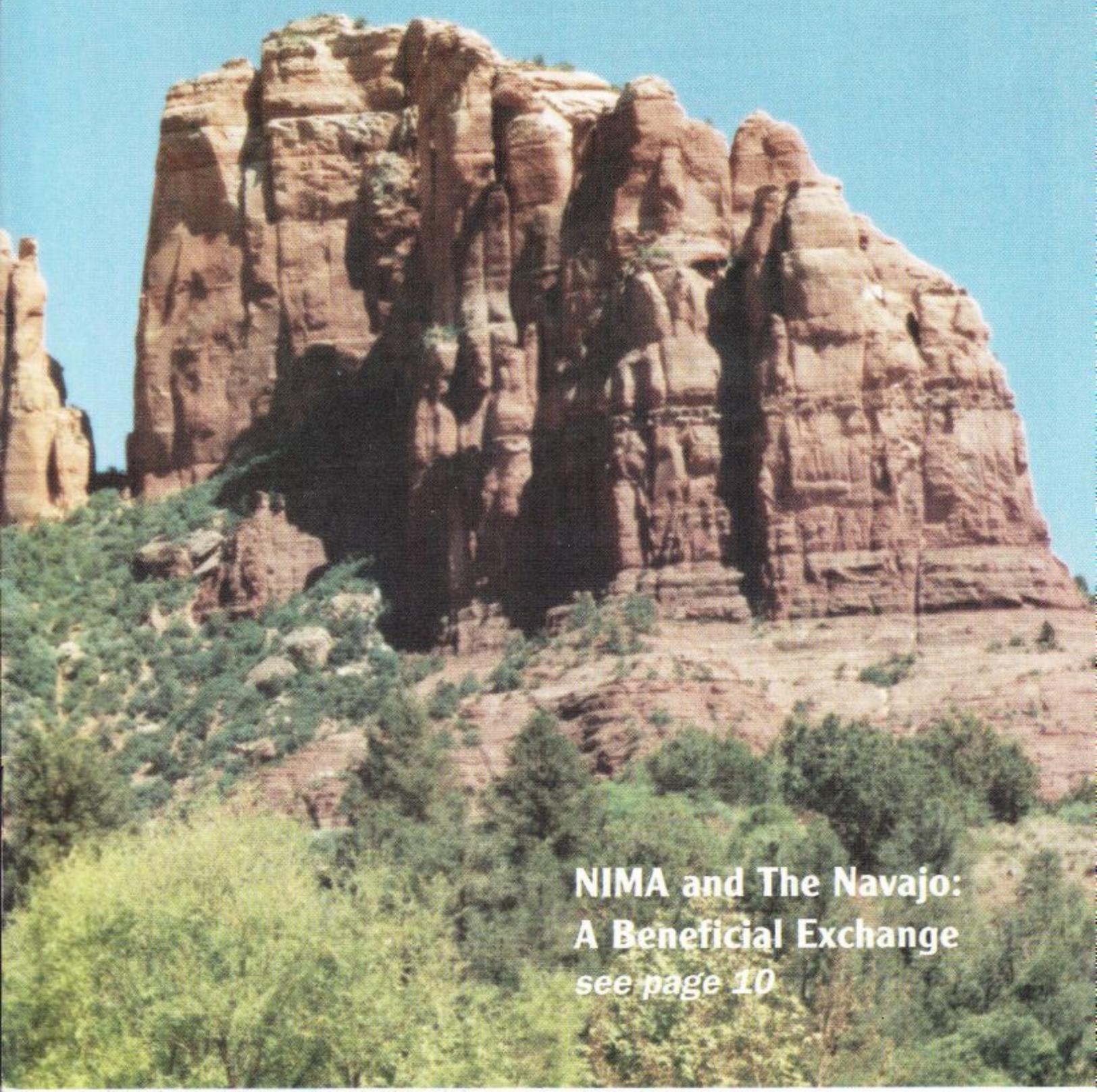


The **Edge** March 1997

National Imagery
and Mapping
Agency

Guaranteeing the Information Edge



**NIMA and The Navajo:
A Beneficial Exchange**
see page 10

The Edge
 National Imagery and Mapping Agency
 Guaranteeing the Information Edge

Volume 1, Number 5 • March 1997



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Teams working to develop strategic outcomes for the agency through the year 2000

NIMA's Business Plan Approved

by Jennifer Lafley

Developing a business plan that supports NIMA's strategic direction has been a priority since the standup of the new agency. On Feb. 12, the Senior Leadership Council along with directors and their deputies, met at NIMA's headquarters to discuss implementation of a business plan for the agency.

