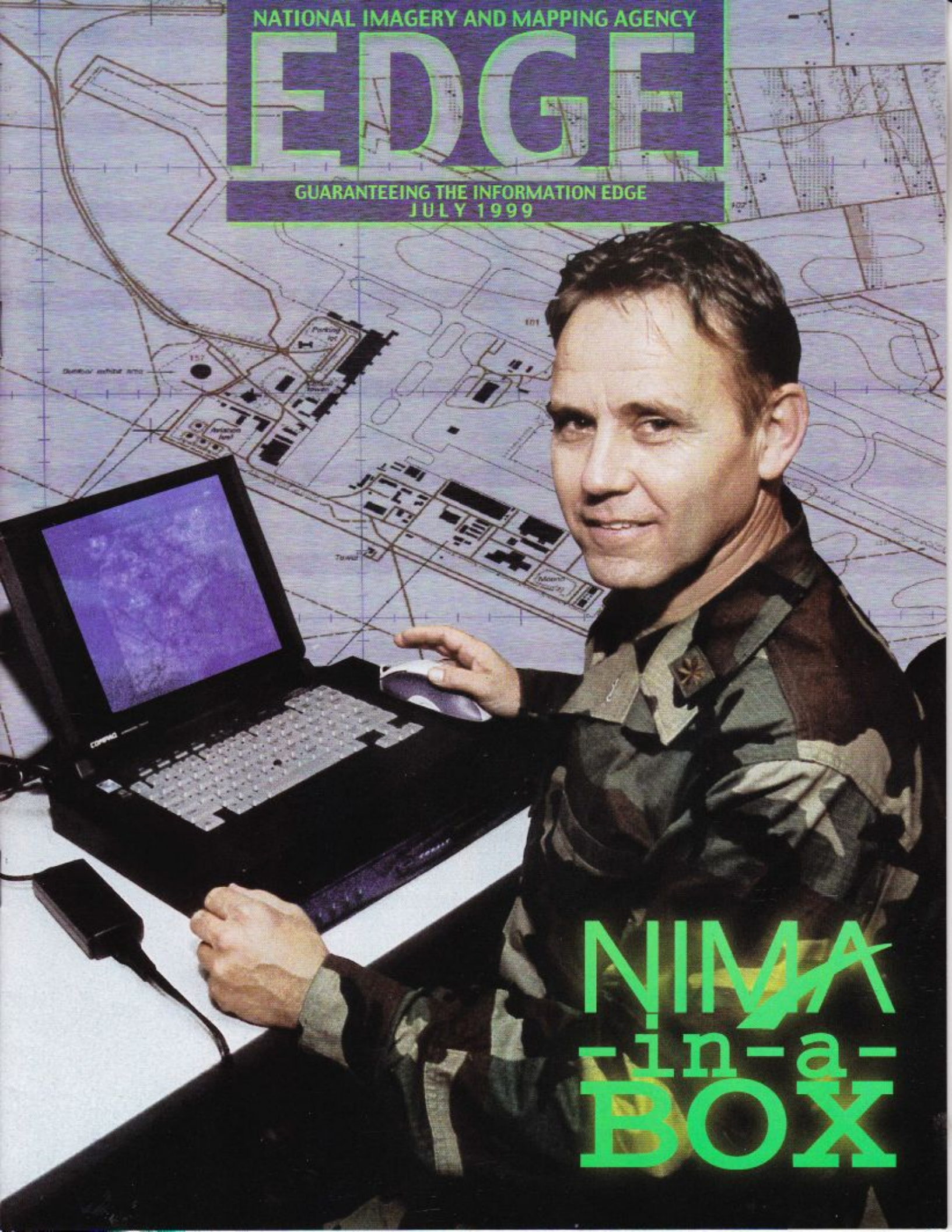
NATIONAL IMAGERY AND MAPPING AGENCY

EDGE

GUARANTEEING THE INFORMATION EDGE
JULY 1999



NIMA -in-a- BOX

JULY 1999

EDGE

On The Cover

It may be innovative, it may even be revolutionary, but NIMA-in-a-Box is simply a standard notebook computer loaded with "the right stuff"—commercial software and NIMA data that makes finding targets a snap. Pictured with the "box" is Program Manager and USAF Reserves Major Vic Kuchar, who spent hours with customers, not to train them, but to find out what they wanted. See story, page 14. *(Photo by John Iler)*

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COMMAND POST

Our support to recent military operations in Serbia and Kosovo has demonstrated once again how we are "guaranteeing the information edge" to our national leaders and warfighters. Three examples illustrate the value we add.

The first is NIMA's crucial role in the rescue of an F-16 pilot shot down in enemy territory during Operation Allied Force. In less than 90 minutes from the time the pilot was on the ground, a search-and-rescue team aboard a helicopter was able to pluck him from danger. They were able to do so because of NIMA's products, information and services that were provided in an innovative package called "NIMA-in-a-Box." It had only been aboard the Airborne Command and Control Center (ABCCC) plane two days when the F-16 pilot went down. As one theater imagery analyst put it, "We were blind before NIMA-in-a-Box came along."

Our second example involves the tragic ethnic cleansing that occurred. As Operation Allied Force wound down, reports surfaced of Serbs destroying evidence of atrocities, specifically mass graves. At first, there were only reports. Then NIMA imagery provided incontrovertible evidence. At a news briefing in June, our imagery-derived products were displayed by the Department of Defense for all the world to see. NIMA is now working closely with the State Department and other members of the Intelligence Community to provide support to the International Criminal Tribunal for the Former Yugoslavia's indictment and prosecution of Serbian government and military officials accused of committing war crimes in Kosovo.

The third way NIMA is providing vital support to our nation is through verification of Serbian withdrawal from Kosovo as called for in the June G-8 peace agreement. We expect even greater requirements for geospatial and imagery products as Operation Joint Guardian begins enforcement of the peace agreement.

I have only highlighted a few of the many ways we have supported our nation in the last few months. Your work shows clearly why our nation needs NIMA. You have never let America down.

James C. King
LTG, USA

National Exploitation System to Activate July 31

by Rosetta Lee-Epps
NES Program Management Office

NIMA's U.S. Imagery and Geospatial Service (USIGS) will achieve a major milestone July 31 when its National Exploitation System (NES) is activated. It will replace the Defense Intelligence Agency's (DIA) Advanced Imagery Requirements and Exploitation System (AIRES) Life Extension (ALE) System and NIMA's National Data System (NDS).

"Their functions and capabilities," said NES Program Manager Irvin W. Hayes, "will be taken over by the Y2K compliant NES."

The Five-Year Mission

"NES is the culmination of five years' work and provides imagery analysts and researchers the tools for exploitation and reporting on imagery," Hayes explained. "And it will inherit the historical repository for imagery intelligence reports created on the legacy NDS and ALE systems."

The new system will be used by NIMA's imagery analysts, DIA analysts, the Missiles and Space Intelligence Center (MSIC), Armed Forces Medical Intelligence Center (AFMIC) and the U.S. Army's National Ground Intelligence Center (NGIC). The system will:

- Provide mission-critical national and DoD imagery intelligence, including target and topic reports and cables;
- Serve as the authoritative source for targets for the imagery and geospatial community, providing the Requirements Management System (RMS) with the active target collection deck;
- Provide RMS exploitation feedback;
- Establish links between the imagery and all-source communities through the NES and DIA's Modernized Integrated Data Base (MIDB) interface;
- Manage soft copy nomination and distribution for Imagery Data Exploitation (IDEX) and the Integrated Exploitation Capability (IEC) workstations; and
- Match imagery and targets with analysts (predict and assign).

NES also will support NIMA production users, policy makers and military strategists around the globe with:

- Soft copy imagery coverage plots;
- Worldwide access to imagery-derived information through Intelink connectivity to the historical imagery, intelligence reporting, and history of coverage databases; and
- Profiling of reports and image/target pairs.

Worldwide Access

"Customers will be able to access the NES database via Intelink all over the world," Hayes said. "NES also will allow Intelink (TS) users to display image footprints and targets of interest on NIMA map background data." Thus, research customers will be able to quickly assess image availability over their targets of interest and can access historical national imagery archives through the NES interface to the National Area Coverage Data File (NACDF).

