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CSA outlines Transformation to SMDC leaders

by Rhonda K. Paige
Arlington, Va.

Speaking at the U.S. Army Space and Missile Defense Command Offsite, General Eric K. Shinseki, Chief of Staff, United States Army, addressed SMDC offsite attendees on the Army Transformation. He noted as the Army moves into the 21st Century and celebrates its 225th Birthday, one of the primary tasks it faces is the "Transformation Process." (See related story, page 2.)

Using lessons learned from DESERT STORM, Shinseki said one of the major issues is the Army always ends up providing the counterattack, because it gets there after the war has started. He said, an objective of the Transformation should be to deploy early enough so the Army won't necessarily have to counterattack.

To get there, "we must have a prompt and sustained land warfare," said Shineski. Key to Shinseki's "Vision" for the transformed Army of the 21st Century is people, readiness, and transformation. He stressed people are the most critical element of that process.

"People are the centerpiece of everything we do, and we can never do enough for the American soldier," he said.

According to Shinseki, taking care of soldiers correlates directly with the transformation process. Even with a lighter and more mobile force, the Army must still acquire adequate resources to organize, equip, and train our soldiers to be warfighters.

He said the Army is also well aware of challenges in recruitment and retention due to the draw of higher salaried corporate positions.

Even with the challenges that lie ahead in all of these areas and the Transformation process, "We still have the best Army in the World," said Shinseki.

"For our soldiers it's not about the money, it's about service. Our job is to train these soldiers and grow them into leaders," said Shinseki.

The Army Strategy for Transformation

- **Increase Strategic Responsiveness**
- **Develop Joint Leaders, Improve Operational Jointness, Achieve Joint Vision Goals**
- **Integrate Active and Reserve Components**
- **Develop Leaders for both Warfighting and Change**
- **Man Warfighting Units**
- **Provide for the well being of Soldiers, DA Civilians, Veterans, and Army Family Members**
- **Invest in people—help soldiers achieve personal goals**
- **Provide the most modern equipment to maintain technological superiority**
- **Commit to business process improvement/efficiencies**

Advanced Research Center gets NMD exercise; President announces deployment delay

The new Integrated System Test Capability-2 facility located at the U.S. Army Space and Defense Command Advanced Research Center in Huntsville, Ala., will conduct the next national missile defense (NMD) ground exercise. The multi-week, comprehensive NMD ground exercise conducted for the Ballistic Missile Defense Organization (BMDO) will likely take place in February, according to a BMDO spokesman.

The exercise will be the first since President Bill Clinton's September announcement at Georgetown University he had decided to delay authorizing NMD deployment.

In making his delaying announcement President Clinton said while the United States may eventually need a national missile defense system, he will leave it up to his successor to decide whether or not to proceed with plans to develop that system.

Speaking at Georgetown University Sept. 1, Clinton said, "I simply cannot conclude with the information I have today, that we have enough confidence in the technology and the operational effectiveness of the entire NMD system, to move forward to deployment. Therefore, I have decided not to authorize deployment of a national missile defense at this time."

Defense Secretary William S. Cohen responded at the Pentagon to the president's announcement.

"The President's statement today underscores the importance of having the next president fully involved in decisions regarding the future of the program before committing the United States to a deployment strategy," Cohen said. "In the meantime, we will aggressively proceed with the developmental testing program," he said.

In his address, Clinton said if the next president decides to go ahead with NMD, the system most likely could be deployed in the original 2006 to 2007 timeframe.

He noted establishing a national missile defense system is a worthy goal because threats posed to American national security and geopolitical interests—especially from North Korea and certain Middle East countries— are still very much present a decade after the end of the Cold War.

NMD would not be a substitute for diplomacy or deterrence, he said, "but such a system, if it worked properly, could give us an extra dimension of insurance in a world where proliferation has complicated the task of preserving the peace. Therefore, I believe we have an obligation to determine the feasibility, the effectiveness and the impact of a national missile defense on the overall security of the United States."

"We've begun to show that different parts of this system can work together," he said. "Our Defense Department has overcome daunting technical obstacles in a remarkably short period of time. … Still, although the technology for NMD is promising, the system as a whole is not yet proven. After the initial test succeeded, our two most recent tests failed—for different reasons—to achieve an intercept."

Clinton said there are unresolved questions about NMD interceptor booster rockets and whether the system can deal with countermeasures. BMDO has planned several more tests to determine whether NMD can work reliably under realistic conditions. Clinton said the nation may meet these challenges in the future.

"I have asked Secretary Cohen to continue a robust program of development and testing," he said. "Only three of the 19 planned intercept tests have been held so far. We need more tests against more challenging targets and more simulations before we can responsibly commit our nation's resources to deployment."

Gerry J. Gilmore, of the American Forces Press Service contributed to this article.

Inside The Eagle

SMDC Offsite 2000:

Setting a Course for the New Millennium

by Rhonda K. Paige
Arlington, Va.

More than 100 Army Space and Missile Defense Command (SMDC) Senior Military and Civilian Leaders and their spouses met for the Command's second annual Offsite, in Chantilly, Va., Sept. 13-15. The theme of this year's offsite was "Setting a Course for a New Millennium."

Because SMDC is so widely spread over the globe, the annual gathering provided a rare opportunity for command members to come together in one central location to review issues of the past year and plan the future of the command.

'We are a pretty powerful group of people, and the more we get organized there isn't anything we can't do.'

— Lt. Gen. Costello

The primary objectives of the 2000 Offsite were to provide a forum for the command's leadership to report on the performance improvement accomplishments associated with each strategic goal; to implement tactics for updating SMDC's Strategic Plan; and for the spouses of senior leaders to develop a USASMDC Family Readiness Plan.

Lt. Gen. John Costello welcomed the group, saying, "What we are doing here is giving ourselves a to-do list and we're going to measure how well we do on that to-do list."

Costello also stressed the importance of interaction among members of the command. "An organization that gets along socially, gets along professionally," said Costello.

Keynote guest speakers for the Offsite were Gen. Eric K. Shinseki, Army Chief of Staff, who spoke on the Army Transformation; Dr. James A. Crupi, renowned author and authority on international business, leadership, and the future, who spoke on Leadership and Change in the 21st Century; and Maj. Gen. Robert H. Scales, former commandant of the U.S. Army War College, who spoke on future warfare.

Overviews of several critical areas of the SMDC Strategic Plan were also presented by senior leaders of the command, and included Army Performance Improvement Criteria (APIC); Army Family Readiness Planning, and several breakout workshops, which focused on these areas.

The Offsite wrapped up on Friday with a review of the group's recommendations, guidance on key issues, a summary of Offsite accomplishments, and a report on the plan to implement those accomplishments and goals, from key Offsite staffers and Costello.

'. . . we can harness the energy, the organization we have, the field that we have . . . it's just a matter of . . . focusing.'

— Lt. Gen. Costello

Remarking on Offsite accomplishments and attendees, Costello said, "We are a pretty powerful group of people, and the more we get organized there isn't anything we can't do. If we can harness the energy, the organization we have, the field that we have, here in SMDC, we can really lead the Army, it's just a matter of getting the roadmap and focusing," said Costello.

While recognizing the success of the Offsite, Costello also reminded the group that this session was only the beginning to an ongoing process. "This strategy for change should be a living, breathing document; not one to be finished and then done with," he said.

'This strategy for change should be a living, breathing document; not one to be finished and then done with.'

— Lt. Gen. Costello

Costello also pointed out that the emphasis should be on doing the plan, rather than getting to the plan.

An end of October date was set by Costello for key leadership to return to SMDC headquarters with preliminary reports of how their respective areas and directorates initially implemented the plan after the Offsite.

During this initial feedback as well as next year's Offsite, the success of the plan will be measured in terms of the organization's level of performance, the organization's trend of performance, and by comparing SMDC efforts to similar performance among industry leaders.

As Costello closed SMDC Offsite 2000, he reminded the group of the critical nature of this organizational effort. "We may be saving someone's life in the future by the work that we've done here this week," he said.

Budget funds Army Transformation, military to get 3.7 percent pay raise

by Joe Burlas

WASHINGTON (Army News Service, Sep. 6, 2000) — The 2001 Defense Appropriations Act, signed by President Clinton Aug. 9, includes funding to equip two Interim Brigade Combat Teams and a 3.7-percent military pay raise.

Army leaders had requested $537 million to stand up a single IBCT in fiscal year 2001. Congress provided the requested amount and an additional $100 million for that first interim brigade. It also funded $500 million to equip a second in the coming year.

"In this bill, funding is provided to procure the first two brigade sets of equipment for the new transformation force," said Alaska Sen. Ted Stevens in moving the Defense appropriations bill through committee in July. "We are determined that this new force be equipped as rapidly as possible, and intend to maintain this pace of funding in fiscal years 2002 and 2003."

Last October, Army leadership established a new vision for the Army—a more mobile, lethal and flexible force for the 21st Century. The process to get there is called the Army Transformation.

Department of Defense leaders requested $118 million in next year's Army budget for research and development for testing, integration and development of an Interim Armored Vehicle. The new Defense Act supports a more aggressive timeline with $268 million for that effort.

The current Army Transformation plan eventually calls for six IBCTs: four in the active force, one in the Army Reserve and one in the National Guard.

"This is the strongest plus-up budget the Army has received from Congress in years," said Gen. John M. Keane, Army vice chief of staff. "Both the proposed Department of Defense and President budgets supported the buildup of a single Interim Brigade Combat Team over the next year. The congressional appropriations budget adds another brigade which demonstrates Congress' solid support to move the Army Transformation quickly along."

In total, the appropriations act gave the Army approximately $3.2 billion more than it had requested.

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Spouses map out first SMDC Army Family Readiness Plan

by Rhonda K. Paige
Arlington, Va.

If you think the spouses of SMDC leaders attended Offsite 2000 for the social activities, your assumption is way off the mark.

This group of 15 came together for three days with the primary goal of drafting SMDC's first Family Readiness Plan. Holly Gifford, U.S. Army Deployment Readiness Program Manager, served as the facilitator for the working group.

Under Department of Army Regulation, each installation, sub-command, and major command must have a Family Readiness Plan in place and ready to be implemented.

Formerly referred to as the Total Army Family Support Program, the "readiness" plan is intended to shift the emphasis to a state of preparedness of soldiers and their families through proactive education and support programs that promote self-reliance and enhance family well being.

After the SMDC working group started the day by introducing themselves, Gifford briefed them on the goals and timelines set for the working group. The group also participated in a practical fun exercise called the "lipstick personality chart," which not only broke the ice, but also helped to identify general personality traits of group members.

Then it was down to the business of brainstorming, putting ideas down on paper, and preparing a brief on the draft plan to be presented to all Offsite attendees, in less than 24 hours.

As the group worked their way through the process, one of the key participants who always managed to bring the group back to its main focus was Mickey Costello, wife of SMDC's commanding general.

Explaining to the group why their task at hand was so vital, Mrs. Costello said, "The Army went from family support to family readiness in order to make spouses more self-sufficient."

On the final day of the Offsite, Cheryl Coffin,

Cheryl Coffin presents the SMDC Family Readiness Plan to Offsite participants.

wife of Lt. Col. Tim Coffin, commander of the 1st Space Battalion, briefed Offsite attendees on the goals and recommendations for the SMDC Family Readiness Plan.

- Initial Goal of the Plan is to Enhance Workforce Excellence
- Purpose of the group is to Develop a framework for a Family Readiness Plan for the U.S. Army Space and Missile Defense Command
- Objective One is to increase families' knowledge of the SMDC mission and the organization
- Objective Two is to assist in the development of SMDC family readiness programs.
- Objective Three is to enhance the family readiness programs by offering information and referral to military and community resources
- Objective Four is to encourage participation by soldiers, civilians, contractors, retirees, and family members in SMDC activities to enhance cohesion, readiness and retention.
- Objective Five is to develop self-reliance necessary to resolve problems, especially during periods of family separation

Progress of the plan will be measured using these objectives:

1. Develop a Family Readiness web-site link—to be measured by number of hits per month survey
2. Develop a Family Readiness Welcome Packet—to be measured by number of newcomers, number of packets distributed, and customer survey cards
3. Feature a Family Readiness Group corner in *The Eagle*—to be measured by a proposed "Eagle Eye Award"
4. Develop an SMDC Family Readiness Guide—measurement TBD based on location
5. Include Family members at SMDC award VTC; and have the Family Readiness Group meet quarterly to measure success
6. Establish the Family Readiness Process Action Team and meet semi-annually
7. To enhance sponsorship program to include family members—to be measured by an in-processing checklist
8. To ensure Family Readiness Plans are in place throughout the Command—to be measured by a command inspection program

General Costello commended the group on successfully putting the Family Readiness Plan together and reinforced how important the plan was in terms of cohesiveness within the organization. "Family wellness is integral to what we need to do in the command and how well we do it," he said.

Crupi discusses leadership and change strategies for SMDC

by Rhonda K. Paige
Arlington, Va.

In keeping with the theme of "Setting the Course for a New Millennium," renowned lecturer and author, Dr. James E. Crupi, presented his strategy for Leadership and Change in the 21st Century, to participants of SMDC Offsite 2000.

A recognized authority on international business, leadership and the future, Dr. Crupi challenged Offsite participants on their and the Army's traditional assumptions about power, authority, status and achieving success.

At the center of Crupi's philosophy is his belief the individual, or in the case of SMDC, each member of SMDC, not merely the leaders, is an essential element to winning in a competitive market.

He said SMDC and the military in general should be approaching the competition as if they were a commercial business, and the individual in an organization is the new unit of business, not the company itself.

Using the words of business mogul, Ted Turner, Crupi reminded Offsite participants of a familiar analogy—"Business is War."

"The leader's job is to 'shape what might be, not serve what is,'" said Crupi. "Leaders must understand the competitive forces that shape their customers decisions, as well as the competition that challenges their own businesses."

Crupi further challenged Offsite participants with the notion the 1990s power play of leaders empowering people is no longer applicable for the business world or the military. "Empowerment cannot be imposed, it must come from within," said Crupi.

To illustrate his points on competition, power, and leadership, Crupi engaged volunteers in a hands-on-exercise, in which strategy and leadership decisions had to be made in a matter of minutes in order to win.

Crupi noted how fierce the competition was, how much strategy was used, and how decision-making became a key factor even in such a minor fun exercise.

"Making decisions is easy, 'how' you make the decisions is what separates the men from the boys," said Crupi.

Crupi said for any group, military or civilian, the first and most important question should always be "what are we trying to achieve."

Crupi summarized how the leadership and strategic planning of the business world can be applied in SMDC and the military, but also stressed there is a clear-cut and vital difference between the two.

"You, as the Army Space and Missile Defense Command, have to get this right, sans mistakes, because it isn't just business, it's a matter of national security," said Crupi.

ADA dinner-dance planned

The Redstone Arsenal/Huntsville chapter of the Air Defense Artillery Association will hold their annual St. Barbara Dinner Dance October 28 at the Huntsville Hilton Hotel. The guest of honor and speaker will be Brig. Gen. (P) Stanley E. (Stan) Green, commanding general, U.S. Army Air Defense Artillery Center and Ft. Bliss. Contact the chapter secretary for more information at 922-1680 ext. 2855.

Transformation and Space Support

by Jonathan Pierce
Huntsville, Ala.

As the Army begins to transform itself the U.S. Army Space and Missile Defense Command (SMDC) is working to ensure the integration of space and missile defense capabilities and technologies needed across the full spectrum of operations.

Transformation is not new to the Army, according to Blake Myers, a contract representative of Coleman Research Corporation working with the Deputy Chief of Staff Strategic Planning and Analysis (DCSSPA) office at SMDC headquarters in Arlington, Va. The current Army transformation, he believes, is an attempt to condense the modernization cycle to meet a real world, near-term capability gap. "You've got the heavy forces that were designed against a Cold War threat, and are great at fighting that kind of war—an armored force on armored force—and no Army in the world can stand up to them," said Myers. "You've got light forces on the other end of the spectrum designed against a specific threat, that can get in quickly. But they have limited lethality and sustainability and almost no mobility once it gets there.

"The problem is that since the Wall came down—the last 10 years—the Army has been operating right in the middle of those two. It's a part of the spectrum of operations where you need a strategically and a tactically mobile force that can do decisive operations, but is light and agile enough to be rapidly deployed," to places like Haiti and Kosovo, Myers said.

According to Myers, agility and versatility get to the mental preparation of the objective force. Small unit leaders, he says need to be mentally agile enough to operate across the spectrum; to do tactical operations that have strategic impact—settling town disputes, working with local leaders, interagency officials and non-governmental organizations.

The objective force, he said, "still has to be the toughest guy on the block. When the Army goes into an operation, forces in the area need to understand they shouldn't mess with us. It comes back to the fact that the force can't be so light that it doesn't have the necessary lethality to accomplish its mission."

Survivability and sustainability have to do with both reducing the size of the force exposed to possible hostilities and reducing the amount of equipment and supplies that have to be shipped or airlifted to the area. "The objective force can't have this huge logistics tail that comes along with it. Logistics [in the past] has eaten up 90 percent of the lift capacity. The way we do logistics has to be transformed," said Myers. Instead of building huge logistical bases in theater, that take months to build and become huge targets, the Army's concept is to use just-in-time logistics.

