



The Eagle

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Laser demo achieves first light

WASHINGTON, D.C.—In late June, the Tactical High Energy Laser, or THEL's, advanced concept technology demonstration laser subsystem achieved "first light" at the TRW Capistrano Test Facility in California.

TRW conducted a test to demonstrate the end-to-end capability of the laser subsystem and demonstrate the laser optical control of extracting a high-energy laser beam. Subsequent laser subsystem tests are planned before the laser subsystem is transported to White Sands Missile Range, N.M., for integration later this summer.

The THEL demonstration was initiated after the White House announced in April 1996, that the United States and Israel would undertake a joint effort to evaluate the effectiveness of a THEL to negate the threat posed by Katyusha rockets to populated areas in northern Israel.

Dr. Paul Kaminski, the Under Secretary of Defense for Acquisition and Technology, and Maj. Gen. Ilan Biran, director general of the Israeli Ministry of Defense, signed a memorandum, formalizing the agreement, in July 1996. The agreement provides for development and functional testing of a THEL demonstrator, consisting of a laser; pointer-tracker; and C3I, or command, control, communications, and intelligence subsystems.

The U.S. Army Space and Missile Defense Command is the executive agent of the joint THEL demonstration program for the Department of Defense. The Israeli Ministry of Defense has also designated a program office to oversee the joint development effort. TRW, Inc. was selected as the primary civilian contractor to design, build, and integrate the THEL demonstrator.

Using mature beam generation and beam pointing technologies to develop a THEL demonstrator, the program developers have driven an advanced concept technology demonstration, or ACTD, program weapon system development from start to hardware completion and achieving laser first light in three years.

Under the current schedule the laser and pointer-tracker subsystems will be transported to White Sands Missile Range, N.M., to be integrated with the C3I subsystem later this summer. This ACTD has demonstrated the ability to cut through the traditional weapon developmental processes to provide a limited operational capability to the user in a very short period of time.

(Press release from the Office of Secretary of Defense.)



Photo by LuAnne Fantasia

Somehow out on the edge of Texas and beyond, members of the SMDC Battle Lab, Missile Defense and Technology Center, JLENS, Army Space Command and 1st Satellite Control Battalion provided wide space and Theater Missile Defense support during Roving Sands '99. Support ranged from systems currently fielded and ready to support current operations, to new concepts designed to support future warfighters. See inside pages 5-8 for a special section on the command's participation at Roving Sands '99.

Army Family Action Plan

SMDC delegates represent families at Army Materiel Command's conference

Story & photos by LuAnne Fantasia
Huntsville, Ala.

You hear it all the time. The Army is family. It's true.

A recent model of that kinship was when a civilian employee and two spouses from this command were invited to participate as delegates for the Army Materiel Command's Army Family Action Plan conference.

When soldiers, family members and civilian employees throughout one of the Army's largest major commands gathered to resolve identified problems and concerns, Kathy Nelson, Gloria Flowers and Sue Flohr sat at the table and participated as delegates.

"The Army family includes a lot of people, and this program unites the entire family," Sue Flohr said. Flohr is the wife of SMDC's deputy commanding general, Brig. Gen. Steven Flohr. The AFAP is a 16-year-old, Armywide program, that affords soldiers, family members and civilian employees the opportunity and a road map to effect significant changes.

"I'm excited about the power of this program," she said. "I hope we can teach people in our command that with this program, issues are resolved. They can be resolved through local AFAP coordinators across the command, or they can be resolved at command or Army levels. But, they will be resolved."

Flohr explained that currently there are [Armywide] AFAP issues being presented to Congress. "There are issues with broad impact. There are some that are isolated and unique to the installation or command, and there are many that we all have in common," she said.

Kathy Nelson said that participating in the Materiel Command's conference gave her, Flohr and Flowers excellent resources to bring back to SMDC. "This program truly does have the national level's interest. Everyone is positive about the program and proactive." Nelson is the wife of Lt. Col. Ron Nelson, commander at the High Energy Laser Systems Test Facility at White Sands Missile Range, N.M.

"It was obvious that the leaders are supportive of finding a solution of all issues," she added. "We all go back to our communities and need to impress that something can and will be done, sooner or later."

New benefits and privileges for civilian employees don't just happen, according to Gloria Flowers, the AFAP coordinator for Huntsville, who also attended the Army Materiel Command's conference as a delegate.

"Many civilian employees are unaware that they benefit from the Army Family Action Plan, too," Flowers said. She said the civilian leave transfer is a direct result of an issue presented through the program in the past. She added that the question "why can't military service members do the same?" is one currently being worked in the Army Materiel Command's AFAP channels.

Flowers said that although 98 percent of issues presented through the program are resolved at the installation or major command level, all issues get the ear of decision-makers.

(See AFAP, page 9)

Commanding General's Column



Lt. Gen. John Costello

It's a great time to be in the missile defense business. In the last several months, we've witnessed several major successes in theater missile defense, or TMD.

On March 15, during a seeker characterization test, PAC-3, the Army's lower-tier TMD system, intercepted a Hera target. Then, on June 10, its upper-tier counterpart, THAAD, completely destroyed another Hera target. Later that month, during the world's largest air and missile defense exercise—Roving Sands '99—our Joint Land Attack Cruise

Missile Defense Elevated Netted Sensor, or JLENS, system for the first time transmitted information into the Joint Tactical Information Distribution System, pulling data from surrogate radars into a prototype processor. It also operated for only the second time with a prototype processing station, a key enabler in performing interoperability functions. Previously, the program took an important step on the road to funding stability when the Pentagon designated it as an Army Category II acquisition program.

I don't think I can overstate how important these successes are to actually fielding effective missile defenses. Here are several reasons why:

- Much criticized hit-to-kill technology has now been validated, despite the incredible technological challenge of "hitting a bullet with a bullet" in scenarios where the bullets are missile warheads hurtling towards each other at a combined speed of about 4,000 meters a second.
- Having successes in both the upper- and lower-tier program strengthens the case for the DoD's multi-tiered concept.
- Psychologically to everyone in the program, actual intercepts are important because we live in a

society which generally only respects "bottom-line" results. Direct-hit kills are as bottom line as you can get.