All of the imagery-derived information in the NES will be available to all Intelink (TS) users. Most of the research users will not require NES user log-on IDs or passwords. However, NES log-on IDs and passwords will be required for imagery analysts who support NIMA, NGIC and DIA (MSIC and AFMIC).

Although current ALE and NDS users should have little problems adjusting to NES, the NIMA Imagery and Mapping College (NIMC) has taken steps to ensure that a comprehensive NES training program is established.

NIMC, under the auspices of Stephen Handwerk and the author, has identified and

Members of the NIMA System Engineering Support team include, from left: Patricia Murphy, John Rother, Irvin Hayes, Vernon Hawkins and Kent Varney. Photo by Rob Cox

catalogued the user training requirements. This has resulted in an on-line training suite of software called the Electronic Performance Support System (EPSS) with a companion cadre of classroom training courses, covering all aspects of the system.

A multidisciplinary development team was established by Paul Feldman, director, Management Systems Division (SOM), to create system requirements and to develop the new system. The NES Program Management Office (SOM-N) consists of Hayes, with John Rother (SOM-NA), the contract office technical representative (COTR), and Patricia Murphy (SOM-NS) serving as the Operations and Maintenance (O&M) advocate. System development was led by Ricci Beasley of Lockheed Martin; System Engineering and Integration was provided by the NIMA System Engineering Support (NSES) team led by Vernon Hawkins Jr.

For more details on NES training, see the NIMA College and the NES Home Pages on Intelink. NIMC points of contact on NES training are Handwerk and Mary-Beth Gaddie. They may be reached at (202) 863-3436.

Questions concerning the NES program should be directed to Hayes or John Rother at DSN325-6225 (STU-III) or (202) 863-3625. ❖

Supporting Air Operations Aboard Stennis

Photo by Darryl Holman

An F/A-18 Hornet lands on the aircraft carrier USS John C. Stennis in the Arabian Gulf. NIMA technical representatives aboard the carrier spent much of their time supporting air operations over Iraq.

by Paul Hurlburt

From the moment they touched down on the deck of USS *John C. Stennis* in a C-2 cargo plane until the time they took off from the same deck weeks later, NIMA cartographers and imagery analysts providing support during the recent deployment said it was an experience they'll always remember.

"It was like no circus ride I'd ever been on," said St. Louis cartographer Lori LeBlanc of the aircraft carrier landing. "You hit the arrest cable and stop, all in less than 300 feet and under three seconds." Taking off on the return flight at the end of *Stennis*' deployment, she added, was equally as exciting. "You have to go fast enough to become airborne, so you're catapulted off the deck in a steam-driven sled, going from 0 to 180 miles per hour in under three seconds."

Throughout the eight-month deployment—which began in Norfolk, ended in San Diego and included duty in the Arabian Gulf—at least one NIMA technical representative was aboard to provide support to the carrier and its battle group of planes and ships.

Although some days in the Gulf hit the 135-degree mark and calls frequently jarred them awake at night, LeBlanc said, "We'd all go back tomorrow if we could. Despite the demanding work and never being able to get away, I don't know anybody who didn't think this was one of the neatest things they'd ever done."

LeBlanc and the other NIMA "tech reps" spent much of their time supporting air operations in monitoring "no-fly" zones over Iraq. Customers included aircrews, mission planners and the *Stennis* and battle group commanding officers.

The tech reps coached sailors in the use of mostly commercial off-the-shelf systems NIMA left behind after a Joint Warrior Interoperability Demonstration (JWID). They also used imagery intelligence and geospatial data sets to create nearly 40 customized charts upon which pilots and planners came to rely. A 1:50,000-scale topographic line map with scaled target imagery embedded in the center greatly aided aviators in finding their targets.

Using the Internet, the tech reps were able to quickly access and provide data and technical assistance from the NIMA technology labs in Bethesda and St. Louis. "They did a lot of the legwork for us," LeBlanc said. "They were terrific. We chatted on the Internet three or four times a week."

During their four- to six-week tours, the tech reps helped complete an Internet home page established by NIMA before the deployment to provide *Stennis* users quick access to needed information. From the Digital Target Inventory site on the Secret Internet Protocol Routing Network (SPIRNet), mission planners and pilots gained access to all the imagery, geospatial and other information with the click of a mouse.

The target home page included non-NIMA data, such as the latest reconnaissance imagery collected by the battle group. It was so popular with the Navy, LeBlanc said, it resulted in a requirement to field a similar capability in Bahrain after the *Stennis* departed the region.

As one report put it, "The NIMA experience on the *Stennis* is a JWID [Joint Warrior Interoperability Demonstration] success story of turning NIMA capabilities into an indispensable asset." A senior officer estimated that the new NIMA JWID capability saved strike planners up to 75 percent of the time normally taken to do their job.

The face-to-face aspect of the NIMA service also was important, LeBlanc said. "They really picked our brains," LeBlanc said. "And we learned a lot."

At one point, she saw a sailor marking up a chart. "It obviously didn't fit his need," she said, "so I asked him, 'What do you need?' In many cases, we connected people with products and resources. It was so much more than going out and making charts."

NIMA tech reps who joined the *Stennis* deployment included LeBlanc, Carolyn Barry, Darryl Holman, James McGinley, Dave Montgomery, Jeffrey Osborn, Patti Pokorney and Kelvin Toots. ❖

Photo by Lori LeBlanc

Darryl Holman arrives aboard the Stennis to relieve Lori LeBlanc as NIMA technical representative.

Air operations aboard the Stennis.

Photo by Darryl Holman

St. Louis Employees, Teams Honored With FEB Awards

Three employees and two teams from NIMA St. Louis were honored at the 10th annual Federal Employee of the Year Awards ceremony held May 6 in St. Louis.

Sponsored by the Federal Executive Board of St. Louis, the ceremony is part of the region's celebration of Public Service Recognition Week. It recognizes federal civilian and military employees for significant contributions to their agencies and communities. More than 180 federal employees, representing 33 government agencies, received nominations. Phyllis Farris, Geospatial Information and Services (GI), was named Outstanding Manger of the Year. She was recognized for her tireless efforts to improve the lives of the employees in her department as well as the general employee population in NIMA. Her leadership and management abilities resulted in improved employment conditions within her department, high morale and increased productivity.

Air Force 2nd Lt. Kenneth L. Black, Office of the Inspector General (IG), was the Outstanding Law Enforcement Employee. His performance aided in the resolution of potential morale-destroying employee concerns; the prevention of fraud, waste and abuse, and mismanagement of government resources; and contributed to overall success in achieving the missions of the Office of Inspector General and NIMA St. Louis.

Catherine Haar (GI) received FEB's Individual Community Service Award, recognizing her efforts on behalf of the YMCA's Women's Resource Center Sexual Response Team and Webster Groves Community Days. She also served as president of the Webster Groves Library board of trustees and was nominated as citizen of the year in Webster Groves for her outstanding community service.

Receiving Outstanding Team Performance honors were Shirley Dubbs, Charlene Hitz and David K. Jarvis, members of NIMA's Permanent Change of Station (PCS) Team. The team took over responsibility for NIMA's PCS program last July. In its first 90 days, the team helped move 26 NIMA employees to 22 locations worldwide, with a customer satisfaction rate of 85 percent. During the first quarter of fiscal 1999, it helped move an additional 38 employees to 29 locations, with a 95 percent customer satisfaction rate.

Federal employees, family members and friends attended the Federal Employee of the Year Awards ceremony.

The Outstanding Team Performance award also went to the *WORKFORCE21* Training Team, which trained NIMA St. Louis employees on the Agency's new human resource system. Consisting of volunteers from many organizations comprising NIMA St. Louis, the team was credited with saving the Agency approximately $72, 000 in overall training costs. Team members included June L. Cornman, Mary A. Dierker, Susan M. Gligros, JoAnn Heady, John A. Heard, Theresa A. Higgins, Mona R. Holm, Craig E. Hoover, Sandra M. Martin, Curtis C. Overbey and Sharon M. Smith. ❖

(Left to Right) Susan M. Gligros, Sharon M. Smith, Theresa A. Higgins, Curtis C. Overbey, JoAnn Heady, John A. Heard, Sandra M. Martin and June L. Cornman. (Not available for the picture: Mary A. Dierker, Mona R. Holm, Craig Hoover).