The objective force also needs to be more strategically responsive, he said. Instead of taking a basic division or brigade and adding capabilities that aren't built into their structure the objective force will be more structured to handle full-spectrum operations. A brigade combat team, he said, has to be capable of deploying and operating within 96 hours.

"Space-based capabilities are there when you need them. It goes back to not bringing that big infrastructure or logistical footprint. You don't have to have scads of communication types, putting stuff on the ground and setting up relays. You still have some of that stuff, but you want it deployable and responsive so it can move as a part of the brigade combat team," Davies said.

SMDC's Force Development and Integration Center, Battle Lab, Army Space Program Office, Army Space Command (ARSPACE) participate in an integrated effort across the command, under various leads, and in various Training and Doctrine Command and Department of the Army forums.

Eventually, according to Davies, a lot of the capabilities of the ARSPACE Army Space Support Teams (ARSST) will be embedded in the organizational capabilities of the objective force. The ARSSTs, he said, can pull down imagery, terrain, and satellite transmission data, quickly analyze it, and brief a corps commander and his staff. Those capabilities are not currently organic to corps.

"Right now we couldn't tell you what an objective force looks like," said Davies. "We can't tell you what an IDIV looks like. Does it include an ARSST? We don't know.

"What SMDC is trying to do is to ensure that those capabilities are integral to the objective force. It may wind up being any number of space officers, or it could be any number of computers that have the capability to do the analysis of an ARSS team."

Space Support to the Objective Force

Seven Categories of Space Support	Objective Force Characteristics
Communications	Responsive
Position, Navigation & Timing	Deployable
Weather	Agile
Terrain	Versatile
Environmental Monitoring	Lethal
Intelligence, Surveillance & Reconnaissance	Survivable
Missile Warning	Sustainable

"So the Army transformation is really about transforming the Army to have the desired capabilities across the entire spectrum of operations. Army XXI and Army After Next haven't gone away. Transformation has encompassed all of that and subsumed all of those studies, analyses and good ideas," he said.

The immediate goal of transformation is to provide a force that can fill the mid-spectrum capability that the CINCs need. The ultimate objective of transformation is a force that is strategically responsive and dominant at every point on the operational spectrum. Transformation is about the entire Army: the institutional Army, the training base of the Army, the operational force, it's everything. The point of the spear, Myers said, is the brigade combat team, the interim division (IDIV) and the objective force. But, he says, transformation of the entire Army is not just about building a new division, or even a common vehicle.

Seven objective force characteristics

There are seven characteristics that the objective force will need to meet the vision of Army transformation. They are: responsiveness, deployability, agility, versatility, lethality, survivability and sustainability. The search for a common vehicle, lighter than today's main battle tanks is largely an issue of deployability. Heavy armor is hard to move because of its bulk and weight. A smaller common vehicle of 20-25 tons means that it could be transported by C-130 aircraft.

Space support aids transformation

If these seven characteristics of the objective force are its key elements then space support provides capabilities needed in the Army Transformation. Space-based architectures and platforms, according to Myers and Lt. Col. Walter Davies of the DCSSPA Strategic Planning Division, enable the objective force characteristics. Space support in satellite communications; weather; terrain; position, navigation and timing; environmental monitoring; intelligence, surveillance and reconnaissance; and missile warning.

"A large part of being able to project the objective force around the world is inherently reliant on space architecture—communications, imagery, reconnaissance, and force protection missile warning," said Davies.

"The joint force, and the Army specifically, relies on space-based capabilities because you can't carry it with you. You can't rely on air or earth-based relay stations for comms or uplinks or downlinks to satellites. It has to be available wherever you go. The only way to get that is through space-based capabilities.

Capabilities are the driving factor

"The important part of this is making sure the right capability is available all the way down to the right level where the warfighter needs it," said Davies.

"Most especially, for the things the Army doesn't own, like Air Force satellites, our biggest job is to ensure that the space support capabilities that the warfighter needs are not left off those platforms as they are developed," he said.

Davies and Myers agreed that what SMDC is trying to do is to integrate into the objective force the equipment, people, and the connectivity that will allow it to be agile, lethal, and survivable based on the operational concept of the envisioned force. And, they said, there are differences in those requirements from the brigade combat teams, to the IDIV, to the higher level force. And it also depends on the time frame you look at as to what the force package will look like.

One of SMDC's efforts is the Tactical Exploitation of National Capabilities (TENCAP) program. The objective, they said, is to take national level information and exploit it for tactical use—to get it down to the warfighter who can use it.

"Great information and superb intelligence doesn't do you much good if it gets there too late to use it—it's got to be timely," said Myers.

The idea Davies said, is to get the information to the tactical commander so he doesn't have to make a decision based on intelligence that has taken eight hours to go to national assets and filter its way down. When tactical commanders can get appropriate intelligence in real time they can take advantage of it.

Figuring out what pieces of information are needed at each level is important, he said. "We don't want everything that goes to national agencies coming down to the brigade level because the commander doesn't need it all, he can't use it all. But what are the right pieces and how do we build that capability into the platform and into the force...? Those are the kind of issues that SMDC is involved in,"said Davies.

PATRIOT hits three-for-three firings

by Connie Davis
Huntsville, Ala.

Eglin Air Force Base, Fla.—For the second year in a row, the Alabama National Guard, 1st Battalion 203d Air Defense Artillery (PATRIOT) and the U.S. Army Lower Tier Project Office, Program Executive Office for Air and Missile Defense, performed three successful live PATRIOT missile firings at Eglin Air Force Base, Fla. The battalion is headquartered in Athens, Ala. and has units in Huntsville, Scottsboro, Bridgeport, and Hartselle.

Three PATRIOT missiles were fired Sept. 18 as part of this air and missile defense test. The first missile fired, a PAC-2 (an upgraded version of the standard PATRIOT), successfully intercepted an MQM-107 turbojet aerial target. The second and third missiles fired were standard PATRIOT missiles, which successfully intercepted sub-scale towed targets. The tests provided the Army with valuable field surveillance data and allowed the Guard soldiers to gain valuable field experience training with a live missile.

"I am more than pleased with the experience of these soldiers and expertise they have demonstrated," said Lt. Col. Gary Sheffer, battalion commander. "To take a state of the art system and have back-to-back successful firings two years in a row is a testament to the high quality of these troops, and the excellent leadership and training the Alabama Army National Guard has provided to them. This outstanding accomplishment is especially critical right now because this battalion is scheduled to deploy to Operation Southern Watch in the near future, where their performance could be the determining factor in life or death situations, for themselves or other troops," he said.

The Army has asked the Alabama Army National Guard to provide the first full National Guard battery to Southern Watch in Southwest Asia, with the first unit scheduled to deploy in 2001, according to Sheffer. The battalion is currently the only deployable PATRIOT unit in the National Guard—and will provide air and missile defense to Central Command while in Southwest Asia.

Every year the Army is required to fire 18 PATRIOT missiles as part of the Field Surveillance Program. Until now, PATRIOT testing has been done almost exclusively at Fort Bliss, Texas, and White Sands Missile Range, N.M. However, the system must be able to perform anywhere in the world. "Eglin Air Force Base provides a different test environment that builds confidence in the system to perform its role of protecting the troops and allies in time of conflict. This testing is an ongoing part of the Army's overall test and evaluation program. Since the three missiles fired today are part of the annual mandatory PATRIOT testing program, there are virtually no additional costs incurred.

The PATRIOT air and missile defense equipment used in today's firing convoyed from Huntsville to Eglin Air Force Base last week with 327 soldiers of the 1-203d ADA. Approximately 250 family members also made the trip and were allowed to view the test from bleachers set up in a secure site at Eglin.

"I don't think you can find a more capable PATRIOT battalion anywhere in the world," said Brig. Gen. John Urias, Program Executive Officer, Air and Missile Defense. "These soldiers are great professionals, dedicated and committed to serving this great nation. I am proud to serve with them, and watch them demonstrate their proficiency with one of the Army's most important weapon systems. Entrusting this equipment to an Army National Guard battalion is further evidence of our commitment to a single Total Army Team—a seamless fighting force," said Urias.

The PATRIOT program is executed by the U.S. Army Program Executive Officer, Air and Missile Defense and the U.S. Army Lower Tier Project Office in Huntsville, Ala. The Simulation, Training and Instrumentation Command, Orlando, Fla., manages the targets used in these tests. Raytheon Systems Company in Bedford, Mass. is the prime contractor for the PATRIOT system.

"This is a real example of a win-win operation," said Thomas McDonagh, vice president and deputy manager of the Air/Missile Defense Systems for Raytheon. "It provides both the training for our National Guard troops, who are playing an ever increasing role in our defense interests, and a real test scenario to verify the integrity of our aging missile stocks. Congratulations to the 1-203d: Great shooting—3 for 3," he said.

"This successful firing gives our troops the confidence to know they will perform well in the field, if called upon. Our soldiers know what to do, and when to do it, and they recognize that the system will enable them to provide the type of protection to themselves and other troops that has never existed on a battlefield before," Sheffer said.

The U.S. Army Lower Tier Project Office, Program Executive Office for Air and Missile Defense, contributed to this article.

A Patriot missile soars toward its target as the 1st Battalion 203d Air Defense Artillery (PATRIOT), Alabama National Guard, conducted their annual training this year.

Two Washington youths attend Huntsville camp

by Sgt. Maj. Lesley Hamilton
Arlington, Va.

When Brandon Mackie and Daverna Jackson arrived for a week of intensive training at the U.S. Space and Rocket Center Aviation Challenge Mach II camp they became know by their call signs "Popper" and "Metallica" respectively.

Mackie and Jackson, members of Martha's Table in Washington, D.C., received full scholarships to the one-week camp from the Army Space and Missile Defense Association (ASMDA) located in Huntsville, Ala.

The eighth grade honor students were exposed to some of the same training and survival techniques that real fighter pilots receive.

From wake up at 6:30 a.m. to lights out at 10 p.m. their days were filled with flight simulator training, water survival training, mission briefs, and many other challenges.

"My plane kept running out of fuel," Jackson said of her simulated take-offs and landings. "I couldn't keep the stick steady and they wouldn't let me land," she said.

An aspiring actress, Jackson says the low crawling portion of survival training was the worst for her. "There were skunks and spider webs all over the place, and I knew they would get on me," she said.

Mackie says he particularly enjoyed the program and learned many things about himself that he sometimes took for granted. Teamwork and leadership skills were present in all phases of their training, he said.

"Our group did details together and when somebody messed up, we were all (involved) in the fix," said Mackie.

Speaking on leadership, he said his instructor, Lee South (call sign Chule), made the training exciting.

"Chule explained things so we could understand; and, he found the way out of the woods with his compass," said Mackie, recounting his experiences during the land navigation course. "He made things fun for us."

Mackie likes to write and be creative. He also plays basketball and plans to attend North Carolina State University.

Mackie and Jackson were selected to receive the scholarships from among the other 70 students in the Bridge Program at Martha's Table.

"It was no question on these two," said Jerry Love, the program coordinator at Martha's Table. Their grades, conduct and their roles in the community were just a few of the things that made them stand out, he said.

The ASMDA has provided two scholarships annually to Martha's Table participants for the past six years. Martha's Table provides needy children and teens with nutrious meals and supervised learning and literacy activities in a safe environment, 365 days a year. It also operates a mobile soup kitchen feeding nearly 1,200 homeless people daily.

"We operate totally on donations from all over the city and even the country," said spokesman John Wiebenson.

Shared experiences, cohesion sought

Functional Area 40 continues growth

by Jonathan Pierce
Huntsville, Ala.

Space officers work in a new dimension of the military but their mission isn't much different from that of other Army officers, according to the chief of Functional Area 40, Space Operations.

Col. Glenn C. Collins Jr., director of the Force Development and Integration Center, U.S. Army Space and Missile Defense Command (SMDC), runs Functional Area 40 (FA 40) for its proponent Lt. Gen. John Costello, the SMDC commanding general. Recently, he spoke with *The Eagle* editor concerning FA 40 officers.

"Many of our missions are just the same as when I was an artilleryman," said Collins. "We would task-organize artillery forces to support the maneuver guys, now we task-organize space officers to support maneuver guys," he said.

Space officers apply space assets to maximize warfighter communications, command and control, position navigation, mapping, weather forecasting, intelligence and information operations, and theater and national missile defense. "Other than the fact that the spacecraft reside way up there in space, the principles of conducting military operations apply quite well," Collins said.

In its second year, FA 40 is doing well and experiencing rapid growth. From its initial group of 23 designated officers, the functional area now has at least 60 designated officers with a total requirement for 127. Competition for FA 40 is intense. When captains select their functional areas, they can choose to stay in their basic branch or they can opt to enter a functional area such as FA 40. The Army matches individual choices to actual Army requirements and designates each individual's functional area.

"We have a 400 percent application rate—officers who want to be space officers versus how many we can actually accept," said Collins. "There's a great many young officers who see the future of the military in space, the importance of supporting terrestrial operations from space, and they want to be a part of that future," he said.

At Command and General Staff College (CGSC) any student can take the space operations elective course and receive an additional skill identifier. For officers designated to FA 40, the elective is their first step in professional development. After CGSC, FA 40 officers attend an additional five-week course split between Fort Leavenworth, Kan., and Colorado Springs, Colo.

After training, space officers are assigned to corps and divisions and to various positions in SMDC, Department of the Army and the Joint arena.

Collins is concerned, however, that FA 40 officers may feel a void in their professional lives as a result of leaving their basic branches. "These officers will not work in their basic branch again," he said. "I worry about those young majors and their families as they come out of CGSC. The community they were a part of, whether it's military intelligence, air defense, or field artillery [or any other branch], is likely to be a community they were very proud to be a part of. Now [it] falls away and they will have to develop new friends and interests, and new sources of knowledge and education.

"Our goal is to make sure those officers don't feel that there is a void in their military lives because they have made their choice to be a space officer. Our goal is to fill that void with knowledge, camaraderie, jobs, and esprit de corps commensurate to the branches that they are no longer a part of," said Collins.

One of the ways of developing both the knowledge and camaraderie of officers within a functional area is to share the experiences that officers have in their various assignments. Collins uses the example of two new space officers being assigned to Fort Bragg, N.C., and to Seoul, Republic of Korea.

"For instance," Collins explains, "just now, we're assigning majors to XVIII Airborne Corps and Eighth United States Army. [They are] fine young officers, fully credible as FA 40s. Each is the only Army space officer in his organization – a somewhat lonely position as he tries to figure out how he meets his customer needs. He's going to have concerns about how to do things, how to solve problems," he said.

One of the resources those officers have is other space officers. Each of these officers, according to Collins, "…is going to solve problems that the rest of us would want to know about. So we have to share these experiences."

Sharing these problems and experiences is something that he believes the command must facilitate if FA 40 officers are to incorporate lessons learned from normal staff work, to exercises and operational deployments. Collins is looking into ways that might be done. Among these may be the development of a Space Operations journal or magazine in which problems, experiences and solutions can be discussed. The use of such a journal is a time-proven method of developing doctrine in branches such as armor, infantry, and field artillery, Collins said. Journals are an excellent tool for increasing knowledge and developing cohesion within branches and it should have that same affect with FA 40, he said.

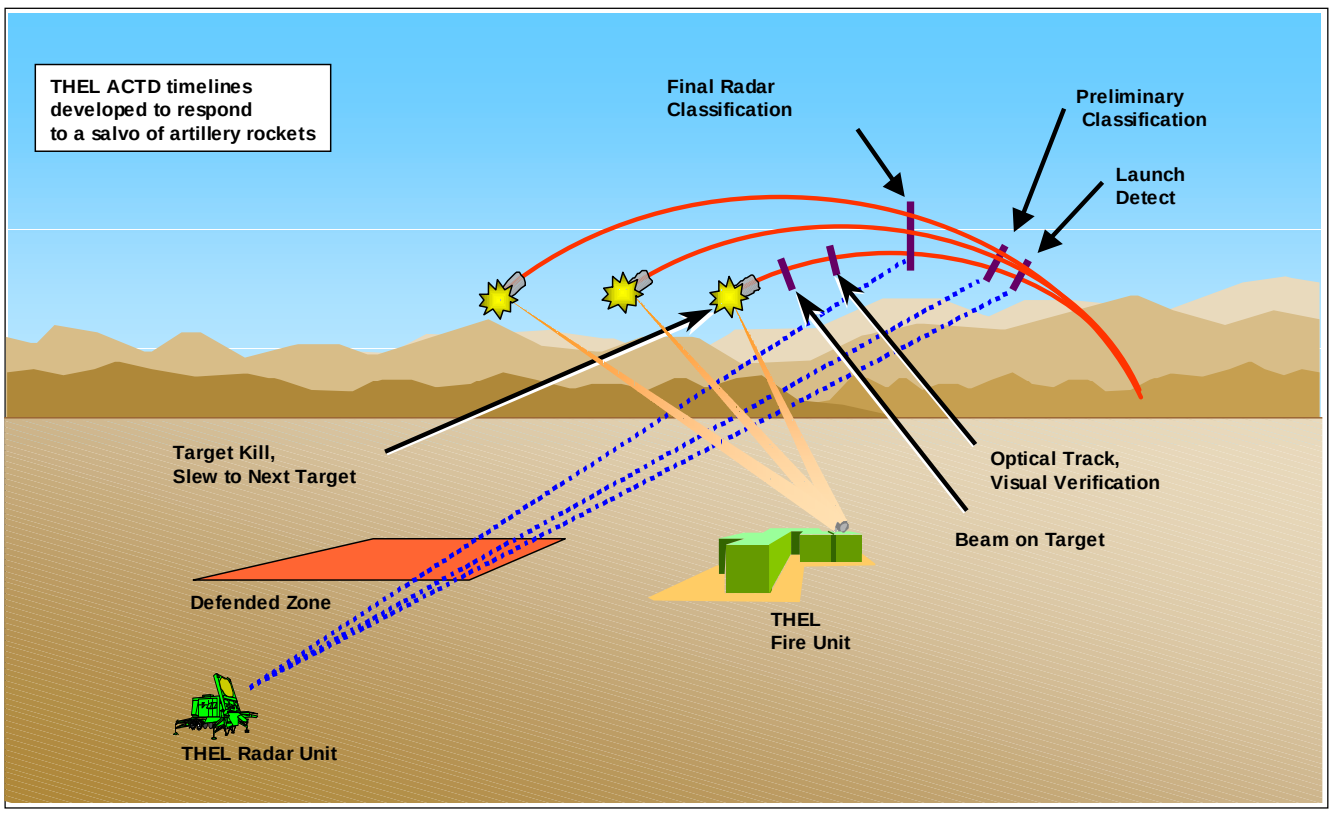
Knowledge, camaraderie, and esprit de corps are essential to filling the void in the professional lives of officers designated to FA 40. "We have to create a community for space officers that is as equivalent as we can make it to the one they left from their basic branch," said Collins. We want to fill that void so, "…they won't ever regret that they were once an artilleryman, and are no more, or once an armor officer, and now no more," he said. We want them to say, "Yes, I was once armor, and I enjoyed that, but now I'm a space officer, and I enjoy that also."