- More importantly, for the first time the two intercepts enabled developers to closely observe the "end game." This is where the seeker acquires the target and after a series of incredibly difficult technological steps, moves in for the kill. Analyzing end-game data is the most critical factor in improving these interceptors.
- Most importantly, having these concrete successes provides a tremendous morale boost to the soldiers who man the Patriot and THAAD batteries. They have been waiting for too long to get the weapons that will allow them to do what they have spent many years training to do, that is defend their fellow warfighters and citizens against missile attack.
- Finally, JLENS achievements are the first tangible advances in cruise missile defense beyond the "viewgraph" stage of development. We in SMDC can feel an extra measure of pride in these accomplishments because the command, together with the Ballistic Missile Defense Organization and the Program Executive Office for Air

and Missile Defense have contributed much to each success. For example, most of the basic technology for PAC-3 and THAAD was developed at SMDC, and the JLENS technology is managed by a joint program office assigned to the command. In addition, highly skilled SMDC (matrix) personnel work in the PEO-AMD to support the accelerated advanced development of PAC-3 and THAAD. Finally, SMDC develops the HERA targets used in the PAC-3 and THAAD tests.

As much as we feel good about these recent successes, we know there is much work to be done. There are more PAC-3 and THAAD intercept tests scheduled this summer, and JLENS will be attempting a Forward Pass next spring. In that experiment, it will attempt for the first time to use its radar to "guide" an air-directed surface-to-air missile to its target. Also, the National Missile Defense Ground Based Interceptor will attempt its first intercept in the fall. This will be followed by several more attempts before a presidential deployment decision next summer.

Obviously, we have many challenges ahead of us. But now we also have some real successes to motivate us to even greater achievements on the road to the ultimate goal – fielding effective missile defenses as soon as possible. Our soldiers and fellow citizens deserve no less.

High-level leaders take helm as U.S. Army, Ballistic Missile Defense Organization chiefs

The Army's 34th chief of staff said, "We are no longer the Total Army; no longer the One Army. We are The Army."

Gen. Eric Shinseki was welcomed to his new job June 22 in Washington.



Gen. Eric Shinseki

Shinseki had served as the Army's vice chief of staff since November 1998. Prior to that, he was commanding general, U.S. Army-Europe and Seventh Army, Germany; concurrently commanding NATO soldiers as the commander, Allied Land Forces Central Europe. "Gen. Shinseki is the chief who will lead the Army into the 21st century..." said Louis

Caldera, secretary of the Army and host of the change of command ceremonies, "Whatever the new century may bring, every day our soldiers are contributing to keeping America strong."

Shinseki, 56, was born in Lihue on the island of Kauai, Hawaii. He graduated from the United States Military Academy at West Point in 1965, with a Bachelor of Science Degree in Engineering. He also holds a Master of Arts Degree in English Literature from Duke University. His military education includes the United States Army Command and General Staff College, and the National War College.

"Gen. Shinseki is a leader of rock-solid integrity," Caldera added. He said the new chief of staff "knows what trained and ready look like from a muddy boots perspective."

During the ceremonies, Shinseki recognized Generals John Pershing and Creighton Abrams as two who rebuilt the Army and promised to continue that process. "We will build on their legacy," Shinseki said, "by providing the leadership that keeps this Army pre-eminent in land warfare. We will aspire to be the most esteemed institution in the nation, the most respected army in the world, the most feared ground combat force to those whose actions would threaten the interests of the United States.

"We know we have a non-negotiable contract with the American people to provide a trained and ready Army on demand," he said.

Shinseki succeeds Gen. Dennis Reimer, who served as Army chief of staff since June 1995.

He complemented Reimer's successful measures to integrate the Reserve and National Guard components of the Army. "Today I declare that we are The Army. Totally integrated with a unity of purpose. No longer the Total Army. No longer the One Army. We are The Army," Shinseki said.

Caldera noted Reimer's various commands, including Forces Command, but said if asked what his most satisfying command has been, Reimer would answer that it was as a basic training company commander.

"It is an answer that speaks profoundly about how deeply [Reimer] cares about soldiers and the role he expects our young leaders to play," Caldera said.

In mid-June, Air Force Lt. Gen. Ronald Kadish took over as director of the Ballistic Missile Defense Organization.



Lt. Gen. Ronald Kadish

Before this new assignment at the Pentagon, Kadish was commander of the electronic systems center of the Air Force Materiel Command, Hanscom Air Force Base, Mass. He was responsible for command and control systems; a three billion dollar annual program.

Kadish is a senior pilot with more than 2,500 flight hours.

He entered the Air Force in 1970 after graduating from the Reserve Officer Training Corps program at St. Joseph's University in Philadelphia.

He succeeds Lt. Gen. Lester Lyles, who has been nominated by the President for appointment to the grade of general with assignment as vice chief of staff for the Air Force.

(Compiled from reports by Sgt. 1st Class Connie Dickey, Spc. Bradley Rhen, Pvt. Jody Fahrig, and the Army News and Defense Press Services.)

"... We know we have a non-negotiable contract with the American people to provide a trained and ready Army on demand ..."

-- Gen. Eric Shinseki

The Eagle ...

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Jerry Greenwood, site manager for the Stanley R. Mickelsen Safeguard Complex in North Dakota, stands in front of the Missile Site Radar, with walls that have four to five feet of nuclear-hardened concrete.

**Photo and story by Marco Morales
Huntsville, Ala.**

On windy days, if one listens closely, soft whispers of Native American Sioux languages can be heard chanting ceremonial bear hunt or sun dance verses over the grassy landscape of Nekoma, a small town 100 miles northwest of Grand Forks, N.D.

What used to be home for the Great Plains Dakota Indians now serves as farmland and as a standby for a proposed National Missile Defense site which—in the mid-70s—was operational as an Anti-Ballistic Missile defense site known as the Stanley R. Mickelsen Safeguard Complex, or SRMSC.

The site construction was authorized by Congress in 1969 and began in 1970. When the U.S. and the former Soviet Union signed the ABM Treaty in May 1972, it let both countries deploy defensive systems at two separate locations. A 1974 protocol between the signatories limited each to one ABM site and 100 ABM launchers. Construction of the SRMSC was finished in 1974 and the complex became operational October 1975, remaining operational until Feb. 10, 1976, when it was closed by Congress.

