickly. But when I look at all that has been accomplished by this great team, it’s hard to believe it has been only three years!

When I became commanding officer of SSC Charleston in 2005, I felt assured that we knew our course and could take on any challenge.

There were a few things I did not foresee. I did not foresee our involvement with an armored vehicle program that was the highest acquisition priority for the Department of Defense. I would never have predicted that I’d be called on to testify before Congress about our abilities or that we would welcome the Secretary of Defense, Secretary of the Navy, Chief of Naval Operations and more than 70 elected officials, general officers and flag officers through our gates as a result of our vital role in saving warfighter lives.

I knew that our Internet café program was changing history by giving warfighters a communications capability unlike any in the annals of armed conflict, but I did not foresee that we would have more than 800 cafés up and running throughout Iraq, Afghanistan and the Balkans. That’s thanks to our great government/industry partnership and dedicated individuals who live and work alongside the warfighters, far from home and loved ones.

I knew this SSC Charleston team was dedicated to engineering process improvements and accountability for product and service delivery, but I did not foresee that we would be the first SPAWAR systems center to obtain Capability Maturity Model Integration (CMMI) Maturity Level 3.

While we knew that BRAC ‘06 called for the merger of existing East Coast systems centers into SPAWAR Atlantic by October 2008, I did not foresee how well our team would take on the challenge to address competency alignment, end-to-end (E2E) engineering alignment, engineering processes, corporate operations, military alignments, financial, legal and contract consolidation efforts.

I knew I’d travel around the globe to meet our deployed employees, industry partners and customers, but I never ceased to be amazed at how our strong, dedicated team contributes to joint and combined operations in ways no one could have imagined. To see our people in action is to know how good they are.

In a climate of major process change throughout the command — with BSC, CAO, NSPS, Navy ERP, BRAC – you stayed on course to our strategic vision. The successful programs are too numerous to mention. Our products continue to be delivered to the warfighter at an incredible rate. These past few years have brought momentous change for this organization. With change comes great opportunity. Every time the bar has been raised you have responded by exceeding expectations.

People are the heart of this organization, the reason for successful achievement, the strength of effort. People are our most important resource in delivering our capabilities to the warfighter. It is not enough to say that I have been incredibly honored to serve as commanding officer here. I am so fortunate to have had the opportunity to serve alongside you in my Navy career.

I have considered it a distinct honor and privilege to work with each and every one of you. Your technical proficiency and tenacity inspire me. Your professionalism gives me confidence. You welcomed Cherrie and my family into your family, for which we will always be grateful.

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You have all made a tremendous impact on me. I admire you all and will watch with pride as you continue to grow and excel through teamwork. I will surely miss you. Thank you.
Capt. Bruce Urbon relieved Capt. Red Hoover as commanding officer of SSC Charleston June 26 in a change of command ceremony held in the horseshoe in front of Bldg. 3147. More than 500 people – including local, state and national officials, military leaders, invited guests, family, friends and employees – gathered to witness SSC Charleston’s seventh change of command.

“Captain Hoover has very impressive credentials and great personal qualities, and he’s added some magnificent accomplishments while serving as commanding officer of SSC Charleston,” said Rear Adm. Michael Bachmann, commander of SPAWARSYSNCOM and keynote speaker for the ceremony.

He lauded Hoover’s role as a catalyst in the pending merger of three existing systems centers into SSC Atlantic, effective Oct. 1, and his ability to achieve a strategic vision for the center across major process changes involving organizational structure, personnel systems and resource planning. Under Hoover’s leadership the center attained Capability Maturity Model Integration (CMMI) Maturity Level 3, the first SPAWAR systems center to do so, Bachmann noted.

In his final address to the SSC Charleston workforce as their commanding officer, Hoover said that as he has traveled around the globe to meet deployed employees, industry partners and customers, he never ceased to be amazed at how much that dedicated team contributes to joint and combined operations.

“All of this effort is taking place nonstop while we are all sitting here. This is what I have been so proud of as commanding officer these last three years; of this command’s incredible focus on the warfighter, and determination to pro-
Hoover said.

A native of Flushing, Mich., Hoover received a bachelor of science degree in engineering from the University of Michigan-Flint in 1984. He also holds a master of science degree in physics from the Naval Postgraduate School in Monterey, Calif.

His sea assignments were on board the frigate USS Meyerkord (FF 1058) and guided missile frigate USS Elrod (FFG 55). After becoming an Engineering Duty Officer in 1994 he was assigned to Puget Sound Naval Shipyard as combat systems project manager for the aircraft carrier USS Lincoln (CVN 72) 1996 complex overhaul. In 1998 he reported to Naval Sea Systems Command, SEA 53, to assist in the formation of a new office for managing combat systems and C4I interoperability.

In August 2001 he reported to PEO Theater Surface Combatants as part of the Cooperative Engagement Capability (CEC) program office. He became the Fleet Support and Aegis Integration Manager for PEO Integrated Warfare Systems Command and Control Directorate (IWS 6N) in March 2002.

Hoover reported to SSC Charleston as executive officer (XO) in June 2004. While serving as XO and deputy chief engineer, Hoover oversaw more than 80 command engineers and science and technology officers through a Systems Engineering Group. He established engineering-level relationships with the Program Executive Office, Integrated Warfare Systems (PEO, IWS) and Chief of Naval Operation’s Strategic Studies Group. Under his leadership as XO more than 620 ship and 150 shore C4ISR installations were accomplished.

Hoover became the sixth commanding officer of SSC Charleston in June 2005. He led the C4ISR integration program for Mine Resistant Ambush Protected (MRAP) vehicles, the number one acquisition priority for the Department of Defense, increasing production from five to 50 vehicles a day. Through the successful integration of more than 8,700 vehicles in the past year, SSC Charleston efforts have been invaluable to the Global War on Terrorism in both Iraq and Afghanistan.

Continued on next page
Change of command

Continued from previous page

Afghanistan, Bachmann noted. Under Hoover’s vision and direction, SSC Charleston made major strides in improving communication barriers for deployed troops by establishing Internet cafés in Afghanistan, Iraq and the Balkans. By the end of September 2008 more than 1,000 Internet cafés will be in use there, providing warfighters with a communications capability unheard of in the history of warfare.

“Throughout his assignment, Red demonstrated his professionalism and expertise in a wide variety of disciplines. Technical competence, superior managerial abilities and inspirational leadership have characterized his performance while here in Charleston,” Bachmann said. “As Red moves on, I envision even greater things from him. His family can be proud; his nation assured that he will take with him those leadership qualities wherever he goes.”

Bachmann presented Hoover the Legion of Merit for his accomplishments at SSC Charleston. Hoover’s next assignment will be in the Program Executive Office, Integrated Warfare Systems (PEO, IWS) in Washington, D.C., as the CG(X) Systems Integration Program Manager.

Calling Urbon “the right man to continue the momentum that Captain Hoover has created,” Bachmann said, “I have great confidence in your depth of commitment, your level of competence, and your breadth of experience, particularly with SPAWAR and our mission.”

Above, SSC Charleston Executive Officer Cmrd. Scott Heller watches as, at left, Rear Adm. Michael Bachmann pins the Legion of Merit to the uniform of Capt. Red Hoover. At top, Navy Band Jacksonville performs for the crowd which numbered more than 500.
A native of Shaker Heights, Ohio, Urbon is a graduate of The Ohio State University, where he earned a bachelor of science degree in aeronautical and astronautical engineering in 1985. He was awarded a master of science degree in astronautical engineering from the Naval Postgraduate School in 1992.

Urbon’s operational background includes service as first lieutenant and then main propulsion assistant in the frigate USS Miller (FF-1091), followed by a tour as navigator in Second Fleet Flagship USS Mount Whitney (LCC-20). He also served as the combat systems officer (CSO) aboard the aircraft carrier USS Theodore Roosevelt (CVN-71).

Following postgraduate school, Urbon was assigned to the Office of Naval Research and assumed duties as program manager for the Precision Signal Intelligence (SIGINT) Targeting System (PSTS) Advanced Concept Technology Demonstration (ACTD). In 1997 Urbon was assigned to the SPAWAR Space Field Activity, where he served as a systems engineer on a multibillion dollar ACAT 1D-equivalent reconnaissance satellite acquisition program. During this tour, he completed the Defense Systems Management College (DSMC) Advanced Program Management Course and received Level III certification in the field of program management. He was also selected for membership in the Navy’s Acquisition Professional Community and was identified as a member of the Navy Space Cadre.

In 1999 Urbon reported to SSC Charleston, where he served as Fleet Support Officer and Program Manager for the Next Generation Command and Control Processor (NGC2P). In 2002 he was assigned to Fleet Technical Support Center, Atlantic (FTSCLANT) as Combat Systems Department Head. Upon completion of his tour on USS Theodore Roosevelt in 2006, he was assigned to SSC Charleston to serve as the command’s first director of type command (TYCOM)/combatant command (COCOM) operations and director of fleet support.

“At Red Hoover’s strong leadership, SPAWAR Systems Center, Charleston has made tremendous strides in many areas,” said Urbon after reading his orders in the time-honored Navy change of command tradition. “For the men and women of SPAWAR Systems Center, Charleston, I am truly thrilled and honored to take the helm from Red Hoover and I look forward to meeting the challenges ahead together.”
CNO makes unscheduled visit to MRAP vehicle integration team

By Lt. Brian Phillips
MRAP Lean Six Sigma Black Belt

April 2, 2008, presented itself as the most unexpected — yet exciting — encounter of my career. At approximately 0945 I received a call from the Mine Resistant Ambush Protected (MRAP) Program Manager. On the other end of the line the voice said, “I am about to make your day; the Chief of Naval Operations (CNO) will be at your facility at 1100. I need you to set up the facility and be ready to brief him.”

My initial reaction was a big gulp followed by a shot of adrenaline, realizing that I had to condense a normally intense preparation cycle into only one hour. The briefing material was developed so I had the team put up all storyboards and sweep up the facility quickly to complete the tasking at hand. Within 20 minutes Capt. Red Hoover, commanding officer of SSC Charleston, was on site helping to prep for the unexpected visit, ensuring all details were covered and that the facility was ready for the highest ranking officer in the U.S. Navy.

This expeditious visit was very similar to how the MRAP program has progressed since its inception: faster than humanly possible. The MRAP family of vehicles provides operating forces multiple mission-role platforms capable of mitigating IED, underbody mines and small arms fire (SAF) threats, the greatest casualty producers in the Global War on Terrorism. The MRAP platforms include a suite of government-furnished equipment to help warfighters be successful on the battlefield. SSC Charleston oversees the integration and installation work after the vehicles are accepted from the manufacturers. The MRAP team also performs
interoperability testing and orchestrates transportation of the vehicles from South Carolina to the Middle East. While many were transported by air initially, most are now sent by ship. SSC Charleston teams also deprocess the vehicles in theatre. The MRAP program has gone from inception to Full Rate Production in a little over a year. That is about 5 times faster than most traditional acquisition programs of this type.

Adm. Gary Roughhead, the CNO, arrived promptly at 1100 at SSC Charleston’s MRAP vehicle integration facility as promised. The admiral was quick to congratulate the team for success in meeting the nation’s demand signal to ramp up production to 50 vehicles fully integrated with a full compliment of communications, computers, command and control, intelligence, surveillance and reconnaissance (C4ISR) systems. The CNO ensured not only that he learned all the details of what it takes to integrate the vehicles, but also that he shook as many hands as possible and delivered as many personal “thank you’s” as he could for all the hard work done.

This visit also gave the CNO the opportunity to look over the facility and observe a joint program in action, which he was very excited to see. Many of his questions focused on how the services were able to balance requirements and ensure interoperability with each other. Overall he was very impressed with how, in a highly compressed time frame, the services have teamed to develop the best product at pennies on the dollar compared with original estimates. To put the accomplishments of the MRAP in perspective, this effort is the first of its kind and production increased by 10 times in only four months; development and acquisition ramped up more rapidly than the Jeep in World War II — especially noteworthy considering that the MRAP is a much more complex vehicle.

As the CNO departed, his final comments to Captain Hoover were about how the lessons learned in the MRAP program needed to be shared with all programs across the DoD. He was highly impressed with the workforce, leadership, facilities and with SPAWAR as an agency. The visit was a resounding success in that it showcased the high quality work we do at SSC Charleston, and it allowed the CNO to see the MRAP integration team in action.
Ward ends Navy civilian career

James D. Ward, technical director of SSC Charleston, was praised by local military and community leaders and Navy and state leaders as he ended a 31-year career of public service to the U.S. Navy in a retirement luncheon held March 28 at the SSC Charleston Conference Center.