New Enterprise Management System Debuts at Washington Navy Yard

NIMA Director, Lt. Gen. James C. King, cuts the ribbon on the NIMA Enterprise Management System (NEMS) at the Washington Navy Yard while Dr. David R. Harris, chief, U.S. Imagery and Geospatial Information Service and Systems Office looks on.

On May 28, NIMA Director Lt. Gen. James C. King cut the ribbon on the NIMA Enterprise Management System (NEMS) at the Washington Navy Yard facility. Participating in the ceremony was Dr. David R. Harris, chief, U.S. Imagery and Geospatial Information System Services and Systems Office.

"The NIMA Enterprise Management System will monitor networks and systems throughout NIMA," said NEMS lead Jeff Hancock. "This monitoring will provide operations and maintenance personnel with tools that will enhance troubleshooting and network performance, create effective reports and emphasize the need for discovering and solving problems before NIMA users are aware of them."

Initial NEMS management is centered at Reston to support the SCEN help desk and at the Navy Yard to support 24-hour operations on the Sensitive But Unclassified (SBU) network and the SCEN through the Command Center. "All of the SCEN and a significant portion of the SBU are monitored from these consoles," Hancock said. When a problem is detected, a trouble ticket is automatically generated. Then support personnel are dispatched to resolve the problem.

The idea behind putting NEMS monitoring equipment at the Washington Navy Yard was to give NIMA Watch Officers (NWO) access to the network 24 hours a day. "The help desk in Reston is only active 10 hours a day," Hancock said. "When the help desk is not manned, the phones are switched over the Washington Navy Yard and the NWOs can take trouble calls and respond immediately."

Near-term plans for NEMS include developing a MailGuard monitor to alert Operations and Management staff when delays between SBU and SCEN mail become excessive. A performance management tool to evaluate the capacity of the networks also will be tested in the NEMS lab in Bethesda and later used on the SCEN in Reston. It will allow systems engineers to upgrade circuits or recommend moving users to balance network load and provide daily reports on network throughput and device availability.

"Longer-term plans involve expanding access to users in Bethesda and St. Louis," Hancock said. "Additional functionality will be provided through event correlation, automated trouble-ticketing, security monitoring, integrated inventory and software distribution, to name a few. After functionality has been established on the SCEN, the systems will be replicated on the SBU and SCI LANs."

For further information about NEMS, contact the NEMS lead Jeff Hancock at: hancocja@se.nima.mil or call (703) 264-7277. ❖

From Left Kris Rujawitz, Jim Beale, Paul Callahan, Thelonia Plummer, David Stizza, Michael Jennings

Leveraging the Gravity of Geoscience

by Don Kusturin

"Were the government to pay for surveyors to go out to various points on the land and sea and perform gravity surveys to match the data which we have in our files, the cost would be in the trillions of dollars."

So said NIMA geodesist Jim Beale. In fact, NIMA is responsible for maintaining the gravity database for the Department of Defense. The Gravity Collection, Processing, Evaluation and Products Branch (GIMGC) maintains a database exceeding 35 million gravity points—points on the Earth where gravity has been measured and recorded.

Gravity is measured by a gravimeter in *milligals*, a unit of acceleration equal to 1/1000 centimeter per second per second, or one-millionth the average gravity at the Earth's surface.

The gravity branch has leveraged an average of one million points for each year of its existence.

"Leveraging is the collection of data by using one's assets," explained Beale.

Besides doing their own surveys, geodesists leverage data through agreements with other agencies, both government and commercial, universities and countries. An example would be: if an oil company were looking for gravity data to find a subsurface oil trap, it might be willing to trade data they had taken for another location for the data they currently need. If NIMA has that information, the oil company would likely trade. This means one less point NIMA has to manually survey, and savings for the government.

Once the information is received is must be verified and usually converted into NIMA's standard gravity record format.

"There has never been a meeting in the geophysical community to standardize the way a gravity record is represented, so each different organization has their own way of doing this, largely driven by their specific needs," explained Beale.

These reports come in one of three formats: paper reports, electronic files and points on a map. Each form ideally answers a number of questions ranging from how and where the survey was taken, to problems during the survey. Values come in the form of longitude/latitude, gravity value type, gravity value units, concerns, corrections and elevation units.

They have such strange sounding names as milligals, Bouguer anomaly, Eotvos and Isostatic Anomaly.

As long as these questions are answered and the standard that these measurements are taken is known, GIMGC personnel can convert them into their own standard format and then these points can be used for NIMA products.

Once the conversion is made through mathematical calculations specific to each standard, it is evaluated for correctness. Since the Earth is not a perfect surface and is made up by a number of substances, each having its specific structural and gravitational characteristics, geodesy has to make some calculated assumptions. These assumptions are based on geometric representations of the earth, and represent the earth as a geoid and an ellipsoid. Because of this evaluation is crucial.

"Products that use gravity information don't use absolute values of gravity, they use anomaly values," said Beale. "If the Earth were homogeneous, then gravity could accurately be determined at any point on the earth's surface using ellipsoidal calculations. Since the Earth is heterogeneous in its composition, gravity deficiencies and excesses exist. In other words, in most places, the absolute value of gravity is more than or less than the value which would be predicted on an ellipsoid which accurately approximates the earth. This becomes important when dealing with earth models and navigational systems."

After the information is processed, converted and evaluated, it is ready to be incorporated into NIMA products. It is used with the advanced inertial navigational systems of the B-2 and F117 and other high-tech aircraft. Mean gravity anomaly data are used by the Navy's trident submarine program. The branch was involved in the enhancement of WGS 84, the reference frame for the Global Positioning System, and produced the Earth Gravity Model EGM96 Geopotential Model that dramatically improved the existing worldwide gravity and geoid models.

GPS alone is used by everyone from outdoor sportsmen to airline pilots, as well as the military.

These are just a few examples of how gravity is used by DoD and the commercial sector, and as the information becomes more precise gravity usage will continue to grow. ❖

NIMA Career Development Center Opens

by Jim Girardi

NIMA Director Lt. Gen. James C. King dedicated the agency's new Career Development Center on June 22 in Bethesda's Ruth Building.

"This center," he said, "demonstrates pride, initiative, personal integrity, professionalism and commitment to NIMA's vision and mission." He added that employees can meet with facilitators to better understand their career opportunities "within a culture that promotes trust, diversity, personal and professional growth, mutual respect and open communications."

Doug Smith, then-director of Corporate Affairs, also addressed attendees praising the "hard work" that's gone into making the Bethesda Center, which joins three others in St. Louis, the Washington Navy Yard and Reston. He called their creation an example of "a collaborative effort across directorates, offices and workgroups."

The Human Resources Office invested training dollars to establish a core of certified career developmental facilitators to help employees better understand organizational change, the excepted service, new pay-for-performance concepts, career planning and transition assistance. The facilitators also help NIMA employees assess their abilities while assisting them with their career plans.

Continued on page 17

NIMA, CIA and NRO Teams Receive Hammer Awards

Three teams comprised of NIMA, CIA and NRO employees and contract personnel received the Hammer Award in a ceremony June 3 in the Erskine Hall cafeteria in Bethesda, Md.

Presenting the awards was Morely Winograd, senior policy advisor to Vice President Gore and director of National Partnership for Reinventing Government (NPR).

"The Hammer Award," said Winograd, "is given to teams that demonstrate that they put customers first, save the government money and cut red tape. All the Hammer Awards given out today to NIMA and her partners absolutely do that."

Winograd told *What's Going On* editor Wells Huff the awards are designated "Hammer" because, at one time, the now-proverbial $400 hammer was a symbol of government waste. "Hammers also are designed to tear things down that don't work and build new things in their place that do."

NIMA Director Lt. Gen. James C. King addressed awardees and guests, saying the award is for those who "cut the Gordian Knot" of bureaucracy to cut costs and boost efficiency. "The Hammer Award is the answer to yesterday's inefficient government. It is actually the response today to dedicated government employees who want to do right and find a way of doing it."