"The driving force of the plan was NIMA's strategic direction and vision statement," said Dick Beck of Office of Plans, Programs and Analysis (PA), whose office led a working group that spent several months conducting research and developing the first drafts of the plan.

NIMA's changing customer base, the volatility of customers' needs and the rapid technological innovations provided the challenge for the working group.

"We needed a plan that addressed those issues and one that gives both employees and customers a clear vision of where we are going," Beck said.

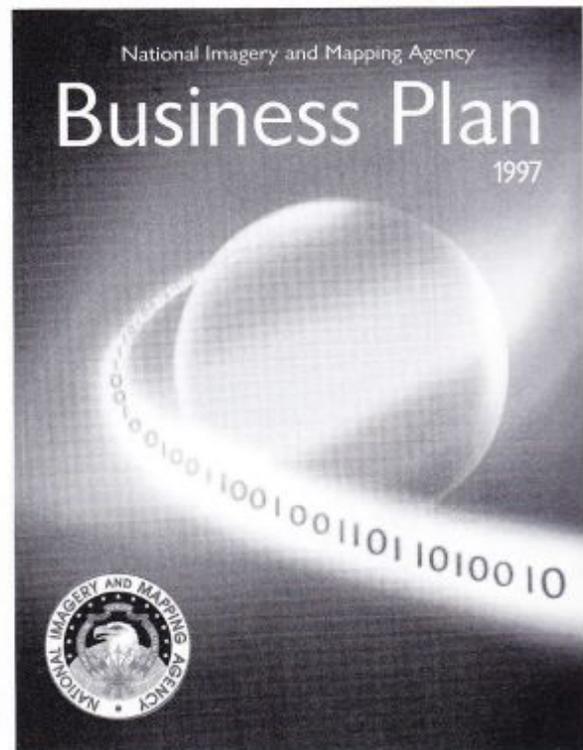
The business plan outlines seven strategies:

- **Continue to provide strong customer support.**
- **Evolve NIMA's production focus.** Identify and outsource products and services available from others that meet customer needs. Focus NIMA's production efforts in areas best served by its own capabilities.
- **Create the NIMA Information Service.** Establish an accessible database with the information and applications that customers want.
- **Transition from custom systems to flexible commercial solutions.** Use open systems technology to reduce costs and develop custom systems only when no commercial solution exists.
- **Define and lead the USIGS community.** Define operational, technical and system views of architecture to permit organizations to share data, services and resources.
- **Establish partnerships in all aspects of NIMA's businesses.** Leverage strengths and share resources with U.S. and foreign governments, commercial organizations and academia.
- **Develop policies to facilitate NIMA and USIGS activities.** Ensure that policies support NIMA's goals to provide information at the lowest classification levels, establish partnerships, and purchase commercial products and services.

Discussion of the plan focused on the four core businesses of NIMA in its role of provider of information products and services—Information and Services Acquisition, Information Production, Information Access and Delivery, and Information Applications and Systems as well as the functions of infrastructure services and customer service.

The group also discussed the actions necessary to implement the Business Plan.

Rear Adm. J.J. Dantone Jr. has directed PA to set up regular meetings so that senior leaders could be



involved with the development of the Strategic Outcomes and Implementation Plans.

Senior leaders will also be looking for feedback from employees and customers.

"The key is to provide employees and customers a clear understanding of what direction the agency is heading," Beck said.

Copies will be distributed to each branch of the agency. If you have questions or would like additional copies of the NIMA Business Plan, please contact Dick Beck at 275-5784. Copies will also be available to attendees at Business Opportunity Day. ♦



What's so unique about NIMA's Commercial Advocate Office? Is it that its functions did not exist in any of the legacy organizations merged to form NIMA? Or, is it because it appears to be the only one of its kind in DoD?

Both of the above, and that's probably why it may be the least understood NIMA business unit. The office, given the acronym AD, is precedent-setting, said its director, A. Clay Ancell.

"We've looked around government and asked around industry," he said. "It seems to be one-of-a-kind for now."

A quick survey around the office, however, and attempts to define AD's functions will invariably generate the word "outsourcing."

AD has the lead in developing the agency's outsourcing methodology, which includes a study of industry best practices, benchmarking and consistent methodology guidelines for consideration in business planning and employee transition. But that's only one of its many functions.