THEL test tracks, hits multiple rockets

White Sands Missile Range, N.M.—The Tactical High Energy Laser (THEL) demonstrator successfully tracked and destroyed a salvo of two Katyusha rockets on August 28 and again on Sept. 22. The tests were the first time the THEL system shot down multiple rockets in the air at the same time. The tests were a follow-on to the successful single rocket shootdown of June 6.

The THEL, a joint Advanced Concept Technology Demonstration (ACTD) program between the United States and Israel, is designed to negate the threat posed by Katyusha rockets to populated areas in northern Israel.

In July 1996, the U.S. Department of Defense (DOD) and the Israeli Ministry of Defense (IMOD) signed a memorandum of agreement which spelled out the development and functional testing of a THEL demonstrator. The THEL consists of subsystems that include a laser, a pointer-tracker, a command, control, communications and intelligence (C3I) center, and a fire control radar. TRW, Inc., is the prime contractor.



This graphic depicts how the various components of the demonstration THEL system work.

The U.S. Army Space and Missile Defense Command is the DOD executive agent for the joint THEL/ACTD program.

After development, testing and evaluation, the demonstrator will be available for shipment to Israel.

Space officers graduate from first course

by Don Montoya
Colorado Springs, Colo.

The U.S. Army Space Command (ARSPACE) recently achieved a milestone when it graduated the first class of a new space operations officer course for the Army's new Functional Area 40.

The first Interim Space Operations Officer Course (ISOOC) held from June 26 through July 14 in Colorado Springs, Colo., was composed of 11 military officers and one GS-12 civilian.

The course was developed and conducted by the U.S. Army Space and Missile Defense Command (SMDC) Battle Lab.

"The three-week course was laid out with the first two weeks being hands-on training here in Colorado Springs," said Lt. Col. Brad Baehr, chief of the Concepts and Initiatives Division, U.S. Army Space and Missile Defense Command Battle Lab, who was the course director and designer.

"Students were exposed to various aspects of military space operations including threat capabilities, in addition to experiencing hands-on training on space analysis tools and specific space equipment," he said.

During the third week of the course the students went to Washington D.C., and visited various national organizations that deal with space, such as the National Reconnaissance Office, the National Security Agency, National Imagery and Mapping Agency, and the Army Space Program Office. They were introduced to what those organizations do and how they as space operations officers would affect the Army's use of space.

Although similar courses are offered both through an inter-service education program and at the Command and General Staff College, there wasn't one that fit the space operations officer requirements, Baehr said.

According to Baehr, officers currently entering FA 40 have limited opportunities for formalized Space training until the formal qualification course is begun next summer.

"So the question was how do we give these soldiers training to make them value-added to the commander once they arrive in a given unit," he said.

The answer is this new interim course, the genesis of which occurred last year after discussions with Lt. Gen. John Costello, the SMDC commanding general.

Graduates pose with the creators of the first Functional Area 40 Interim Space Operations Officer Course: (Front row, left to right) Maj. Dave Wilson, Maj. Scott Cuthbertson, Maj. Floyd Light, Maj. Joseph Bolton, Capt. Victoria Miralda, and Candice Simon. (Back row) Andy Zagars, Maj. Bryan Boyce, Maj. Chris Baker, Lt. Col. Brad Baehr, Capt. Joel Humphreys, Maj. Dawn Eisert, Willie Breazell, Maj. Joe Maier and Keri Clark.

"He asked if the Battle Lab would be able to accomplish this mission of setting up an interim, tactically oriented course," said Baehr. In six months the Battle Lab put it all together.

"We worked very closely with the SMDC Force Development and Integration Center (FDIC) in Arlington, Va., who are developing the actual qualification course. We worked with ARSPACE, the Air Force and about 20 different agencies to put this together," he said.

More than half of the nearly 30 instructors were subject matter experts from outside the Army. Whether it was orbital mechanics or imagery the right instructors were brought in. In addition, various people came to observe the class in progress.

The benefit of all this, Baehr stated, was that everything done for the course has been turned over to FDIC to use as a baseline to help them develop the formal course due out by next June.

"Everything that the students learned about Space Operations is on five compact discs," said Baehr. "They have this to use with their laptop computers and help them do their job. That's unique! There are only 12 sets and each student has one."

The other great value of the class, Baehr pointed out, is that this first group of Space Operations Officers got to meet and network with each other. The end result was the realization that once they walk out the door they are not on their own.

"We have provided them with mission skills and the knowledge of how and whom to contact for continued support," he said.

"We try to give them as many skills and [contacts] to call ... so they don't feel they are on their own. And that's probably the thing that makes me feel the best. Everyone left here feeling more confident compared to when they came in," said Baehr.

Some of the new Space Operations Officers have been assigned to tactical units to include XVIII Airborne Corps, Fort Bragg, N.C., and Eighth United States Army, Yongsan, Seoul, Republic of Korea. "We already have one FA 40 assigned to I Corps at Fort Lewis, Wash.," said Baehr.

The other students are going to staff assignments throughout the Army.

A follow-up to the initial critique is slated for three- to six-months out. All the students will send a critique from the field so Baehr and company can evaluate if what was taught was valid.

"Maybe there is instruction we did here that they haven't used so we won't recommend that be included in the long course," said Baehr.

Baehr worked with a team composed of contractor consultants and others to create the interim course. Some of those individuals included Chuck Purkiss and Willie Breazell, consultants with TASC/Litton; Andy Zagars, consultant with STA; T.I. Weintraub, a consultant with Lockheed Martin Corp.; Lt. Col. Larry Fallen and Lt. Col. Jerry Cole from FDIC; and Keri Clark, an administrative assistant at SMDC Battle Lab.

"That team did all the work," Baehr said. "They sat down with me and we mapped out the program of instruction and did all the development and coordination to put it together."

SMDC participates in procurement preference program

The federal government purchases billions of dollars in goods and services each year that range from paperclips to complex space vehicles. It is the policy of the United States, expressed in the Small Business Act (P.L. 85-536), that all small businesses have the maximum practicable opportunity to participate in providing goods and services to the federal government.

The Small Business Administration (SBA) is responsible for ensuring that the statutory government-wide goals are met. To ensure that small businesses get their fair share, the SBA negotiates annual procurement preference goals with each Federal agency and reviews each agency's yearly results. These results are then reported to Congress and to the President.

The annual procurement preference goals negotiated between the SBA and the Department of Defense are further negotiated between the DOD and the Department of the Army and then between the Army and its major commands such as the Army Space and Missile Defense Command (SMDC). The goal percentages are applied to total contract dollar obligations. Our command's goals for 2000 are:

- 18% - total small business
- 11.5% - small business set-aside
- 5% - small disadvantaged businesses
- 5% - women-owned small businesses
- 1% - HUB Zone small businesses
- 5% - historically black colleges and universities and minority institutions.

The SMDC has had a great year so far. We have exceeded all our goals except one and are making progress toward it. Mr. Mark Lumer's HUB Zone Basic Ordering Agreement (BOA) initiative has generated considerable interest around the country, as well as within the HUBZone small business community. This initiative placed BOAs with 48 firms in 17 states. Contact Ms. Nicole Baugh at (256) 955-4985 for BOA information.

For information regarding any aspect of the federal small business program as it affects SMDC, contact either Mr. John Ralls or Ms. Christine Smith at (256) 955-3412. They can also be reached by fax at (256) 955-2654 and by e-mail at john.ralls@smdc.army.mil and christine.smith@smdc.army.mil.

The command website contains additional small business information and business opportunities at (http://www.smdc.army.mil).

Army officer to take third flight

ARSPACE teams with NASA again

by Don Montoya
Colorado Springs, Colo.

U.S. Army Space Command is lending a helping hand to NASA during the continuing construction of the International Space Station in October. This help comes in the form of Col. William McArthur, an astronaut in the ARSPACE program, one of five mission specialists out of a crew of seven flying aboard STS-92 on the Space Shuttle *Discovery*. (The launch of *Discovery,* set for the evening of Oct. 5, was delayed until after publication deadline.)

McArthur is currently one of six mission specialist astronauts from the ARSPACE Army Astronaut Detachment located at NASA's Johnson Space Center in Houston, Texas. This detachment supports NASA's Space Shuttle and International Space Station Programs.

A veteran of two space flights, he has logged 354 orbits of the Earth and traveled 9.2 million miles in 22 days, 4 hours, 44 minutes and 45 seconds.

During this historic 11-day mission on STS-92 he joins Brian Duffy, commander; Pamela Melroy, pilot; Koichi Wakata (Japan/NASDA), mission specialist; Leroy Chiao, mission specialist; Peter Wisoff, mission specialist; and Michael Lopez-Alegria, mission specialist. The crew will deliver an exterior framework called the Z-1 Truss and a third mating adapter to the International Space Station.

STS-92 will begin the "heart" of station construction in orbit, attaching these two major components.

The new truss houses four gyroscope devices that will become the station's primary "sense of balance," and Ku-Band communications equipment. The truss contains parts of both systems, but the full systems will not become active until the STS-102 mission.

McArthur and crew will attach the truss and mating adapter using the robotic arm, and then the astronauts will perform four space walks to hook up electrical lines, computer connections and other finish work.

As an added bonus to the mission, the crew of STS-92 will also have the distinct honor of being on board the 100th shuttle flight.

McArthur was assigned to NASA at the Johnson Space Center in August 1987 as a Space Shuttle vehicle integration test engineer. His duties involved engineering liaison for launch and landing operations of the Space Shuttle. He was actively involved in the integrated test of the flight control system for each orbiter for its return to flight and was a member of the Emergency Escape and Rescue Working Group.

Selected by NASA in January 1990, McArthur became an astronaut in July 1991. Since then, McArthur has held various assignments within the Astronaut Office including: working issues relating to the solid rocket booster, redesigned solid rocket motor, and the advanced solid rocket motor.

He served as Chief of the Astronaut Office Flight Support Branch, supervising astronaut support of the Mission Control Center, prelaunch Space Shuttle processing, and launch and landing operations.

He served as a mission specialist on STS-58 on the seven-person life science research mission aboard the Space Shuttle *Columbia* in October 1993. McArthur served as a mission specialist on STS-74, which involved NASA's second Space Shuttle mission to rendezvous and dock with the Russian Space Station *Mir* in November 1995.

Photo courtesy of NASA

Astronauts Col. William S. McArthur, Jr. (left) and Koichi Wakata train in the Virtual Reality Laboratory at the Johnson Space Center's Systems Integration Facility.

Individual Mobilization Augmentees earn retirement points

by Steven K. Gover
Huntsville, Ala.

Members of the Individual Ready Reserve, Reserve Component troop program units, and soldiers separating from active duty also have another means by which they can earn points toward retirement. Individual Mobilization Augmentees (IMA) have a unique way of earning retirement points.

IMAs are different because they drill for retirement points only, not for pay, according to Lt. Col. George Adams, detachment commander for the 184th IMA. The unit provides an excellent opportunity for those whose family life or job prevents them from participating in a troop program unit. "You don't have to devote one weekend a month or two weeks in the summer," said Adams. "The driving factor is to get retirement points, and there's no problem getting [enough] retirement points for a good retirement year," he said.

The 184th, located in building 3459, meets every Tuesday evening from 5:30 to 7:30 p.m. Its activities are similar to other IMA units.

The detachment has a dynamic training schedule that covers topics such as: military history, leadership, military book reviews, and community service. "Recently," Adams said, "we had a Russian veteran of the Battle of Stalingrad [speak]. We had a wonderful time reliving his experiences," he said.

IMAs who want to serve active duty tours have no problems, according to Adams. The unit is a clearinghouse for active duty tours in search of IMAs to fill them. "There are always tours for Army special projects, disaster relief and overseas tours for qualified soldiers," said Adams.

To find out more about the IMA program, or to learn more about the 184th, individuals can call Sgt. 1st Class Barnes at (256) 876-3666 or go to the detachment website at: www.imad.redstone.army.mil.

Officer promotions to major announced

Congratulations are in order for the following officers for their selection for promotion to Major:

Jerome J. Driscoll	ARSPACE
John M. Eggert	USAKA
William M. McLagan	ARSPACE
Edward J. Oneill IV	SMDC HQ
James D. Patterson	ARSPACE
Robert J. Phillips	FDIC
Kelly C. Spillane	FDIC
Terry Torraca	ARSPACE

ARSPACE building costs $24.5 million

Ceremony marks start of construction

USSPACECOM PAO

PETERSON AFB, Colo. - The U.S. and Canadian North American Aerospace Defense Command, U.S. Space Command, and U.S. Army Space Command broke ground July 6 for the new Peterson Air Force Base space complex. The ceremony underscored the importance of space as an integral part of our nation's defense, joint service operations, and the continued resolve of two nations to protect their homelands.

Pitching the first shovels of dirt were Rep. Joel Hefley, R-Colo., whose district includes Peterson AFB; Canadian Forces Lt. Gen. George Macdonald, deputy commander in chief, NORAD; Vice Adm. Herbert A. Browne, deputy commander in chief, USSPACECOM; Lt. Gen. John Costello, commander, U.S. Army Space Command (ARSPACE) and Army Space and Missile Defense Command; Brig. Gen. Carl Strock, commander, Northwest Division, U.S. Army Corps of Engineers; and Mr. David White of the construction firm of Swinerton and Walberg.

In his opening remarks, Congressman Hefley set the day's tone when he emphasized the importance of the construction project and the significance of NORAD and space to our nation's defense. "As we look to defense of the future, we don't want facilities that are based in the past. We want facilities that match the mission that we have in the future," he said.

The two new buildings, and the current Air Force Space Command headquarters, will be centralized in a campus-like area allowing for easy access among the buildings. Locating the new ARSPACE building on Peterson AFB will improve coordination and communications with other elements of U. S. Space Command located here. It will also unify all the currently separate ARSPACE and Army Space and Missile Defense Command elements in Colorado Springs. The new buildings will also house a larger Naval Space Command planning element, although its headquarters will remain in Dahlgren, Va.

The new ARSPACE headquarters building will house approximately 315 military and civilian personnel and contain slightly more than 100,000 square feet. The facility will be used for headquarters functions as well as operational missions conducted by ARSPACE and other elements of the Army Space and Missile Defense Command in the Colorado Springs area.

Lt. Gen. Costello expressed excitement about moving onto Peterson AFB saying it would allow ARSPACE to be a part of the team. "It is a symbol of jointness and of working together as a joint team doing the nation's business," he said.

According to Vice Adm. Browne, the importance of this close and immediate coordination cannot be understated, especially in an era of high tempo military operations.

"Today it takes almost three days in terms of travel time to have a two-hour meeting in Colorado Springs with the commander in chief. Now they will be able to gather together relatively quickly in the headquarters and work very important issues," he said.

The new combined headquarters building for NORAD and U.S. Space Command will be approximately 133,000 square feet. The current headquarters building holds 675 people, though the building was only designed to accommodate 450 people. The new headquarters will accommodate more than 800 staff members who will support the NORAD and U.S. Space Command missions.

"The two commands work hand in glove on several key areas, therefore it's good to have the staffs working together in one spot," said Lt. Gen. Macdonald.

Perhaps more importantly, the new buildings symbolize the enduring 42-year partnership that NORAD has become for the common defense of North America. In fact, the NORAD agreement was extended last month for another five years by the governments of Canada and the United States.