In presenting the awards, Winograd praised NIMA and its work. "Truly," he said, "the work you do is a marvel of our modern world. Your ability to accurately map and identify targets, locations and troop movements is something beyond the dreams of intelligence analysts of not that long ago, and certainly of the warriors of old."

Imagery Products Delivery Process Improvement Team

Members of the Imagery Products Delivery Process Improvement Team received the Hammer Award for expediting the delivery of classified imagery intelligence products. The new process delivers products in 24 hours with cost savings of $800K per year, a 92 percent reduction from past delivery costs.

Team members include: L.J. Roberts; John McGuinnes; Lawrence Anderson; Denise Foerg; Linda Machino; Ronald McWhorter; Gerard D'Alessandro; Caesar Moss; Mark Navarrette; John Schmidt; Gary Conary; Kenneth Goode; Major James Long; Judy Moore; Raul Rodriguez; Mark Rowberry; Allen Bowers; William Henrikson; Nancy Rice; Dave Bennett; Alex Graham; Bernard Boyd; Laura Kimberly; and John Zelsnack.

Morely Winograd awards NIMA's Lt. Gen. James C. King and teams comprised of NIMA, CIA, and NRO employees and contract personnel with the National Partnership for Reinventing Government (NPR) Hammer Award.

Printing and Distribution Study Team

Members of NIMA's Printing and Distribution Study Team received the Hammer Award for reinventing the Agency's information printing and distribution processes, resulting in a faster response to the Department of Defense and NIMA's national customers. Costs were reduced through personnel, material and facilities reductions. The team also created the ability to distribute information digitally to accommodate NIMA's customers' growing needs for rapidly delivered digital data.

Team members include: Joseph Obermeier; Mark Aglio; Michael Carr; Donald Cuming; Thomas Mann; Michael McManus; Pamela Rader; and James Sippel.

Quality Assistance Visit Pilot Team

NIMA's Quality Assistance Visit Pilot Team received the Hammer Award for cutting edge leadership in completely revamping its approach to conducting command inspections. This concept was the catalyst for the reinvention of the Inspector General function within the Federal government.

Team members include: Colonel Richard Rice, USAF (Ret.); Lenore Guthrie; James Kasab; Anthony Mehalic; and Susan Riley.

The Hammer Award consists of a $6.00 hammer, a ribbon and a note from Vice President Al Gore, all in an aluminum frame. The note is signed and states, "Thanks for building a government that works better and costs less!"

The award is presented to teams comprised of federal employees, state and local employees and citizens who have made significant contributions in support of reinventing government principles. Since 1994, more than 1,250 Hammer Awards have been presented to teams who are working to build a better government. ❖

"Truly, the work you do is a marvel of our modern world. Your ability to accurately map and identify targets, locations and troop movements is something beyond the dreams of intelligence analysts of not that long ago, and certainly of the warriors of old."

NIMA-in-a-Box Huge Success in Operation Allied Force

Photos by John Iler

Call it anything you want, but NIMA-in-a-Box is strictly off-the-shelf. Just ask (l-r) NIMA employees Colby Harmon, Sally Schultz and Bill MacDonald, who configure the boxes.

by John Iler

During the early morning hours of May 2, an Air Force F-16 was returning from a combat mission as part of Operation Allied Force. For reasons still not disclosed, the aircraft went down, the pilot safely ejecting.

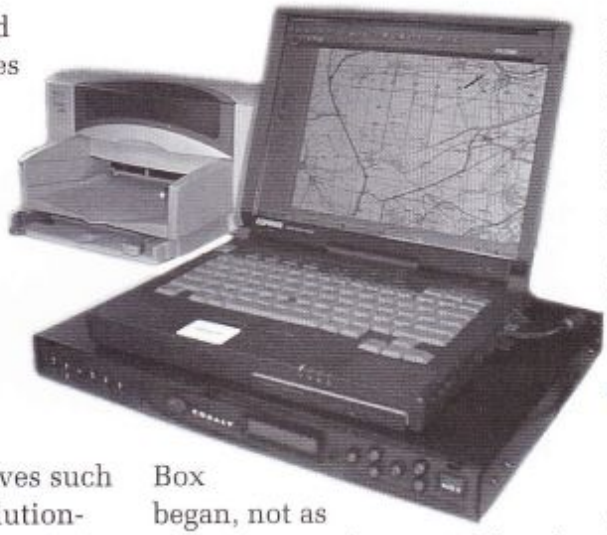
But he was far from safe. His plane had crashed and there were nests of angry Serb forces throughout the area. Though the pilot was trained to evade the enemy, he knew the moment he triggered his emergency beacon, his coordinates would not only be broadcast to friendly forces, but to hostile forces as well.

With daybreak only hours away, he hit the beacon and the race was on. Thanks to a new tool in the inventory—a tool known simply as "NIMA-in-a-Box"—the coordinates, when received by a nearby EC-130E Hercules aircraft, were rapidly processed, and an 8.5" x 11" overview map was quickly printed for the intelligence team on board. The EC-130E then directed rescue teams aboard HH-60 Blackhawk helicopters to the downed airman's location. Swooping in quickly, the Blackhawks arrived at the coordinates, sweeping deftly past treacherous power lines and plucking the pilot to safety. The rescue mission was executed in less than 90 minutes.

Air Force Reserve Maj. Vic Kuchar, NIMA program manager of the Joint Warrior Interoperability Demonstration (JWID), is enthusiastic about NIMA-in-a-Box and its capabilities. Using conventional procedures, the pilot's coordinates would have been received, recorded, plotted and converted for use with the proper scale paper map—a tedious manual process, and one Kuchar said is much more prone to human error. Had that process been used in this instance, he noted, the lead

helicopter likely would have hit the power lines going in.

"I talked to the helicopter pilot just three weeks after the operation," Kuchar said, "and asked him for his assessment of NIMA-in-a-Box. He replied, 'It probably saved my life.'"



He rattles off adjectives such as "innovative," "revolutionary"—but also uses "generic" and "off-the-shelf." In fact, the "Box" itself is powered by a Pentium II notebook computer and is loaded with standard NIMA imagery and geospatial data products. The primary application is a highly customized version of ESRI's Arcview software, created by NIMA Technology in Bethesda, Md.

The revolutionary "Box" already has the enthusiastic support of the Air Force, which ordered 25 additional units after seeing the results of the test box used under combat situations. One avid proponent is Lt. Gen. David L. Vesely, Air Force assistant vice chief of staff. Calling it "one of the great success stories from Operation Allied Force," he said, "I believe it has been responsible for saving the lives of at least two NATO aircrew members on combat missions. Its potential to save more lives and improve combat effectiveness is virtually unlimited."

The Beginnings

What Kuchar called the "grandfather" of NIMA-in-a-Box began, not as an imagery and geospatial tool, but a demonstration platform used aboard the USS *John C. Stennis* during its 1998 deployment to the Persian Gulf. With Enterprise servers housed in two full computer racks, it was, said Kuchar, "too large, too difficult to use and too expensive." The price tag then was more than $400,000 and the unit required contractor support, special connections, ship modifications and 100 gigabytes of storage.

"If people remember one thing," Kuchar said, "it's that for any product to be successful, you have to do what I call 'breathe the air of the customers.' You have to know what they need, how they use your products and how you can make them easier and more effective." To do this, he watched them use NIMA maps, charts and images, carefully noting the processes they employed to extract data and how they used it.

"Once I did that, it was a matter of putting on my imagery and geospatial hat and trying to find a way to make it simpler, easier, faster and more efficient." A NIMA Technology team took the requirements Kuchar acquired first hand aboard *Stennis* and began an engineering effort focused on developing a platform that leveraged a simple yet flexible design integrating NIMA data for an entire theater.

Technology Shines

Behind an unmarked door deep in the recesses of Bethesda's Roberdeau Hall, Bill MacDonald and Andy Cohen lead their team of contract engineers, fine tuning the Box for each incoming operational requirement. Two configurations of NIMA-in-a Box were developed for Operation Allied Force. The EC-130E sported a standalone version, while a workgroup version was deployed at key locations throughout Italy. "The latter," said MacDonald, "adds several capabilities by introducing the latest in network appliances from Cobalt MicroSystems." NIMA data was loaded onto the Cobalt RaQ servers, making it available to users and systems on the local network.