With Nick Sullivan of Code 01000 as master of ceremonies, the retirement ceremony featured speakers Rear Adm. Michael Bachmann, commander of SPAWAR Systems Command; Rear Adm. (Sel) Tim Flynn, Program Executive Officer for Enterprise Information Systems (PEO-EIS); Brig. Gen. Tom Mikolajcik, USAF (Ret.), community leader and the namesake of SSC Charleston’s Bldg. 3146; Chris Miller, PEO C4I technical director; Carmela Keeney, SSC San Diego technical director; several SSC Charleston department heads and Ward’s three sons Zachary, Pete and Jason. In addition, letters sent to Ward on the occasion of his retirement from numerous local, state and national elected officials were read during the ceremony.

“The State of South Carolina remains proud of the role that SPAWAR Systems Center, Charleston has played in saving the lives of our nation’s warfighters,” said U.S. Sen. Lindsey Graham in a letter to Ward. “Through your management and guidance, it has become increasingly evident that the United States Navy realizes the importance and valued contribution of SPAWAR Systems Center, Charleston.”

In his remarks, Ward praised the SSC Charleston team which he has led since becoming executive director five years ago. “It has been the highest honor to stand and serve with you. I will leave here with what you have given me – friendship, partnership and optimism,” he said.

As the senior civilian leader of a change-enabled organization that is engaged in hundreds of warfighter programs, Ward was credited with anchoring the command’s global workforce with sound systems and software engineering practices. The SSC Charleston workforce, consisting of 2,500 civil service employees (73 percent in science, IT or engineering fields) and more than 9,000 industry partners, has found effective and
efficient solutions in the Global War on Terrorism and directly improve the enablement, safety and quality of life of warfighters. The SSC Charleston team is currently engaged in the integration of various electronic systems into Mine Resistant, Armor Protected (MRAP) vehicles, and has designed and installed transportable air traffic control (ATC) facilities in Iraq and Afghanistan for U.S. Central Command Air Forces. They have also designed, procured and installed more than 600 Internet cafés, giving warfighters a communications capability unsurpassed in the history of warfare.

Ward was also praised for initiatives such as the New Professionals, which has attracted some of the nation’s brightest minds to the Charleston center, and for the establishment of an Innovation Program which has led to the development of new products for the warfighter such as inflatable antennas.

A native of Hampton, Va., Ward holds a bachelor of science degree in electrical engineering from Virginia Polytechnic Institute and State University, and a master of business administration degree from the College of William and Mary. He is a graduate of the Federal Executive Institute, and completed the Senior Fellows Program of the John F. Kennedy School of Government at Harvard University.

Ward relocated to the Charleston area in 1996, during consolidation of the Navy’s four east coast Electronic Engineering Centers. In 1998 he was selected to head the consolidated organization’s Command and Control Systems Department, and in 2003 he became SSC Charleston’s executive director, the senior executive service (SES) civilian re-

Continued on next page
Ward retirement

sponsible for setting command-wide strategic goals, developing and implementing policies and procedures, and managing all engineering and business operations. In 2007 the job was renamed “Technical Director” to align with the organizational chain of command of SPAWARSYSCOM.

In February Ward was awarded the state’s highest civilian honor, the Order of the Palmetto for “setting a standard of excellence second to none,” according to Gov. Mark Sanford. Today’s warfighters are better equipped and safer thanks to the technological advancements made at SSC Charleston on Ward’s watch, Sanford noted.

Ward’s advancement of the local knowledge-based economy was recognized by the Charleston Metro Chamber of Commerce in May 2007 when he was presented the Man of the Year award for the public sector at the ThinkTEC Innovation Summit.

In April 2001 Ward was presented the Navy Superior Civilian Service Award for his leadership in the integration of major elements of the Navy’s telecommunications infrastructure into SSC Charleston. He received the Outstanding Manager and Executive Award from the Charleston-area Federal Executive Association in 2000, and the Distinguished Civilian Service Award in 2008.
Philipp Charles

Former SSC Charleston chief engineer named technical director

Philipp H. Charles, who has served as Chief Engineer for SSC Charleston since 1997, was recently named to succeed James Ward as SSC Charleston’s technical director.

A native of Cincinnati, Ohio, Charles served in the U.S. Marine Corps from 1976 to 1979, and as a Marine, he was selected to serve on President Jimmy Carter’s presidential honor guard. In December 1986 he earned a bachelor of science degree in electrical engineering from Rutgers University and shortly thereafter began working as a project engineer for the Navy. He undertook postgraduate studies during evenings, earning a master of science degree in engineering management from Florida Tech in 1993. He is also a graduate of the Federal Executive Institute, Leadership for a Democratic Society Program in 2001, Defense Acquisition University where he received an Acquisition Professional Community Level III certification in 2004, and he was awarded a certified Lean Six Sigma Green Belt in 2007.

In his previous position as chief engineer for SSC Charleston, Charles provided technical leadership to 2,200 government personnel involved in numerous defense-related C4ISR technical business projects. He provided the technical vision, and ensured that effective controls, guides and processes were in place to develop and deliver hundreds of quality Navy, joint and national products and services in a timely and efficient manner. He represented the command on key technical issues of national interest and interfaced with other Navy, joint and national organizations at all levels.

Charles served as Technical Director of Architectures for the ASN(RDA) Chief Engineer from 2001 to 2005. His efforts in this role earned him the Special Act Award for his work in developing architectures and systems engineering for FORCEnet and acquisition of Navy Network Centric Warfare (NCW) capabilities.

Charles led the Navy’s end-to-end Y2K laboratory testing program for the Chief of Naval Operations’ Y2K Office from late 1998 through January 2000. His engineering prioritization assessments earned him the Presidential Y2K Council Medal and his second Meritorious Civilian Service Medal.

Additionally, Charles has led the development of an advanced outcome-based methodology and NTIRA/GEMINI tool set for rapidly assessing the impact of acquisition decisions on warfighter capabilities associated with complex system-of-systems architectures. He has conducted numerous large-scale engineering assessments in support of NCW goals since May 1997, including the development of the Charleston Integrated Products Center and Systems Integration Environment, a cohesive strategy for developing and testing NCW capabilities in an engineering environment.

His early management experiences between 1989 and 1997 were at Naval Electronic Systems Engineering Activity (NESEA), and Naval Command, Control and Ocean Surveillance Center In-Service Engineering East (NISE-East) serving as a section head and branch head. He supervised and managed the work of up to 92 government and contractor personnel, a budget of approximately $30 million a year, and $75 million in contracts as the Contracting Officer’s Technical Representative (COTR).

With Dr. Charles Dickerson, Charles coauthored the book, Using Architectures for Research, Development and Acquisition, which was used by George Mason University as a textbook.
SSC Charleston’s Ken A. Crawley has been selected a Top Navy Engineer of the Year by the Assistant Secretary of the Navy (Research, Development and Acquisition.)

Crawley was one of seven SPAWARSYS COM employees honored in the competition, which included nearly 60 submissions. The award recognizes Crawley’s work with advanced antenna and RF systems, particularly his contribution to the Expanded Maritime Interdiction Operations (EMIO) communications system. The system provides high speed data and voice to crews boarding vessels of interest (VOI) while underway.

Crawley improved the antenna and radio system operation to greatly reduce service interruption and provide reliable communications between staff on the host vessel and the boarding party. The award citation noted that the electronics engineer’s efforts “have made the task of interdiction much more effective and safer for our warfighters.”

SSC Charleston supports the EMIO program by providing ship-to-ship Line of Sight (LoS) communications to boarding parties. The system design utilizes commercial-type wireless network systems to provide easy implementation and interoperability with common commercial network and computer systems.

Designing a dependable wireless link to operate between moving vessels on open seas offers challenges beyond those of a normal terrestrial link. A terrestrial LoS microwave link does not move, although path loss can vary over time due to ducting effects. Engineering a successful data communications link over land is straightforward, even when including static water segments between the two terrestrial endpoints.

A maritime LoS microwave link is entirely different. All of the difficulties and losses inherent in a terrestrial link are present, plus the relative positions of the two end points of the link vary and the variability of the transmission medium between them also varies.

Maritime LoS microwave links are also different with respect to terrestrial microwave equipment design and the data processing software algorithms for negotiating the best modulation waveforms. These are optimized for the highest data rates under static conditions. Commercial Off-the-Shelf (COTS) solutions are not optimized for continuous renegotiation of the variables presented in a maritime environment. As a result, the path must be engineered with the greatest signal margins possible to keep the maritime effects at a minimum.

Also, COTS antennas are designed with the assumption they are bolted in place and will not move in relative position. Maritime antennas are displaced in three dimensions simultaneously and quickly.

Crawley was called upon to review the implementation design, test the radio frequency (RF) components and overall system operation, and recommend system improvements to ensure communications reliability to meet mission requirements. After undertaking research and practical testing at SSC Charleston’s Sullivan’s Island lab facility and in on-water testing, Crawley proposed improvements to the system to increase effectiveness and reliability in a wide range of conditions.

Initial testing showed that variable sea conditions greatly affect the reliability of the link and additional signal gain must be designed into the system to achieve minimum requirements for distance and data rate. Most notably, wave induced rolls expected during interdiction operations will
exceed the vertical beam angle of the original antenna system.

Antennas are optimized to provide the highest transmit/receive focus (gain) in a particular direction or elevation based on the designed use of the system. Generally the higher the gain an antenna provides, the more directional the beam. The radiation pattern of the antennas installed on the vessels provided effective communications when both were mounted vertically, but as the vessel rolled, the antennas tilted from vertical resulting in reduced signal amplification.

Crawley’s test and evaluation process resulted in several recommendations, including adding amplifiers to both the Vessel of Interest (VOI) system and the host vessel to keep the system design “symmetrical.” He also recommended replacing the antenna on the VOI system to increase the vertical beam width and adding another antenna for use in higher sea states, and selecting an RF transmission line with the lowest loss practicable. Crawley also provided procedures and training to the boarding team to install the VOI antenna as near vertical as possible.

These improvements provided a system that worked acceptably in varying sea states under which actual operations occur. The continuous contact and large volume of data the boarding teams will have access to will not only increase the effectiveness of operations, but also reduce operational costs and potentially save lives.

Referring to RF engineering as an “art form,” Crawley attributed his success with the EMIO system to “… education, experience, motivation, and humility. Lack any one of these elements and you will fail,” he said. “RF Engineering has colors that are the electromagnetic spectrum; each behaves differently. Often a textbook solution, or a product brochure solution, will fail because there are complications that lie outside of the problem statement,” he said.

Crawley’s work in RF propagation/antenna design in SSC Charleston’s communications department has taken him around the world. He also performs antenna and RF system performance review and testing to identify system deficiencies and recommend performance enhancements to improve systems to meet operational requirements.

He was selected SSC Charleston Engineer of the Year in 2002 for a telemetry relay he designed, built and installed in Antarctica. During a six-month tour in Iraq in 2004 he established the SSC Charleston office in Balad, locating a site and negotiating with the Army and Air Force for its use. He and Jim Watson of SSC Charleston’s Pensacola site, along with some willing Iraqis, cleared Operation Desert Storm war debris from the site.

In 2004 he, along with fellow SPAWARriors Don McCormick and Dean Glace (who has since retired from SSC Charleston,) received a patent on a high-efficiency, compact antenna assembly. Crawley has also filed a patent for a tactical AM broadcast antenna.

“This is wonderful recognition of your contributions to both Department of the Navy, as well as DoD,” said SPAWARSYSCOM Commander Rear Adm. Michael Bachmann in a note to the SPAWAR honorees in the Navy Top Engineers and Scientists competition.

Crawley and other SPAWAR award winners — SSC San Diego’s James Finneran, Dr. John Meloling, Paul A. Miller, Hoa G. Nguyen, Dr. J. Scott Rodgers and Mihajlo Tomic — were honored in a Pentagon ceremony May 29. During the presentation Crawley was lauded for providing “the warfighter with a reliable tool they can count on for information and force protection during dangerous operations at sea. Your efforts have improved the product, saved money, and ensured greater success in assigned operations,” his award citation noted.

The Department of the Navy has over 35,000 scientists and engineers pursuing research, development, acquisition and sustainment. The award was established to honor those who reached superior technical achievements and to promote continued scientific and engineering excellence.