Macdonald stressed the importance of the bi-national resolve saying, "Here in North America it has always been clearly understood that the defense of our two homelands could be accomplished far better through cooperation between two great friends and allies."

The new buildings also include space for the new U.S. Space Command computer network defense and attack missions. "Really with this, we are at the cutting edge of what defense is in a modern age," said Hefley.

The U.S. Army Corps of Engineers awarded a contract of $55.7 million to the Arvada, Colorado-based construction firm of Swinerton and Walberg on March 29. The project includes $31.2 million for the NORAD and USSPACECOM headquarters and $24.5 million for the ARSPACE headquarters. The buildings will be located next to the Air Force Space Command headquarters. Consolidating operations on Peterson AFB will save the miltary $2 million annually in rent.

Swinerton and Walberg will team with Merrick for engineering and RNL Design for architectural work. Both firms are from Denver. Construction is expected to be completed by the fall of 2002.

Groundbreaking starts European construction

by Don Montoya
Colorado Springs, Colo.

A July 10 groundbreaking ceremony in Stuttgart, Germany, advanced a project to combine Army Space Command-Europe (ARSPACE-Europe) and the Defense Information Systems Agency- Europe (DISA-Europe) into a Communications one stop shop that will occupy two buildings being constructed adjacent to DISA-Europe's main building on Patch Barracks.

The two buildings will look like one from the outside, but one building will house ARSPACE-Europe and the other will be used by DISA-Europe.

"These buildings will be what they call the one-stop shop for communications for 24 hours a day, seven days a week support to the warfighter, " said William Galvan, director of the ARSPACE Regional SATCOM Support Center Europe.

The new project's objective is to physically combine two previously separate entities. ARSPACE currently works in an area separated from DISA-Europe to provide satellite communication support. DISA-Europe's mission is to provide terrestrial communication support.

"Neither of those alone could serve the warfighter without the support of the other," Galvan said.

Galvan introduced many of the project leaders in the short ceremony, and each got a chance to don red hard hats and yellow gardening gloves to dig the first soil for the foundation.

The project planning started nine months ago, with the price tag going beyond the budget of both organizations. This necessitated plans for the two buildings to be redone many times before an agreement was reached.

"It has been nine months of discussing, talking and planning a difficult but successful project," said Christoph Melchers, head of the German Housing Authority. "Now is the time for doing, and if you want to move in near February 2001, we can't discuss plans anymore."

"I hope that's why we're breaking ground," said DISA-Europe director Col. Stephen Klinefelter.

Col. John Klemencic, commander of Army Space Forces, traveled from Colorado Springs, Colo., to witness the ceremony.

"The Army is getting a tremendous bang for its buck in this facility," said Klemencic. "All of the other ARSPACE offices are looking to this one because it is so successful."

ColonelStephen Klinefelter (left), commander, Defense Information Systems Agency-Europe; Col. John Klemencic, commander, Army Space Forces; and Christoph Melchers, head of the German Housing Authority, perform the traditional groundbreaking to begin construction on the new ARSPACE and DISA-Europe facility.

Exercise improves NMD development

by Tom Mahr

SCHRIEVER AFB, CO – "Today's exercise had two purposes," explained Maj. Tom Anderson, of the U.S. Army Space Command plans division. "Our first goal was to examine the importance and impact of the rules of engagement on the North American Aerospace Defense Command (NORAD) and U.S. Space Command (USSPACECOM) ability to carry out their assigned missions of defending North America against a variety of ballistic missile threats. Our second goal was to give those of us in the operational community a chance to practice critical operational decisionmaking using the current version of the National Missile Defense (NMD) battle management software."

More than two dozen people participated in Battle Planning Exercise (BPEx) 00-03 held at the Joint National Test Facility of the Ballistic Missile Defense Organization on August 16. Organized and executed by the Army Space Command, BPEx 00-03 was the eighth in a series of exerciess sponsored by USSPACECOM and hosted by the Joint National Test Facility to fine-tune the battle management/command, control and communications (BM/C3) system being developed for the national missile defense system.

The exercise brought together a number of NMD operators including USSPACECOM, NORAD, Air Force Space Command, Army Space Command and the Army National Guard with several DOD and contractor members of the developer team for discussions, table top exercises and exercises using the prototype NMD battle management/command and control software.

Participants were extremely positive about the results of the exercise. Many discovered how valuable it is for operators and developers to discuss the rules of the game, especially with a mission to defend North America against intentional and accidental missile attacks.

"As an NMD warfighter, it is especially important to understand the big picture so I can best apply my skills in the fire direction center," said Capt. Sean Johnson of the North Dakota Army National Guard. "BPEx 00-03 gave me an excellent opportunity to better understand the rules of engagement and to refine my tactical skills on the BM/C3 system."

Johnson, along with Maj. Kevin Iverson and SSgt. Reed Unterseher, represented the North Dakota Army Guard, while Sgt. 1st Class Bill Amidon represented the Alaskan Army National Guard. North Dakota and Alaska are the two states that are most likely to operate the ground-based portion of an NMD system, if a decision is made to deploy one.

The Joint National Test Facility is the Ballistic Missile Defense Organization's premier modeling, simulation and test center. The facility is focused on interservice, interoperability and integration aspects of the nation's national and theater missile defense programs.

"The BPExs are conducted here in the Joint National Test Facility to enable us to take advantage of the BM/C3 Element Laboratory's operational software and analytical tools," explained Maj. Stuart Strong, program manager for the BM/C3 Element Support Center and BM/C3 Element Laboratory.

Lt. Col. Stephen Sovaiko, assigned to NORAD/USSPACECOM's Cheyenne Mountain Operation Center, summed up his experience: "This exercise was important because it focused our attention on ways the national command authorities might use a national missile defense system to counteract a wide range of possible threats to North America. The exercise also revealed a lot of policy work which remains to be done on engagement doctrine."

Canadian Forces Maj. Gen. David Bartram, NORAD's director of operations and the exercise commander-in-chief, agreed with and under- scored Sovaiko's observations. "Recommendations will flow from the exercise to the NORAD and USSPACECOM staffs which will ultimately be reflected in ballistic missile defense concepts of operations and/or requests for changes or clarifications to the rules of engagement for ballistic missile defense."

(DOD photo by Carol Floyd)

Practice makes perfect

SCHRIEVER AFB, CO – Participants in Battle Planning Exercise 00-03 hone their skills on prototype national missile defense battle management/command and control software. Pictured from left to right are: Army Maj. Tom Anderson, U.S, Army Space Command; and Army Lt. Col. Sherry Carpenter, Army Col. Steven Bowman and Army Maj. Patrick Frakes, all of the NORAD/ USSPACECOM Cheyenne Mountain Operations Center.

New SMDC major subordinate element to identify industry technologies for DOD

SMDC PAO

The Army Space and Missile Defense Command (SMDC) recently established a new major subordinate element (MSE), the Office of Technical Integration and Interoperability (OTII). Bill Reeves, head of SMDC's Weapons Directorate, will lead this effort along with other highly qualified people from SMDC and the Program Executive Office for Air and Missile Defense (PEO AMD).

The broad charter of this office is to perform the critical function of identifying technology efforts with the Department of Defense (DOD) and industry. The office will also focus on and leverage ongoing and projected technology efforts in missile defense and space.

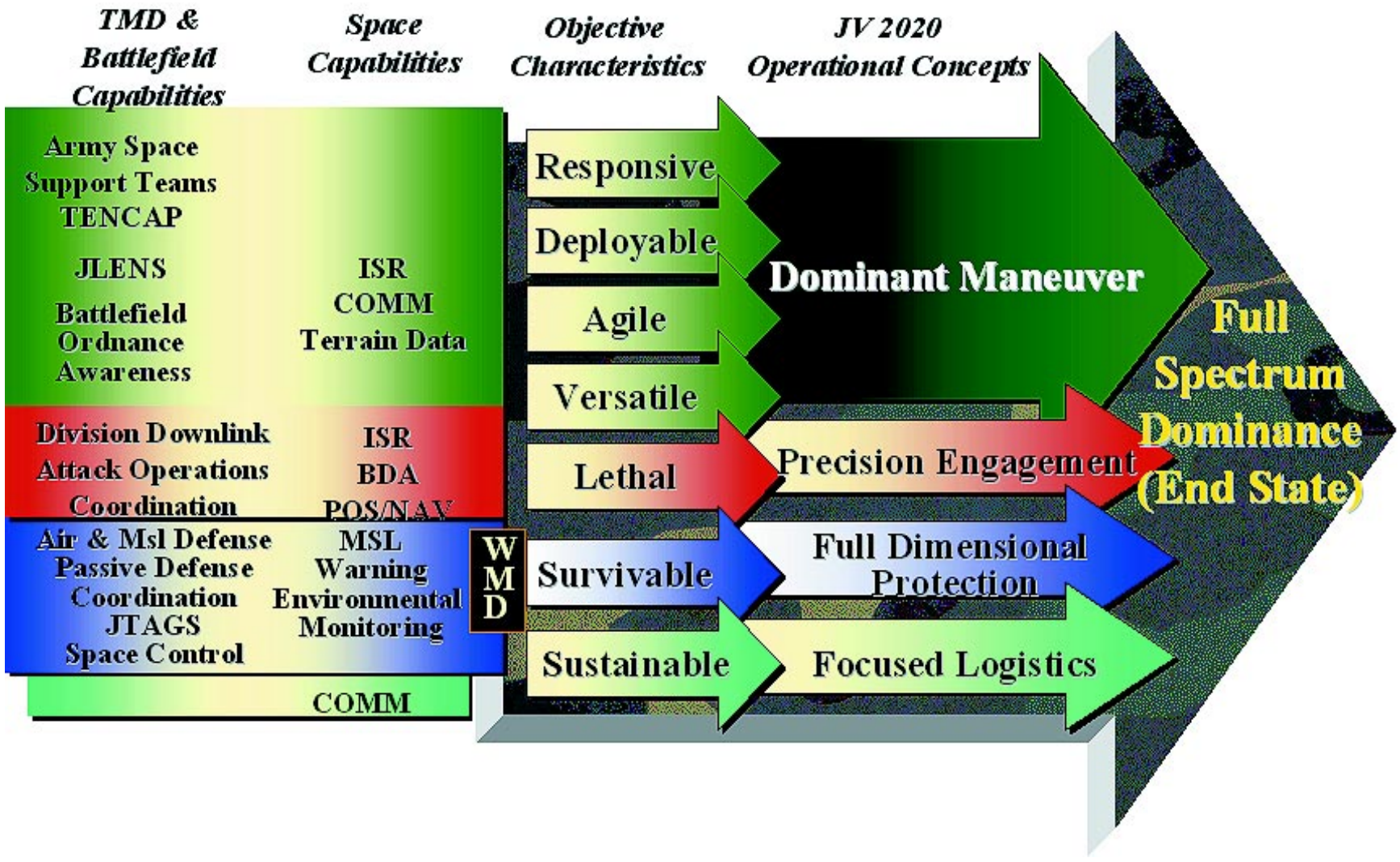
OTII will serve as a critical outreach center to other Army agencies, other DOD organizations such as the Defense Advanced Research Projects Agency (DARPA), other national agencies such as the National Reconnaissance Office (NRO) and the National Imagery and Mapping Agency (NIMA), and industry. The director of OTII is responsible for providing the commanding general a prioritized technical road map by which the command can execute key aspects of its strategic plan.

Additionally, the OTII will act as the support center and subject matter expert in support of the newly created Single Integrated Air Picture Systems Engineer Organization (at the PEO AMD) The OTII director is responsible to coordinate the Army's technical interoperability solutions, coordinate emerging and changing theater air and missile defense requirements and make key recommendations on priorities and resource allocations.

In both capacities, the OTII director will report directly to the SMDC commanding general and the deputy commanding general for acquisition. The OTII is a special MSE, similar to that of the TRADOC Systems Manager Office, and has broad coordinating and integrating responsibilities across the command.

AUSA '00 Annual Meeting

U.S. Army Space and Missile Defense Command in 'tune' with Army's Transformation messages



When the 2000 Association of the United States Army commences its Annual Meeting and Exposition in Washington, D.C., the U.S. Army Space and Missile Defense Command (SMDC) will offer an opportunity to the Army leadership, soldiers, and the public to view some of the latest developments in space and missile defense technology being devised for the warfighter today.

The Cotillion Foyer of the Marriott Wardman Park Hotel will be filled with space and missile defense demonstrations Oct. 16-18. SMDC will show many of the latest innovations to ensure soldiers fight and win better and safer on the battlefields of the future.

U.S. Army Space and Missile Defense Command (SMDC)

The U.S. Army SMDC, one of the Army's newest major commands, best represents the theme of this year's AUSA exhibit: "Transforming the Army for the 21st Century." SMDC is at the forefront of working to provide digital technologies to the Army's corps-level and below commands—where the soldiers need it most.

Space & Missile Defense Battle Lab

The Space and Missile Defense Battle Lab leads off the U.S. Army SMDC exhibit with many commercial, off-the-shelf products that can transform today's soldier into tomorrow's Objective Force. Join our soldiers as they take you along on a hypothetical deployment to geographical areas that would protect U.S. interests during a contingency. You'll see how these space products can work throughout the stages of pre-deployment planning, deployment, and initial operations to help make the tough jobs our soldiers face easier and safer.

Army Space Support Teams

The Army Space Support Teams bring the latest technologies to the warfighters in the field.

These teams, fielded by the Army Space Command, will be led by trained *Space Operations Officers* from the FA 40 Army Functional Area and will take advantage of the many situational awareness and communication tools that space affords. Stop by and take time to speak with any of our four soldiers who will be standing by at our Army Space Command exhibit.

Space Control

The U.S. Army SMDC is a strong advocate of the United States having space control capabilities in a time of a national emergency. Just as the United States can use space to provide critical support to warfighters around the world, our adversaries can also use space assets to monitor, track and target U.S. troops. The United States must be able to prevent space assets from being used as a tool against us. At the same time, the Army must ensure that U.S. troops can have uninterrupted access to space products and can operate freely within the regime of space.

Kwajalein Missile Range

The Command's Kwajalein Missile Range in the Central Pacific is involved in continuous surveillance of space assets helping U.S. Space Command and NASA identify, track, and monitor the myriad space objects circling the earth today—military or commercial, friendly or foe. They even keep track of the space "junk" that resides in permanent orbit around the earth as a result of man's 40 years of space exploration.

Other areas of interest...

The Army Space Program Office is featuring one of the latest developments in the Tactical Exploitation of National Capabilities, the Grenadier Brat.

In the area of Cruise Missile Defense, the Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS), features an exhibit with computer simulation demos.

The Ballistic Missile Targets Joint Project Office has recently updated its exhibit and will have subject-matter experts addressing the latest in target missile support to the joint community.

The Tactical High Energy Laser (THEL) program is moving ahead with the government of Israel and TRW, Inc., in a joint effort to finalize the laser demonstrator and possibly move on to the development of a more mobile version.

Please stop by and visit our exhibit and find out about our many other current space and missile defense projects and developments. We are a proud team player in the Army's Transformation!

Ensuring our Army evolves into a ...

Responsive, Deployable, Agile, Versa

FOR

SMDC's exhibit includes initiatives employed during the recent Advanced Warfighting Experiment and are planned for future Army Warfighting Experiments...

Broadcast Request Imagery Technology Experiment (BRITE)

The Broadcast Request Imagery Technology Experiment (BRITE) enables Army units to access and exploit existing intelligence imagery collected by National Technical Means (NTM). The near-real-time exploitation of this imagery enhances its tactical value. BRITE provides "disadvantaged" units a capability to gain access to NTM imagery for tactical purposes.

BRITE imagery enhances a commander's ability to select the most favorable course of action before the fight, maintain situational awareness during the fight and to conduct battle damage assessment (BDA) after the fight. The exploitation of BRITE imagery can reduce casualties and increase the probability of mission success.

Precision Signals Intelligence (SIGINT) Targeting System and the Embedded National Tactical Receiver (PSTS/ENTR)

The PSTS/ENTR technology provides a means to exploit correlated Electronic Intelligence (ELINT) acquired from national and corps-level systems while providing accurate, timely targeting data to the fire support assets, with a significant space and weight savings over conventional Ultra-High Frequency (UHF) Satellite Communications (SATCOM) radios.

It also provides the commander with a sensor-to-shooter capability.

Space Operations Officer - Functional Area 40 (SOO-FA40)

The Space Operations Officer (SOO) provides the tactical commander analysis of space mission requirements including the synchronization and coordination of all available space assets to support successful mission accomplishment.

The SOO provides the tactical commander with an accurate assessment of friendly, enemy, and third party space capabilities, dispositions, and intentions in support of combat operations.

Spectral Imagery Products

Imagery products are required by the tactical commander for intelligence preparation of the battlefield, target detection, battle damage assessment, and battlefield visualization in cluttered terrain. These products provide improved perception of battlespace to operational and tactical users conducting world-wide military operations.

Spectral systems sense objects across a broad spectrum, enabling automated recognition of targets and terrain features. Results of spectral initiatives can defeat camouflage, enhance target detection, accelerate terrain analysis, detect obstacles, assess battle damage, and protect the force.

atile, Lethal, Survivable & Sustainable

Deployable Weather Satellite Workstation (DWSW)

The Deployable Weather Satellite Workstation (DWSW) receives high-resolution imagery and other data directly from polar orbiting and geostationary weather satellites. Because these satellites collect data over a very large area, the DWSW can provide needed "GO/NO GO" weather-decision products for a battlespace several thousand miles away.