The SRMSC, the only operational ABM facility ever completed in the U.S., is now in “caretaker” status and the U.S. Army Space and Missile Defense Command is responsible for its upkeep and future use. Amidst the principal part of the six-site complex, the MSR, or Missile Site Radar, a stretch of empty, military style buildings, dot the fenced-in facility in a location that would typically be coined, “out in the middle of nowhere.” And taking care of the SRMSC is Jerry Greenwood’s responsibility. Greenwood is the SRMSC site manager and a general engineer who works for the deputy chief of staff, engineer for this command. Green-

Caretaker’s job not ‘run-of-the-mill’

wood, a civil service veteran of 28 years and a native of North Dakota, assures the SRMSC stays “open” even in its current state.

Standing next to the MSR’s 77-foot-high radar structure, made up of four to five feet of nuclear-hardened concrete, Greenwood talked about his duties.

“I like the variety of people I meet. I travel a lot, but usually not for long periods,” he said. “I’ve done historical coordination, contract technical monitoring, I’ve interfaced with the contracting office, worked with budgets—just a great mix of different jobs,” he added.

Reflecting on the former capabilities of the SRMSC, Greenwood offered some background on the missile silos at the 442-acre MSR site.

“There were 100 missiles associated with this place; 30 Spartans and 70 Sprints,” Greenwood said. “These lids are for the Sprint missile which can travel unbelievably fast. The lids are made out of high density styrofoam,” he said.

Pointing at one silo, he described how the Spartan missile system would have worked. The missiles and their warheads have long since been removed. “An explosive gas charge inside the silo blows the lid off as the missile is being launched. The lids for the Spartan missile come in pairs. One hole houses the missile and the other is for the missile’s exhaust,” Green-

wood said. The Sprint was a short-range missile designed to destroy incoming enemy ballistic missiles in their final approach phase. The Spartan, a long-range interceptor, was designed to destroy an incoming ballistic missile in the exoatmosphere.

So what does Greenwood do on a regular day at the SRMSC? “I don’t have an average day. Since I’ve been out here, I’ve done design work for projects.

“I could be escorting people from the press or state and federal level environmentalists one day, or interfacing with other people or agencies that want to know things about the SRMSC on other days,” he said. And the job keeps him busier than most people would think.

Greenwood, who earned a bachelor’s degree in mechanical engineering from the University of North Dakota at Grand Forks, enjoys his profession.

“I’m enjoying this job a lot. Sometimes there are lots of things going on around here particularly during winter when everybody likes to stay away. Things slow down a bit and there are no construction projects because of the weather. This is the time that I go to other SMDC elements. I went to Wake Island to fill in for the site manager. I went to Colorado Springs and did an inspection at the Army Space Command,” he said.

As if that weren’t enough for one

person, Greenwood spoke about some of his other duties. “I interface with the Air Force at the PARCS site, which is leased from SMDC,” he said. “And I attend environmental protection meetings and their facility meetings to make sure that we know what kinds of things they’re doing on our property...not so much to tell them what they can or can’t do, but to be aware.”

Greenwood says there are also historical considerations associated with modifying buildings at the SRMSC, which includes four Remote Sprint Launch sites, or RSLs.

“Some of these buildings out here are considered historical so we’re careful about what we tear down,” he said. “One small building, a fuel-oil building inside the tactical area that we’ve been looking at taking down, had to be coordinated through the state historical preservation office before we could do anything.”

As an engineer, he says it’s frustrating to see empty buildings not being used.

“It’s kind of sad when you look around at these buildings because, structurally, they’re very sound and well-built. And we’ve made efforts to find organizations who can use the buildings, but most everyone who has looked at the buildings wants a long-term lease agreement,” Greenwood said. “The best that we can offer them is a short-term agreement because if NMD says they want it, they’ll get a short notice telling them to leave.”

And what stands in the near future for the SRMSC and Nekoma?

“If they deploy something out here there could be quite a bit of activity as a result,” said Greenwood. “This isn’t the only place decision-makers are looking at. In fact, a lot of people think the Stanley R. Mickelsen site is only here at the MSR, but it covers six other sites including this [MSR] site, the PARCS site, and the four remote Sprint launch sites.”

“... Some of these buildings out here are considered historical so we’re careful about what we tear down ...”

— Jerry Greenwood

It was a ball, man!!

Photos by Ed White
and Angela Gatti



To celebrate its 11th birthday, the Army Space Command had a ball last month in Colorado Springs, Colo. 1st SATCON Battalion Command Sgt. Maj. Ray Hrynko (center) and his wife Thea, visit with SMDC's Command Sgt. Maj. Frank Mantia.



Maj. Tom Anderson (standing), and the headquarters company commander, Capt. Wendy Lupo, enjoy the annual ARSPACE birthday ball.



Teru and Bryan Sasaki find their seats during the cocktail hour. Bryan played a key part in planning the ball this year. A lot of work went into the event and a lot of fun came out of it.