Last year SSC Charleston’s Chris All of Code 5521 was honored in this competition for his inflatable satellite antenna innovation.

- Susan Piedfort, Chronicle Editor
FEA honors

SPAWARriors named Employees of the Year

SSC Charleston employees were honored for teamwork, scientific prowess, heroism, communications security and outstanding supervision during the Greater Charleston Area Federal Executive Association (FEA) Employee of the Year program.

More than 300 people filled the Naval Weapons Station Redbank Club May 21 to honor federal civilian employees and uniformed military personnel in nine categories. SSC Charleston employees were on hand to cheer on the Mine Resistant Ambush Protected (MRAP) vehicle team as it won first place honors, Carl Agren of Code 56410 and Richard Demmerle of Code 56320 as they won first runners up, and Evelyn White and Nancye Kutch as they were recognized as second runners up in their respective categories.

The Outstanding Team Award was presented to the MRAP Vehicle C4I Integration and Delivery Team -- 13 military and civilian SPAWAR employees who, along with more than 800 industry partners met a critical need of delivering 1,500 fully C4I-integrated MRAP vehicles to Iraq by Dec. 31, 2007. In March 2007 the Assistant Secretary of the Navy for Research, Development and Acquisition (ASN-RDA) and the MRAP vehicle Joint Program Office (JPO) entrusted SSC Charleston with this life-saving mission.

The team, led by Joseph Rodgers and Peter Ward, along with industry partners, the 841st Transportation Battalion, and the 437th and 315th Airlift Wings met this goal, and a subsequent production goal of 50 integrated vehicles per day by Dec. 15. Working long and tedious hours, the team met and exceeded their goals. They completed integration on the first 1,500 vehicles in November 2007, enabling in-theater delivery by Dec. 31, and they met the production goal and milestone of integrating 50 vehicles per day on Dec. 5, 10 days ahead of schedule.

Given its importance as the top Department of Defense acquisition priority and as a proven lifesaver for warfighters, the MRAP integration program has had wide-reaching impact. MRAP vehicles are proven to save the lives of servicemembers deployed in-theater against the explosive forces of Improvised Explosive Devices (IEDs). With the protection of this vehicle, warfighters can better focus on their tasks and can locate IEDs and the insurgents who plant them more safely.

The MRAP integration program has had direct, positive economic impact on the greater Charleston community, with more than 850 industry partners hired in direct jobs that are feeding the local economy.

To meet the goal of producing 50 integrated vehicles a day, SSC Charleston employed Lean Six Sigma (LSS) principles and associated management tools to increase vehicle output, reduce cycle time and improve product quality.

Carl Agren, first runner up in the Outstanding Scientific/Professional Employee category, serves in the Intelligence and Information Warfare Department as the chief scientist for the Network Common Operating Picture (NetCOP) inte-
managed a Communications Security Material System (CMS)/Electronic Key Management System (EKMS) account of more than 10,000 items, one of the largest in the Navy. In addition to SSC Charleston, she supports eight local tenant commands and five SSC Charleston satellite offices. She is recognized as one of the leading civilian experts concerning Navy EKMS/CMS policies and procedures.

Evelyn White, a supervisory contracts specialist branch head in Code 22310, was second runner up in the outstanding supervisor category. Leading a team of four contract specialists and four purchasing agents, White was responsible for the award and administration of Task Orders and Simplified Acquisition procurements (SAP) in support of SSC Charleston’s command and control systems department. She served as a key member of a focus group analyzing procurement processes and was vital to the group’s successful accomplishments. She also served in a leadership role to develop competencies and performance objectives in preparation for the command’s transition to the National Security Personnel System (NSPS).

Other SSC Charleston employees honored by the command with nominations in this year’s FEA Federal Employee of the Year award program were Lonnie Cowart, Public Affairs Officer of Code 85100 for Managerial/Executive; Electronics Technician Kenneth J. Ballard of Code 55100 for Technician/Assistant; and Management Technician Torri L. Jenkins of Code 83100 for Clerical/Administrative.

Since 1967 the Greater Charleston FEA has sponsored the Employee of the Year program as a means of publicizing the high caliber of civilian and military employees of the federal service. Tom Crawford, chief meteorologist for WCIV News, emceed the ceremony for the sixth year in a row.

- Susan Piedfort, Chronicle Editor
Thirty-six SSC Charleston employees recently completed a 40-hour Lean Six Sigma (LSS) Green Belt course. The training emphasized using LSS methods and techniques in projects and rapid improvement events.

SSC Charleston’s LSS Certified Master Black Belt Dale Davis served as instructor for the training.

The Department of the Navy recognizes five LSS belt levels, according to Davis, white, yellow, green, black and the Master Black Belt. White belt is strictly an awareness level. The official Navy course is available at Navy Knowledge Online (NKO). The Yellow Belt is a foundation level geared toward the subject matter expert participating on a Lean Six Sigma team. SSC Charleston offers a one-day Yellow Belt course that includes practical training with commonly used LSS tools.

Green Belts provide the backbone of the SSC Charleston Lean Six Sigma implementation. The LSS Green Belt course provides a thorough understanding of what Lean Six Sigma is and how it works in practice at SSC Charleston. The five-day class prepares participants to become team leaders/facilitators of process improvement teams using tools and methodologies of Lean Six Sigma. These techniques are integrated into a “roadmap” called DMAIC (da-MAY-ik.) DMAIC stands for Define, Measure, Analyze, Improve, Control and represents the steps and order to be followed during a process improvement effort.

The Green Belt course is highly interactive and team focused. Case studies, hands-on exercises and group activities offer practical application of statistical concepts learned. The course provides participants with sound data analysis techniques to look at problems in a manner that will allow them to make better business decisions.

Lean Six Sigma Black Belts are the centerpiece of the program, integrating the strategies of Lean Six Sigma. Black Belts are improvement experts deployed to lead and mentor process improvement efforts. Throughout their four-week Black Belt training, participants internalize the methods and tools of Lean Six Sigma.

The training itself is conducted over the course of four months. Students in the Black Belt course are nominated to
A total of 36 SSC Charleston employees completed a 40-hour Lean-Six Sigma green belt training course in May. Green belt candidates will use their LSS competencies to facilitate rapid improvement events and teams and support black belts in their organizations.
The last time Brig. Gen. Tom Mikolajcik (USAF, Ret.) had seen Bldg. 3146 it was unfinished on the inside but held more than 400 dignitaries and well wishers, including U.S. senators, the S.C. governor and a multitude of flag officers and area commanders.

Since the ceremony marking its dedication in honor of Mikolajcik last year on March 16, Bldg. 3146 has been populated with more than 200 SSC Charleston employees and industry partners and has all the equipment they need to meet the needs of the warfighter and the demands of our country’s national response mission. The general was recently treated to a tour of the new building to see firsthand the work being done by several engineering divisions that were previously spread out across the SSC Charleston campus. The state-of-the-art, 57,000-square-foot facility provides more flexible office and lab space and has enabled efficient teaming by collocating like work together.

The Mikolajcik Engineering Laboratory Center replaced 10 modular buildings. Code 55000 consolidated Networks Engineering Division work from eight different locations into the building.
A recent Citadel graduate was the proud recipient of an award which honors the father of an SSC Charleston employee. The Robert G. Miller Memorial Sword was presented to Ens. Jeffrey A. Cornielle during an awards convocation held at The Citadel May 1.

Robert “Robbie” George Miller was born Aug. 12, 1924 in West New York, N.J., to second generation immigrant parents from Germany. Living near the Great Palisades next to the Hudson River, he could see the tall buildings of Manhattan and the open channel to the sea. Drawn to the sea at an early age, Miller joined the Sea Scouts and spent many hours on the Hudson River.

He graduated with the class of 1942 from St. Joseph’s High School in West New York, N.J. As did most of his class of the “Greatest Generation,” he volunteered to serve in the armed services. He joined the Army intent on taking the fight directly to the Nazi German empire. This was somewhat ironic since his father was born in Germany and his grandfather arrived in the U.S. from Germany as a young boy in 1884, changing the family name from “Muller” to “Miller” to embrace their new American homeland.

Miller was with Gen. George Patton in many Seventh and Third armies campaigns across Europe, including the Battle of the Bulge. He was a T-Sergeant (Technical Sergeant) in the heavy artillery and was the lead in the fire control command sequence, directing fire to the enemy. Miller never spoke much of his heroic deeds, merely saying he did his duty and just that. When it was suggested well after the war that Miller go back to Germany to visit, he said he saw enough on foot in those four years to last a lifetime.

After returning home to New Jersey, Miller volunteered as a Sea Scouting Master in the late 1940s and early ‘50s. He married in 1953, and he and wife Dorothy raised four children in Teaneck. He served as a Boy Scout Assistant Scout Master from 1966 to 1973. His sons became Eagle Scouts and his daughters First Class Girl Scouts (Eagle Scout equivalents).

Miller always loved the sea and spent many hours sharing this passion with friends and family. He joined the U.S. Power Squadron in 1973 and taught the public boating class for many years. He was a certified navigator with a “full certificate,” served as commander of the Palisades Power Squadron in New Jersey for several years, and taught the free boating safety class until his death in 1996.

As a memorial to their father, Patricia, Maureen, James and Robert “Bob” William Miller (an SSC Charleston employee in Code 53130) established the Robert G. Miller Memorial Sword award. It is presented to The Citadel NROTC Sea services candidate who embodies Miller’s leadership skills and dedication to serve his nation and others, and who appreciates and love the sea.
Immediate access to broadband

By Janel Brown

There’s a good reason why the Joint Communication Support Element (JCSE) is called the “The Voice Heard Around the World,” and SSC Charleston’s Code 5594 has a lot to do with it.

Immediate access to broadband

SSC Charleston Code 5594, located close to JCSE headquarters, in Tampa, Fla., has delivered 36 Small Command and Control Internet over Protocol (SC2IP), pronounced “skip,” units to JCSE and has orders for five more this year. The SC2IP allows JCSE to deploy around the world and still have immediate access to NIPRnet and SIPRnet, as well as DSN, VoIP, VoSIP and video-teleconference capabilities.

SC2IP is JCSE’s Everything Over Internet Protocol (EoIP) building block to support JTFs or JSOTFs. The SC2IP comes completely self-contained with portable power generation, satellite access via a Very Small Aperture Terminal (VSAT), and a basic complement of both VoIP and analog phones capable of secure and nonsecure voice services.

When other services such as CENTRIX or direct internet access are required, the SC2IP can provide them too. It is a robust, modular telecommunications package ideal for an initial entry team, advanced party or small headquarters since it provides broadband C2 certified services within a small footprint for up to 40 users.

The Code 5594 JCSE Team, led by Ken Bedwell, interim Code 5594 branch head; Tim Roland, JCSE project manager; the support team of James “Buck” Henry, Robert Pierson, Robert Profit, Jeremy King and Robert Dittman. Robert Sanicola is not pictured.

Four locations -- from Virginia to Hawaii to Qatar to Italy -- give worldwide JCSE coverage for warfighters. JCSE and SSC Charleston will lead the effort to establish IP services at Standardized Tactical Entry Points and Teleports (Suite C) throughout the world.
Cheryl Ankrom, Dave Wortham, Homer Wilkerson and Mark Simon; and the integration team of Robert Pierson, Robert Profit, Jeremy King, Brian Dittman and Robert Sanicola worked to develop and integrate the Internet Protocol (IP) architecture that has put JCSE on the leading edge of technology. They transitioned JCSE from a circuit-switched architecture based on Promina Time Division Multiplexers to an EoIP architecture which uses packet-switched equipment to provide improved service while saving size, weight, cost, manpower and complexity.

JCSE was the first DoD organization to be fully certified to operate using an IP-based protocol in the DISA network and they have already used this technology in 11 joint operations in both Iraq and Afghanistan and during several contingencies, including the Hurricane Katrina recovery effort and the evacuation of American personnel from Lebanon.

JCSE’s demonstrated success with this SSC Charleston-developed IP architecture led to their recent selection by the DISA Teleport Program Office as the model for Teleport Internet Protocol Generation III architecture. This selection means that JCSE and SPAWAR will lead the effort to establish IP services at Standardized Tactical Entry Points (STEP) and Teleports (Suite C) throughout the world.