DWSW provides commanders the timely and accurate weather imagery and data needed to plan and execute military operations. It also provides mission-focused digital weather and weather effects products across the Army Battle Command Systems (ABCS).

Enroute Mission Planning and Rehearsal System (EMPRS)

During deployment, EMPRS provides the deploying tactical commander and his staff with secure two-way data, voice, and imagery information between aircraft in flight, headquarters planning staff elements at home, advanced reconnaissance teams already in the objective area, and other supporting agencies and forces.

It enables the deploying tactical commander to make changes to plans while still enroute to the objective area, and allows him to coordinate those changes with all subordinates and supporting forces. EMPRS seeks to eliminate the "information blackout" commanders now experience while enroute.

Hardware Software Integration Center/NMD Users Lab (HSIC/NMD UL)

The HSIC is a Space and Missile Defense Battle Lab technology center, supporting the integration of several initiatives into the commanders' existing command and control system. The NMD UL is an Army operated activity supporting the joint NMD user community and evaluating proposed joint DTLOM solutions.

The NMD UL provides an independent environment and capability for the operator, user, combat developer, and combat training developer to train, exercise, and experiment.

Handheld Command and Control Wireless Communications (HC2WC)

HC2WC provides near-real-time two-way communications between tactical users worldwide and the tactical operations center. Tactical commanders on the ground have the ability to track deployed combat soldiers as well as receive pertinent real-time information and intelligence from those soldiers that could prove essential to mission success.

This system provides the tactical commander on the ground the ability to track deployed soldiers, as well as receive pertinent real-time information that could prove to be the combat multiplier in the end.

'We must develop a vibrant capability for reach back communications and intelligence—to enable us to put a combat capable brigade anywhere in the world in 96 hours, a division on the ground in 120 hours, and five divisions in 30 days...'

Gen. Eric K. Shinseki
Chief of Staff
U.S. Army

PEO AMD Exhibit Features TMD "Hit to-Kill" Successes

As we enter the new millennium, the U.S. Army Program Executive Office for Air and Missile Defense (PEO AMD) is aggressively working to protect our warfighters by developing world-class systems that are technologically superior. Great strides are being made every day as we come closer to accomplishing our mission of developing a theater air and missile defense capability that, when fully fielded, will provide a near-leak-proof protection of our defended areas and deployed forces from air and missile attack.

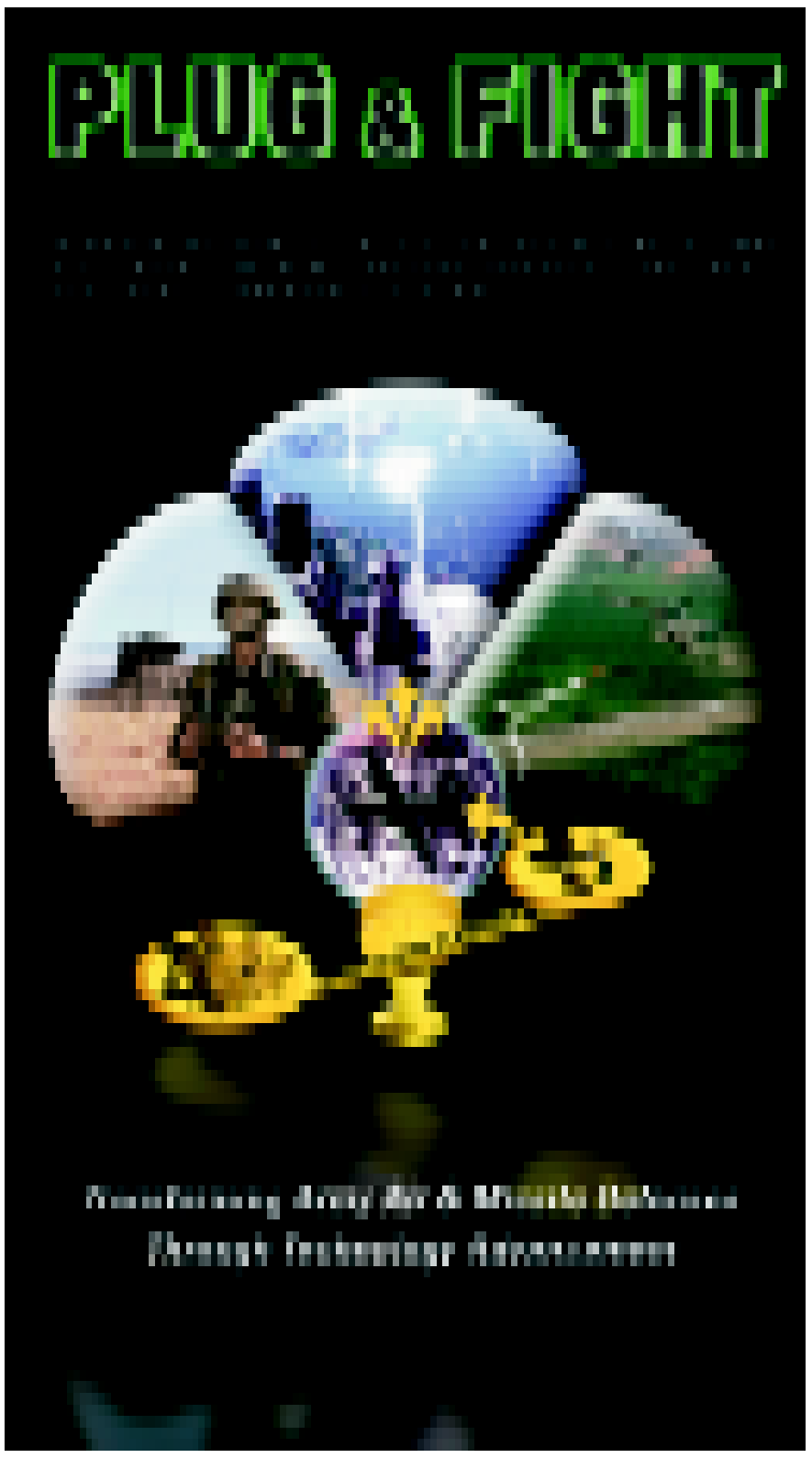
The systems being developed and tested by PEO AMD are key to our mission. By visiting our exhibit at AUSA's 2000 annual meeting, conference attendees and visitors can view our new, integrated, multimedia video presentation to receive an informative overview of each program managed by PEO AMD. The exhibit features live-flight test successes achieved in the PATRIOT Advanced Capability 3 (PAC-3), Theater High Altitude Area Defense (THAAD), and Arrow programs. In addition, an impressive, full-scale THAAD Kill Vehicle model and a half-scale PAC-3 model will be on display. New for this year's conference is a dramatic 6- by 4-foot, backlit, graphic panel that amplifies the Army Chief-of-Staff's vision of "Transforming the Army for the 21st Century." Brigadier General John Urias, the PEO for AMD, has implemented a "Plug & Fight" concept that is intended to execute the air and missile defense portion of the Army plan. The graphic panel illustrates PEO AMD's goal of developing and deploying systems/system components that are lighter, rapidly transportable, and easily reconfigured—yet retain the required lethality and survivability criterion of future battlefields. Our senior staff will also be on hand to discuss the latest developments in our theater air and missile defense programs and answer any questions you may have.

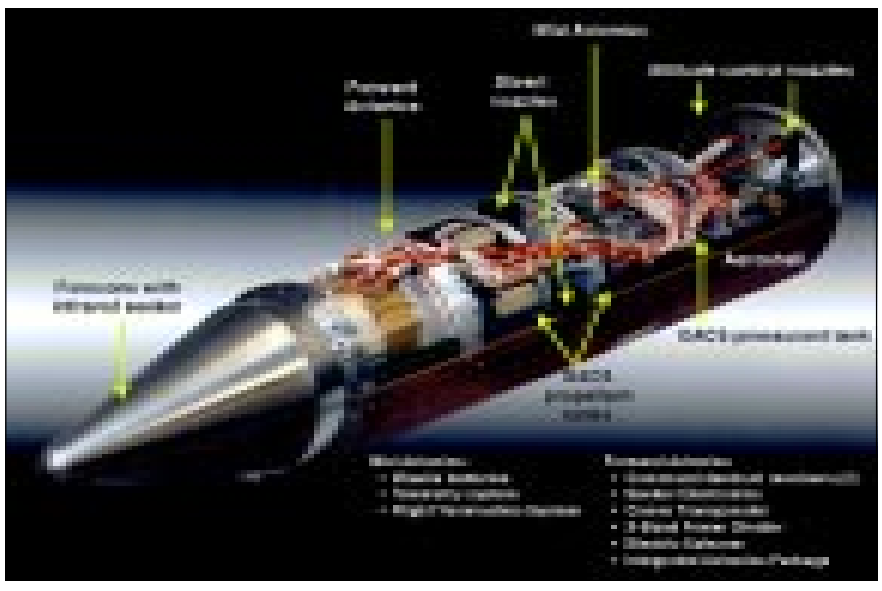
The PEO AMD is responsible for the materiel development and fielding of air and missile defense elements that comprise the Army's Theater Air and Missile Defense (TAMD) segment. Lead by the PATRIOT Project Office, PEO AMD has compiled an impressive flight test performance record over the past 18 months. During this span, seven successive target engagement attempts (four PATRIOT, two THAAD, one Arrow) have resulted in target intercepts. Before these elements ever see combat, however, vigorous component and system testing is performed to ensure that the user's operational requirements are met or exceeded. Weapon system and/or sensor test and evaluation programs begin early in a program's life-cycle model and continue through engineering and manufacturing development and production. Each test phase has different objectives, and as milestones are achieved, the objectives increase in complexity. To this end, and in partnership with the Ballistic Missile Defense Organization (BMDO), PEO AMD has been tasked to integrate and field Army TAMD systems that will enable our soldiers to defeat air and missile threats whenever and wherever encountered. Listed below are a few facts and highlights from each of the project and product offices that comprise PEO AMD.

PATRIOT: PATRIOT's mission is to defend the "lower-tier" of the TAMD architecture. This includes defending troops and fixed assets from short- and medium-range ballistic missiles, cruise missiles, and other air-breathing threats such as fixed- and rotary-wing aircraft. PATRIOT initially focused on air defense rather than missile defense, but the changing battlefield and increased threat posed by tactical ballistic missiles spurred improvements and modifications needed to refocus on the TBM threat. Today, the effort to improve PATRIOT's missile defense capabilities continues as the latest version, PAC-3, nears completion. PAC-3 has achieved five successful intercepts, including three against Hera ballistic missile targets. The PAC-3 interceptor recently passed a critical technical milestone, demonstrating for the first time the successful "hit-to-kill" destruction of an air-breathing drone configured as a cruise missile.

THAAD: The THAAD system provides the "upper-tier" response for the Army's two-tier Theater Missile Defense concept. The higher altitude and theater-wide protection furnished by THAAD combines with lower-tier systems to provide a near-leak-proof missile defense of critical, high-value assets. THAAD provides the most mature upper-tier system and will intercept enemy TBMs in both the high endo- and exoatmospheric regions. This capability will enable THAAD to destroy incoming TBMs at longer ranges from defended assets, allow for multiple-shot opportunities, and minimize the likelihood of damage from weapons of mass destruction and falling debris. Two successive THAAD intercepts of TBM targets were achieved between June and August 1999. Based on these successes, THAAD has entered the Engineering, Manufacturing, and Development (EMD) acquisition phase. Flight tests using EMD hardware are scheduled to take place in 2004.

Arrow: The Arrow Weapon System (AWS) mission is to support the Israeli Government in developing a TMD system to defend Israel. The U.S. provides technical expertise to aid in AWS risk reduction. Knowledge gained from the joint effort also yields benefits in furthering risk reduction of U.S. system development. Arrow has an engagement footprint somewhere between the U.S. PAC-3 and THAAD systems and functions effectively in the upper reaches of the earth's atmosphere. The Arrow interceptor uses a blast fragmentation warhead to eliminate incoming missiles, as opposed to the kinetic energy, hit-to-kill warheads employed in PAC-3 and THAAD. The first successful intercept of a TBM target was achieved in November 1999, and the first pair of AWS batteries was deployed in March 2000. Continuing through 2001, the Arrow Deployability Project will be the cornerstone for U.S. and Israeli ballistic missile defense cooperation.





The THAAD Kill Vehicle model will be on display.

MEADS: The Medium Extended Air Defense System (MEADS) will defend maneuver forces and fixed assets from attack by short-range ballistic missiles, large-caliber rockets, cruise missiles, and other air-breathing objects such as aircraft or unmanned aerial vehicles. MEADS' role in the ballistic missile defense architecture will be to bridge the gap between low-altitude air defense systems, like STINGER, and higher levels of the missile defense structure covered by PATRIOT and THAAD, while providing continuous coverage for rapidly advancing maneuver forces. MEADS will be rapidly deployable, have greater firepower, and require less manpower than its predecessors. MEADS is an international venture between the United States, Germany, and Italy, and its management organization charter was established under NATO in 1996.

JTAGS: The Joint Tactical Ground Station (JTAGS) provides the theater commander-in-chief with a deployable, in-theater capability to receive, process, and disseminate space-based infrared sensor information on TBM launches and other events. JTAGS is currently fielded overseas as well as to CONUS-based contingency units. JTAGS is a key part of CINCSPACE's Tactical Event System and is operated by joint Army-Navy crews, providing continuous, all-weather threat monitoring.

Transforming the Army for the 21st Century—the theme of AUSA 2000—is the challenge we face to meet a changing world and an increasingly diverse, lethal, and proliferating multiple-platform air and missile threat. PEO AMD embraces the responsibility of countering this threat by developing, integrating, acquiring, and fielding TAMD systems to meet the current and future needs of the U.S. Armed Forces and its allies. We are dedicated to equipping our warfighters with the best state-of-the-art defense technology available, while continuing to investigate emerging technologies that will make our platforms more lethal, survivable, and transportable. With each milestone we reach, we come closer to realizing our ultimate goal—achieving full integration into the Joint TMD Family of Systems.

SMDC Quality Awards net winners

by Marco Morales
Huntsville, Ala.

Ms. Donna Burnette receives the Commander's Quality Award on behalf of the U.S. Army Kwajalein Atoll/Kwajalein Missile Range from Lt. Gen. John Costello, the SMDC commanding general. The award was accompanied by a check for $75,000.

The U.S. Army Kwajalein Atoll/ Kwajalein Missile Range (USAKA/ KMR), the Ballistic Missile Targets Joint Project Office (BMTJPO), and the U.S. Army Space and Missile Defense Battle Lab (SMDBL) received Commander's Quality Awards July 21 for being the "best in the command." The award ceremony, held in Washington, D.C., was broadcast via a video teleconference (VTC) throughout the command.

The awards, presented by Lt. Gen. John Costello, commanding general of the U.S. Army Space and Missile Defense Command (SMDC), are designed to further the goals of the Army Performance Improvement Criteria (APIC) at SMDC.

The highest award, the Commander's Quality Award, went to USAKA/KMR. Along with an engraved bronze trophy came a check for $75,000. The award was accepted by Donna Burnett of the Kwajalein Support Directorate in Huntsville, representing Colonel Gary K. McMillen who was present via VTC. The Chief of Staff Award, earned by the BMTJPO, was accepted by Col. James D. Cambron, project manager of the BMTJPO. Cambron's organization received an engraved acrylic trophy and $50,000. The Merit Award for Quality was presented to Larry Burger, director of the SMDBL. His organization also received an acrylic trophy, and $25,000. All funds are to be used for employee enhancements.

"I am very comfortable with the fact that we have embedded in the Command a process by which we can do great work for both our Army and our nation," said Costello. "We have a defined 'road map' with goals and objectives that management has embraced."

How did these SMDC organizations succeed in APIC?

The USAKA/KMR leads the command in APIC implementation.

According to USAKA/KMR's award citation, "they attacked APIC so aggressively that they started revamping their review and analysis process during the very first APIC training session. They completed APIC Phases I and II long before anyone else, and have developed a training program, complete with a CD ROM, designed to train their entire workforce in APIC by the end of summer." One of the keys to their success was bringing the contractor community on board with APIC during the initial stages. This culminated in Colonel McMillen, Mr. John Wallace, and the senior leaders from both contractor and government organizations signing an "APIC Pledge" last April. This pledge was a sign of commitment by both parties to work together as a team in deploying APIC.

The award citation for the BMTJPO stated that they were "especially strong in their leadership direction. Colonel Cambron has long been an advocate of APIC and has taken the lead in implementing APIC in Targets. Another strength of Targets is their thorough knowledge of and great relationship with their customers. They have identified several methods for assisting customers in conducting business, seeking assistance, and voicing complaints."

The Battle Lab's award citation included their strengths in the competition, stating that "Battle Lab personnel understand their customers and what they require. A particular strength noted was that several Battle Lab programs had very effective means to deal with customer complaints, change requests, and software problems.

'Some of these means include a 24-hour telephone support line, customer surveys, and day-to-day contact with customers. They have begun to develop results data for customer and employee satisfaction."