Its efforts are right in line with the agency's third and fourth strategic goals, which are obtaining and using the best available information and using private sector services and best available commercial technology to improve service to customers.

"The office was not created to promote any particular industry,"

Ancell said, "but to seek opportunities for NIMA to leverage industry's proven capabilities with the single goal of increasing customer satisfaction."

Established by NIMA's Acting Director Rear Admiral J.J. Dantone Jr., AD was designed to nurture this process along, thus increasing NIMA capabilities by using proven commercial capabilities. Ancell's office is also responsible for stimulating the culture change needed for NIMA to consider commercial solutions first. The challenge is formidable for a team of 10, once fully staffed, and two senior scientists who are matrixed to the office to provide technical advice on all new commercial technologies.

NIMA's One-of-a-Kind Commercial Advocate Office

by
Kathleen Neary

Educating Industry

Educating industry to new laws that streamline the procurement process is part of the challenge, and equally a significant selling point for AD efforts.

In the early 90s, government began rethinking a very laborious, complex, costly, and ineffective procurement process that had been fashioned in the 80s as a means of combating fraud, waste and abuse. These strict procurement laws were later realized to be much too restrictive. Industry was spending more money to do business with the government and subsequently passing on the expense. Additionally, some businesses that could be of value were refusing to deal with the government because of the cumbersome processes. It was a no-win situation.

"The pendulum had swung over too far into an over regulated environment," said Ancell. Federal Acquisition Streamlining and Reform acts were introduced, making it much easier to do business, and the Clinger-Cohen Act of 1996 made it truly possible to create an environment of doing business with the government that was similar to industry doing business with industry.

"The whole contracting-out process is collapsing into a straight forward, 'get the GSA schedule, assess at least three qualified suppliers, negotiate your best price, and procure them,'" Ancell said. "We are planning a joint NIMA/GSA/ Industry workshop later this spring to educate and encourage industry to employ the streamlined acquisition procedures."

AD advocates the new procurement processes by getting the word out to industry and to folks within the agency. Already, more than 50 businesses have met with the commercial advocates to discuss new procedures and briefings

have been presented at various industry-hosted functions. NIMA representatives are sharing with industry leaders the agency's vision requirements to strengthen dialogue and encourage partnerships, he said. In addition to coordinating the agency's Business Opportunity Day, AD is the agency lead in planning NIMA's participation in the upcoming Armed Forces Communication Electronics Association (AFCEA) TechNet '97 conference. Advocate representation is also becoming a staple on many agencywide working groups.

It wasn't long ago when NIMA's legacy organizations were the only market for some of these geospatial and imagery systems. The high lifecycle cost from that era is still with us, according to Ancell. With the advent of commercial satellites and the proliferation of commercial image analysis workstations, this is expected to change.

Unique Position to Influence Industry

"Even though NIMA is a small part of the multi-billion dollar imagery and geospatial market, we are in a unique position to influence industry," Ancell said. "Our expertise in the field is respected and many parts of industry believe that if they can meet our needs, they will have a more competitive product."

Essentially, advocates want to encourage companies to design platforms that are compatible and can talk to each other so that "glue ware" doesn't have to be designed to make these different systems fit.

To illustrate, take for example a stereo system. The receiver is compatible with a variety of different brand name components. The consumer is not limited to a single brand that may be costly or inadequate for personal needs. Systems are compatible across the board.

"Our ultimate goal," he said, "is to be able to transparently insert new improved technology as it becomes available. Open architectures will allow this 'plug-and-play' interoperability concept to become a reality."

What does all this mean? It means there are new opportunities to do more, better and quicker. Lower initial costs and lower sustainment and maintenance costs allow the agency to more wisely spend its resources to accomplish the mission. Ultimately, NIMA can better serve its customers, ensuring that they have the information edge. ♦



Ancell

Photos by Ed Grub

Employee Assistance Will Minimize Adverse Effects of Hardcopy Distribution Transfer

Internal and external placement programs, personal consultation, workshops and retraining are all combining, NIMA officials say, to minimize adverse effects to employees affected by the transfer of hardcopy distribution from NIMA to the Defense Logistics Agency.

NIMA is working closely with DLA to ensure that affected employees are considered first for new positions created by the changes. At the same

time, NIMA is making full use of programs designed to assist employees whose positions are eliminated. Employees who transfer to DLA, or within NIMA, will receive permanent change of

station (PCS) assistance.

The transfer of hardcopy distribution to DLA will affect employees in Bethesda, Philadelphia, St. Louis, and other sites. Most of the Bethesda employees are involved in inventory control, requisition processing and cataloging, while the others are mostly involved in distribution.