To accomplish this goal, JCSE has partnered with DISA and the combatant commands to install SC2IP’s corresponding reach-back architecture into teleports worldwide and to tie deployed EoIP packages into the current circuit-based DISN reach-back architecture which allows global communications coverage. So far, SPAWAR and JCSE have jointly installed five STEP EoIP gateways located at the Wahiawa Teleport, Hawaii; the Lago Patria Teleport, Italy; the Northwest Teleport, Virginia; Camp As Sayliyah, Qatar and Landstuhl, Germany. These new STEP EoIP installs will soon be followed by new installs in Bahrain; Fort Buckner, Japan; and finally, Camp Roberts, Calif.
We don’t just install Internet cafés

Warfighters impressed with rapid repair of Internet café

Throughout the history of armed conflict warfighters have had little or no way to stay in touch with their loved ones. At best communication was slow and infrequent. This is no longer the case, thanks to SSC Charleston, whose personnel have designed, procured and installed more than 700 Internet cafes and phones used by U.S. servicemembers in Iraq, Kuwait and Afghanistan.

Never before have our deployed men and women had the communications capability and the access to technology the SSC Charleston team has provided, with help from SSC San Diego. In Internet cafes in Iraq, Kuwait, and Afghanistan, servicemembers of each of the armed services are able to access the internet to e-mail, chat, exchange music and photos, attend distance learning college courses, and video teleconference with their friends and family while deployed in support of current operations. These services are provided at no cost and are available 24/7. This program has set the standard for what servicemembers will expect in future deployments in order to stay in touch with friends and family while they are serving in times of conflict.

But SSC Charleston does more than just set up the equipment.

Justin Burtsosky is an industry partner who deployed to Iraq in early 2008, one of more than 500 SSC Charleston government employees and contractors in theater setting up Internet cafés and providing C4I support to warfighters. He was on his way to the coffee shop when some soldiers told him about an Internet café damaged by enemy fire.

SSC Charleston’s lead for the overall Internet café effort is Mike Hartman, out of Stuttgart, Germany, with Joe Keane as division head. Jim Clarkson is the lead over the Iraq area of responsibility for Internet cafés. DRS Technologies Inc., is SSC Charleston’s industry partner in the effort.

Keane received an e-mail from Burtsosky recently detailing the situation and the actions he took. The note was forwarded to then-SSC Charleston Commanding Officer Capt. Red Hoover, who forwarded it to SPAWAR SYSCOM Commander Rear Adm. Michael Bachmann as an example of “the amazing job SPAWARriors are doing providing C4I support to our troops.”

Burtsosky’s after action report chronicling the events appears at right.
Subject: Internet Café damage  
From: Burtosky, Justin

All,

Today at around 0900z, ... a rocket detonated directly above [one of our Internet cafés] hurling shrapnel straight down into the café, directly above where the black box and computers were set up. Luckily, nobody was killed in the attack....

Unfortunately, there were a few folks injured who were using the cafe but they are OK. The cafe itself was rendered inoperable due to damage from the blast.

When I arrived here to take a damage assessment I was very surprised to find that there was minimal damage which only took me a few hours to fix and get them back on-line.....

The following is a list of the damage done: 1) Rx COAX Cable severed by shrapnel; 2) Ethernet cable going from the switch to the router severed by shrapnel; 3) Desktop had a hole blown into the top by shrapnel which destroyed the DVD Rom and damaged the HD; 4) 17” LCD damaged beyond repair; 5) The black box with the modem, switch and router inside looks like swiss cheese, but amazingly none of the core components were damaged....

The following is what led up to my arrival at the site.....

As I was walking into the coffee shop at around 1330z, two soldiers walked up to me and asked me if I had heard about [the explosion.] Obviously I had no idea what they were talking about.... They then told me what had happened.... Without even getting my Chai Tea, I immediately tried to contact the unit and find out what was damaged.... The report I got was bleak and not very detailed. So it was time to move.

Within the hour I had almost a complete cafe in parts ready to go.... I went and found the soldiers and let them know that I was ready to go if they had room to take me back with them so I could try and get the site back up...

I really think that this blew them all away.... They were extremely happy that I was responding so fast, without having got “official word” about what had happened.....

So they helped me get all the equipment loaded up and we rolled out...

I wish you all could have seen the faces of these guys when we arrived at [the site] and I stepped out of the [vehicle] I was riding in ... It was like kids at Christmas... They couldn’t believe I was there to fix it so fast.

The nicest thing to all of this are the smiles on the faces of all the soldiers that are sitting around me using the internet cafe that had earlier gotten blown up. It makes it worth it!

- Ski

Soldiers from the 101st Airborne Division (Air Assault), line up to use the Internet and phones at a Morale, Welfare and Recreation tent in Kuwait in this photo from 2003. The SSC Charleston team has designed, procured and installed more than 800 Internet cafés used by servicemembers in Iraq, Kuwait and Afghanistan.
2008 innovators and projects

SSC Charleston’s ’08 innovator team leaders, and their projects, are:

Employing Expert Knowledge Elucidation to Retain Corporate Investment
Renee Puzio, Code 524A0

Expert Knowledge Elucidation (EKE) is an emerging tool within Knowledge Management. Its premise is that managers and subject matter experts retain vast amounts of mission-critical knowledge regarding the risk they have encountered in their work experiences. This knowledge can be discovered, documented and managed so that the experts’ ideas, experience, knowledge and vision are retained in the event that they leave their current role. This innovation will investigate a cost-effective way to determine the feasibility and affordability of integrating EKE into SPAWAR’s best business practices. It will explore the time and resources required to conduct EKE and transcribe the results into a useable format. Participants will evaluate EKE’s potential to significantly reduce project risk and eliminate waste and variance. Deliverables will summarize the execution of the experiment and present the participants’ conclusions and recommendations regarding further investigation into establishing the EKE process within SPAWAR.

Characterization of the Portability of SDR Waveforms to Small Form Factor Platforms
Dexiang Xu, Code 55200

Migrating to Software Defined Radio (SDR) technology allows for the movement of waveform software to different hardware platforms without re-developing the software each time. The goal of this effort is to gain a better knowledge of the behavior of SDR waveforms on Small Form Factor (SFF) hardware platforms by performing a port of the JTRS version of the Waveform To Be Ported (WTBP) for use on the Handheld, Manpack and Small Form Factor (HMS) JTRS product line. The information gathered from performing and studying the resulting behavior of the port will be used to determine how to better design waveforms to perform effectively on SFF platforms while maintaining portability. Completion of this project will result in a new version of the WTBP, running on a handheld device. In addition, the innovation team will provide a Waveform Porting Report (WPR), including lessons learned on how porting costs can be reduced and how waveforms can be designed in order to maximize their reusability. Furthermore, completion of this effort will result in SSC Charleston’s having a laboratory team of engineers, in house, capable of performing efforts similar to this port, whose expertise can be leveraged on to all variety of SDR programs.

Disconnected Identity Federation and Delegation
Michael Ramirez, Code 53E00

This project will develop a methodology to provide offline provisioning of identity tokens so that users will have access even when disconnected from their normal network. For example, an unanticipated Army soldier is attached to a disconnected Navy platform and uses the associated resources using only his Army-issued information. This offline provisioning is accomplished by refining the InfoCard and SAML technologies to benefit all federation technologies. The project will define the technical profiles which will allow a warfighter to receive identity information for offline use from their Identity Provider and subsequently use it to access a system which was not
previously provisioned (unanticipated user). This capability is revolutionary as it will not require the creation/management of a temporary account; the information will be entirely secure, tamper-proof and will be encrypted strategically to enforce need-to-know requirements on the data. Finally, since the technology includes the user in the transaction, he will also have the opportunity to selectively delegate rights and permissions to systems which must perform work on his behalf. This delegation will be done in a clearly auditable and nonreputable manner, enabling Service Chaining capability.

**Systems And Services Management Integration (S2MI)**

*Derik L. Pack, Code 53E00*

With the advent of e-commerce and business integration, private industry has made significant strides on enterprise systems management (ESM). While this has led to a better understanding of the performance model for server infrastructure and network systems, a disconnect remains between the management of enterprise systems and the services those systems are used to field. Stakeholders in these systems must have the ability to show cause-and-effect between the hardware/network layer and the service layer to determine Service Level Agreement (SLA) compliance and performance bottlenecks. Without this capability, the DoD will never be able to achieve a distributed operational support infrastructure. The goal of the Systems and Services Management Integration (S2MI) project is to address this need through an investigation of the proposed management standards and operational needs within the DoD and a proof-of-concept management infrastructure to support relationships between the system and service layers. Through the investigation, the project will show a realistic picture of the management requirements and standards being used by the DoD. The lessons learned from this study will be used to drive the development of the proof-of-concept and will be used to create a set of relational models between the system and service layer. These relationships will be implemented in an automatic causality engine in the proof-of-concept. Such an engine will be critical to provide a fully integrated systems/services view to the DoD.

**Ultra-Wideband Cognitive Radio Management Tool**

*Dave Neumann, Code 56150*

Software Defined Radios (SDR) are coming online for both the military and government organizations. Typically, these radios can move about a large range of the spectrum but they are currently constrained to specific frequencies and waveforms because they support legacy waveforms. This project will use an 8 Channel COTS digitizer along with 3 to 8 wide band tuners to create a capability to achieve a 180 - 240 MHz RF spectrum histogram for future cognitive radio operations utilizing opportunistic frequency management techniques. Because the digitizer can capture up to 1-2 seconds of signals, we can classify the different types and produce more efficient predictions of channel usage to deconflict hopping signals, better spectral efficiency and propagation modeling. There are several types of COTS vendors that provide these wide band digitized signals, so we can use the techniques and software across multiple hardware products used by various SPAWAR programs.

**Embedded Simulation in a Multi-Touch Environment: Building an Automated Battle Management Aid (ABMA)**

*Mike Nash, Code 51000*

This project will allow SSC Charleston to become an innovator and leader in the field of Automated Battle Management Aids (ABMAs), a set of interconnected, distributed decision-support tools that the warrior uses in the management, prioritization and optimization of sensor, weapon and command and control resources. As an early adopter of the ABMA technology, SSC Charleston will have the advantage of gaining knowledge and insight into potential issues, both positive and negative, and position this command as the forerunner of future research and development. At the end of the project, the Command will possess a live, interactive, working ABMA, which can be used to demonstrate performance improvements realized during development through the multitouch multiuser (MTMU) environment. The resulting ABMA can serve as a prototype to search for additional funding for research/development in this area from ONR, DARPA or the Navy at large. In addition, the project will produce experiment results that compare the decision-making ability of man versus machine-supported man versus machine.

**A Generic Architecture for Deterministic Decision Making Utilizing Results From Deterministic and Non-Deterministic Sources**

*Sarah Leitner, Code 53350*

This project will select and code a generic decision making algorithm, add in sensitivity measures and apply to a test case. This decision making methodology will take large, complex problems with no clear answers, divide the problem into many little pieces for which there is a known or approximate answer, and then provide a solution optimized to the user’s inputs. Because

Continued on next page
An Encrypted Temporal Preamble for Bit-by-Bit Authentication of an RF Emitter
Albert Kunze, Code 55120

Reactive jammers must be able to rapidly distinguish between Blue Force Communications (BFC) and other communications. The most rapid distinction would be one made on a bit-by-bit basis. This project will implement a secure process that will make this bit-by-bit distinction, and provide the most rapid BFC authentication method. A time-stamped symmetric key is distributed (either conducted or radiated) using Public Key Infrastructure (PKI)-based tokens for BFC devices and Jammers. All recipients decrypt appropriate token, recover time-stamped symmetric key and create table of encrypted data-time values. Based on GPS time, BFC devices and Jammers select encrypted data-time value from table. The jammer does bit stream comparison of BFC preamble and jams on first bit mismatch. Any transceiver that can determine the preamble to transmit can also validate a received preamble. Thus each transceiver which implements this preamble to the Wideband Network Waveform can be a jammer. Currently, there is no known method to do bit-by-bit Blue Force Communications authentication.

Automated Signal Recognition and Processing Services Framework
John E. Cutter, Code 56150

This project will develop a workflow algorithm based on software automation best practices being applied in the aviation and business domains and apply the algorithm for identifying Signals of Interest (SOIs). The success pattern for characterizing and exploiting new threat SOIs currently relies on providing expert analysts with predominantly manual signal measurement and analysis tools to process new SOIs. Current automated signal processing software solutions typically fail to be open, are not built on a modern software architecture, are often hardware dependent, and do not present simple mechanisms for modifying logic, adding new functionality, or incorporating externally obtained algorithms. Knowledge gained from previously examining the application of Services Oriented Architecture (SOA) concepts to signal processing software will be incorporated to yield automated signal processing capabilities aligned to enterprise service architectures like DCGS, CANES, etc. This innovation will improve enemy situational awareness by automating threat warning, signal recognition and processing capabilities which currently require a man in the loop.