Cohen tested and integrated the customized scripts the engineers wrote for Arcview, then installed them on each Box. "Using 25 gigabytes of NIMA data and some very clever code," MacDonald said, "the laptops easily distanced themselves from more powerful computer systems using less elegant designs."

On opening the scripts, users found they could seamlessly browse through maps and

imagery at various scales by zooming in or out, or panning in any direction. The complexity of processing the data was hidden from the operators, allowing them to quickly and easily find the correct image or map at the appropriate scale, then apply it to their mission.

"The ability to quickly customize Arcview to address the evolving mission requirements gave us the flexibility we needed to tailor NIMA-in-a-Box successfully," MacDonald said. "New tactics were required to fight a dispersed and hidden land force from 15,000 feet. The Box supported this mission much better than any of us had envisioned."

The Technology Team downloaded, compiled and installed open source software from the Internet to speed development times. Targeting information was hosted on a series of RaQ Web Servers stretching across the Atlantic from Bethesda to multiple locations in Italy. Download and query times were virtually eliminated, saving mission planners valuable time.

"Whenever we directly support operations, it greatly accelerates our research and development activities," MacDonald noted. "There is a tremendous war time dividend collected by NIMA Technology when it invests in direct operational support." The impact of NIMA-in-a-Box, he added, was the sheer volume of NIMA data so easily accessed from the screen of a laptop computer.

The USAF Goes to School

Once the boxes were installed, instructors from NIMA's Defense Mapping School (DMS) arrived on the scene. Army Maj. Dale Kornuta and Air Force Capt. Rich Koltas traveled throughout Italy and into Albania to train users. Sally Schulz, from NIMA Technology, initiated the introductory training and taught the targeting unit at Aviano how to use their new color plotter to create mission overview graphics for the evenings sorties.

Lionel Miller, from TeraResearch, and Dana Kuan (TASC) confer on ways to improve the box's configuration.

Kornuta and Koltas also flew on board the EC-130E at night, training individual crew members recruited from the Bomb Damage Assessment Team at Aviano. After a 15-hour flight, the on-the-job training was complete. The trainee was then authorized to fly with NIMA-in-a-Box without an observer on the daytime missions. By the middle of May, the instructors had trained more than 25 Air Force and Army personnel.

Spreading the Word

Its early successes sparked interest, especially when word spread about how affordable it was. No longer cumbersome or difficult to use, a fully loaded system, including licenses, fees, software and shipping cost $5,000 - $15,000 depending on the configuration. And though most of the current orders have come from the Air Force, Kuchar said the U.S. Navy and Army are showing interest.

Currently the boxes are being configured by NIMA at its headquarters in Bethesda. Eventually, customers will be building their own boxes using the Agency's imagery and geospatial products. The Technology team wants to make the custom scripts available to any customer using Arcview software and NIMA data.

Continued on page 25

NIMA, SUN Partner in Cooperative Research and Development Agreement

On hand for the NIMA and Sun Microsystems agreement are, from left: David Lutz, Mitre Corporation; Paul Feldman, NIMA Systems and Technology (ST); Melvin Wagner, ST; Robert Laurine, ST; Ronald Burns, ST; William Allder, ST; Kenneth Loudon, ST; Scott McNealy, Sun Microsystems; and Ron Holmes, ST.

NIMA and Sun Microsystems have signed an agreement to incorporate NIMA's imagery and geospatial needs into Sun's commercial products.

William Allder Jr., director of NIMA Systems and Technology, and Scott McNeally, president and chief executive officer of Sun Microsystems, signed the Cooperative Research and Development Agreement (CRADA) on April 28. "The alliance with Sun Microsystems is part of NIMA's larger initiative to guarantee geospatial and imagery intelligence within the global enterprise," Allder said. "This specifically means providing the best support to our customers and using state-of-the-art commercial technology."

The CRADA provides the means for the Agency to assess existing and advanced Sun technologies for possible application within the operational environments of the U.S. Imagery and Geospatial Information Service.

"Sun looks forward to supporting this CRADA," said John Marselle, president of Sun Microsystems Federal, Inc. "The agreement gives NIMA insight into Sun's future technologies and product offerings. At the same time, it lets Sun tap into NIMA's vast experience in imagery and geospatial global enterprise computing."

"We are very excited to work with NIMA on this initiative to drive geospatial computing for the Internet age," said Ken Okin, vice president of Sun's Workstation Product Group. The CRADA between NIMA and Sun Federal marks the first collaborative agreement between both parties to pursue this goal into the next millennium.

Key NIMA members in the execution of this CRADA include Kenneth Loudon as the principal point of contact, John Polger in the development of the Java Advanced Imaging effort, and Ron Holmes as the technology research lead. ❖

Career Center,

continued from page 11

Each Center also has new, career-oriented videotapes, audio tapes, books and CD-ROMs, as well as state-of-the-art computer multimedia equipment. NIMA's Human Resources Organization Development and Career Management Division also designed a specialized career development web site, with links to additional government, college and private sector resources. This site is accessible from the HR Intranet home page, at http://hr.nima.mil/.

The Career Development facilitators also provide comprehensive workshops for NIMA offices requesting assistance for employees needing additional skills in résumé preparation and interviewing techniques.

NIMA Named Corporate Volunteer of The Year

NIMA was recognized as the St. Louis Public Schools' Corporate Volunteer of the Year. The award was presented to NIMA's School Partnership volunteers May 23 in a ceremony held in St. Louis.

The award was part of the 17th Annual St. Louis Public Schools' Annual Volunteer Recognition Ceremony, held at the Carr Lane Middle School of Performing Arts. NIMA volunteers honored included Jim Akers; Kevin Alphin; Ken Barrows; Air Force 1st Lt. Ken Black; Mike Boehm; Rick Bonnot; Holly Byland; Kathy Egan; Rich Egan; Air Force Lt. Col. Leslye Elbert; Patrice Fenner; Jay Gardner; George Hoff; Liz Hunter; Loretta Jones; Dave Kasich; Dave Klinge; Bill Mantinband; Carlene Mitchell; Curt Overbey; Donna Pekarek; Carla Perkins-Dumas; Kathy Pozzo; Sharon Smith; Livingstone Sykes; Dave Talburtt; Janice Thomas; Joe Tuthill; Terry Wease; Kathy Wever; Audrey Williams; and Judy Wolf. Also recognized was the late Nora Blassasingame-Johnson, who died April15.

Commenting on NIMA's selection for the award, NIMA Director Lt. Gen. James C. King said, "Wonderful news. Thanks to everyone who made this happen. You truly are people who care."

Vasilika Tsichlis, principal of Hodgen Elementary, NIMA's partnership school, nominated NIMA's volunteers for their participation in Hodgen's tutoring program.

The tutoring program is designed to improve the reading skills of the school's third grade students. Volunteers work with designated students for 45 minutes on alternating weeks. The sessions include a variety of activities including reading, writing, and vocabulary building exercises. The volunteers also serve as mentors and role models for the students.