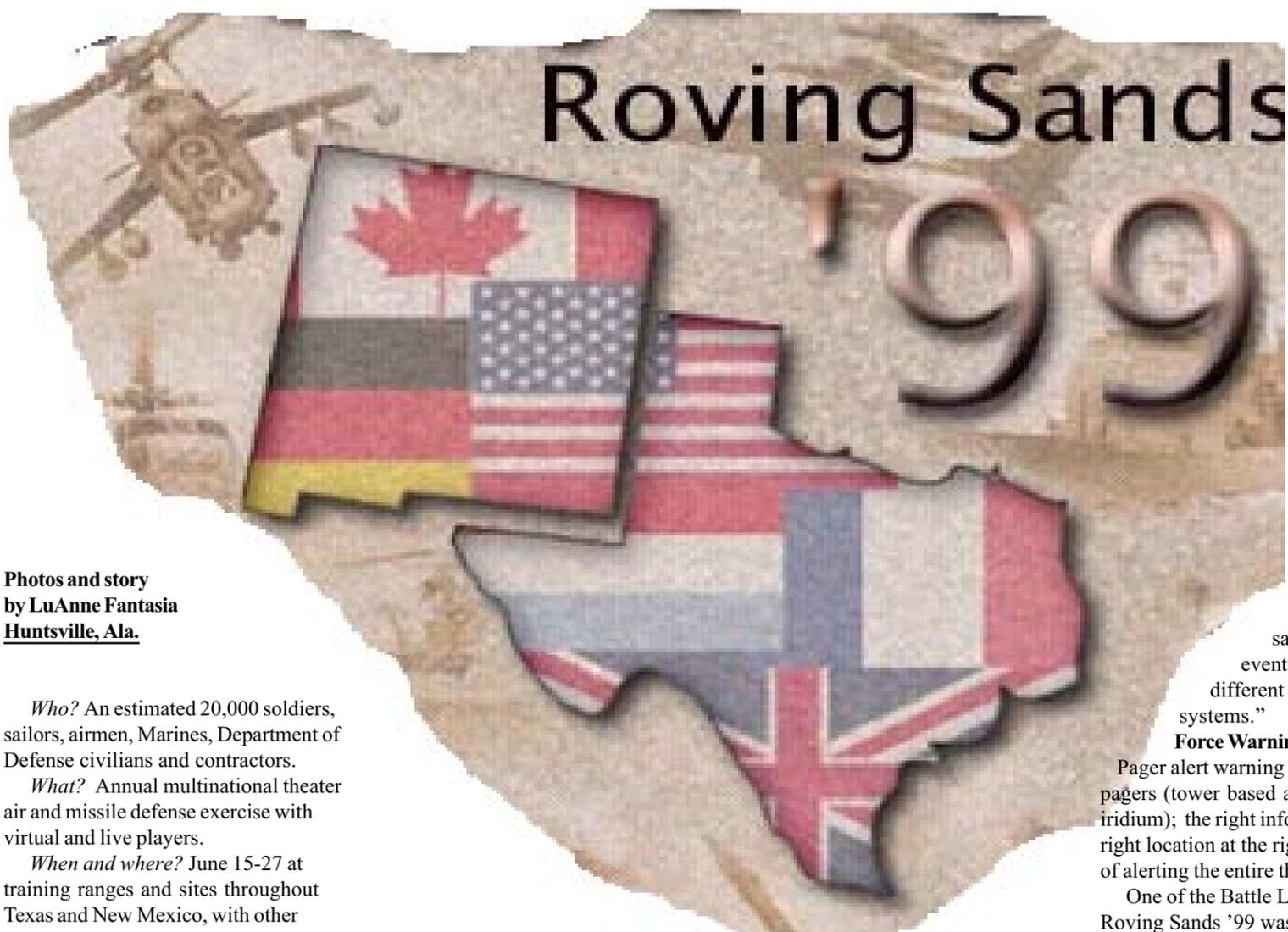
The few, the proud, the well fed...ARSPACE's only Marine, Capt. Scott Mayfield waits for the food at ARSPACE's annual birthday ball.



Michele Costello (left) talks with Sgt. Cassandra Shigley, who sang The Star Spangled Banner during the opening ceremonies at the birthday ball. This year's celebration was marked by the absence of the V Corps Army Space Team, which is in Albania supporting operations there and in Kosovo.



Sgt. 1st Class and Mrs. Dennis O'Rourke take a breather between ceremonies. O'Rourke was the NCOIC for the color guard and was responsible for the coordination of the various ARSPACE elements which came together to put on the ball.



**Photos and story
by LuAnne Fantasia
Huntsville, Ala.**

Who? An estimated 20,000 soldiers, sailors, airmen, Marines, Department of Defense civilians and contractors.

What? Annual multinational theater air and missile defense exercise with virtual and live players.

When and where? June 15-27 at training ranges and sites throughout Texas and New Mexico, with other players in Virginia, Florida, Arizona, Colorado and California.

Why? To reflect a wide range of capabilities needed in various geographical areas; to enhance commanders' ability to plan and experience joint and combined tactical air operations, and theater missile defense operations under real world conditions. "In theater" replication through simulation even more important this year due to loss of large, live capability to Kosovo.

SMDC's role? Establish space as an integral role to the warfighter and to use the output for future application.

TSIU—the threads that tied

For Roving Sands '99, the TSIU, or Tactical Simulation Interface Unit, was a major player providing support to the 32nd AAMDC, or Army Air and Missile Defense Command at Fort Bliss, Texas. The 32nd is the warfighting host for the exercise.

Bridging the gap between simulation and the soldier, the TSIU makes soldiers experience the same situation as they would in conflict.

Through the TSIU, simulation data is converted to real world tactical information, according to Tom Rycroft, a military operations analyst with Coleman Research Corporation, stationed at Fort Bliss, Texas. During Roving Sands '99, Rycroft was an exercise integrator for SMDC.

"For simulation support, there has to be a clear cut wall between simulation and real world," Rycroft said. "Various sensors in the simulation world create output which the TSIU reformats into tactical messages and sends that real world information back out through the tactical communication net."

Rycroft explained the three threads running through the Battle Lab's TSIU for the exercise. "The blue thread, or friendly forces, status reporting threat is critical to the joint task force commander as an important piece of his Common Operational Picture. The PEGEM and the BOA are the other two threads."

The PEGEM—Battle Lab's Post-

Engagement Ground Effects Model—models contamination and distribution patterns of a nuclear, biological, chemical, or NBC, incident. It provides everyone with the NBC picture.

"It can be a simulated model or a predictive tool," Rycroft said. "At the TOC workstation, it is a predictive tool. If PEGEM suspects an incoming warhead is an NBC one, or if sensors are hit by contamination, PEGEM sends downwind distribution predictions across the simulation network, which TSIU receives and turns into tactical information or perceive data and sends that to the white cell commanders."

BOA—Battlefield Ordnance Awareness

This sensor technology collects and processes detonations such as intercepts and missile launch events and provides near real-time information to the commander. It is an initiative of the command's Space Technology Directorate, part of the Missile Defense and Space Technology Center, or MDSTC.

Rycroft explained that whether the platform independent BOA sensors are space-based or aircraft mounted, they are infrared sensors that stare at a sector of the battlefield.

"These sensors look at their sector of the battlefield, unlike the defense satellite program, or DSP, which rotates and is never fixed on one sector of the battlefield," Rycroft said.

Andrew Callan, a general engineer with Teledyne Brown Engineering, was on site in the BOA cell for Roving

Sands '99.

"The BOA senses battlefield flashes, everything from artillery firing to impact on the ground," Callan said. "The BOA simulation for Roving Sands—based in Extended Air Defense Simulation, or EADSIM—characterizes those flashes and determines their sources, sends that data to the TSIU, which passes it on to the tactical operation centers of the 40th Infantry Division and the 32nd Army Air and Missile Defense Command."