Enhanced SOA/ACE Capability for Network Centric Mapping Database (NCMD) Software (eNCMD)
Robert A. Green, Code 525A0 (formerly 83A)

This project seeks to enhance the existing Network Centric Mapping Database (NCMD) software to make it a true Services Oriented Architecture (SOA). While enhancing NCMD, we plan to study the Universal Description Discovery Integration (UDDI) standard for the tactical environment. SPAWAR, in collaboration with the UK Hydrographic Office, developed the NCMD. The NCMD is Web service-based software that allows a deployed Electronic Chart Display and Information System - ECDIS (or any C4ISR system) to autonomously obtain and update geospatial data. The NCMD Web service software will be enhanced to comply with the UDDI standard and to register with the ACE common registry. This will allow a client application containing the embedded NCMD capability to discover the NCMD service in the ACE registry, and “pull” the required geospatial data updates from the NCMD database. The client application then can autonomously maintain the required geospatial data products to meet mission requirements through a machine-to-machine interface. This innovation provides an autonomous update for geospatial data using the find, blind and invoke paradigm.

Instituting CMMI by Value Stream
Robert J. Castagna, Code 53700

Capability Maturity Model Integration (CMMI) provides a well-recognized basis for ensuring project success by establishing a Quality process that overarches all business and engineering activities. This stability is highly important to the TEAM SPAWAR organization because of our project diversity, employee growth over the past few years, and the fact that we are required to do more for less in an austere budget climate. The Command recognizes that CMMI processes have not been institutionalized throughout the organization and is struggling with how to make the entire organization Level 3 compliant. This innovation provides an improved methodol-
ogy for implementing and institutionalizing CMMI within all projects at SSC Charleston by utilizing a Value Stream approach. Developing the proposed methodology will install CMMI best practices across a larger framework of unifying functional activities that covers all projects. The proposed classification of projects will promote a more timely and cost-efficient CMMI appraisal methodology by focusing evaluations on the Value Streams, thus covering all SSC Charleston projects.

Social Network for Harnessing Internal Corporate Knowledge (SNHICK)

Bruce Billian, Code 56440

Social networking has become an organic tool for information sharing among individuals on the Internet, becoming an integral communication tool for an entire generation. In order to harness this rapidly evolving technology, this project will research and deploy a social networking-based collaboration system within SPAWAR. This project seeks to provide capabilities for individuals to post files related to in-progress and completed projects as well as to tag their project involvement. At SPAWAR a number of standalone information resources exist that have value in being combined. This innovation strives to create and enable more flexible and useful collaboration tools, acting as a bridge between different information sources. These tools will be used to share project information, involvement, and key project focus areas. The end result of this project will be enhanced internal collaboration and information sharing enabling the engineers and finance personnel at SPAWAR to get up to speed on new projects quicker, and to reduce the duplication of efforts.

Cable Climber for Auto Deployment of Wide Range Network Node or Retransmit Capability

Chris All, Code 55210

In military conflict, humanitarian aid, or disaster relief events, forces are required to provide for secure communications capability in an occupied area. Currently, forces often utilize portable towers or push poles in order to extend Line-of-Sight (LOS) communications range. In many cases, occupied areas have existing infrastructure that could be used to extend communications ranges. This project will provide designs, working “proof of concept” models, and demonstrations of a semiautonomous robot system that climbs a variety of tower guy wires while carrying a battery powered radio payload and loiter for an extended period of time. This payload is used to enhance LOS communications in an occupied area of conflict or concern. No human climber is needed, no coaxial run is required and significant horizontal and vertical antenna separation is achieved by using the guy wire rather than the tower. Utilizing a guy wire will allow the payload to be largely inaccessible and therefore protected from theft, possibly eliminating the need to guard it. Communications networks, such as those being developed by the Joint Tactical Radio System (JTRS) program, may benefit from this as it will allow a JTRS battery powered radio, set up as a network node, to cover a large LOS area. This will allow the node to provide wide area network access or to provide a link between local networks.

Making FORCENET A Reality: Meshing the Tactical Edge Network

Richard Cunningham, Code 55140

In today’s communications environment there exists an IP Line-of-Sight (LOS) capability gap at the tactical edge that, in the near term, will not be filled until Joint Tactical Radio System (JTRS) waveforms, such as the Wideband Networking Waveform (WNW), are fielded. This gap has been proliferated by stove-piped, nonintegrated solutions that were produced across various departments and services. This gap is furthered by the United States’ unwavering dependence on satellite-based communications (SATCOM), which produces a “hub and spoke” communications network. Coupled with the warfighter’s increasing reliance on the network as a weapon, this capability gap ensures that the United States’ tactical networks will not be robust enough to handle a catastrophic event. A reliable, automatic, secure, inexpensive, easy to use and high bandwidth IP LOS solution must be fielded to fully mesh the United States’ tactical networks. As a gapfiller and potential long-term solution, this project will investigate commercial off the shelf (COTS) IP enabled wireless communications, such as EVDO, GSM and Mobile IP. Further, we will integrate these proven and inexpensive technologies with a Type 1 Encryptor to provide COMSEC/TRANSEC.

Embedded Spectrum Awareness on Software Defined Radio

Mike Shirley, Code 55140

The emerging Joint Tactical Radio System (JTRS) will enable transparent communications with sea-based, ground-based, air-based, and space-based platforms. In the JTRS context, situational awareness and warfighter survivability will be enhanced by the ability to detect and process spectrum “events” across a network of heterogeneous software defined radio (SDR) nodes. In this project we present SDR-embedded spectrum awareness techniques that provide a baseline for rapid prototyping on a variety of SDR devices and plan to demonstrate spectrum awareness to provide adaptive communications, SIGINT to continued on next page
identify RF interference, perform as RF Jammer for IEDs and prevent inadvertent jamming of Blue Force network communications. Embedded spectrum awareness can be leveraged by the network to disrupt an adversary’s communications, jam an RF-enabled improvised explosive device (IED), and correct spectrum contentions among coalition members. As networks can be deployed around the world on very short notice, embedded spectrum awareness will enable deployed communication systems to minimize their potential for disruptive impact on local communication systems.

Business Area Management Operating Model

**Greg Hays, formerly of Code 01000**

SPAWAR has set up a Business Area Management (BAM) construct for Program Executive Office C4I customers/projects. The BAM construct was established to facilitate delivery of integrated solutions to customers providing more cost effective and efficient services. The intent of this project is to develop a comprehensive BAM model that addresses these objectives as we migrate to a CAO model. In addition, it is important that program level reporting visibility be available and effectively managed in the new Navy Enterprise Resource Planning (ERP) environment. This project will research major account management and demand planning best practices, assess applicability to the SPAWAR business model, identify key implementation areas, develop and implement a Plan of Action & Milestones (POA&M), and publish standard business processes. It is envisioned that Lean Six Sigma events will be conducted to a) define BAM roles/responsibilities in a CAO environment, b) develop a comprehensive demand planning methodology, and c) define standard BAM Project Management and Control processes in a Navy ERP environment. At the end of this project a standard business operating model will be published and implemented by, at a minimum, the PMW 160 Business Area Manager.

- A Publish It! product by Peter Johnson

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From left, SSC Charleston Commanding Officer Capt. Bruce Urbon, Tom Stone, Capt. Bob Parker, Steve Miller, Capt. Larry Ash, Susie Hartzog, Capt. (Sel) Andy Cibula, Paul Schmidt and Ed Cutter pose during the recent ribbon cutting ceremony for the Distributed Common Ground System-Navy lab.

**DCGS-N laboratory established in Bldg. 3146**

Capt. Bob Parker, PMW 120, presided over a Distributed Common Ground System-Navy (DCGS-N) lab ribbon cutting ceremony at SSC Charleston June 18. Capt. Larry Ash, SPAWAR ISR director; Susie Hartzog, ISR Principle APM (PAPM); Capt. (Sel) Andy Cibula, ISR Chief Engineer; and Capt. Bruce Urbon, SSC Charleston commanding officer also participated in the ceremony.

The GENSER DCGS-N lab is located in the SSC Charleston End-to-End (E2E) lab located in Bldg. 3146, and the SCI lab is located in Bldg. 3147. The ribbon cutting represented the official standup and running of the DCGS-N Block 1 Engineering Development Module (EDM) in the lab and establishes extensive connectivity in the E2E environment.

The ribbon cutting ceremony was followed by a demonstration of the DCGS-N Enterprise Node (DEN) capability and component workstations for Generic Area Limitation Environment (GALE), Integrated Intelligence and Imagery (I3) Analyst Workstation and Common Geopositioning Services (CGS).

Following the ceremony, Parker addressed the group of about 50 people and complimented SSC Charleston’s responsiveness and Systems Engineering capabilities.

Parker also toured the DCGS-N SCI lab and the ISR, IO, METOC and ISEA/Fleet support areas supporting PMW120.

DCGS-N is supported by SSC Charleston personnel in Codes 55000, 53000, 56000, 52000 and 42000 located in Charleston, S.C.; Cherry Point, N.C.; and in Norfolk and Rosslyn, Va.
SSC Charleston personnel honored in All Hands gathering

SSC Charleston personnel were singled out during a June 12 SPAWARSYSCOM All Hands videoteleconference.

The Adm. Stan Arthur Award for Logistics Excellence (Joint Logistics Team of the Year) was presented to Lt. Brian Phillips, Peter Ward and Joseph Rodgers on behalf of the entire MRAP Vehicle Integration LSS Team. The team was commended for its accomplishments in establishing an effective process improvement presence that resulted in reaching all integration goals.

Lori Thompson, supervisory logistics management specialist, Code 55360, was presented the SPAWARSYSCOM Civilian Logistician of the Year award during the All Hands.

The award recognizes Thompson’s accomplishments as the logistics branch chief for the Airborne and Maritime/Fixed Station Joint Tactical Radio System (AMF JTRS), a Joint Acquisition Category 1D program with an estimated development cost in excess of $1 billion.

Thompson’s early identification of a need to incorporate a joint-focused logistics approach into the system’s design ensured that a true “joint” product support approach was taken and that requirements were built into the program to facilitate this approach, the award citation noted.

Her initiatives prevented the development of separate service infrastructures to support the AMF JTRS form factors and instead allowed the development of a single support infrastructure reducing life cycle costs and promoting cross-service synergies.

Also during the All Hands Lt. Brian Phillips, MRAP Lean Six Sigma (LSS) Black Belt, was presented the SPAWARSYSCOM Military Logistician of the Year award.

The award was presented for Phillips’ achievements and contributions toward rapid integration and deployment of MRAP vehicles from five to over 50 per day in eight months.

“Your leadership resulted in resounding success by bringing dramatic improvements to the production, integration and deployment of the MRAP vehicles. Your vision and innovative approach were critical in removing waste from the integration process and increasing production and delivery of MRAP vehicles. This is a major contribution to ensuring the continued forward presence and protection of our warfighters and national security,” according to the award citation.

Steve Lariviere of Code 56200 and Dale Davis of Code 52650 were presented certificates as Lean Six Sigma Certified Master Black Belts from SSC Charleston’s then-Commanding Officer Capt. Red Hoover and then-Acting Technical Director Charlie Adams, respectively.

Also honored was Ken Crawley for being one of seven SPAWARSYSCOM employees -- the only from SSC Charleston -- selected as a Top Navy Engineer of the Year by the Assistant Secretary of the Navy (Research, Development and Acquisition.)
AMF JTRs team recognized

Capt. Jeff Dunlap, Airborne and Maritime/Fixed Station (AMF) Joint Tactical Radio System (JTRS) deputy program manager, held his first All Hands with the AMF JTRS Charleston team members.

Dunlap presented AMF JTRS Excellence Awards for outstanding performance and on-the-spot awards to members of the team providing support as either sub-factor lead or on the AMF JTRS Source Selection Evaluation Team (SSET) at Hanscom AFB, Mass. Code 55, 553, 552 and 525 team members receiving awards were Erik Albiz, Chris All, Claire Commodore, Bob Davis, Eric Enes, Brad Hoisington, Cliff Hunt, Tim Logan, Donna McDonald, Xuong On, Mike Robinson, Kirk Teems and Lori Thompson.