If you would like to be a volunteer next school year, contact Joan Mears at (301) 227-2057 or Sharon Smith at (314) 263-4142. ❖

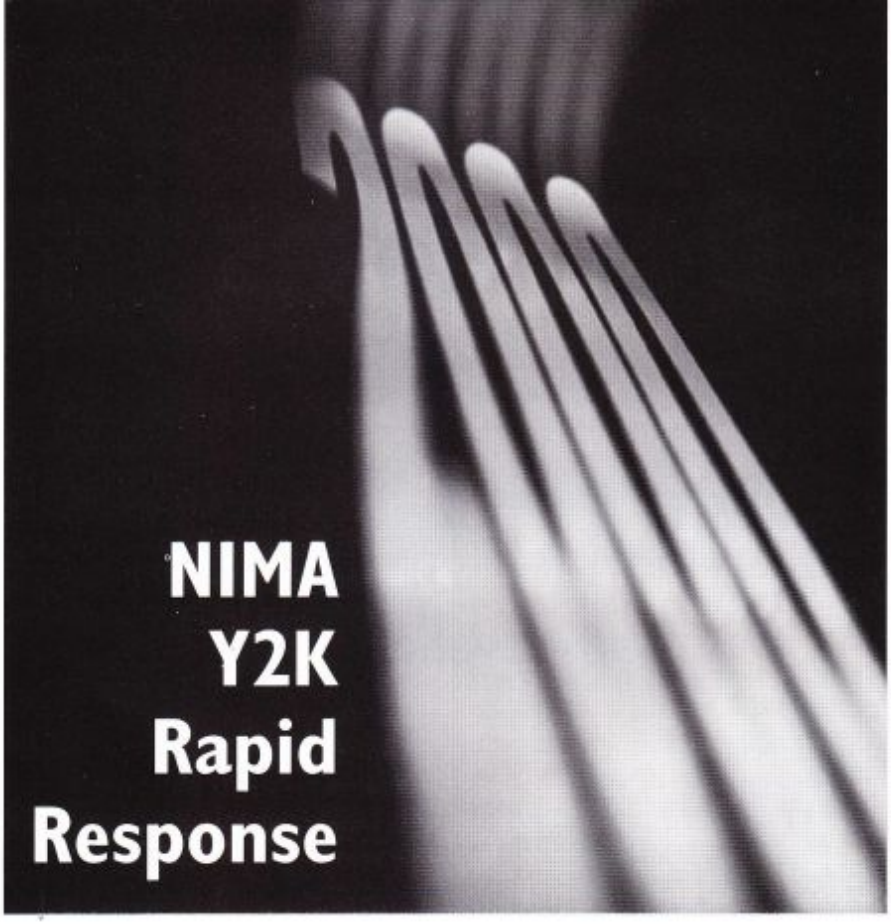
Jasielum Receives Lackman Award

by Tammi Kiser-Sparks

Sheryl Jasielum, Imagery Analysis Office, Special Operations Division, Operations Directorate, received the William F. Lackman, Jr., award in a ceremony held in Virginia in May.

Jasielum was cited for her outstanding degree of professionalism while providing vital military intelligence analysis in support of U.S. military operations. Her unparalleled substantive competence and tireless dedication to duty was pivotal to national imagery intelligence support to the targeting process of the United Commands, the Joint Staff, and the National Command Authority.

The William F. Lackman, Jr., award was established in memory of the first director of the Central Imagery Office (CIO). Lackman forged the CIO as an organization committed to the precept that imagery intelligence is crucial to U.S. military and civilian leaders.



NIMA Y2K Rapid Response

by Terry Housel
Y2K Staff

With the turn of the millennium just months away, NIMA's Y2K team is developing rapid response plans to tackle unforeseen problems.

Terry Housel and Air Force Lt. Col. Dan Turgeon, both of the Office of the Special Assistant for Y2K (SAY2K), are leading the planning and coordination of the NIMA Y2K Rapid Response.

"The Y2K Rapid Response addresses how the Agency will react to the unknown," Housel said. "We must be prepared to handle all situations that might arise, respond to them quickly and effectively and return to a normal state of operations as rapidly as possible." He adds that Rapid Response helps augment NIMA's other Y2K activities. These activities, underway at NIMA for the past two years, have focused on eliminating risk by renovating systems, testing and certifying compliance, and preparing continuity of operations plans for critical products.

The planned life span for the Y2K Rapid Response is Sept. 1, 1999, through March 21, 2000. The most critical point is "Rollover Weekend," defined as the time period beginning at 6 a.m. Eastern Standard Time on Dec. 31, 1999, and ending at close-of-business on Jan. 3, 2000.

Turgeon notes that the combination of Christmas and New Year's Day, both occurring on consecutive Saturdays, make the Y2K rollover weekend an "excellent opportunity to assess systems for Y2K processing errors, take action to repair system failures, trigger continuity of operations plans (COOPs) and notify customers of resulting impacts."

Positive responses will be required from all NIMA interests. All NIMA customer locations will be contacted for system status. Beginning at 6 a.m., Dec. 31, system status from customer locations will be in geographic areas immediately west of the International Date Line. "All internal NIMA systems operations, facilities, and services will be assessed as well," he said. "The goal is for the regular workforce to return on Jan. 3, 2000, to systems and facilities that are fully functioning." ❖

Promotion Process Ends:

Now the Decisions

by Susan H. Meisner
Human Resources

Fiscal year 1999 "Self-nominations" for promotions are in, and NIMA's promotion panels are reviewing applications and making the difficult decisions of whom to promote.

"NIMA's promotion team and occupation council members had a lot of ground work to cover just to get to this point," said Jackie Rhodes, implementation lead for the *WORKFORCE21* promotion process. "The promotion team developed the procedures for the design concepts and facilitated their approval by senior management and the unions. The NIMA Resources Board approved all promotion funding and NIMA's Senior Leadership Group received recommendations from each occupation council on the number of promotions needed in each pay band."

Occupation council chairs also nominated both promotion panel chairs and members. Some occupations appointed different promotion panels for each pay band, while others designated one panel for the entire occupation.

"At least one occupation council member had to be on every panel," said Rhodes. "Members at the highest bands serve as core members and participate in every panel decision across the occupation." Core members are responsible for ensuring consistency in the assessment of candidates and in the final decisions.

NIMA's Executive Review Board (ERB) examined all promotion panel nominations, looking closely at the diversity in panel composition.

"Diversity is more than just including minority members and women," Rhodes said. "It also includes representation from different pay bands in an occupation, as well as employees at our locations in the east and west."

Each panel has a minimum of three members, with some having as many as 20. Although the majority of panel members are from a given occupation, some panels included members of other occupations.

Organizational development consultant Sandra Wood, of Human Technology Inc., trained most of NIMA's promotion panels. The all-day training was held in February and included developing promotion announcements, criteria and methodology. Wood, part of the initial design team for *WORKFORCE21*, facilitated both the promotion and assignment and implementation teams. She also helped Rhodes ensure that promotion announcements and panel procedures were consistent in following certain key guidelines.

"The promotion process was designed to be fair, yet flexible, since all occupations are not the same," Wood said. She stressed that large occupations, such as cartography, have needs that differ from those of smaller occupations. The *WORKFORCE21 Promotion Panel Desk Guide* was an integral part of panel training and served as a reference for panel members.

"The Guide was a fabulous tool for preparing promotion packages and developing the criteria for evaluating candidates," said Steve Pollard, co-chair of the financial management promotion panel. "The *WORKFORCE21* team's up-front planning provided the guidance and samples we needed to implement the process."

Overall, panel members rated promotion panel training as a "4" on a scale of 1-5, indicating the training was effective in providing them a clear understanding of their responsibilities in the promotion process.

"We want the workforce to know that panel members are their peers and that they understand their occupations," said Opal Stroup, a core member of the systems engineering panel. "We wanted the process to be as fair and as objective as possible and I think we've designed a workable system."

Fairness and consistency are common themes among all the panels. "People are genuinely

concerned about being thorough and using a fair process that represents all employees," said Curtis Triggs, a member of the aeronautical navigation, marine navigation, and geospatial analyst panels. "Bringing different people together [on the panels] helped us see meaningful things in all applicants."

NIMA's previous pass/fail evaluation system created some challenges for the promotion panels. "We had to work harder to find evaluation criteria," Triggs said. "Some 'acceptable' evaluations had no comments." He looks forward to the new *WORKFORCE21* performance evaluation system, which requires more detailed information and examples of employee's performance and better represents their skills.

Supervisors also must perform more up-front work to facilitate the new promotion process. They must provide written validations of employees' skill proficiencies identified as critical for promotion.

"We realize supervisors already have a sizable workload," Rhodes said, "but the process should ease next year once employee skills are entered into PeopleSoft," NIMA's future human resources system.

The promotion process supports the *WORKFORCE21* person-based system by recognizing employees who demonstrate the required skill proficiencies and level of performance required for promotion in an occupation. Employees must be explicit when describing their accomplishments and skills. Said Triggs: "They have to say, 'I've done this—and this is how well I've done it.' This process is the best I've worked with and has the potential of finding the best candidates for promotion."