A contractor for BOA, John Dennis, said, "We're seeing a lot more activity in this exercise than we expected."

Yesterday we saw more than 700 events from 12 different types of weapon systems."

Force Warning Experiment—

Pager alert warning software and pagers (tower based and space-based iridium); the right information to the right location at the right time instead of alerting the entire theater.

One of the Battle Lab's goals for Roving Sands '99 was to conduct actual field experiments with the new satellite-based, worldwide Iridium pagers.

"We also want to provide the 32nd AAMDC with leave-behind Iridium paging capability following our Force Warning experiment during Roving Sands," said Larry Burger, director of the command's Space and Missile Defense Battle Lab.

The space-based paging system Burger refers to is an evolving early warning concept that distributes warnings directly to the lowest levels of affected units within 35-40 seconds.

"It's easy for the joint task force command and staff to get immediate, critical information, but who gets the word to the private in the sleeping tent to get his gas mask on now?" said Staff Sgt. Larceno Pearson.

He is NCOIC of the Force Warning Experiment in the Battle Lab at Colorado Springs, Colo.

(See Exercise, page 6)



TSIU crew for Roving Sands '99: (seated) Byrom Dervis, Coleman Research Corporation; (standing, l to r) Dennis Utz, Coleman Research Corporation; Tom Rycroft, SMDC's RS 99 exercise integrator; and Tonya Anderson, SMDC Battle Lab.

Exercise

(Continued from page 5)

"This experiment is all about survivability of the soldier," he added. "These pagers are one of many answers to getting information down to the private's level. If soldiers get the message in time to prepare for the hit, then force warning has done its job."

Bill Coffey--a support contractor who works with Pearson in Colorado Springs--explained the four pillars of theater missile defense; attack operations, active defense, passive defense and battle management, which includes command, control, communications and intelligence.

"Force warning is part of the passive defense, or force protection," Coffey said. "It's buttoning down the hatches. It encompasses everything that helps soldiers survive...everything from countering incoming missiles to getting their gas masks on."

Coffey explained how the pager system supports the 32nd AAMDC's passive defense cell for Roving Sands '99. "The satellites detect a hit and send data to the JTAGS, where the alert warning software creates a mailing list to only those forces in the affected area. Pager messages are instantaneously sent to only those addresses, instead of the entire theater, eliminating the the frustrating theater-wide and indiscriminant warning experienced during Operation Desert Storm."

"Roving Sands '99 is a test for the timeliness of the space-based pager concept and use of the software," Pearson said, explaining that previous experiments were tower-based, which depends upon the terrain of the land, such as Kuwait and South Korea.

"We left behind about 400 tower-based pagers in Kuwait, and will leave behind 30 of the 40 Iridium satellite-based pagers for the 32nd AAMDC after Roving Sands," Pearson said.

Coffey added, "The 32nd already has the force warning software and is trained in its capabilities. The pagers themselves are just regular, commercial items available off-the-shelf. It's the software in the tactical operations center that does all the thinking."

Army Maj. Randy Smith is the officer in charge of the passive defense cell for the 32nd AAMDC during Roving Sands

"At this end, the automated paging system is working well. The only problems have been things such as commercial lines needing to be upgraded to priority lines, and we had some weather interruptions due to severe thunderstorms.

"But this unit has deployed to Kuwait three times during the past year, so these leave-behind pagers and software will be put to good use," Smith added.

What's a HUMRAAM???

Take one HUMVEE, mount an advanced medium-range air-to-air missile, or AMRAAM, and you've got a HUMRAAM...and another Army acronym!

For Roving Sands '99, it used the Battle Lab's Extended Air Defense Testbed for its model simulation, but what does it do? Well, it boldly goes where no man has gone before.

"It fills the gap between long- and short-range air-to-air missile defense," said Monty Offutt, a principal engineer for Boeing-Huntsville. "It helps fill in the medium range, between the Avenger and the Patriot."

Offutt said the Marine Corps introduced the concept in one of their programs, and that all components are off-the-shelf, making assembly of the system cheaper and quicker.

One of the HUMRAAM's components is from the Bradley Linebacker (where Stinger missiles are added to the Bradley.) Offutt said another is from the Avenger program, where Stinger missiles are on a turret. (They are attached to the HUMVEE on a turret system, making it possible to aim them anywhere in 360 degrees.)

"The third component is the "slew-to-cue program," Offutt said, "which is a kit that upgrades existing Avengers, enabling them to be told the location of a target, aim and slew it!"



John Peck, Colsa Corporation, Colorado Springs, Colo., and Staff Sgt. Forrest Moncrief, a 32nd AAMDC, address pagers in the passive defense cell of the tactical operations center during Roving Sands '99.



Soldiers of the 32nd Army Air and Missile Defense Command at Fort Bliss, Texas, hosted more than 20,000 soldiers, sailors, airmen, Marines, DoD civilians and contractors during Roving Sands '99. The 32nd AAMDC was the war fighting host for the exercise. Participants in RS '99 relied heavily on simulation data transmitted to and from the exercise nerve center, the tactical operations center, or TOC.



Bill Coffey (left), a support contractor who works with Iridium pagers to a General Dynamics, explained the experiment experiment testbed prior to the impact of simulation data transmitted to the field during RS '99 received by soldiers and units prior to the exercise.



AMDC soldier at Fort Bliss, Texas, monitor '99.



Welcome to Fort Bliss, Texas

Established in 1848, Fort Bliss is one of the oldest Army posts in the United States. It is the home of the Air Defense Artillery Center of Excellence, responsible for air defense artillery training of U.S. soldiers and the soldiers of many allied nations.

It is also the home of seven Forces Command warfighting units--the 32nd Army Air and Missile Defense Command, 11th Air Defense Artillery Brigade, 31st Air Defense Artillery Brigade, the 108th Air Defense Artillery Brigade, 35th Air Defense Artillery Brigade, the 204th Military Intelligence Battalion, and the 978th Military Police Company.

With 1.1 million acres, this post is bigger than the state of Rhode Island and can accommodate every weapon system in the Army. Excellent ranges and training areas, coupled with the third longest runway in the nation, make Fort Bliss a premier facility for training, mobilization, and deploying combat forces.