Dunlap noted that the team’s dedication to completing their SSET duties from March 2007 to March 2008, their professionalism and their overall contributions to the team’s evaluation products were superb and resulted in the best value award of a major ACAT 1D contract.

The team evaluated proposals, prepared evaluation notices/reports and briefings for the Source Selection Authority, and participated in numerous briefings and meetings with the Source Selection Advisory Counsel, program manager, procurement contracting officer, legal counsel and others.

The awards noted the team members’ attention to detail, energetic attitude, dedication and flawless execution of source selection tasks.

MRAP MVPs


SPAWARriors honored by chamber

SSC Charleston’s Dr. Steve Jarrett, second from right, and Bob Miller, center, receive special awards at a June 13 ThinkTEC Advisory Board Retreat for advancing public/private partnerships between ThinkTEC and SSC Charleston. Presenting the awards were Rob Davis, 2008 ThinkTEC Chairman, second from left, and Pennie Bingham, ThinkTEC director for Innovation for the Charleston Metro Chamber of Commerce. Pictured above at far left is Ken Felsher, who was honored for his service as chairman of the Business Continuity Planning Council. Not pictured is Craig Solem, who was honored as chairman of the ThinkTEC Homeland Security Conference Task Force.

Cornielle award

Cornielle was selected to receive the Robert G. Miller Memorial Sword for his scholarly, military and community achievements. He attained a 3.78 GPA in a business administration program at The Citadel and often spent his free time tutoring his fellow classmates. He was the public affairs officer for NROTC Unit at The Citadel. He made a great impact on the command through his aggressive recruiting efforts, which substantially increased the number of prior enlisted service members attending The Citadel to become commissioned officers. Cornielle was a leader in the community as well, spearheading an effort with his shipmates to provide disaster relief for the citizens of Branchville, S.C., after a tornado this past spring.
CAO: FY08 successes and plans for FY09

Rebecca Sherwood
CAO Execution Manager

As fiscal year 2008 winds down, we can look back at some significant accomplishments in implementing a Competency Aligned Organization (CAO).

A first major step occurred Oct. 1, 2007, as every employee received a new organizational code designation. The new codes relate to competencies such as Finance, Contracts, Legal, Logistics and Fleet Support, Engineering, Program Management, Science & Technology and Corporate Operations.

In January TEAM SPAWAR leadership met in San Diego to conduct a “war game” to validate the CAO/IPT CONOPs dated Sept. 1, 2007. The intent of the war game was to simulate three operational scenarios where the leaders would refer to the CONOPs for guidance. The CONOPs served as the primary set of plans, processes and procedures to guide the games. The group discovered some sound operating principles which directly applied to the effort and other areas which needed further analysis and refinement. The exercise provided valuable insight and direction for the way ahead.

The update of the CONOPs is in progress, with plans to publish the new version by the end of this fiscal year. This version will focus on new and revised processes and governance, provide use cases, process definition and greater clarity of roles and responsibilities.

Organizational Tiers 1 and 2 definitions have been written, approved and published via SPAWARNOTE 5450 of June 9, and have been posted on the CnE Web page under CAO. The definitions describe the type and scope of work performed in the competency. In addition, we have developed, reviewed and documented the Competency Breakdown Structure (CBS) which provides standard competency numbers and naming conventions for Tiers 1, 2 and 3 across TEAM SPAWAR.

As part of employees’ professional development, each competency lead is responsible for providing training and career guidance for designated areas of expertise. To promote proficiency and provide a roadmap, Competency Development Models (CDMs) are being created. They provide employees a guide to enhance their technical proficiency. The CDM structure is complete, and a CDM handbook was published in May and posted on CnE. The handbook outlines the key assignments and experiences, the knowledge, skills and abilities, and the leadership proficiencies necessary to enable enhanced product and service delivery and mission success. We are looking forward to publishing most of the CDMs for each competency at the end of July and expect they will be a valuable tool when developing Individual Development Plans (IDPs) and estimating projected training costs.

The command has completed primary and secondary competency mappings, which designates employees’ primary expertise and, in some cases, additional areas of expertise. The initial mapping responded to the Assistant Secretary of the Navy (ASN/RDA) tasking. However, to provide a more thorough review, business rules were applied and utilized by supervisors and employees as part of the mapping process. The data on employee competencies was compiled and formally completed in June. These mappings provided a baseline of talent across the enterprise and awareness of projected mappings of individuals within each competency. Each National Competency Lead received a listing of all employees who indicated a primary or secondary competency for their related area.

To further develop technical competency across Team SPAWAR, initial concepts and a plan of action were developed to incorporate technical authority (TA) within the CAO construct. TA is defined as “the authority, responsibility and accountability to establish, monitor and approve technical standards, tools and processes in conformance to higher authority policy, requirements, architectures and standards.” Specific accomplishments in TA include the development of technical authority pilot and boot camp curriculum for Tier 2 National Competency Leads and Technical Warrant Holders, respectively, and identification of technical warrant holder types, areas and future candidates.

As we go forward, we intend to capitalize on these achievements and begin to refine the CAO concept as we migrate and transform to the new organizational structure which will be formalized in the coming year. Some of the specific efforts we intend to address are:

- Continuing to define and refine processes and templates, e.g., Program Operations Guides (POGs), Team Assignment Agreements (TAAs) and identification of tools to support the CAO. One example is the process definition for the standup and dissolution of Integrated Product Teams (IPTs). Another process under development will be the projection of incoming or changing work requirements, i.e., “Demand Signal.”
- Continuing to monitor and measure CAO mission effectiveness and aligning expected outcomes to our Balanced Scorecard.
- Incentive planning is underway now, and will mature in the coming year. This year we will identify and utilize existing award programs and performance plans to incentivize. Next year we will address other venues to promote competency alignment both individually as well as collectively.
- The SPAWAR CAO Communications Plan has been developed both by SPAWAR Headquarters (HQ) and SSC Charleston. In the future, employees should expect to receive briefings and information from competency leads.
- Initial efforts have begun and will extend through FY09 with Navy ERP to capture CAO competency data and processes. Synchronization with SSC San Diego and SPAWAR HQ CAO implementation will continue to facilitate and exploit common approaches, best practices and proficiency.

Summer 2008

The Chronicle
SSC Charleston is empowering decision making and enabling action for Marines in the field by providing combat operations center (COCs) — mobile, modular command and control centers designed to support Marines whenever and wherever they fight.

When Marines identified a need for standardized operations facilities that would provide mobility, power generation and interoperability, COCs were the answer. They provide for optimum readiness and rapid deployment. Built from common, modular, scalable building blocks, the COCs are configurable to four different capability sets — for use from the battalion (eight operators) level, growing to regiment, division or Marine Expeditionary Force (MEF) levels. An MEF typically has more than 40,000 Marines and Sailors.

Besides providing commonality and standardization among Marine systems, COCs are easily integrated among Marine, joint and coalition systems. They are deployed rapidly and employed with flexibility to digitally collect, process and disseminate tactical data. The open-systems design allows for future technology enhancements. They provide the Marine Air-Ground Task Force (MAGTF), with shared situational awareness, enabling Marines to collaborate at all levels while being fully netted. MAGTFs are a balanced air-ground, combined arms task organization of Marine Corps forces, under a single commander, that is structured to accomplish a specific mission.

COCs are designed for ease of employment from the ground up. Each center has a network of workstations and servers supporting standard Tactical Data Systems and other mission-critical software, voice, data and Voice over Internet Protocol (VoIP) communications. The mobile tent facility is a “high tech office” with laptops, printers, LAN, overhead touch screens, air conditioning and heating.

Everything is prewired and ready to operate, and commanders can easily configure them to suit their specific needs. Tents, trailers, radios, power generation and other tactical hardware are integrated for a single-system command and control capability that can be transported by air, ground or sea to wherever Marines fight. The COCs designed for battalion use can be easily loaded onto three Humvees and trailers and can be set up in less than an hour.

**COCs enhance decision superiority**

**Connecting Marines differently**

Combat Operations Centers such as this division-level configuration being built at General Dynamics C4 Systems in Scottsdale, Ariz., are designed to support Marines anywhere they are deployed. Depending on the configuration, some COCs can be easily loaded onto three Humvees and trailers and can be set up in less than an hour.
ers to be moved from place to place and set up in less than an hour.

The configuration provides data protection in the event a server goes down, and the trailer is set up with an uninterruptible power supply, which can provide 45 minutes of battery back up power in an emergency. There is even the capability to run the trailer on Humvee power.

SSC Charleston has been involved with the COC effort since 2002 under the leadership of Keith Alexis of Code 53150. Jerry Glover has served as COC officer for Marine Corps System Command (MARCOSYSCOM), the main customer, during the COC effort. J.B. Lawrence recently replaced Alexis on the project, allowing Alexis to take on other duties. Lawrence, who comes to the COC team from the MRAP integration effort, has experience working with MARCOSYSCOM, and high praise for the work the COC team has accomplished.

“This has been a very rewarding project,” said Alexis, who credits Glover for his success in managing COCs as they have evolved and grown in size and complexity from the battalion to the MEF capability level.

Marine Corps Lt. Col. Michael Coolican, MARCOSYSCOM project manager for the combat operations center, said that working with a trusted government organization such as SSC Charleston has made a big difference on this project. The three main pieces to the COC effort, he explained, are the MARCOSYSCOM role of program management and funding, the General Dynamics C4 Systems (GDC4S) piece for production of the systems, and the SPAWAR piece, which has been offering major logistical support under MARCOSYSCOM’s new performance based logistics (PBL) process.

“MARCOSYSCOM does not have the personnel to do the work on the engineering, software and engineering assurance side. SSC Charleston’s involvement has made a big difference,” Coolican said.

“We have had excellent partnerships,” he added. “Keith (Alexis) and Jerry (Glover) are genuinely good people; you know you can trust them. They have focused their support on the Marines all of the time, and that is a big reason why the program runs so well. People are what it really comes down to.”

GDC4S COC Program Manager Flor Aguilar Kim has been involved with the COC program in different roles since 2002, when General Dynamics won the contract as the prime systems integrator. “SPAWAR has been very integral to the project in the validation and verification role for the systems and software,” she said.

Aguilar Kim said supporting Marines in the field with more efficient and secure operations is work the entire team finds very rewarding. “Bottom line, that’s what we are focused on: the warfighters out there,” she said.

- Susan Piedfort

The Chronicle
Summer 2008

J.B. Lawrence, left, has assumed COC project management from Keith Alexis, right.

The core of the COC is the “ready-to-go” operational trailer.

The mobile tent facility is an air conditioned oasis in the desert with everything warfighters need to communicate and conduct operations.
COC IA team protects the warfighter

Countering the information warfare threat

Today’s military fights not only on the ground, in the air and on or under the sea, but also in cyberspace. The modern military’s duty is to protect not only its physical, but its informational assets as well.

The ever-increasing reliance on communications and tactical data systems to support the successful completion of warfighting missions has created a dire need for continuous and exacting information assurance (IA) efforts. SSC Charleston’s own Combat Operations Center (COC) IA team has, for the past six years, worked to ensure the success of U.S. missions and the safety of the men and women who serve in harm’s way in defense of the U.S. and its allies.

The COC family of systems provides standard command and control (C2) equipment combinations which allow tactical commanders to control Marine Corps ground combat forces in a timely manner. COC provides a standardized infrastructure of environmental controls, tactical data system (TDS) hardware, voice switching systems, and local area networking to support existing command, control, communications, computer, and intelligence (C4I) software. This enables existing field units to work in a common tactical environment—a capability that is essential to overall mission success.

There comes an increased need to successfully secure these systems with the ever-increasing number of voice and data communications, including web, video and C2 applications hosted by the COC. The COC IA team at SSC Charleston utilizes a wide array of Defense Information Systems Agency (DISA) tools to test COC production systems for security compliance.

Each COC has three major sub-systems with IA requirements: the C2 systems, visual displays and software. To ensure compliance with DISA security guidelines, the team utilizes a suite of automated tools and manual checks. In addition to these procedures, the team completes exhaustive manual checks on system hardware and applications, including all routers, switches, server-side management software, and communication and networking applications.

The IA team must pay close attention not only to technological security methods, but to physical methods as well. As Bruce Schneier, an internationally renowned security technologist, has said, “If you think technology can solve your security problems, then you don’t understand the problems and you don’t understand the technology.” The final documentation that describes a system’s security posture always includes a detailed discussion of these concepts, including least privileged, need-to-know and disaster-recovery procedures. Templates to help receiving units implement important physical security policies and training are also included. This ensures that, while the technology is secured, it is also protected at the physical level once deployed.