DLA has committed to transferring 42 inventory control point personnel and 10 distribution operations personnel to its facility in Richmond, Va., and one cataloger to its facility in Battle Creek, Mich.

When distribution and inventory control functions of the combat support elements transfer to DLA, the NIMA personnel performing these functions also will transfer. (The imagery analysis, geospatial planning, remote replication and customer support functions of the CSEs will remain with NIMA.)

"Although NIMA cannot promise each employee a job, our management is committed to the success of the outplacement process," said Mark Cheli, human resources manager for the DLA transfer study.

When authorized, affected employees are being registered for the DoD Priority Placement Program and the Defense Outplacement

Referral System (accessible to private employers). The newly implemented NIMA Internal Priority Placement Program will help place employees in other NIMA positions for which they are well qualified. And buyouts and early retirement will be available to affected eligible employees.

All employees have access to on-line job vacancies, employment bulletin boards, and retirement computation software in special transition centers set up by the Office of Human Resources in Bethesda and Philadelphia. Employees can consult with on-site HR staff and refer to information on job-search methods, resume preparation and interviewing techniques. A transition center will open in St. Louis in the near future.

Right Associates, a private contractor, has provided a series of transition workshops to Philadelphia and Bethesda employees, and more may be offered if interest warrants. Some Philadelphia employees have also been participating in a Defense Conversion Adjustment grant program in the Naval compound, which trains participants for new jobs.

The agreement to transfer hardcopy distribution to DLA is an outgrowth of a cost-benefit analysis conducted at the recommendation of the Joint Chiefs of Staff. The analysis reaffirmed the importance of NIMA focusing on its core business functions, including providing imagery, imagery intelligence and geospatial information, and improving customer support. Hardcopy product distribution, on the other hand, was identified as one of DLA's core business functions.

NIMA officials expect that the transfer of hardcopy distribution to DLA will improve customer service and result in more efficient operations, while achieving substantial savings. ♦

"Although NIMA cannot promise each employee a job, our management is committed to the success of the outplacement process."

Editor's Note: This article was prepared by the offices of Congressional and Public Liaison and Human Resources. Look for future articles featuring affected employees—their thoughts on transition assistance and training—and how they are coping with change.

The Department of Transportation (DOT) and the Department of Defense (DoD) recently announced an agreement assuring civil users of the satellite-based Global Positioning System (GPS) the availability of a second frequency.

A second frequency is essential for critical civilian uses of GPS. The White House Commission on Aviation Safety and Security, chaired by Vice President Al Gore, called for the establishment of a second civil frequency as part of a broader program to maintain U.S. leadership in aviation and satellite technology.

DoD agreed to assure civil users uninterrupted access to a portion of its military signal, known as the "carrier phase." The uninterrupted access to L2 carrier phase for civilian uses will be reflected in the upcoming publication of the Federal Radionavigation Plan, jointly published by both departments.

Guaranteed availability of the L2 carrier phase will support the accelerated implementation of the Federal Aviation Administration's (FAA) Wide Area Augmentation System (WAAS). WAAS is the centerpiece of FAA's transition to a satellite based air traffic control system. WAAS enhances the capabilities of GPS signals by providing the accuracy, integrity and reliability needed to allow the system to be used by civilian pilots as a primary means of navigation.

In addition, the DOT and DoD agreed to develop a plan for providing a second frequency with course acquisition code and navigation message for civil use.

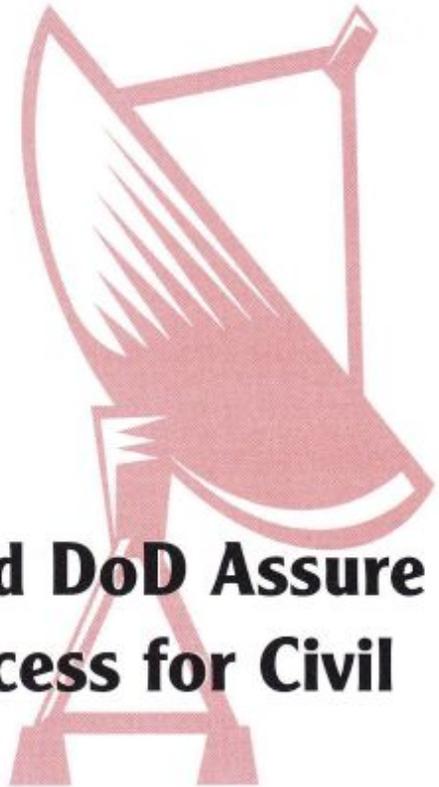
This will enhance worldwide GPS capability and allow each department to most effectively meet its responsibilities as laid out in the President's GPS Policy issued in 1996. The addition of a second civil frequency will result in an upgrading of the next generation satellites, known as the Block IIF.