Fort Bliss is located in the largest American city on a U.S. international border, (El Paso, Texas) contributing over \$1 billion annually to the regional economy.

Over its distinguished history, Fort Bliss has served as an infantry post, a cavalry post, and today serves as the premier Air Defense Artillery Center of Excellence.



Contractor in Colorado Springs, explains the Force Warning Experiment to a man Army officer at Roving Sands '99. The Force Warning Experiment demonstrated the ability to send time-sensitive alert warning messages to pagers to alert incoming tactical ballistic missiles during the exercise. Pagers in the area received over 600 TBM alert warning messages, 79 per cent of which alerted the impact time.



Air Defense Artillery

"First to Fire"

Roving Sands '99



The JLENS prototype processing station correlates multiple data links into a single track. Radar tracks from other aerostats in Deming, N.M. and Marfa, Texas, networked into the JLENS processing station where data contributed to the generation of a single integrated air picture.

JLENS:

Tracks multiple low altitude targets to 200 miles



JLENS crew members work under the 71-meter Aerostat to adjust the fiber optic tether from the sensor to the processing station.

Navy Cdr. Bob Dees (standing), JLENS engineer, views real time weather data inside the processing station with Sgt. 1st Class William Strawhorn, a 263rd AAMDC soldier with the South Carolina National Guard.



Send in the Rhode Island National Guard!

With more than 20,000 players in Roving Sands '99, this country's smallest state went above and beyond its call to duty by sending three companies to support the annual, multinational exercise. The 169th Military Police Company alone sent over 100 soldiers from Warren, R.I. Three of them are pictured here, at their station outside SMDC's high security white cell. Courteous and friendly...but always professional, these law enforcement soldiers checked bags, computers, badges and rosters continuously during the two-week exercise. Pictured (left to right) is the 169th MP Company's Spc. Russ Horsman, Spc. Michael Ferreira, and Sgt. Gerald Walsh. Ferreira is a former Marine with four years' active duty. Walsh is also prior service, with 10 years' active duty in the Navy.

4 4 8 8

Building offers huge, long-term savings

by LuAnne Fantasia
Huntsville, Ala.

It's all but official, and that's only a matter of time. But the bottom line is that the command's Huntsville element plans to move onto Redstone Arsenal within the next three years—a move that will save literally millions of long-term dollars. You could say it's simple lease-onomics.

"That just makes sense," said Lt. Col. John Ramey, the command's deputy chief of staff engineer. "We're spending more than \$6.5 million a year now for a lease. Simple economics says that at that rate, we will have a new building paid for in less than four years."

Ramey explained that the Army Materiel Command's downsizing in the past year has left a building vacant on Redstone Arsenal that can accommodate all of the command's some 800 Huntsville soldiers and employees.

"This does not include the program executive office people currently in the building," Ramey said, explaining that the PEO (THAAD, Patriot and the technical support directorate) has decided not to move.

He said the command had three options: status quo, new construction or renovation of an existing facility. The plan now is to renovate building 4488 on Martin Road, the old Acquisition Center. Plans call for the building to be completely gutted, using only the existing concrete platform and frame to rebuild.

"The building will be within current Redstone design guide and codes," Ramey said, adding that asbestos abatement would be done, and fire protection, plumbing, electrical, and mechanical—heat and air—systems would all be new.

Demolition and rebuild construction is currently scheduled to begin during the first quarter of Fiscal Year 01, or October to December 2000. Given an 18-24 month construction time, move-in would be three years from now, but that will be budget-driven, Ramey said.

Under Redstone's current money-saving "Operation Small Footprint", SMDC would reduce Redstone's excess space by more than 200K square feet, reducing their penalties thereby increasing their base operations dollars.

Building 4488 opened 43 years ago as the Army's main facility for the Army Ballistic Missile Agency. It is located next to the technical library.

"General Costello gave us the go-ahead to take this to the Army to see if they could help us get out of our current high-cost lease," Ramey said.

The Army then asked General Costello to concur with the option of full renovation of an existing facility on Redstone, specifically building 4488, to which he agreed, Ramey said.

"It's important to remember three benefits to this," Ramey said. "It reduces Redstone's excess space. It saves this command \$6.5 million dollars in rent a year, and it has a four-year payback. That's just smart business."

AFAP

(Continued from page 1)

"We want people in the command to know the avenues available to them to get their concerns heard and resolved," she said.

Portia Davidson is this command's AFAP coordinator. She has introduced the program and made it successful in another major Army command and is making it work here. Her program coordinators—in all of the command's major elements—are: Don **Mathis**, ARSPACE; Cris **Foster**, HELSTF; 1st Sgt. Ozel **Robertson**, Kwajalein; Gloria **Flowers**, Huntsville; Master Sgt. Bill **Peeler**, ASPO; Sgt. 1st Class Bernard **Coutour**, 1st SATCON Battalion; and Regina **Campbell**, Arlington.

Flowers said that two issues currently being worked through the AFAP are: compensation more supportive of families when the service member or civilian employee has repeated or extensive temporary duty travel; and re-computation of cost-of-living allowances in many areas.

She said attending the conference helped her as an AFAP coordinator have a better understanding of how the program benefits everyone in the Department of Army.

"Most of us are second- or third-generation military or civil service families. What we do now, and the changes we effect now, will most likely affect our children and grandchildren," she said.

"If we don't care now, we'll lose our most valuable assets for Army 2010—people."



Gloria Flowers (left) and Sue Flohr recently attended the Army Materiel Command's AFAP conference as delegates. (Kathy Nelson, from HELSTF, also attended, but was unavailable for photo.) All three women said the Army Family Action Plan is a powerful and proactive program that does have decision-makers' attention, and does effect long-term and positive changes for soldiers and civilian employees.



(Left) Regina Campbell, a former Army captain, is the AFAP coordinator for SMDC-Arlington. Portia Davidson (right), is SMDC's AFAP coordinator.



(Left) Cris Foster is the AFAP coordinator at HELSTF. 1st Sgt. Ozel Robertson is the coordinator on Kwajalein.

26 years, four days and a wake-up!!

Joint Targets director retires

Story and photo by LuAnne Fantasia
Huntsville, Ala.

"This man is the leader of a team that, when there's nothing left of their product, that's a success," the commanding general said of Col. George Birdsong during his recent retirement ceremony.