While under development each system undergoes multiple rounds of security testing. Between each round the integration team works to remove identified vulnerabilities. After several rounds of rigorous testing, a system security authorization agreement is compiled and sent to the designated approving authority for approval and signing of the authority to operate.

The growing threat of information warfare cannot be taken lightly. In 2002 the Office of Homeland Security allocated $2.12 billion for information security efforts. SSC Charleston’s COC information assurance team is making sure this money is well spent to ensure the continued effectiveness and safety of warfighters.

- Ryan J. Burden
For the second year in a row an SSC Charleston team from Code 55240 worked with Department of Homeland Security (DHS) personnel to test communications interoperability capabilities during Palmetto Hawk, held here May 19th through the 23rd.

The DHS Deployable Situational Awareness Team (DSAT), consisting of Immigration and Customs Enforcement (ICE) agents and DHS engineers, successfully tested their ability to respond to natural disasters or terrorist incidents and transmit real-time video back to DHS headquarters in Washington, D.C., during the exercise.

SSC Charleston Executive Officer Cmdr. Scott Heller kicked off the exercise with a brief in Bldg. 3146 as he welcomed the visiting DHS exercise participants.

During the Palmetto Hawk exercise, the team set up a Very Small Aperture Terminal (VSAT) satellite ground station at Bldg. 3146 and ran the exercise from the conference room. The team successfully tested VTC capability from a forward operations area, access to the Homeland Security Information Network (HSIN) and Common Operational Picture (COP), transferring live video and still photography utilizing satellite and cellular technology.

Working with the Naval Weapons Station Fire Department, the team gathered situational awareness information during a fire drill and evacuation of Bldg. 3146. That information was successfully transmitted to the National Operations Center (NOC).

The exercise improved the communications capability needed by Customs and Border Protection (CBP), ICE, Office of Operations (OPS)/NOC, DHS Public Affairs Office (PAO) and Coast Guard personnel in the event of a hurricane or natural disaster.

At top, Brett Williams of DHS checks out an antenna set up as part of the exercise. SSC Charleston Executive Officer Scott Heller, above, takes a question from an exercise participant visiting from DHS. At left, team members Dana Gruszczinski, Brett Williams, Coleman Lowry, Mark Hudson Jr., David Underwood, Jesse Howard, John Chap and Michael Enos take a break from setting up their communications gear at Bldg. 3146.
Above, SSC Charleston Public Affairs Officer Lonnie Cowart, Carolyn Martel of the VA Medical Center in Charleston and SSC Charleston Executive Officer Cmdr. Scott Heller enjoy a laugh with HMS guidance counselor Karen Cowell, at lecturn, during an awards assembly for Hanahan Middle School sixth graders. At right, Electronics Technician Chief Jonathan M. Smith of SSC Charleston’s Code 55310 presents a certificate to essay contest winner T’Najah Ferrell.

T’Najah Ferrell penned the winning essay in the annual SSC Charleston-sponsored patriotic essay contest at Hanahan Middle School (HMS). HMS students were invited to write on the topic: “Why it is important to vote.” Their essays were judged by an impartial panel at SSC Charleston.

“For young people who are too young to vote, they had some very convincing arguments on the importance of exercising that right,” said Lonnie Cowart, SSC Charleston public affairs officer and organizer of this year’s essay contest. Contest winners were recognized at assemblies at the school. Ralph H. Johnson Veterans Administration Medical Center in Charleston supported the effort by sponsoring some of the prizes. Ferrell, an eighth grader in Ms. Carolyn Stewart’s class, won a CD player. The runners up won gift certificates, movie passes and command coins.

Carolyn Martel from the VA Medical Center presented gift certificates to the winner and runners up from each grade. These essays are currently on display at the VA Medical Center, and Martel told the students that visitors enjoy reading their essays each year. “It is especially heartwarming because these veterans who have helped defend our country can see that the younger generation appreciates the importance of having the freedom to vote,” she said.

This essay contest, part of an ongoing partnership between the Hanahan Middle School and SSC Charleston, has been in place for seven years and was begun shortly after September 11, 2001. As part of this partnership, SSC Charleston also provides employee volunteers for classroom events, math contests, science and career fairs and other special activities that emphasize building good character and academic achievement. The command has more than 80 employee Lunch Buddies who are paired with a student and have lunch with their “buddy” every month. Lunch Buddies discuss grades, school activities, how coursework relates to career opportunities, and other topics important to the student. This academically motivating program, now in its eighth year at SSC Charleston, has grown each year.

SSC Charleston also hosts an annual, week-long Math, Science & Technology (MaST) program for school administrators, career counselors and teachers to visit the command for an insider’s view of the new technologies being developed. This helps educators relate real world experiences to math and science, so they can encourage their students to pursue careers in these areas.

Students become aware of real work scenarios that involve math and science principles they are learning in school, and can see first-hand how they are used to develop the Navy’s command, control, communications, computers, intelligence, surveillance and reconnaissance (C4ISR) systems.

Ferrell’s winning essay appears at right.
Voting is a method of a group such as a meeting or an electorate expressing their opinions to bring about a change.

There are many questions that run through your head when you hear the word “vote.” Many people think “do I have to vote” or “does my vote really count?” To tell you the truth every vote counts. With this it tells you that voting is very important. Voting determines how your community, city, state or even your country runs.

Most people believe that their votes might not count based on their ethnicities, background, religion or the amount of money they make. In the U.S. Constitution, Article 7, Amendment 1, it states that anyone is able to speak freely about what they believe in without censorship. This gives everyone from the age of 18 and up the right to vote. Most people also believe that it takes too much time to vote. Statistics show that voting only takes the average person approximately 15 minutes to show proof of identification and actually cast your ballot.

I believe strongly that voting is a privilege, because many countries around our world don’t get this privilege. As the United States we were granted this opportunity to vote on what goes on in our community, city, state and country. We get to voice our opinion, knowing that it could make a difference in the outcome. People take this for granted because they don’t think their vote specifically can change anything. We have certain responsibilities to be active in positive change. Many men died for our right to vote, as well as the other rights we now take for granted. Women could not vote for many years because they were not considered an important part of decision making. Now we all have a responsibility to make the world a better place and we now have the right to do so. Women more than ever now, should exercise their right to vote.
In 1998 Capt. James Hoffman was the new commanding officer of SSC Charleston, Y2K loomed ahead ominously, A-76 studies were underway and the SSC Charleston European/Central Region Office in Stuttgart, Germany was being established.

On June 30 of that year, Toastmasters Club No. 8627 was chartered at SSC Charleston, with a mission to help government employees and contractors improve their communication skills and enhance their leadership potential. An old Toastmasters saying refers to it as “teaching people to talk turkey without turning chicken.”

Ten years later, Toastmasters 8627 has enabled success for hundreds of Charleston SPAWARriors by helping them lose their fear of public speaking, become better listeners, conduct meetings and become leaders.

Thousands of business and government organizations like SSC Charleston use Toastmasters International as a cost efficient and effective way to help employees help themselves with communication training. At SSC Charleston the command pays the $20 Toastmasters joining fee and the first year of annual dues ($54) for government employees, and contractors may be reimburged for their costs by their sponsoring company.

New members receive training manuals and other resources offering insights on speaking and leadership techniques, and are assigned a mentor who provides guidance and support. The first speech for new Toastmasters is the “icebreaker,” during which the speaker tells the club about him or herself. Constructive criticism and praise are offered by fellow Toastmasters in a comfortable, friendly atmosphere. Members eventually give 10 speeches, all at their own pace, each one no more than seven minutes long, to earn the designation of “Competent Communicator.”

In addition to the communication track centered on public speaking, Toastmasters also features a leadership track that emphasizes listening skills, feedback, time management, organization and delegating. Completion of the advanced communications and leadership tracks earns one the designation of “Distinguished Toastmaster.”

Just as a great golfer or pianist must practice, so must a good speaker. Toastmasters is a “learn-by-doing” workshop that allows speakers to improve their skills in a comfortable, friendly atmosphere. “We support each other. We help each other reach our goals,” said Dan Williams of Code 55230, newly elected president of the SSC Charleston club. He added that the SSC Charleston’s 8627 will attain the designation of “Distinguished” club this year thanks to their success in meeting 10 specified personal and club goals. This is the first time in six years the club has attained this designation.

“It’s been very rewarding to see individuals who have worked hard to improve themselves through Toastmasters,” said Theresa Breaux of Code 55310 a charter member of the SSC Charleston Toastmasters. “It’s rewarding to see them progress and meet their goals, and especially to see them build interpersonal and leadership skills that are helping them in the workplace. It’s all about self improvement.”

Mark Held of Code 55200, a past member of Toastmasters, stressed that
Significant events for SSC Charleston’s chapter of Toastmasters International have been highlighted in The Chronicle through the years, beginning with news of its charter in 1998.

Currently, there are more 215,000 members in more than 10,000 Toastmasters clubs across approximately 90 countries worldwide. Membership is open for anyone 18 years of age or older who wants to develop their ability to communicate confidently.

More information on SSC Charleston’s Toastmasters 8627 can be found at the club’s Web site, spawar.freetoasthost.us, or by calling Dave Osborne, vice president of membership, at 218-5691.

- Susan Piedfort, Chronicle Editor
Cameras aid nighttime video surveillance

A Publish It! product by
Daniel Heater, Code 56410

Nighttime intruders and criminals have had the luxury of unimpeded movement and access to valued assets, with law enforcement at a decided disadvantage to combat their threat. Continued advances in camera technology, however, allow for improved visual capability during hours of darkness, providing law enforcement personnel equal footing for surveillance operations.

Enhanced camera technologies are being rapidly employed in nighttime surveillance applications as part of Closed-Circuit Television (CCTV) systems integrated with Automated Video Surveillance (AVS) technology. AVS provides the ability to automatically alert security system operators and monitors of discrete, programmable events and have become an integral component in today’s surveillance applications and security operations. Selecting the right camera for the specific application is a critical factor in the overall performance of AVS capable systems, specifically the performance in low light settings.

Homeland Security equipment evaluations

In support of Homeland Security and a recognized need to equip domestic agencies and business sectors with an improved security posture, SSC Charleston conducted an evaluation on AVS systems to measure their performance when integrated with enhanced camera technologies. Homeland Security professionals, specifically those in the emergency management sector, recognized the potential for varied performance characteristics for the integrated system components. An evaluation included analysis of the performance of these systems for the nighttime environment to successfully alert operators to specific events, such as a person entering a secured area. As part of the evaluation, four leading AVS vendors were invited to demonstrate their systems’ capabilities when integrated with high-performance monochrome and thermal imaging cameras.

Basic camera technology

High-performance monochrome cameras are widely used in the security industry for low-light/nighttime video surveillance due to their ability to produce images with much higher resolution and sensitivity to light than color cameras. Monochrome cameras are sensitive to the intensity of light energy in a scene with wavelengths outside the range of human visual perception, referred to as near infrared.

These cameras record the various intensities of light in a scene rather than the colors, red, green and blue, recorded by color cameras, to provide a much brighter image in dark environments. This technology employs a charged couple device sensor that detects available light and provides the signal to a digital signal processor to enhance the detected light in low light conditions with back light compensation.

High performance monochrome cameras reduce the typical noise in an image at low light conditions, offer excellent dynamic range, are responsive to the near infrared spectrum,
and have antiblooming characteristics. In addition, these cameras coupled with infrared illumination devices (no visible light), such as laser, incandescent or light emitting diodes will improve the video scene by producing an even brighter camera image. For this reason, infrared illuminators are often used for covert surveillance operations.

Thermal imaging cameras provide effective long-range detection and have several advantages over typical cameras. Unlike monochrome cameras, thermal imagers sense thermal energy rather than light energy. So even in complete darkness, rain, smoke, dust or light fog, the thermal camera can produce an image from the various heat sources.

The thermal detector is the primary component of the thermal imaging camera and is composed of various materials depending on the specific wavelength of infrared energy for which the detector is optimized. Since all objects radiate infrared energy in some way, the camera has the ability to sense those differences to 1/10th of a degree Fahrenheit. Today, thermal imagers offer a high resolution of up to 320 x 240 individual picture elements (pixels) which provide clear scene detail and long detection range. Because these cameras detect heat to produce images and not light, surveillance systems that use these cameras do not require any type of lighting. In addition, the thermal imaging camera provides consistent performance despite adverse weather conditions such as rain, snow and fog, and are widely used in waterfront, lake and port applications.