The detailed plan for providing this coded second civil frequency will be announced within one year.

Dr. Paul Kaminski, Under Secretary of Defense for Acquisition and Technology, and Frank Kruesi, Assistant Secretary for Transportation Policy, met Feb. 22 to review the frequencies specified in the Block IIF contract for possible use as the second civil frequency, referred to as L5.

Although none of the candidate frequencies was considered mutually acceptable to all federal agencies with an interest in GPS, DOT and DoD reaffirmed their commitment to providing the second coded frequency for civil use.

As a first step, DoD's GPS Joint Program Office will request a proposal from Boeing North American, the Block IIF contractor, for an alternative design for providing the



DOT and DoD Assure GPS Access for Civil Users

second civil frequency. Also, the DoD intends to investigate increasing the robustness of GPS for military use by supplementing the current system with an enhanced military capability at a yet to be determined frequency.

These planned changes reflect the commitment in the President's GPS Policy that the U.S. will provide the most capable and reliable satellite navigation system for use by all the nations of the world well into the next century.

The DOT and DoD also announced the signing of the charter for the Interagency GPS Executive Board (IGEB). The charter was signed by Secretary of Defense William Cohen and Secretary of Transportation Federico Pena before he left office. This board, established by the President's GPS Policy, will provide interagency management of the GPS and U.S. augmentations to the GPS, and policy guidance for U.S. efforts to assure global acceptance of GPS technology. ♦

NIMA Paper Cited at Conference

A technical paper co-authored by four NIMA personnel was cited as the best paper of its session at a conference sponsored by the American Institute of Aeronautics and Astronautics.

The Missile Sciences Conference was held in December at the Naval Postgraduate School in Monterey, Calif. The NIMA paper — "Digital Point Positioning Data Base: A New Resource for Targeting and Mission Planning" — was presented by Bill Stein, technical adviser for advanced imaging sensors. The co-authors are Steve Malys, Paul Pals and John Strebeck.

Based on imagery, Digital Point Positioning Data Base (DPPDB)

provides a deployable database from which precise target coordinates can be derived. The coordinates are derived at computer workstations, bypassing analog equipment that was used with film-based hardcopy PPDB.

In addition to providing an overview of the DPPDB product, the paper presented a rigorous assessment of DPPDB accuracy characteristics. The assessment was based on a set of specially designed geodetic control networks, established by NIMA personnel in selected test areas, Malys said.

The paper also reflected remarks made at the conference by William M. Perry, then Secretary of Defense.

"Dr. Perry spoke about bringing our military into the 21st century, with emphasis on modernizing the forces, particularly with respect to technology," Stein said.

The NIMA paper was directly concerned with the transfer of digital technology to the war fighter.

Commending the four Systems and Technology personnel, Leo Hazlewood, deputy director of operations, noted that the Operations Directorate has benefited from their efforts. ♦

NPR Workday

by Paul Hurlburt

"There was no song and dance—no canned tour," said Mary Morgan, a project leader in Geospatial Information's Source Services Branch. Morgan was commenting on the branch's reception of Leo Hazlewood during his National Performance Review Workday at NIMA, Reston.

The NIMA Deputy Director for Operations (DDO) simply showed up and was placed on a workstation.

The unusual treatment for one of the agency's top three civilians fit the format for NPR Workdays, a program in which senior leaders work alongside employees to learn firsthand about the complexities of the work they do.

"I expect to gain better insights into NIMA's work processes and customer interactions," Hazlewood said, "and I want to see NIMA from the perspective of employees. Hopefully, this will broaden my view of operations from the bottom up."

The DDO spent the day in the Source Service Branch of the Source Analysis, Information and Services Department. The branch, headed by Susan Riley, collects, manages and disseminates imagery for customers in Geospatial Information and has around 60 employees.

Source Service personnel operate the Source Acquisition Segment, a complex system that stores imagery and associated triangulation data used in geospatial applications, among other functions. Since August, the branch has been accessing the Requirements Management System, which manages the imagery community's collection requirements. Among other systems, the branch also manages three transcription databases containing information about the transcription of selected imagery on magnetic tape into a newer format.