In addition to being winners in the SMDC competition, USAKA/KMR and the Battle Lab's packages will be forwarded to the Department of the Army (DA) to compete against other Army organizations. If they are winners at the DA level their packages will be forwarded to the Office of Personnel Management for competition in the President's Quality Award.

General Costello addressed the award winners, telling them not to slow down. "This is a never-ending process, so you all can't rest on your laurels because this is only 'step two'," he said, adding, "I believe this is the only way to operate and focus our resources. And frankly, I personally believe that SMDC benefited this year from having a management plan, despite the fact that it was rather immature. The fact that we had a plan resulted in probably more resources coming our way than in recent history."

Initiated by the deputy chief of staff for Strategic Planning and Analysis (DCSSPA), the Commander's Quality Award program was developed to recognize the three top scoring SMDC organizations. This process also provides feedback comments to all program participants on their strengths and weaknesses. All MSEs, to include the SMDC staff, submitted their application packages for review. A cross-section of representatives from each MSE, the SMDC staff, and several external organizations served as evaluators.

Feedback was provided to the organizations to improve their operations.

The APIC is based on the Malcolm Baldrige National Quality Award Criteria-based framework to manage change, a tool for assessment, a means to provide integration and a common language for SMDC's internal and external communication. The assessments and competition will be performed every year. This is the first year this initiative has been used at SMDC.

Forty-four U.S. states currently have Baldrige programs and that number is expected to grow. In 1991, state programs collectively received 111 applications; in 1997, that number was 974 and the state programs trained more than 2,400 Baldrige examiners.

Internationally, 42 quality programs, most modeled after the Baldrige program, are in operation.

Many organizations, including United Way, trade associations, government agencies, and companies have created their own award programs based on the Baldrige Criteria.

"After you look at the great support that we've gotten both from the Department of Defense and the Congress of the United States, you'll agree with me that this has been an exceptional year that will allow us to do even better for our Army and our nation in the future," Costello said.

Colonel James Cambron receives a trophy and a check for $50,000 for the Ballistic Missile Targets Joint Project Office from Lt. Gen. Costello.

Mr. Larry Burger receives a $25,000 check for the SMDC Battle Lab from Lt. Gen. Costello.

SMDC People in the News

Worker saves former teacher, co-worker

A Space and Missile Defense Command (SMDC) engineer saved her former physics instructor from choking on cornbread on Aug. 17.

While eating lunch with a friend in the SMDC cafeteria, Tracey Hatcher noticed Larry Altgilbers in the next booth was "kind of looking at me," she said. "I thought there might be something wrong but I couldn't tell. When he stood up, then I knew. I asked him if he needed help and he shook his head yes."

Photo by Sandy Riebeling

It took two thrusts for Tracey Hatcher to dislodge cornbread from the throat of a choking co-worker.

Even though he was choking, Altgilbers was able to remain calm and even turned around and bent down slightly so that Hatcher could perform the Heimlich maneuver.

"I'm really short and he's got to be over 6 feet tall," Hatcher said. "I put my arms around him and pushed and nothing happened the first time. I started to get nervous because I didn't know how much time I had. I figured that he was choking when he first made eye contact with me.

"I leaned against the table for leverage and tried again. This time it worked. I was so glad. I just remember thinking, 'What if it doesn't work?' I didn't know what to do then. It was early and there wasn't anyone else around in the cafeteria except my friend. I didn't know where the phone was to call for help."

Once the cornbread was dislodged, Hatcher made sure Altgilbers was alright then quickly excused herself.

"I had to leave and go calm down," she said.

Hatcher, a general engineer in the Battle Lab at SMDC, is also 15 weeks pregnant.

"Thinking back on it now, I bet we were a funny sight," she said. "A short little pregnant woman pushing around on this big tall guy."

Later that afternoon, Altgilbers, who works in the SMDC Advanced Technology Directorate, and who had taught her class at the University of Alabama-Huntsville, tracked Hatcher down to thank her, because she never returned to the cafeteria.

Hatcher was able to perform the lifesaving rescue due to the first aid training she took while working as a swimming instructor's aide when she was 14 years old. The training immediately came to mind at the critical moment but Hatcher says she's ready for a refresher course in CPR and first aid.

"This thing has had such an impact on me. I have a 2-year-old son. I used to give him a handful of Goldfish crackers while I took a shower. I never left him alone to eat a hotdog or anything, but there's not much difference between cornbread and crackers. Now I sit with him at every meal, for as long as it takes. My husband is the same way."

Hatcher received a commander's coin from Lt. Gen. John Costello, the SMDC commanding general, for her heroic efforts.

From a Redstone Rocket article by Sandy Riebeling

Three conduct two-hour rescue off Kwajalein Atoll

by Barbara Johnson
The Kwajalein *Hourglass*

Although Jimeal Total, Bob Darrington and Henry Bulele were at the Carlos power plant for a U.S. Army Kwajalein Atoll/Kwajalein Missile Range (USAKA/KMR) mission Memorial Day weekend, they performed a rescue mission straight out of an action movie—and they became local heroes.

Total and Darrington, Kwajalein Generator Shop employees, along with Bulele, who works at the Carlos power plant, went into action when a water taxi capsized in the lagoon off Carlos May 28.

The three Raytheon Utility Department employees were honored for their heroism recently after managers at the power plant found out what had happened.

"They risked their own lives to save others," said Col. Gary K. McMillen, the outgoing USAKA/KMR commander, presenting the men with commander's coins. "These are the kind of values we are looking for—people who are willing to go the extra mile for their fellow man ... you put your own safety aside for that of your co-workers and family."

John Wallace, Raytheon site manager, also presented the three heroes with certificates of appreciation.

Total said that he, Darrington and Bulele were at the power plant on Carlos about 4 p.m. The weather that day was extremely windy, the tide was low, and high waves were crashing on shore.

He said that some people from the Assembly of God church on Ebeye had apparently spent the night on Carlos and were returning to Ebeye by water taxi, a single-engine 18-foot boat.

The heroes didn't see the boat flip over but they heard people in the lagoon and on the pier calling for help. When the men got to the pier they saw people waving for help about a quarter mile from shore.

"The boat was extremely full when leaving the pier. Just past the concrete ship the boat capsized," Darrington said.

Bulele said that there had been 11 people on board including five children. Some people were clinging to the overturned boat, but others were trying to stay afloat, fighting the waves.

"Total jumped right into the water and swam out to the victims," Darrington said. "While the waves were crashing about, Total managed to pull one Marshallese woman to shore. Still coughing up saltwater himself, Total went right back out into the lagoon and returned with another Marshallese woman. Had Total not reacted as he did, two lives would have been lost."

Photo by Barbara Johnson

Col. Gary K. McMillen presents commander's coins at a ceremony July 14 to, from left, Bob Darrington, Henry Bulele and Jimeal Total. They were honored for rescuing several people after a boating accident on Carlos Memoral Day weekend.

Meanwhile, Bulele and Darrington stood waist deep in water, with waves slamming them back, waiting to help carry people to shore. Total went back to help bring the boat in.

Then, Darrington went through the surf and made sure that the people hanging on to the boat got in safely.

One of the rescued women had her two children, ages three and seven, with her. She said that when they went into the water she received a head injury and they were thrown away from her. Her three-year-old didn't know how to swim but her seven-year-old swam over to the younger boy and brought him back to the boat. She expressed appreciation for the swim lessons her older son had received in the first grade last year at Kwajalein.

After being notified by telephone, a police boat arrived from Ebeye with a doctor, who treated several people. The boaters were all returned to Ebeye.

"I was thankful to God, because he gave us the chance to go out and help people, and save someone's life," said Total.

SMDC hosts Washington area organization day

by Rhonda Paige
Arlington, Va.

SMDC Deputy Chief of Staff Operations, Lt. Col. (P) Rick Dorsey, Gary Masters, DCSOPS, and Sgt. 1st Class John Devenger, DCSOPS acted as cooks for the day.

Nicholas Ryan, son of Col. Kevin Ryan, SMDC chief of staff, displays his personalized artwork.

Cash Snively, SMDC intelligence analyst, gets an SMDC logo painted on his forehead by a contract artist.

Dessert contest winner Rosemary Cuadras, an SMDC personnel specialist, displays her rum cake.

James Lewis, ASPO security officer, winds up a hit as John Cummings, SMDC congressional liaison officer, plays catcher.

Family, friends, food and fun were in tall order, as SMDC celebrated its tenth annual Organizational Day, Aug. 28, at Fort McNair.

Because SMDC Headquarters is located outside the perimeters of an Army installation, all manpower, assets, food and equipment needed for the day were facilitated in-house by SMDC military and civilian staff. In his opening remarks to the group, Lt. Gen. John Costello, commanding general, SMDC, noted and thanked all from the SMDC family for the hard work that was done to make the day successful.

Costello also took this, his final Organizational Day as SMDC's commanding general, to reflect on the accomplishments of the command over the past year. "For those of you who've been around you know that this has been a very productive year for the command and that we've accomplished a lot," said Costello.

"For those of you who are new to the organization, take this opportunity not only to relax and have fun, but to also meet everyone," he said.

Equal Opportunity Officer, Sgt. 1st Class Elizabeth Labuda agreed.

"Organizational Day also helps to break down barriers and provides a setting where people can relax and get to a point where they accept and talk to their co-workers in a non-threatening environment," she said.

In addition to getting to know each other better, attendees also enjoyed the fun and competition of golf, softball, horseshoes, cakewalks, soccer, volleyball, and probably most popular with the adults, the best dessert contest. SMDC Personnel Specialist, Rosemary Cuadros' rum cake took the grand blue ribbon prize in that contest. Desserts and goodies were also popular among the younger crowd, judging by the huge numbers lined up for the kids cakewalk game.

In addition to the wide array of desserts, the barbecue and all the fixings were huge crowd pleasers. 10-year-old Carla Lussier, daughter of Master Sgt. James Lussier, agreed that the games and activities were lots of fun, but that she was most looking forward to the great food just as it was at last year's event.

A variety of prizes were given to the winning ticket holders and winners of the various games and sports competitions.

The day concluded with remarks by Col. Kevin Ryan, SMDC chief of staff, and a trophy presentation to the overall sports competition winner, the Army Space Program Office.

Shopping card simplifies military exchange visits

by Gerry J. Gilmore
American Forces Press Service

WASHINGTON, Sep. 7, 2000 — Life is simpler for military exchange customers: Now there's just one charge card instead of two.

DOD mandated the consolidation of the Delayed Payment Plan charge card issued by Army and Air Force Exchange Service and the NEXCARD used in Navy and Marine exchanges, said Connie Gordon, general manager of the AAFES facilities at Fort Belvoir, Va. The Military Star Card is the result, she said.

The Star Card will be accepted at most of the AAFES, Navy, Marine Corps and Coast Guard Exchange activities, to include catalog and military clothing stores operated by AAFES and Marine Corps exchanges, Gordon said. Previously, the only exchange-issued cards that stores honored were their own command's.

"We expect the Marine Corps and Coast Guard to be opening up more sites to accept the Military Star Card very soon," she said.

AAFES, the Naval Exchange Service Command, the Marine Corps Exchange Service and the Coast Guard have approved the new card for use, she said. The official implementation date was Sept. 3, she added, but DPP cardholders in good credit standing began receiving their Star Cards in the mail weeks ago.

Customers are asked to destroy their old DPP and NEXCARD cards upon receipt of their new Star Card, according to exchange officials. Customers may still use old cards until Dec. 31; only the Star Card will be accepted after that. The Star Card cannot be used at Class VI package stores or exchange theaters. It also cannot be used at food courts, which usually are operated by contractors.

Gordon said the new card features redesigned balance statements designed to help customers better manage their accounts. The Star Card carries a 14.25 interest rate, the same rate as the cards it supercedes, said AAFES customer service agent Stacy Martinez. That rate, she said, is competitive with similar store credit cards.

Use of the Star Cards benefits the entire military, Gordon said. "The earnings that come from this card are plowed back into the military community in the form of morale, welfare and recreation dividends," she said. "It is a special benefit for customers (and) a win-win."

For more information about the Military Star Card program, visit: http://www.aafes.com.

DOD to establish food card program for troops

by Spec. Adriane Foss

WASHINGTON (Army News Service, Sept. 18, 2000)—The Department of Defense announced last month that it intends to establish a supplemental subsistence program for its service members that, if approved, should offer a more equitable deal sometime next year for troops living on or off post.

Currently, an off-post service member's Basic Allowance for Housing is included as income in the formula to determine his or her eligibility under the United States Department of Agriculture's food stamp program. For service members who live on post, however, the value of their housing is not used to determine eligibility, creating an unfair advantage based solely on where the military member resides.

However, with DOD's plan, BAH will not be a factor in determining the eligibility of soldiers residing off post.

After the Senate and House submitted their plans to reduce military use of food stamps, DOD appealed the plans and issued its own-one the military's top officials believe will creative the greatest equity between service personnel.

According to Lt. Col. Crutchfield, the Army's chief of the Compensations and Entitlement's Branch, the Senate plan proposed a supplemental basic allowance of $180 per month that would be distributed to food-stamp-eligible patrons.

"A problem with the Senate bill," said Crutchfield, "is even with $180 a month, some members would still be eligible for the (USDA) food stamp program.

"We have some cases where it would take a substantial amount of money to remove one extreme case from the food stamp rolls.

"The Department had questions about the Senate initiative because it was actually changing the reasons for the increased compensation to increased family size."

Crutchfield said the House plan would allot $100-$500 per month, depending on where a military member would qualify in the food stamp range.

"Under this plan, the moment the services start paying $200 a month in benefits, we start getting a pay inversion, whereby junior members will be making more money than senior personnel," said Crutchfield.

"We'd like to say about the military that our pay system is based on performance, experience, and responsibility, not personal choice (i.e: family size)," he said.

"We just went through a pay table reform, and the major point of that was that members would get paid for their performance. This plan would be paying them for the size of their families."

Created primarily for the military's junior enlisted personnel, the DOD plan would provide participants with an electronic debit card authorized for a fixed value that can be used to purchase food goods at any commissary. The value of the debit card will be determined by the member's family size and pay grade.

DOD's plan will closely favor the USDA's program, according to Crutchfield. Differences include:

- Members living on post must use their debit cards only at commissaries.

- Soldiers who are geographically removed from access to commissaries will receive a cash allowance if eligible for the program.

According to a DOD report entitled "Taking Care of Its Own," costs to start and maintain the plan could top $144 million through 2007.

The DOD plan is awaiting approval on Capitol Hill. Crutchfield said DOD hopes to hear something by the beginning of fiscal 2001.

(Editor's note: Adriane Foss is an associate editor of the *Inside the Turret* newspaper at Fort Knox, Ky.)

Civilian Employee News

Electronic LES

Beginning September 18, 2000, all employees could access their LES through the Employee/Member Self Service (E/MSS) web site at http://emss.dfas.mil. You may either view or print the electronic LES. This LES will be available on the Monday before payday.

The electronic LES program is strictly voluntary for Army personnel. You will continue to receive a hard copy LES, unless you choose to discontinue the hard copy through E/MSS.

You must have a personal identification number (PIN) to access E/MSS. If you don't have a PIN for E/MSS, please contact the E/MSS Customer Support Unit at 1-800-390-2348 or DSN 580-5122.

Federal Employee Health Benefit (FEHB) Conversion Plan

Effective October 8, 2000, the payroll deductions for FEHB premiums will be nontaxable. This will happen automatically. No action is required on the part of the employee. The implementation of this plan will affect your net pay. The plan works by reducing the amount of your gross earnings so that withholdings for Old Age Survivors Disability Insurance (OASDI), Medicare, and federal, state and local taxes will be less. The LES will show 'Pretax FEHB exclusion $_____.__' in the remarks section.

Any cash payments for FEHB, however, will not be included as pretax deductions. The new benefit applies only to payroll deductions. An example of this situation would be: If an employee was on Leave Without Pay for an extended period, but wanted to retain health benefits, he would be required to pay for his health insurance biweekly with a check. Since the check is not a payroll deduction, he would not receive the pretax benefit.

Any retroactive payroll deductions will not qualify for the pretax deduction. The Internal Revenue Service (IRS) prohibits any retroactive adjustments to taxable income, even when it is clear an agency is at fault due to an administrative error.

Any employees that desire to waive the pretax benefit for FEHB, must submit a request for waiver memorandum through their Civilian Personnel Advisory Center (CPAC). In turn, the CPACs will forward the waiver to the employee's servicing payroll office.

Please refer any questions to the your CPAC and NOT your DCPS customer service representative (CSR)

Army Benefits Center Services

Civilian employees in Hunstville are now able to change their benefits—retirement, survivor benefits, health and life insurance—over the telephone or on the Web through the Army Benefits Center for Civilians (ABC-C).

Automated services for the above benefits and for the Thrift Savings Plan began on September 11.

"The ABC-C is an effort to maximize the use of technology and promote efficiency through the consolidation of resources," said Kathy Cole, chief of the center. "It uses state-of-the-art technology similar to automated systems used by banks, colleges and health insurance carriers," she said.

More information is available online at: www.abc.army.mil.