Both high-performance monochrome and thermal imaging technologies are widely employed in nighttime surveillance applications integrated with AVS technology. These cameras improve video images supplied to AVS systems, providing surveillance capability for both day and night environments. AVS systems analyze video images enabling automated detection and response to specific alarm events. Their performance depends significantly on the quality of video provided by the camera which is directly proportional to the number of pixels, or individual picture elements generated for the image.

AVS computer algorithms analyze the video, monitoring changes in pixels generated over a sequence of events. Therefore, the performance characteristics of how well the camera can produce a clean, clear image are very important to the analytics of the system. Characteristics of the video image such as noise and contrast are typically a concern in nighttime surveillance applications and influence the performance of AVS systems.

**Evaluating surveillance systems**

AVS systems were evaluated with the two different camera technologies for their ability to provide intrusion detection capabilities. The intrusion detection scenarios introduced a person wearing dark clothing entering an open field at different distances, velocities, and directions. To evaluate all environments, this evaluation was performed in wet, overcast conditions and dry, clear conditions. In addition, more advanced capabilities known as behavioral analysis were evaluated to measure the differences in performance for specific objects introduced into the scene, such as a person, dog or car.

On average, the thermal camera provided images that enabled greater detection ranges than the monochrome camera in the intrusion detection scenarios. The thermal camera provided the best contrast and capability of distinguishing a person from the environmental surroundings regardless of the weather conditions with no additional lighting (only natural) introduced into the scene. Over the sequence of the evaluation, the intruder’s clothing became saturated from the wet grass and undergrowth of the field and displayed less contrast in the thermal image of the intruder and the surroundings than during dry conditions.

The thermal camera was more effective for long-range detection and in open areas when the object appears in high contrast with the surrounding environment. With infrared illumination introduced into the scene, the monochrome camera provided a dramatic improvement in the detection range for the AVS system and was comparable to the thermal camera, especially in wet conditions.

Again, the thermal camera performed better than the monochrome camera during the behavioral analysis, primarily due to the contrast within the thermal image. This contrast allowed the AVS system to differentiate between the two living objects (human and dog) and their associated aspect ratio (the width of an image compared to its height).

Of the systems evaluated, however, several had difficulty in differentiating between a person and a vehicle using the thermal camera. The thermal shape of the vehicle (the heated engine) was smaller than the actual shape of the vehicle, altering the aspect ratio of the vehicle and making classification less reliable.

AVS systems performed slightly better with the monochrome camera than the thermal in differentiating between the human and vehicle, but showed signs of “blooming” with the vehicle’s headlights. This burst of light changed the image of the vehicle in the video making classification difficult. The vehicle headlights did not affect the thermal camera and the corresponding AVS performance.

There are no current industry standards for objective comparison of AVS systems and their performance. As illustrated by the evaluation findings, the ability of a system to generate an alarm depends largely on the quality of video received from the cameras selected for the application. For this evaluation, the thermal camera provided images that enabled greater detection ranges than the monochrome camera.

In more predefined or closer areas, the monochrome camera with infrared illumination proved to be effective. With the appropriate camera technology, adequate illumination, and proper configuration, AVS systems can provide increased operational capability and effective surveillance in a nighttime environment. A copy of the AVS night assessment can be obtained by state and local agency representatives at https://saver.fema.gov.
North Charleston Mayor Keith Summey visited the Mine Resistant Ambush Protected (MRAP) vehicle integration facility May 6. He was taken on a tour of the facility by then-SSC Charleston Commanding Officer Capt. Red Hoover and MRAP Lean Six Sigma Black Belt Lt. Brian Phillips. Accompanying Summey was his assistant, Ray Anderson. The MRAP integration facility lies within the boundaries of North Charleston. Above left, Summey listens as Hoover explains the intricacies of C4ISR integration on a large scale, and above right, Summey poses with Acting Technical Director Charlie Adams, Anderson and the captain in front of one of the life-saving vehicles.

Air Force partnership
Air Force Brig. Gen. Theresa Casey, Assistant Surgeon General for Modernization, Office of the Air Force Surgeon General, and then-SSC Commanding Officer Capt. Red Hoover sign an interservice agreement allowing SSC Charleston to provide support to the Air Force Surgeon General’s office. Col. Brian Masterson, MD, Commanding Officer of the Air Force Medical Support Agency, looks on during a May 21 visit which included a tour of the MRAP integration facility.

Visitors

Mayor onboard

Crean views integration operations
Rear Adm. Sean Crean, Deputy Assistant Secretary of the Navy for Acquisition and Logistics Management, shares a laugh with then-SSC Commanding Officer Capt. Red Hoover, Army Col. Dion King, MRAP project manager, and Joe Rodgers, left, during a visit to the MRAP integration facility June 3. Capt. Joe Manna of the Defense Contract Management Agency, accompanied the admiral.
State AG visits

S.C. Adjutant General Maj. Gen. Stan Spears visited the MRAP integration facility recently, accompanied by Medal of Honor recipient Maj. Gen. James Livingston (USMC, Ret.) Above left, Spears reads the message written by the Secretary of the Defense on a pennant that marked the milestone 2,531th MRAP vehicle integrated at SSC Charleston by the end of 2007. Above right, MRAP project lead Pete Ward briefs Spears and Livingston. Spears leads and directs the 13,500 member South Carolina Army and Air National Guard. He also oversees operations of the South Carolina State Guard and South Carolina Emergency Preparedness Division.

Daedalians ‘land’ at SSC Charleston

U.S. Air Force Col. Joseph W. Mancy, left, commander of the 437th Operations Group at Charleston Air Force Base, and members of the Swamp Fox Flight of the Order of Daedalians pause at the Bldg. 3147 quarterdeck during a visit May 16. The Order of Daedalians is a fraternal and professional order of American military pilots which supports the military services and other aerospace activities. Operating through a worldwide network of chapters, known as Daedalian Flights, the organization is for active or retired commissioned officers, flight officers, warrant officers or Woman Air Force Service pilots rated as military pilots of heavier-than-air, powered aircraft.
NORTHCOM commander visits

Joe Rodgers, MRAP integration project manager, and Pete Ward, MRAP integration lead engineer, greet Air Force Gen. Victor E. Renuart Jr., Commander North American AeroSpace Defense Command and USNORTHCOM, June 12. The general was in Charleston with a Civic Leader Tour group, which saw SSC Charleston’s role in providing command, control, computers, communications, intelligence, surveillance and reconnaissance (C4ISR) engineering and integrated solutions to the warfighter. The group received a command brief and toured the MRAP integration facility.

Donald Tison, Assistant Deputy Chief of Staff for Programs, Office of the Deputy Chief of Staff, G–8, U.S. Army, poses at right with SSC Charleston Commanding Officer Capt. Bruce Urbon, left, and then-Commanding Officer Red Hoover, right. Tison was accompanied by Milton McMillan, senior program analyst/SSO, MRAP DCS, during a June 5 visit to SSC Charleston which included an MRAP overview and tour of the MRAP integration facility.

Fages guest speaker

Retired Vice Adm. Malcolm Fages briefed SSC Charleston on the advances in broadband mobile wireless and an implementation of the technology for first responders in New York City during a Friday morning technical brief June 13. Fages also discussed how this capability could be made available to the warfighter, and took questions from the audience. Fages, now of Fages Consulting, LLC, retired from the U.S. Navy in June 2004, with 36 years of service. His final assignment on active duty was service as the Deputy Chairman of the NATO Military Committee in Brussels, Belgium.

Friday tech brief
Welcome aboard!

SSC Charleston welcomed summer hires -- including Student Temporary Employment Program and Student Career Experience Program (STEP/SCEP), and Navy Career Intern Program (NCIP) employees -- on board in May. Pictured at right, unless indicated otherwise, are STEP hires. Top photo, from left, front row, are Shanda Stanley, Samantha Fieni (SCEP), Trevor Gildea, Ashley Scott, Patrice Richardson-Scott, Sabrena Heyward, Frances Richardson, Steven Roach, and Keon Atkins; and back row, Jonathan Jordan, Brandon Mazeyck Mark Thomas, Michael Steiner, Matthew Stone, Ecoya Green, Jonathan Hite and Som Tantipithan.

In the bottom photo are, from left, front row, Gerry Pass, Michelle Johnson (SCEP), Haley Kaelin, Kara VonBehren, Brittany Parker, Michael Henry, Drew Schwarz, Shane Kimble, Sasha Coston, and Chris Smith; and back row, John Paul Kalapurakal (NCIP), Matthew Sellers, Sarah Zebst, Holden Hughes, Christopher Temples (NCIP) and Shane Ruppert (NCIP).

Proud graduate

Maria Whittington-Hendricks, assigned to Code 55800 in the now closed Heidelberg, Germany office, completed a master of arts degree in international relations from the University of Oklahoma (OU) in May 2008. She is pictured at left with Gen. Roger A. Brady, commander of U.S. Air Forces in Europe (USAFE), right, a fellow OU graduate who was also the commencement speaker. Dr. Richard Little, associate vice president for the OU outreach program, left, was also Maria’s very first professor for her first master’s degree in human resources almost four years ago.

David A. Mank

Dear SSC Charleston:

On May 4, 2008, my husband David passed away. He worked for SPAWAR for many years, retiring July 31, 1999. I want to thank all of you whose thoughts and prayers comforted him during his courageous battle with cancer.

Sincerely,

Elizabeth R. Mank

Denise Simmons

Denise Simmons, a contracts specialist at SSC Charleston supporting code 55000 (formerly Code 50) passed away March 26. A Celebration of Life service for her work friends was held April 7.

Bob Windle

Bob Windle, who worked in St. Juliens Creek performing in-service engineering agent and software support agent duties for the Link-11 System, passed away March 25. He served nearly 30 years as a government employee and lived in Chesapeake, Va.
Back by popular demand ...

... SSC Charleston’s own musical ensemble, the Sound of SPAWAR, which most recently performed during the change of command reception in the atrium of Bldg. 3147 June 26. The band originally came together at SSC Charleston’s first change of command in June 1995 and has played by popular demand at every one since. The group is made up of SPAWARriors who enjoy playing music and are members of bands and church choirs in their spare time. These accomplished musicians can get together on short notice and, with a minimal amount of rehearsal time, put out a sound that listeners agree is second to none. Pictured above, from left, are John Ryan of Code 0122 on bass guitar; Clay Stuckey of Code 56150 on drums; John Monroe of Code 81200, vocals; Gary Kaasa of Code 0122 on keyboards; David Lutzow of Code 55240 on lead guitar; Mark Durham of Code 525A0 on rhythm guitar; Truman Metts, former SSC Charleston employee, saxophone; Ron Lowder of Code 52A00, alto saxophone; and David Engleman of Code 80000, trumpet.

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You can help us keep all SSC Charleston employees, customers, contractors, sponsors and retirees current on the command’s accomplishments. If you have an article or story idea, submit it to The Chronicle. To discuss a story idea or for assistance writing an article, call (843) 218-4973 or DSN 588-4973.

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The Chronicle is published quarterly to inform, educate, entertain and generate new ideas. Articles will be accepted at any time. Articles of any length will be considered, but those with 300 to 500 words are preferred. Photos or illustrations should be sent as separate files, rather than embedded in a document.

A full color version of The Chronicle can also be viewed on the Internet at http://sscc.spawar.navy.mil. Employees can browse the current and back issues of The Chronicle and Chronicle Lite on SSC Charleston’s Collaboration and Execution Web site under “Command Information” and the “Newsletters” drop-down menu.
More than 40 submissions were received for this issue’s photo contest. All were outstanding, giving our panel of impartial judges quite a challenge. Thank you to all who submitted photos. Your submissions will be kept on file for future use.

And the winner is...

Send us your best shot

We are now soliciting photography submissions from SSC Charleston employees for the next Chronicle photo contest.

The Employee Services Association will offer the winner a choice of a coffee cup, thermal mug, command coin, cookbook (if available) or $5 credit toward another logo item.

MWR will offer a certificate for a free lunch in the Cooper River Cafe to the winner. Send your best shot to susan.piedfort@navy.mil or drop your print by the Chronicle office.
UNITED AS ONE
Diversity Day October 2008

The featured events include special culture entertainment on the 15th in 3147 Atrium and interactive discussion with the internationally acclaimed psychologist, Dr. Nichols on the 16th in the 3112 Conf. Center.