During the day, Hazlewood put together a photo lab work order, searched for source material, built a collection requirement for new source and disseminated newly transcribed source in softcopy to internal customers.

Hazlewood's lack of pretense "put us at ease," said cartographer Tom Conroy.

"It was good for morale," said Morgan, who added that Hazlewood not only "found out what we do," but quizzed employees on suggested improvements.

"He was interested in understanding our process and how it fit in with the larger process," Conroy said.

No direct link between NPR Workdays and future decision making is intended.

"Indirectly, the time Hazlewood spent on the floor will affect his decision making as we migrate to USIGS (the U.S. Imagery and Geospatial Information System)," Conroy added. "I sensed that he genuinely wanted to understand

the organizational and process flows, that this [workday at Reston] was not just an exercise."

The NPR Workday did affect the decision making of some of those visited:

"His questions got us thinking about ways to improve [source] dissemination," said cartographer John Sengewalt, who analyzed the process alongside Hazlewood during his visit.

A guiding principle of NIMA is for employees to work at the lowest possible level of classification. Interac-

tion with Hazlewood led to a reevaluation of the classification process, Sengewalt said.

The branch's employees believe they are "an integral part of NIMA," Morgan commented. "We're at the front end of production. If we're doing our job right, the source will be there when cartographers go into production.

"We try to make our process invisible," she added, "but without source, you don't have production."

Hazlewood was a "quick read on all those systems," Conroy noted. "He was very knowledgeable of the connectivity between the systems and how their architectures are integrated."

Since this report, the DDO completed an NPR Workday at NIMA, St. Louis, and a third visit was planned for NIMA, Washington Navy Yard. ♦

Career Development Program Nominees, Selectees Approved

by Jean Haithcock, HRD

Eighteen NIMA employees were nominated by Acting Director Rear Admiral J.J. Dantone Jr. to take part in the Career Development Program. Dantone based his decisions on the recommendations of the NIMA Executive Resources Board for Career Development.

Career Development Programs include: Long-Term Full-Time Training (LTFTT), senior service schools, Federal Executive Institute, DoD Executive Leadership Development, Harvard executive seminars and DoD executive seminars. Both CIA affiliates and DoD employees were eligible to apply for these programs.

The LTFTT program aids the agency by enhancing and developing selectees' skills in a variety of specialized disciplines at universities nationwide. The following selectees will complete graduate or doctorate level course work:

Kent Mitchell and Charlette Watkins, Corporate Affairs (CA); Peter Doucette, James Gallion, Marjorie Hall, LaTracy King-McCallum, Pamela LaFontaine, Cary Lippert, Francis Moffett, Daniel Peshek, Denise Vermeulen and Chris Van Hoene, Operations (DO); Gregory Nuessle, Virtie Heard, Thomas Holzer, Phillip Hwang, Ernest Reith, and Ann Willis, Systems and Technology (ST).

Senior Service School academic programs focus on national policy issues. Senior Service Schools include the Industrial College of the Armed Forces (ICAF), National War College, Navy War College, Army War College, Air War College and the Inter-American Defense College. The schools have the final authority on civilian selections. The nominees are:

Robert Crosby, Jose Villanueva and Laura Senty, CA; Eileen Corrigan, Rich Hubbard, Gary Hacker, Dave Taylor and Barbara Willsey, DO; Vonna Heaton and James Kren, ST.

The Federal Executive Institute holds the "Leadership for a Democratic Society" program. This program addresses the topic of improving organizational performance through the active leadership role of career senior executives and other senior managers. The program objective is to link performance-based individual development to leadership in the federal context. The selectees are:

Robert Cardillo and Laura Senty, CA; Carol Sloper and Paul Weise, DO; Keith Littlefield, Don Stokes, David Burns (Alternate) and Beth Driver, (Alternate), ST.

The DoD Executive Leadership Development Program consists of two courses — Executive Leadership Course and the Senior Executive Leadership Course. The courses concentrate on the application of training concepts and methodology used by the Department of the Army at the combined Armed Services Staff School. Kimberly Singleton-Slater and Tom Strong, both from ST, were nominated.

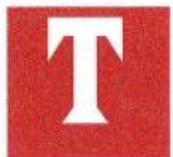
Harvard Executive Seminar, Senior Managers in Government, is a Kennedy School seminar that focuses on management of change, policy analysis, negotiation, leadership, strategy and organizational management. The nominees are: Matt Long of DO and Tom Hennig from ST.