THAAD nears start of engineering, manufacturing & development

The U.S. Army Space and Missile Defense Command's (SMDC's) Contracting and Acquisition Management Office awarded the engineering and manufacturing development (EMD) contract for the Theater High Altitude Area Defense, or THAAD, missile defense system to Lockheed Martin Space Systems Company, Missiles and Space Operations, in Sunnyvale, Calif., on June 28, 2000.

The contract is valued at almost $4 billion—$3,966,948,706—for a period of 98 months. The actual starting date for the contract to go into effect is Aug. 4.

During the EMD program, the system design will evolve to satisfy the Army's key operational requirements while developing weapon system components that are not only effective, but are affordable, ready for production, and available to the U.S. Army for a first unit equipped (FUE) in fiscal year 2007.

The weapon system components consist of hit-to-kill missiles, highly accurate radars, sophisticated battle managers, and launchers.

The components will be designed to survive in a battlefield environment, manufactured on initial production lines, and then verified operationally suitable and effective in comprehensive ground and flight testing.

The effort also includes designing and developing a logistics infrastructure for fielding and maintaining of the THAAD weapon system and its peculiar support equipment for the service life. Sufficient production-representative weapon system components will be built to support all testing to include initial operational test and evaluation and verify the THAAD readiness for low rate initial production and full rate production. The management of this contract is vested in the U.S. Army THAAD Project Office in Huntsville, Ala., and their reporting chain including the Program Executive Office, Air and Missile Defense, and the Ballistic Missile Defense Organization. SMDC administers the contract.

"A lot of hard work went into this contracting effort," said Mark Lumer, SMDC's contracting executive. "Both sides were involved in some serious negotiations and are quite proud of this accomplishment, which will bring our nation's theater missile defense one big step closer to fruition."

Balloon and HUMVEE mounted missiles work

JLENS hits over-the-horizon cruise missile

by Gerda Sherrill
Huntsville, Ala.

The Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System, or JLENS, announced the success of two cruise missile defense *Forward Pass* demonstrations at White Sands Missile Range, N.M.

These demonstrations are a part of a series of tests utilizing JLENS and surface-launched Advanced Medium Range Air-to-Air Missiles, or AMRAAMs, mounted on a HUMVEE designated as the HUMRAAM.

"Forward Pass is a concept under which a sensor on board an elevated aerostat platform guides a surface-launched interceptor missile beyond the range of its own organic radar to the point of engagement," said Lt. Gen. John Costello, commanding general of the U.S. Army Space and Missile Defense Command.

The concept requires separate surveillance and precision track and illumination radars to identify targets and cue the HUMRAAM to intercept low-flying, maneuvering cruise missile targets. "The Forward Pass demonstration validates the need for JLENS in tomorrow's battlefield and significantly improves the Commander-in-Chief's warfighter capability to protect the force," said Col. Mary Fuller, the JLENS project manager.

During Forward Pass Mission #5 in early April, an AMRAAM interceptor destroyed a BQM-74 target simulating a low-flying cruise missile. This intercept was the first-ever live, over-the-horizon engagement of its kind of a cruise missile target using an elevated sensor platform. The shoot-down was one of four cruise missile engagements planned during the exercise, which is sponsored by the Joint Theater Air and Missile Defense Organization.

"JLENS is a critical piece of the cruise missile defense architecture," Fuller said. The system, when fully developed, will consist of two elevated sensors: a surveillance radar and a precision tracking and illumination radar. The surveillance radar provides long-range three-dimensional air picture enhanced by IFF (identification friend or foe) and other identification systems. This information distributed via the Joint Data Network and Joint Composite Tracking Network contributes to the single integrated air picture.

The successful test demonstrated the suitability of the JLENS against the cruise missile threat.

Tactical High Energy Laser (THEL) destroys Katyusha rocket

June 6, 2000, White Sands Missile Range, N.M. – The Tactical High Energy Laser (THEL) demonstrator successfully tracked and destroyed a single rocket in flight for the first time and during the first attempt at approximately 3:45 p.m. EDT.

The test was the first of a series of shoot-downs before the THEL is handed over to the Government of Israel.

The THEL is a joint Advanced Concept Technology Demonstration (ACTD) program between the United States and Israel designed to negate the threat posed by Katyusha rockets to populated areas in northern Israel.

"We've just turned science fiction into reality," said Lt. Gen. John Costello, commanding general, U.S. Army Space and Missile Defense Command. "This compelling demonstration of THEL's defensive capabilities proves that directed energy weapon systems have the potential to play a significant role in defending U.S. national security interests worldwide. It also gives the Government of Israel an avenue for protecting its citizens actively and effectively against cross-border rocket attacks."

In July 1996, the U.S. Department of Defense (DOD) and the Israeli Ministry of Defense (IMoD) signed a memorandum of agreement which spelled out the development and functional testing of a THEL demonstrator. The THEL consists of subsystems that include a laser, a pointer-tracker, a command, control, communications, and intelligence (C3I) center, and a fire-control radar. TRW, Inc., is the prime contractor.

The U.S. Army Space and Missile Defense Command (SMDC) is the Department of Defense's executive agent for the joint THEL/ACTD program.

SMDC realigns technical center operations

In June the Space and Missile Defense Technical Center was realigned to establish the Space and Missile Defense Center for Technology Development (CTD) and the Joint Center for Technology Integration (JCTI).

The CTD will plan, develop, coordinate and execute the Army portion of the Ballistic Missile Defense Organization technology program as well as the SMDC directed energy and space information technology development.

The JCTI will be the BMDO Executive Agent for science and technology programs.

Reprinted Articles from FY 2000

BATTLE LAB LEADS THE WAY INTO .... *THE NEXT MILLENNIUM*

John Buckley
Huntsville, Ala.

The U.S. Army Space and Missile Defense Battle Lab (SMDBL) has had a successful history supporting the warfighter. The latest example of this is the 32nd Army Air and Missile Defense Command's (AAMDC) Future Operational Capability (FOC) program. The program began in early 1999 with guidance and requirements from the commanding generals of the SMDC, U.S. Army Air Defense Artillery School, and the 32nd AAMDC. In general terms the battle lab would provide new technologies that will lead to the required command and control capabilities for the successful conduct of Joint Theater Air and Missile Defense by the 32nd AAMDC.

The SMDBL developed the baseline FOC through close coordination with the 32nd AAMDC staff, TRADOC Systems Manager, Directorate of Combat Developments (Fort Bliss), and the Air and Missile Defense Command and Control Systems (AMDCCS) office.

The FOC was exercised for the first time in a "live" environment during Roving Sands '00 at Fort Bliss, Texas June 6-24. SMDBL personnel trained 32nd AAMDC soldiers both in Huntsville at the Advanced Research Center and at Fort Bliss. The trained soldiers then manned the FOC to provide valuable feedback for an independent assessment. This assessment will be used, along with other collected data and observations, to provide the future vision for the FOC program. The baseline FOC at Roving Sands demonstrated that current in-theater footprints can be reduced by about 70 percent.

Photo by John Buckley

Both active duty and national guard soldiers from the 32nd AAMDC put the FOC to the test at Roving Sands '00 .

The advanced Warfare Environment windows based software successfully performed functionalities that before were reserved for UNIX based system. Advanced visualization techniques both in two and three dimensional environments assist in situational awareness. Communications capabilities have the potential to be enhanced through miniaturization and new techniques in wireless networks.

The FOC was developed through an integrated government and industry product team. The SMDBL integrated proven products from other service battle labs such as the U.S. Marine Corps warfighting center Multi-Source Correlator Tracker, and products and services from 19 different contractors to make the FOC a success.

The 32nd's FOC is truly an experiment in advanced methodologies and techniques that will continue providing unique and innovative C4I capabilities to the modern warfighter.

Eagle Vision II imaging supports counterdrug efforts south of the border

by Ed White
Colorado Springs, Colo.

High on a hilltop overlooking a picturesque farming valley somewhere in the Amazon Basin of South America, a drug lord stands surveying his current Coca crop, assessing its worth, determining its readiness for harvest.

Little does he realize that high overhead, his crop is also being watched by the U.S. Southern Command, from commercial imaging satellites. The constellations of commercial satellites float through space taking images and sending them to a ground station called Eagle Vision II.

From the outside, EV-II looks like an olive drab tractor trailer with a huge dish antenna that would make any satellite television viewer jealous. But, what goes on inside the trailer is remarkable. The equipment inside receives imagery from the French SPOT Image satellite and the Canadian RADARSAT-1 satellite. The data is received on one side of the bank of computers in the trailer, passed to the other side where processing takes place.

"We watch the passes from horizon to horizon," said Capt. Tim Haynie, the EV-II detachment commander. "We can push out a useable product in a few hours to whoever needs it." Haynie added that EV-II was also designed to receive and process data from the next generation of new, high resolution, remote sensing satellites like IKONOS-1, QuickBird-1, and Orb View-3 which are expected to be launched in the next several years.

Recently, EV-II was working in support of the U.S. Army Southern Command, gathering imagery of South America, which is SOUTHCOM's area of responsibility.

"We expected to get 80 clear scenes," explained Haynie. "But we are halfway through the mission time-frame and we already have over 100 scenes. We expect to have over 300 scenes by the end of the mission," Haynie added. Each scene is approximately 60 kilometers square.

While numbers of scenes received are important, what happens inside the trailer is still the more interesting part of the story. Once received, the imagery is processed on site and can then be passed to the user within hours of receipt by the operators inside the trailer. It used to take weeks to get commercial imagery like this from the companies who supply it. In the case of SOUTHCOM, the users range from the people in plans, all the operators, and the counter drug task forces.

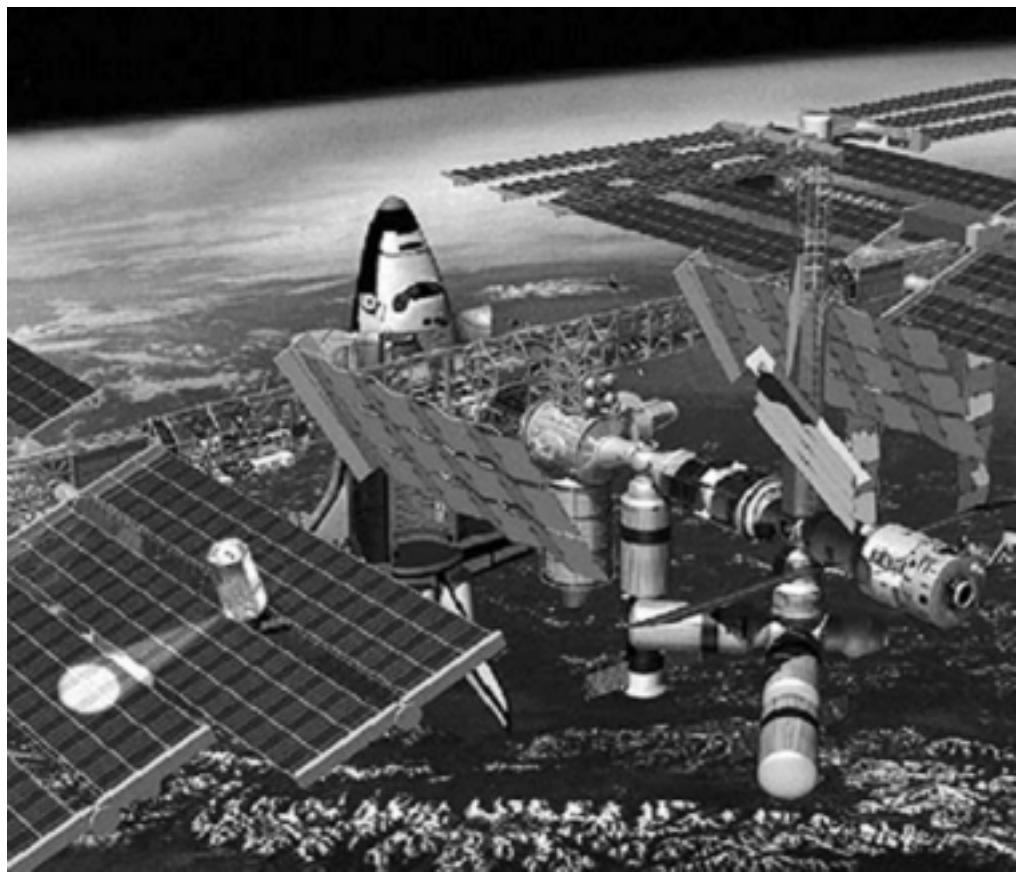
Sgt. Dawn German is a terrain analyst, operating one of the consoles on the production side of the trailer. "We can put this information in a number of formats, from flat maps, completely rectified for use, to three-dimensional flythroughs," she said.

The key to this system is the speed with which they can get imagery to our forces, according to Haynie. "And there is the advantage of being able to give this imagery to our allies as well because it is not classified," he said. If this same imagery was obtained from classified national sources, it could not be shared.

Another clear advantage of the system is the ability to detect changes over time in the landscape. This is good for anticipating drug crop growth, or it can be used to determine the amount of damage done by a hurricane, simply by comparing images through time.

For an investment of about $10 million, the nation has a capability that runs off other people's systems, one that can rapidly deploy anywhere in the world, and one that provides critical information to our forces in support of the full spectrum of modern military missions.

Army officers help build space station



Three Army astronauts go to Space this year; First time two Army officers perform space walk together

by Ed White
Colorado Springs, Colo.

On a clear night, components of the international space station can be seen orbiting the earth. These segments will grow within the next four years to become the full-fledged space station, with Army astronauts playing a key role in its construction and manning.

Three flights are planned this year that involve either active or retired Army astronauts as crew members. As this article was published, Lt. Col. Jeff Williams and (retired) Col. Jim Voss were scheduled to take off on mission STS-101, April 25.

"As we wrap up the training and get close to launch, it's difficult to describe the emotions," Williams said. This was Williams' first space flight. "The difficulty became apparent to me during [our last week of] practice countdown at the Cape."

He said being at the launch pad and strapping into *Atlantis* was exciting, especially knowing that the real launch was only a couple of weeks away. "On the other hand, it often still does not seem real."

Voss, a veteran of Army active duty and trips to space, said, "I'm really happy to be assigned to STS-101, because it gives me the opportunity to use the space station training I've been doing for the last four years…and to see my future home in space." Voss, who retired from the Army last year, is also scheduled for mission STS-102, next February, for a five-month stint with a Russian cosmonaut and another American astronaut.

Voss and Willams' work will increase the livability and configuration of the international space station as well as extend the service life of the current configuration. Their mission will also showcase a new feature on the shuttle *Atlantis*. A new cockpit—technically called the Multifunction Electronic Display Subsystem—replaces obsolete instruments and three monochrome computer screens with 11 full-color graphical displays.

The new cockpit weighs less, uses less electricity, provides more backup instruments, and most importantly, sets the stage for a future "smart cockpit," now in development for the shuttle.

"I look forward to the repair work we will do on the station and to the space walk with Lt. Col. Jeff Williams," Voss said. He refers to the other part of the mission that includes a space walk where Williams and Voss will perform maintenance on the station.

"This will be the first time for two Army officers to do a space walk together," Voss said. "Although I retired [last year], I'm still a soldier!"

"This assignment was a great honor with the space walk being the special surprise," Williams added. "This experience will fulfill a long time dream to go to space, work on the space station, and conduct a space walk all in one mission."

The STS-101 crew will deliver a ton of items to be used by the first resident crew members, who will occupy the ISS later this year.

"My biggest concern is focusing so hard on the tasks to be done that I miss the experience," Williams said. "But, I don't think Jim [Voss] and my other crewmates will let that happen. They've been a great crew to train with on my "rookie" flight, and I very much look forward to flying with them."

Later in the year, another veteran of space travel—Col. William McArthur—will serve as the flight engineer onboard mission STS-92, with a primary mission to attach an integrated truss system.

"The truss system is an early exterior framework," McArthur explained, "that will allow the first U.S. solar arrays to be temporarily installed on Unity for early power, on flight 4A."

The truss system contains the Ku-band communications system and a pressurized mating adapter, according to McArthur. He and crewmates will conduct four space walks to configure those components. "This is after they're attached to the space station using the shuttle robotic arm," McArthur said.

The pressurized mating adapter provides a shuttle docking port to allow solar array installation on a subsequent mission, McArthur said. And the Ku-band communications system supports early science capability and U. S. television. STS-92 is slated for a September launch.

(LuAnne Fantasia contributed to this article.)

Photo by LuAnne Fantasia

Dr. Seuss said it all in his classic book for children of all ages, "Oh, the places you'll go," and Army Astronaut Lt. Col. Jeff Williams passed the word along to a little girl at Martha's Table, in Washington, D.C., when he told her about the places she can go some day with hard work and determination. As we went to press, Williams was scheduled to leave Earth April 25, in his first Space mission to the International Space Station. He and (retired Army Colonel) Jim Voss will be the first two Army officers to take a space walk together.

Reprinted Articles from FY 2000

NMD target vehicle flies demonstration

by Jeff Compton
Huntsville, Ala.

The newest strategic target developed by the U.S. Army Space and Missile Defense Command (SMDC) showed off in late May and looked good doing it.

On May 28, 2000, SMDC successfully conducted the demonstration flight of the Orbital/Suborbital Program Target Launch Vehicle (TLV), from Vandenberg Air Force Base, Calif.