"The Targets office is an astoundingly efficient unit. Col. Birdsong's team enjoyed a great success last week when their Hera target succumbed to the THAAD. And, all of Col. Birdsong's people played a critical role in both of those achievements," Lt. Gen. John Costello said.

Birdsong, a 26-year Army veteran, came to the command in '97 as the director of [then] Targets, Test and Evaluation Directorate. He was instrumental in achieving Department of Army approval for establishing [the current] Ballistic Missile Targets Joint Project Office and was selected as its first Project Manager.

As project manager, Birdsong was responsible for the development, acquisition, and launch of all ballistic missile targets in support of the Ballistic Missile Defense Organization's theater and national missile defense programs.

With Birdsong's officer record brief in hand, Costello said, "This ORB is the military version of DNA...it tells everything Col. Birdsong has done...his assignments, his education and military schools and his awards and medals. But it does not tell about his dedication, his personal integrity, his determination, and his honor. Nor does it tell of his wife's and his daughters' sacrifice to support him in his career.

"Today is not a retirement parade with troop formations passing in review," Costello said. "But, on behalf of the hundreds and thousands of soldiers Col. Birdsong has influenced in his 26 years as an Army officer, I say thank you."

Costello then presented Birdsong with a Legion of Merit medal and his certificate of retirement.

"I have two value-based principles for my life," Birdsong said. "A solid moral background of truth, honor, service, and hard work, which started with my mother. And, the many teachers and mentors of my life, including leaders and non-commissioned officers.

"General Barry MacCaffrey [retired] taught me that

a good idea isn't always recognized as such by others—that you have to believe in the idea when no one else does."

Birdsong named many people by name, personally thanking them for how they effected change in his life, "including a lot of Army civilians along the way," he said.

"A common thread weaving through all these people is that they're all great Americans. They focus on the mission like a laser beam and get it done. They all go beyond," Birdsong said.

Birdsong is a native of Alabama, who graduated from the Marion Military Institute of Alabama, and Georgia State University in Columbus, Ga., and was commissioned as a second lieutenant of Infantry in August 1973. He officially retires Sept. 1—26 years, four days and a wake-up.

Col. James Cambron succeeds Birdsong as Project Manager of the Ballistic Missile Targets Joint Project Office. He comes to SMDC from White Sands Missile Range, where he was the deputy commander and director of National Range.



"This ORB is the military version of DNA..." said Lt. Gen. John Costello (left) at Col. George Birdsong's retirement.

Around the battalion...around the world

by Spc. Nicole Dechert
Fort Meade, Md.

Driving up Emory Road, Fort Meade, Md., two 60-foot satellite antennas rise from the top of the hill. These dishes, along with three smaller 40-foot satellites, enable soldiers of Bravo Company, 1st Satellite Control Battalion to perform their mission.

The 1st SATCON—with headquarters in Colorado Springs, Colo.—is a battalion in the U.S. Army Space Command, a major subordinate element of the U.S. Army Space and Missile Defense Command. The battalion is responsible for the operation and maintenance of a training facility at Schriever Air Force Base, and for five Defense Satellite Communications Systems, or DSCS, operations centers.

The DSCS operations centers are strategically located throughout the world at: Alpha Company, Fort Detrick, Md.; Bravo Company, here at Fort Meade, Md.; Charlie Company, Landstuhl, Germany; Delta Company, Camp Roberts, Calif.; and Echo Company, Fort Buckner, Okinawa, Japan.

Each center is responsible for the real-time, continuous command and control of DSCS satellites and their associated communications networks.

A DSCS satellite is a high capacity communications system that provides wide-band communications links in



Courtesy Photo

the Super High Frequency portion of the radio spectrum to customers approved by the Joint Staff. Customers access the satellite using large, fixed earth terminals. It's an intricate network that provides vital communications to strategic customers, the intelligence community, the White House Communications Agency, and deployed warfighters around the world.

Two websites offer more information about the 1st Satellite Control Battalion: Army Space Command

website at www.armyspace.com, or the Space and Missile Defense Command website at www.smdc.army.mil.

Bravo, Bravo!

Bravo Company soldiers are doing great things. Soldiering is not taken lightly here. Ask Staff Sgt. James Doss, 1999 NCO of the Year for SMDC. Doss continues the tradition set by Staff Sgt. Katherine Day, the 1998 East [stateside] SMDC NCO of the Year, and Spc. Mark Thompson, the 1998 East

Bravo Company Commander Capt. Kim Kawamoto (right), congratulates two of her soldiers for their team's bowling championship at Fort Meade, Md. Spec. William Farmer (left) and Sgt. Bradley Day show the team trophy.

[stateside] SMDC Soldier of the Year.

The Bravo Company bowling team is also making good marks. The team? Staff Sgts. Darryl Jackson and Kevin Crosby; Sgt. Bradley Day; and Spcs. William Farmer...and me! Our team was crowned Fort Meade post champions in late May. Finally, our company commander, Capt. Kim Kawamoto, exhibited her winning spirit as a member of the Championship All Army Women's Basketball team.

Small company wins \$3 million contract

by John Ralls
Huntsville, Ala.

From its beginning, this command has provided prime contracting opportunities to qualified and small disadvantaged businesses. In keeping with its small business focus, the command recently awarded a contract to Maximum Technology Corporation.

MTC will provide software independent verification and validation support to the Atmospheric Interceptor Technology program in the command's Weapons Directorate. The command provides MTC a three-year \$2.9 million contract for the support.

The company is a home grown one. Its president, Mickey Crutcher, supported the command from '84-'96 as a contractor. He started his career with Colsa Corporation as a security guard in the command's simulation center. With a positive attitude and hard work, Crutcher became the center's technical support manager in '91, and in '94, he

became the center's program manager, in charge of the \$35 million contract with about 40 support personnel.

In '96, when the simulation center's contract changed hands, Crutcher decided to move forward and form his own company.

"Starting a business has been a dream of mine for as long as I can remember," Crutcher said. "I like challenges and the satisfaction of watching ideas become reality."

This is Crutcher's second SMDC contract, but its first major award. A small purchase order was issued to the company by SMDC in '98, and the company performed so well on that purchase order, the command decided to use the small company to support other command requirements.