DoD Executive Seminars address key issues in public management and are offered through DoD via contract with Syracuse University and Johns Hopkins University. The nominees are:

Pamela Krause and Dominic Manocchio, CA; Roland Burdett, John Greene and Ricardo McCrimmon, DO; and Marian Cherry, ST. ♦

Navajo Nation, NIMA Engage in M

by
Sharon Alexander



he National Imagery and Mapping Agency along with the Navajo Nation are in the midst of a mutually beneficial exchange that also will promote NIMA's diversity goals.

The agency will transfer imagery analysis information and technology that will enable the Navajos to produce digital maps of the reservation's land cover and terrain features using commercial land satellite (Landsat) multispectral imagery as a base.

Besides raising the awareness of career opportunities in the agency, NIMA will receive ground-truth data for the study area on the reservation, which can be used to analyze land cover at other locations around the world.

Mike Benson, public affairs officer for the tribe's Department of Water Resources Management, said the transfer is in line with their goals to understand, reclaim and preserve their land and to protect precious natural resources.

The satellite imagery will reveal information about vegetation, soil and land cover that ordinary photography will not—information that can be used by many tribal programs, including forestry, minerals, water resources and heritage.

The reservation of the Navajo Nation is a 25,000-square-mile stretch of land that surrounds and includes the point where the states of Arizona, New Mexico, Colorado and Utah meet. That area is known as Four Corners.

According to Tom Margrave of the CIA's Directorate of Science and Technology (DS&T), the idea for the exchange originated in the fall of 1993, when he aired a videotape of the computer simulation of the Kuwait oil fires while recruiting at the American Indian Science and Engineering Society (AISES) Conference in Spokane, Wash.

Lawrence Lano, a Navajo environmental specialist with a New Mexico coal company and president of the Northern Arizona Professional Chapter of AISES, saw the tape and was so mesmerized that he viewed it three or four times consecutively, Margrave said. He explained that Lano thought that a technique similar to that applied in the video could be used to help his people create a geographic information system (GIS) computer model of the Navajo Nation for land management.

"Landsat makes a perfect base layer for such a model," commented Margrave. "And with the right GIS software, additional layers of information can be added to this base."

As a step toward reclamation and preservation, the Navajo Nation already had purchased commercial multispectral Landsat data of their territory to use for mapping and analyzing the Navajo land. However, Margrave was unaware of this until he accepted an invitation to speak to Native American students in the spring of 1995 and visited the Navajo tribal headquarters in Window Rock, Ariz.

"It was just sitting there in boxes," he said. "When I saw the data, I knew how we could help them use it to accomplish their goals!"

At the time, they did not have any way to display or analyze the imagery; however, since that visit, the Navajos have acquired the hardware and software to create their own GIS model, but they still lack the expertise and experience to analyze the imagery and use the tools.

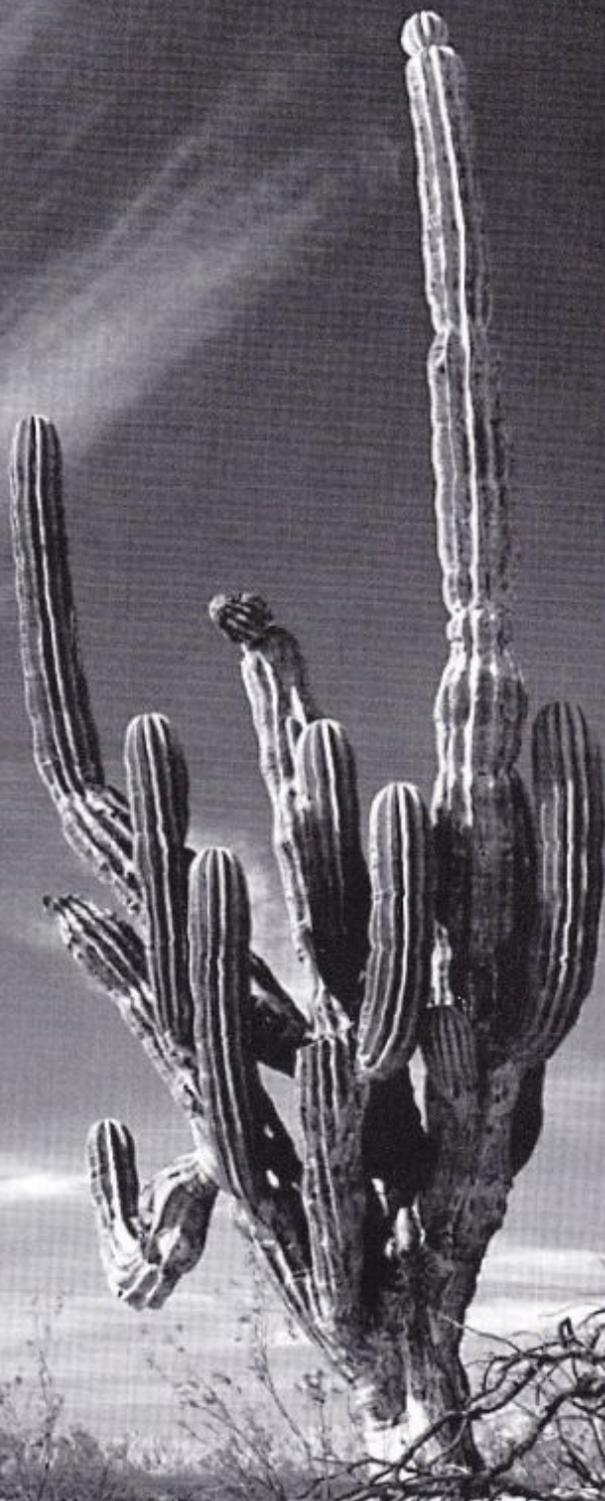
"That is where NIMA entered the picture," Margrave said.