The Ballistic Missile Targets Joint Project Office is the executive agent for ballistic missile targets acquired for the Ballistic Missile Defense Organization (BMDO). The Strategic Targets Product Office provides strategic missile tar-gets for BMDO's National Missile Defense (NMD) program.

The new target launch vehicle was developed to meet future integrated flight test requirements for NMD. The TLV system consists of a front section atop a three-stage Minuteman II booster.

The front section is comprised of a clamshell shroud, which houses the target payload, the guidance control assembly module and a separation module. Orbital Sciences Corporation, under contract to the U.S. Air Force Space and Missile Systems Center, builds the front section and provides launch services for the Orbital/Suborbital Program mission.

Sandia National Laboratories builds the target payloads and the deployment rack. The payload for the demonstration mission consisted of a re-entry vehicle mass simulator, and instrumented medium balloon decoy, four canisterized medium balloon decoys, and a canisterized large balloon decoy. This payload was selected to provide traceability to previous NMD missions while flight-testing new technologies.

The Orbital/Suborbital Program TLV demonstration flight was also being used as a risk reduction flight by national missile defense for its radars and battle management system elements. No intercept was attempted. In the demon-stration flight, the TLV was launched from Launch Facility 06 at Vanderberg AFB. to a point in the broad ocean area north of the SMDC Kwajalein Missile Range.

The re-entry vehicle mass simulator traveled more than 4000 miles before burning up in the atmosphere upon re-entry. Some of SMDC's sensors participating as part of the risk reduction flight were the Airborne Surveillance Testbed and Kwajalein Missile Range.

"Our joint team has worked extremely hard to get to this point and we look forward to NMD intercepting re-entry vehicles from our new launch system," said Lt. Col. Tom Harvill, product manager in Hunstville, Ala.

photo by Diana Helgesen

The new target launch vehicle blasts from Vanderberg Air Force Base Silo #6 on its maiden flight across the Pacific Ocean toward Kwajalein Missile Range.

PAC-3 notches fifth hit-to-kill success

The preliminaries are in and all test data points to success for the PAC-3.

When the Ballistic Missile Defense Organization and the Army conducted a test of the Patriot Advanced Capability-3 missile at White Sands, N.M., Feb.5, the hit-to-kill PAC-3 missile notched its fifth success.

Test objectives included demonstrating system and missile capability to engage a full-body tactical ballistic missile using remote operations. These included employing the launching station several kilometers from the radar and engagement control stations; and demonstrating intercept using the tactical software which allows the seeker to select the optimal aimpoint on the Hera target.

The PAC-3 missile is a high velocity, hit-to-kill missile and is the next generation Patriot missile being developed to provide increased defense capability against advanced tactical ballistic missiles, cruise missiles, and hostile aircraft. The PAC-3 uses kinetic energy to destroy targets rather than employing a high explosive warhead.

The PAC-3 successfully completed four missions prior to this flight test. The first two developmental test missions consisted of missiles with special instrumentation packages in place of the seeker and the missions were structured to verify critical systems and missile performance prior to conducting target intercept flight tests.

A seeker characterization flight mission in March of last year tested the PAC-3 missile with a seeker. Although not a primary objective of the mission, an intercept of the target was achieved. Last September, a second intercept test was successful.

The remaining PAC-3 missions will consist of 14 PAC-3 missiles intercepting various classes of targets. The Patriot program is managed by the Ballistic Missile Defense Organization at the Pentagon, and executed by the Army Program Executive Office for Air and Missile Defense and the Army Patriot Project Office, Huntsville, Ala.

Lockheed Martin Missiles and Fire Control, Dallas, Texas, is the prime contractor responsible for missile development. The seeker is produced by Boeing, also in Huntsville, Ala. Raytheon Systems Company, the Patriot system prime contractor, is the system integrator for the PAC-3 missile segment.
(PEO AMD press release.)

New Hera target intercepted in PAC-3 test

The Hera target reached an altitude of 107 kilometers and flew 344 kilometers down range in 431 seconds, and the PAC-3 found it.

Both systems were a success in the Feb. 5 intercept test at White Sands Missile Range, N.M.

The Hera target system, developed by the U.S. Army Space and Missile Defense Command for the Ballistic Missile Defense Organization, flew in support of the Patriot Advanced Capability 3, or PAC-3, Developmental Test 5. The ballistic missile target is typically used for test and evaluation of BMDO interceptor systems. The Hera target flown for this test was the Block IIB non-separating (unitary) Hera configuration with a ballast payload.

The Hera target was flown from Launch Complex 96 at Fort Wingate, N.M. The DT-5 target missile flew a northwest to southeast trajectory to White Sands Missile Range to support an endoatmospheric intercept of the non-separating Modified Ballistic Reentry Vehicle 3 (MBRV-3) by the PAC-3 system.

The target was launched on a 148-degree azimuth and allowed to coast for 118 seconds after first-stage burnout to accommodate trajectory shaping and first-stage motor placement in the designated impact area. Following simultaneous first-stage separation and second-stage ignition, an energy management maneuver and a dogleg maneuver were performed to place the target complex on the final flight azimuth of 140 degrees. Following second-stage burnout, the target body was re-oriented by the Coast Control System to provide the desired conditions at the altitude of interest. Preliminary flight data indicate all objectives were achieved.

Prime contractor for the Hera targets program is Coleman Aerospace Company of Orlando, Fla., supported by principal subcontractors Space Vector Corporation of Fountain Valley, Calif., and Aerotherm Corporation of Mountain View, Calif.

The Space and Missile Systems Center of the U.S. Air Force provides the booster motors.

At SMDC, the program is managed by Lt. Col. James Matthewson, Jr., theater targets product manager.

That program is part of the Ballistic Missile Targets Joint Project Office; Col. James Cambron, project manager.

(U.S. Army Space and Missile Defense Command press release.)

Reprinted Articles from FY 2000

Reserve components, ARSPACE team up

by Ed White
Colorado Springs, Colo.

"October will usher in a new era of cooperation between the active Army and the Army National Guard and Reserve," said Lt. Gen. John Costello, commanding general at the U.S. Army Space and Missile Defense Command.

Army guard and reserve personnel begin making Army history in October when they start drilling with the U.S. Army Space Command here. "I'm absolutely thrilled with this latest development in the evolution of space within the Army," Costello said. "I look forward to growing together as demands in space increase in the future."

Reserve Forces support to the U.S. Army Space Command will be provided by both individual mobilization augmentees assigned to the Army Reserve and by guardsmen assigned to the Colorado Army National Guard.

"The Army Reserve and the Colorado National Guard have each committed to manning two six-person Army Space Support Teams, for a total of 24 people," said Maj. George Anton, Force Development officer at Army Space Command.

"In October they'll begin a training program that may take up to two years, which is designed to enable them to effectively augment any of the five active-duty teams already in existence."

"The mission of [the space support teams] is to provide or coordinate force enhancement from space for Army units," said Maj. Donald Snow, commander of the 1st Space Battalion's Army Space Support Company.

"Army space support teams are capable of rapidly deploying and using the latest technology to provide a full range of space products and operational support to Army units worldwide."

"The Guard has also signed up to provide a total of 15 additional people to support U.S. Army Space Command," Anton said.

The additional people will support information operations activities at the Army Space Command's 1st Space Battalion's Mobile Technology Team, as well as operations of its 1st Satellite Control Battalion.

"These additional missions are of particular interest to the Guard because they position the Guard to be part of the growing activities in these fields," Anton said.

"The Colorado Army National Guard is excited to be part of the Army Space Team," said Maj. Gen. Roger Schultz, director of Colorado's Army National Guard.

"We look forward to doing our part to usher in this new era of cooperation and to growing together in the future."

Army activates 1st Space Battalion in Colorado

The United States Army lst Space Battalion was activated Dec. 15 at Colorado Springs, Colo.

"This unit is an example of the type of organization that will enable the smaller, lighter, more agile fighting forces recently envisioned by Gen. Eric Shinseki, the Army chief of staff," said Lt. Gen. John Costello, commanding general, U.S. Army Space and Missile Defense Command.

Prior to the formation of the battalion, the Army's four Space Support Teams and five Joint Tactical Ground Stations worked under the Army Space Command operations staff, providing support to exercises and operations Armywide. Now, these key elements that bring space support to the warfighter are brought under the operational control of a commander focused on providing immediate space support, according to Lt. Col. Tim Coffin, the new battalion's first commander.

"Our goal is to continue to normalize space operations in the Army. The new structure will make the chain of command much cleaner, while providing the flexibility we need to meet the space challenges of the new millennium," Coffin said.

"We structured this battalion so it would retain a great deal of flexibility to respond and grow quickly."

He said the battalion provides Army units both the tools and the knowledge to take full advantage of the nation's tremendous on-orbit capabilities.

"The highly mobile teams and detachments tailor their capabilities and products to maximize responsiveness to soldiers," Coffin said. He said a highly mobile technology team will work closely with commercial firms and the command's Battle Lab to rapidly adapt the latest space technologies for use by the soldier.

"This will help determine if there can be space-based solutions to battlefield problems," Coffin said.

Coffin recently completed three years on the U.S. Space Command staff. During his first year there, he was a combined intelligence watch commander in Cheyenne Mountain. His last two years were spent working as the deputy director of an action group for the commander in chief—a select group of officers and NCOs who directly support the CINC in activities ranging from congressional testimony, to speeches and briefings to U.S. and international audiences.

Coffin has ideas about where Army Space needs to concentrate to stay on track.

"In many ways, Army Space is admired by our counterparts in the Air Force and Navy. We have the reputation of being able to do a tremendous amount with an extremely small organization. In that respect, we are right on track," Coffin said.

"I told the members of the new space battalion that we have a great heritage of innovation behind us. But don't get confused—it's not a pillow to rest on. It's a foundation to build on," he said.

The Army Space Command in Colorado Springs, Colo., is a major subordinate element of the U.S. Army Space and Missile Defense Command. Along with the 1st Space Battalion, ARSPACE is home to the 1st Satellite Control Battalion.

(Some quotes were extracted from a late-December article by Army News Service.)

Controlling the new high ground

1st Satellite Control Battalion has long history

by Ed White
Colorado Springs, Colo.

In 1873, three soldiers of the US Army Signal Corps' weather service opened the world's highest weather observatory, on the 14,110-foot summit of Pikes Peak in Colorado Springs.

Working from a hastily built two room stone building with a tin roof held down with rocks, these signal soldiers controlled the ultimate high ground of their day.

Sending reports via an 11-mile telegraph line to Colorado Springs, these soldiers found their reports reprinted in newspapers nationwide.

In 1968, 95 years later, the Defense Department decided to place Signal Corps soldiers in control of a new patch of high ground when DoD gave the go-ahead for development of the Defense Satellite Communications System-II program. This time the high ground was in an area known as "Clark's Belt", some 22,300 miles above the earth. The first of these spin-stabilized, four-channel satellites was launched in Nov. 1971, and the program eventually grew to 12 satellites on orbit.

The last of these satellites was maneuvered into supersynchronous orbit December of last year, and the DSCS constellation became 100 percent comprised of three-axis stabilized, six channel, DSCS-III birds. With 14 satellites in the program and 10 currently on orbit, DSCS-III is one of DoD's most successful programs ever.

In the days of the Pike's Peak weather station, Maj. Gen. Albert Myer, chief of the Signal Corps, trained his weathermen at Fort Whipple, Va., which was later named Fort Myer in his honor. Today's controllers of the high ground receive their intensive training at Fort Gordon, Ga. These satellite controllers receive 51 weeks of training, after which they are eligible for assignment to one of the five DSCS Operations Centers located worldwide.

In 1990, the Army Space Command was given responsibility for the operation and maintenance of these operations centers, and in Nov. 1995, ARSPACE established the 1st Satellite Control Battalion to perform this critical mission.

Today the 305 authorized soldiers and civilians of the 1st Satellite Control Battalion ensure all users of the satellites can communicate effectively (network control), and they configure the communications package and ensure the satellites remain healthy (payload control).

It's ironic that today, 126 years after the first signal soldiers climbed Pikes Peak to occupy the ultimate high ground of the time, at the base of that mighty peak signal soldiers of the 1st Satellite Control Battalion continue to serve the Nation.

Deputy Commanding General Hits Ground Running In New Assignment

COLORADO SPRINGS, Colo.—"This new position is a commitment by the Army," said Col. (P) Richard V. Geraci, "It is clearly indicative of the Army's growing role in space and the requirement for the use of space and space related technologies to carry out the Army's missions across the full spectrum of military operations. Space will play a key role in the Army's objective force of the future," he added.

He was speaking of his new assignment as the first Deputy Commanding General for Operations, U.S. Army Space and Missile Defense Command (SMDC) and Deputy Commanding General for Army Space Command during an early morning SMDC Physical Fitness Run on Peterson Air Force Base.

"Being dual-hatted gives me a lot of ground to cover. I will be involved in the oversight of the command's National Missile Defense, Theater Missile Defense, Space Control, and computer network attack and defense programs. I will also be working Army Space and missile defense operational issues," Gerasi said.

Another of Geraci's responsibilities will be working with the newly established Functional Area 40 Space Operations Officer program. The Army is committed to establishing space expertise among a corps of staff officers. This pool of officers will directly support corps commanders and warfighting CINCs.

Geraci has had a number of Joint, NATO, and Air and Missile Defense assignments. Recently he was assigned to the U. S. Joint Forces Command where he served as the Chief of Operations, Joint Warfighting Experimentation Directorate until 1999. From 1999 until his assignment to SMDC, he served as the deputy director of the Joint Warfighting Experimentation Battle Lab.

SMDC has major subordinate elements in Washington D.C., Huntsville, Ala., and Colorado Springs. "Tremendous work of great importance to our national defense goes on in Huntsville and in Washington, D.C. Colorado Springs is where it comes together to support the warfighter, it is the epicenter of the military space world," Geraci said. "The entire military space community will soon either be headquartered here or be represented at the space complex on Peterson Air Force Base," he added.

The new Deputy Commanding General for U.S. Army Space Command, Col. (P) Richard V. Geraci (at front next to lead guidon bearer), leads ARSPACE personnel on the final leg of an early morning three-mile run through Peterson Air Force Base.

He also said the SMDC and ARSPACE folks here have established a strong position and they understand the importance of working as part of a team with the other services, Geraci added. "Since my arrival I have spoken to many of the senior military and they all have high praise for the Army's space warfighters, whether they are at Schriever or Peterson Air Force bases, or working in support of the soldiers on Fort Carson."

Geraci said, "I am impressed by the level of expertise and knowledge of the civilians and our soldiers in the command. The more I learn about the command and my responsibilities, the more I appreciate the professionalism and dedication of this team. We have a lot of work ahead of us in a number of cutting edge projects and programs and I look forward to the challenges this assignment will bring."

In a video teleconference between the many nodes of SMDC, Geraci and his wife Kathy were welcomed by Lt. Gen. John Costello, the SMDC commanding general.

"This is truly a great day. We finally have established a general officer position at Colorado Springs to assist the commanding general of Army Space Command. This is certainly a milestone as the Army moves toward a more active role in the space arena," said Costello.

Arrow Weapon System intercepts target

The Israeli Ministry of Defense, in cooperation with the U.S. Ballistic Missile Defense Organization (BMDO) and the U.S. Army, successfully conducted the second intercept of a target ballistic missile by the Arrow Weapon System (AWS) at Palmahim Test Range in Israel September 14. While this was the eighth overall Arrow 2 anti-tactical ballistic missile flight test, it was the first use of an actual production line Arrow interceptor. Initial data analysis indicates that all test objectives were achieved.

This is especially noteworthy, due to the fact that this was the first intercept for the AWS against a new air-launched, in-bound target called the Black Sparrow. Previous tests were against a TM-91 target, which was always flown on an outbound trajectory. The Black Sparrow was carried to its launch area on the wing of an Israeli Air Force F-15, then released. The Black Sparrow flew on a trajectory towards the Israeli coast, to simulate an incoming Scud missile, with its final impact point the designated "defended area" for the AWS.

The Arrow interceptor took off and flew in a nominal trajectory, acquired the Black Sparrow target, then locked on and homed on the designated threat. The warhead was fused at the proper range and the Arrow interceptor destroyed the target.

The Green Pine fire control radar and the Citron Tree battle management center participated fully in the test, performing battle planning, launch operations, and up link/down link message applications, as well post intercept verifications. Both assets worked according to plan and fulfilled all test objectives. Analysis of all data is underway to evaluate and confirm results.

Full details on accuracy and actual method of kill (warhead only or warhead and body-to-body impact) are not yet available, but will be determined before a Data Reduction Review, currently scheduled for early November.

The U.S. and Israeli engineering teams are very satisfied with the preliminary test results.

The Arrow program is a joint U.S./Israeli effort to develop a ballistic missile defense system for the State of Israel. The information gained from the program has potential application in several U.S. missile defense programs.

The United States and Israel fund the Arrow program. Israel Aircraft Industries is the prime contractor. Mr. Robert Szerszynski, the Product Manager for the Arrow Product Office of the Program Executive Office for Air and Missile Defense, manages the U.S. effort through funding provided by the BMDO.

Arrow interceptor lifts off toward its first inbound target. The Arrow destroyed its target.