Under the promotion process, Pollard said, "Employees have ample opportunity to communicate their interest in an occupation to councils and panels."

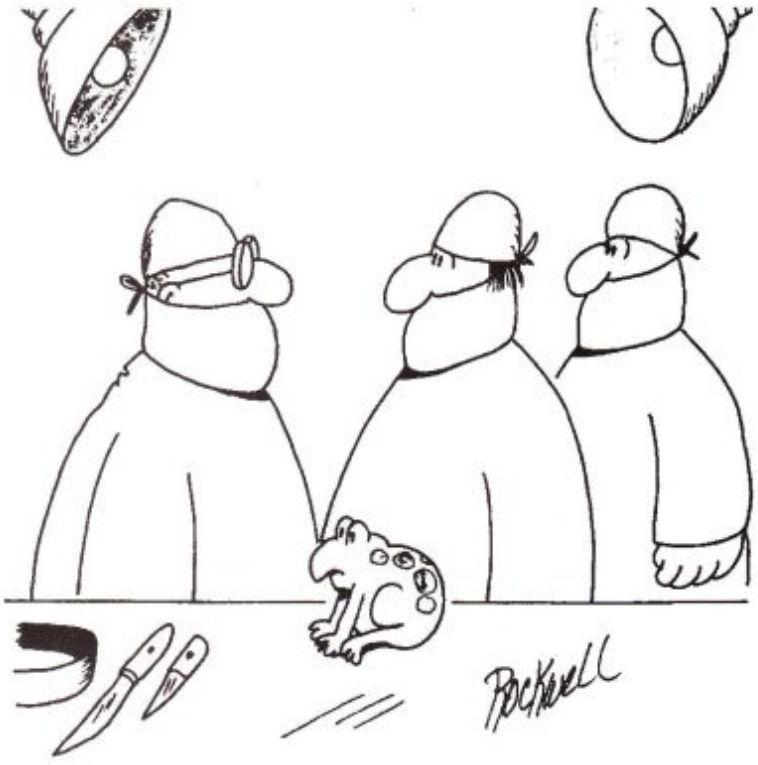
One key to the *WORKFORCE21* process is the occupation guide. "Employees must be intimately familiar with their occupation guides," Wood emphasized. The guide serves as a charter for each occupation and specifies the minimum skills required for each pay band within an occupation.

"The promotion panels worked hard to make the announcements and scoring methods match the occupation guides," Stroup said. "Feedback from employees is important—we can't improve the guides without it." She encourages employees to seek out their council members and help improve the process. Information about the council chairs is available on the *WORKFORCE21* homepage.

What has been learned about the promotion process so far? According to Wood, like the rest of *WORKFORCE21*, promotions are a "work in process."

"We will do a comprehensive review of the process this summer," Rhodes said. "Any new process can use some scrutiny and improvement." ❖

Note: Fiscal 1999 promotions will be effective July 18.



"As you know, gentlemen, this will be an amphibious operation...."

NIMA's Facilitation and Mediation Centers Focus on

Harmony, Teamwork, Consensus

by Vietta Williams
Human Resources

It was a wintry day in February when Amy Martin*, a NIMA mid-level manager, visited the Human Resources Facilitation and Mediation Center at the Washington Navy Yard. She needed advice about her team, which was suffering from low morale.

The team had once prided itself on effective collaboration and communication. But the group dynamics in Martin's unit began to sour as tension rose due to an unexpected unit reorganization. "Nearly everyone had an issue they needed to resolve about someone or something," Martin said. "Communication was at a standstill and there was an incredible amount of distrust amongst employees." Something needed to be done quickly, she added, because it was quickly impacting customer relations.

At first, Martin had reservations about bringing a third party into the situation. But after a colleague explained that the Facilitation and Mediation Center (FMC) specializes in helping NIMA employees and managers find solutions to difficult challenges in the workplace, she decided it might help. As a result, FMC counselors helped Martin and her team rebuild a sense of trust. To do this, they used a series of group interventions concentrated on effective communication and conflict management.

"My hat's off to the counselors for introducing my team to a new way of thinking that's knocking down these barriers at a rapid speed," Martin said.

Success stories such as this help keep FMC counselors at the forefront of solving tough workplace problems. Almost on a daily basis, employees and managers visit the centers, located in the Washington, D.C., and St. Louis areas, in search of assistance with both personal and professional challenges. FMC counselors offer a variety of interventions to employees to resolve conflicts. However, counselors most often provide assistance in the form of group facilitation, mediation or one-on-one counseling.

Since last April, FMC counselors have been involved in nearly 100 group facilitation sessions and have expanded their efforts by using the Myers-Briggs Type Indicator (MBTI). A diagnostic tool that helps people gain a greater awareness of self and differences in others, the MBTI was one of the instruments used to assist Martin's unit.

"The MBTI is an eye-opener to diverse thinking. It has helped me to understand how my teammates think and react to situations on the job."

"The MBTI is an eye-opener to diverse thinking," said the employee. "It has helped me to understand how my teammates think and react to situations on the job. The distrust and disrespect that were becoming prevalent in our unit are disappearing because we are now learning how to be more empathetic with one another."

NIMA DoD and CIA-affiliated employees may contact the Facilitation and Mediation Centers at:

Washington Navy Yard
Bob Shefner
(202) 863-3007/3008
Room 1N365

Bethesda
Bea Vicks
(301) 227-7218
Ruth Building
Room 224

St. Louis
Margy Spezia
(314) 263-4276
Building 36

In addition to group facilitation, FMC counselors provide mediation and one-on-one counseling services. Mediation is a formal, confidential and voluntary process where two or more parties to a dispute agree to have a third neutral party (the mediator) facilitate the negotiation of a settlement. The advantage of reaching a settlement in this manner is that the participants have an active role in designing the settlement with the help of the mediator. Thus, there is a greater potential for lasting results and satisfaction with the agreements.

On a regular basis, FMC representatives also offer one-on-one counseling services as well. "The counseling sessions were great because I felt like I was being heard and I had a chance to voice my frustrations in a non-threatening environment," one employee said.

Receiving assistance at work to cope with personal and professional challenges is invaluable for employees who wouldn't otherwise have the opportunity to talk with a counselor about their issues, said Janet Betts, chief of the Facilitation and Mediation Center. "The key to successful cooperative problem-solving is face-to-face meetings, group facilitation, or mediation," said Betts. "We want to help employees work through their problems efficiently and effectively so that their experience while working at NIMA is worthwhile. Change can be challenging for everyone at every level within the organization. The Facilitation and Mediation Center helps pave the way for smoother transitions for everyone." ❖

Editor's Note: "Amy Martin" is a pseudonym.

IN MEMORIAM

Nora Blassingame-Johnson, a Trouble Desk technician in the U.S. Imagery and Geospatial Information Services (USIGS) Services and Systems Operations Division, St. Louis, died recently following surgery. Blassingame-Johnson had 15 years of federal service. She is survived by her husband James Jr., daughter La Tonya (Tony), and son James III (Cocoa).

Mark Anthony Vance, a management and Program Assistant with the Geospatial Information Services office, died June 12 after an unexpected illness. He is survived by Karen Vance, his grandmother, and sister, Karin Vance.

Web Mapping Futures Unite Government, Industry

by Larry Stephens
Program Manager
NIMA/OpenGIS Consortium

A new mapping community coalition met at the Lockheed Martin facility in Gaithersburg, Md., in May to define standards, interfaces and configurations that broke old industry/government business rules.

"NIMA and other government participants and industry leaders established a unique and innovative business arrangement to develop, build and implement a test bed that follows interoperable standards," said Ken Loudon, chief, Technology Transfer Branch. "It also provides, for the first time, joint investment sharing between industry and government."