"I believed I could transfer knowledge gained while working in the command for Colsa to MTC," Crutcher said. "It has not been easy and the company has a long road to travel, but this contract will help us get there."



Photo by LuAnne Fantasia

Mickey Crutcher (seated, right) is awarded a \$2.9 million contract. Contracting Officer Linda Bentley makes it official. (Back row, l to r): Christina Smith, Kim E. Smith, Noel Paschal, Clara Moore, and Angela Fazah.



Photo by Marco Morales

Lillian Correa (left) and Stephanie Hardiman were recently awarded week-long scholarships at the U.S. Space and Rocket Center, compliments of the Army Space and Missile Defense Association.

Happy campers!

Army Space & Missile Defense Association awards two scholarships

by Gerda Sherrill
Huntsville, Ala.

Two young ladies are on their way to a week at the U.S. Space Camp here, thanks to the Army Space and Missile Defense Association. In support of this command, the association awarded two one-week scholarships during a presentation at the command's Huntsville element.

The happy campers are Lillian Correa, daughter of Carmen Correa from the Contracting and Acquisition Management Office, and Stephanie Hardiman, sponsored by Chuck Lamar from the Weapons Directorate.

Pete Schofield, president of the Association, handed over the valuable scholarship envelopes, congratulating

the two proud winners "for their outstanding scholastic achievements," while scholarship chairman Bob Brown praised "their interest in furthering their scientific horizons."

"This upcoming experience will let you feel what our astronauts go through when preparing to lift off into space," said Brig. Gen. Steven Flohr, SMDC deputy commander. "Your senses will soar when you get an astronaut's eye view of earth after docking a manned maneuvering unit with an orbiting satellite," he continued. "The world's largest hands-on space adventure is waiting for you. Space Camp is the right stuff for fun."



Permanent Change of Station...

Lt. Col. David **Stoddard**, Legion of Merit and PCS to Kwajalein. All of the following soldiers received a Meritorious Service Medal upon their PCS: Lt. Cols. Richard **Doerer**, Tim **Linderman**, Maj. John **Dill**, Louise **Lewis**, Bruce **Collier**, Roy **Sayer**, Kirk **Sanders**, Derik **Crotts**, Scott **Frye**; Capt. David **Scott**, Matthew **Nowak**; Sgt. Maj. Leon **McGraw**, Master Sgt. Lacey **Ivory**, 1st Sgt. Howard **Bufkin**, Sgt. 1st Class Marilyn **Mazalewski**, and Staff Sgt. Bradley **Bricker**.

Hail & Farewell ...

Welcome - Cols. Darell **Lance**, Director of Army Space Program Office; Patrick **O'Reilly**, THAAD Project Manager; and James **Cambron**, Project Manager, BMTJPO; Lt. Col. Patricia **Rainey**, DCSPER.
Farewell - Judy **Angus**

Awards ...

Army Commendation Medal to Maj. Art **Bair**.
Civilian 35-year pin to Charles **White**, JLENS.
Civilian 30-year pins to: Linda **Matheny**, Liz **Hurt**, James **Chiarizio**, Don **Roosman**, Tim **Aden**, Norman **Gilfand**, Mary **Miller**, Tom **Kane**, David **Cross**, and Richard **Barrineau**.
Civilian 25-year pins to: Franklin **Bowles**, Joan **Duvall**, Charles **Lamar**, Stephen **McKay**, Henry **Hollman**, Bob **Connell**, William **Porter**, and Gerda **Sherrill**.
Civilian 20-year pins to: Sammie **Pankey**, Robert **Barker**, Horace **Garner**, Jeanetta

White, Kenneth **Bragg**, Jr., Sharon **Graham**, Lornette **Stokes**, Kay **Thrasher**, Barbara **Elmore**, Rachel **Ramey**, and Beth **Andrews**.

Promotions ...

Maj. John **Dill**, Capt. Kevin **Nabb**, Master Sgt. James **Lussier**, Staff Sgts. Don **O'Neal** and Patrick **Trombley**; and Spc. Jason **Adams**.

Retirement ...

Cols. George **Birdsong**, Mel **Heritage**, Lou **Deeter**, and James **Voss**; Lt. Cols. Jim **Minnon**, Dot **Fulmer-Shaw**, and Phil **Macklin**.

Degree...

Sgt. (Pastor) Jim **Keegan**, B.S. in Theology.

Kwajalein



Photo by Bob Fore

The KRI Dewaruci, the Indonesian Navy training ship, leaves Echo Pier with cadets waving goodbye from the rigging.

*T*all ship makes big splash at Kwajalein



Photo by Cynthia Brewer

A cadet drummer is costumed as a walrus, the mascot of the Indonesian Naval Academy.



Photo by Jim Bennett

The KRI Dewaruci cadet band entertained Kwajalein residents on Brandon Field.

by Jim Bennett
Reprint from *Kwajalein Hourglass*

Whether it was welcoming visitors aboard the tall three-masted barkentine or presenting the military band dressing a variety of uniforms and costumes, the Indonesian Navy training ship KRI Dewaruci gave Kwajalein residents something different to see and do recently.

The ship, on its way to California for the 1999 Gold Rush Race for tall ships, arrived at Kwajalein in mid-May, with the fanfare of a band playing on board, cadets standing high up in the ship's rigging, and a waving crowd at the pier.

In the meantime, the ship's crew opened the ship for tours, allowing residents to visit the upper decks. Residents crowded aboard, examining the rigging and intricate woodwork and purchasing souvenirs.

The cadet band paraded down

Kwajalein's Sixth Street to Ocean Road, and on to Brandon Field, where they gave a performance that included marching renditions of "Ode to Joy," "Auld Lang Syne," and even "Jingle Bells." Drum majors waved their five-foot batons like swords and literally bent over backwards—limbo style—to energize the band. Drummers costumed as walruses, the naval academy's mascot, danced around the other cadets. Another set of drummers was costumed as scuba divers.

The band next paraded back to the ship escorted by a crowd of Kwajalein residents. Cadets, 18- to 22-years-old, answered questions about the ship and the Indonesian navy and sang songs, including "Popeye the Sailor Man."

The cadets will serve on the ship until fall, learning the basics of sailing and long-term deployments. Then they return to the Indonesian Naval Academy and complete final examinations. After that, they join the Indonesian Navy as ensigns.