Members of the demonstration and interface teams helped to develop, build and implement a test that follows interoperable standards

Guided by the OpenGIS Consortium (OGC), Inc., a NIMA partner in defining, developing and solving open geospatial needs and products for the community, the coalition came together to devise the World Wide Web-based mapping test bed. (See "NIMA Teams With Industry in OpenGIS Consortium, July 1998). Government participants included NIMA, the Army's Topographic Engineering Center (TEC), Federal Geographic Data Committee (FGDC), U.S. Geological Survey (USGS), Department of Agriculture (USDA), National Aeronautical Space Administration (NASA), Australian Surveying and Land Information Group and Environment Australia. Industry and scholastic participants included Autodesk, BBN (GTE Internetworking), University of Arkansas, CubeWerx, Sun Microsystems, IntelData, Oracle and Lockheed Martin.

"Everyone involved believes that together, they created a new milestone for government agencies and industries that

trade in geospatial information or technologies," Loudon said.

Beginning with two key government sponsors, NIMA and TEC, and key industry partner, Lockheed Martin, OGC assembled a plan for the test bed. The plan focused advancing web-based mapping technology with the geospatial community; studying commercial technologies and architectural approaches; promoting the process of established OGC standards for interoperable services; and supporting multi-vendor demonstration of web mapping technologies with portable options.

Additionally, the coalition agreed on four objectives: demonstrating and evaluating the interoperation of existing and emerging OGC technology (simple features, catalog, and catalog services); evaluating assumptions of web mapping, data display, symbolization and portrayal in future interoperability specifications; maximizing the use of existing software in the test bed development with minimal investment in new development; and addressing configurations and architectures for operational, integration and interoperability possibilities.

"The kickoff meeting in Gaithersburg," Loudon said, "accomplished the next major hurdle in the project. Attendees divided into two different groups—interfaces and scenarios/demonstrations."

The interface group, he said, focused on understanding the gap between current software capability and the proposed architecture and identified steps to be taken which "will tie their efforts to a technical implementation." The architectural design goals are "slicing through proprietary software and producing more open, modular and interchangeable components."

The organizations completed requests for technology and quotations, and finished the assessments of the submitters. They will offer recommendations within six months.

Using scenarios from three different sponsors, the demonstration team chose a single disaster-type scenario which could easily adapted to other types of scenarios, meeting public, civil and military requirements.

"The demo and interface teams are continuing their work and I think they've already made significant headway," Loudon said.

OGC and the participants plan a formal demonstration at the August OGC Technical Committee meeting in Southampton, England. Questions about this project should be addressed to Larry Stephens, (703) 262-4583, stephenl@nima.mil. ❖

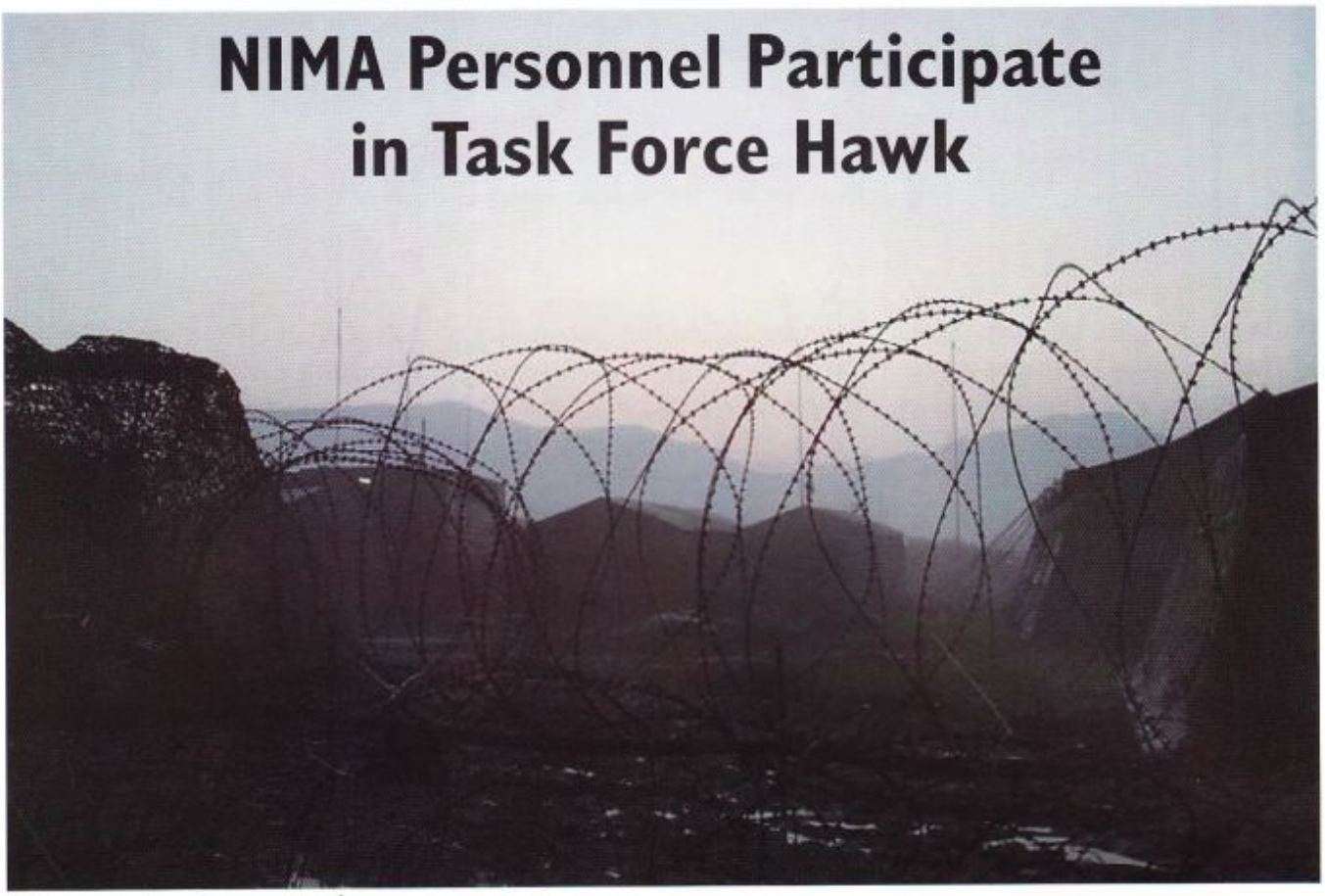
NIMA-in-a-Box,

continued from page 16

"People were blind before NIMA-in-a-Box came along," said Air Force Staff Sgt. Susan Langston, an Operation Allied Force image analyst. "There were many times we came down to the wire directing pilots to targets. And, prior to NIMA-in-a-Box, there were many times that pilots had to abort because we couldn't find the spot on the map in time."

"This program is still in its infancy," said Senior Airman Stephen Holt, another analyst. "Six months ago, this just didn't exist. Now we're seeing it grow by leaps and bounds. Next time we have a major conflict, hopefully this will be old hat." He added that "Speed is of the essence when you're trying to direct a bomber over a moving tank on the road."

NIMA Personnel Participate in Task Force Hawk



A heavy morning mist permeates the camp.

The welcome center was the Customer Support Response Team's first stop in Albania.

by Muridith Winder

Several NIMA employees were among approximately 5,000 U.S. troops making up Task Force Hawk in Albania.

Task Force Hawk consisted of about 50 helicopters, a Multiple Launch Rocket System battalion, infantry battalion, Deep Operation Control Center and support forces.

As a member of the support forces, NIMA employees provided geospatial and imagery support and helped Task Force Hawk troops set up a bare-bones camp.

The task force, said U.S. Army Europe spokesman Jim Boyle, was originally sent to Albania to "provide NATO a deep strike capability out of Albania into Kosovo." Approximately 1,700 members, however, are being deployed as part of Operation Joint Guardian, which is helping to maintain a capable military force in Kosovo and in ensuring the safe return of Kosovar refugees. The remaining members, including the NIMA employees, have been redeployed to their parent organizations. ❖

NIMA's Kevin Coffey pitches in on rock detail.

NIMA's Louis Halbert puts the Quick Response System through its paces.

Task Force Hawk personnel discuss requirements during morning meeting.

NIMA's Incident Management Team

Task Force Hawk personnel had to endure extreme conditions when driving through the encampment.

SUMMER OF 1999

SUN, SURF AND SAFETY