Mike Leman of NIMA's Applied Technical Support Division in the Systems and Technology Directorate will aid Navajo technician Gilbert Largo in interpreting the imagery while he is visiting the area, probably in the spring. In turn, Gilbert will train others in his nation. Largo is a GIS technician with the Navajo Department of Water Resources' Water Management Branch in their Division of Natural Resources located in Fort Defiance, Ariz.

mutually Beneficial Exchange

Oh, beauty before me,
Beauty behind me;
Beauty to the right of me;
Beauty to the left of me;
Beauty above me,
Beauty below me;
I'm on the pollen path!

— Navajo Saying



The two partners have agreed on the study area that will be analyzed during the training process. According to Leman and Margrave, a portion of land was selected that encompasses several major land resource areas and represents about 10 percent of the Navajo territory.

"We will teach Largo using this small study area and then he can apply the techniques to the entire Navajo Nation," Margrave said.

Using image processing techniques, Leman and Largo will assign codes to similar features on the imagery. Largo, who is already familiar with the land, will compare these codes to actual features on the ground in order to establish ground truth.

To assist him with this task, CIA's Office of Research and Development will provide Largo with a laptop computer equipped with a global positioning system (GPS) receiver.

The computer will display on its screen his exact location on the ground, enabling him to accurately identify features seen on the imagery with what is actually present on the ground. Once this is complete, the Navajos will have the beginnings of a GIS model, which they can extend to produce digital maps of the reservation's land cover and terrain. ♦

The Navajo: Respect and Appreciation for the Earth

by *Melissa Mummert*

The Navajo Beginnings

The Navajo tribe today is divided into more than 50 clans scattered throughout northwestern New Mexico, northeastern Arizona and parts of Utah. In the 1960s, the Navajo reservation officially became known as the Navajo Nation. The Navajo Nation controls 15 million acres, making it the largest mass of land governed by Native Americans. According to 1990 census statistics, there are now more than 220,000 Navajo people living in this area.

Experts believe that the term "Navajo" may have been given to the tribe by the Pueblo people. The Navajos, however, call themselves "Dine," which means "the people." They call their land "Dine Bikeyah," or "the people's country."

There is some debate as to when the Navajo migrated from their original homeland in Canada to their current territory in the American Southwest. Some anthropological historians place the migration as early as the 11th century, others as late as the 1500s. Whenever the massive migration took place, the lives of the Navajo people were never the same after the move. Much of the shift in lifestyle resulted from the influence of other tribes upon the Navajo, most notably the Pueblo. A large number of Rio Grande Pueblo arrived in the Southwest in the 17th century after the Spanish suppressed the Pueblo Revolt. The Navajo had survived by hunting in Canada, but they quickly adapted to the Pueblo lifestyle of farming and herding livestock. The Navajo thereafter were a pastoral people.

Times of Tragedy

U.S. troops began to move in on Navajo territory in the mid 1850s, and the Navajo fought back with violent raids. In retaliation for the raids, and because there were rumors circulating about gold within Navajo boundaries, the U.S. government in 1863 commanded Col. Kit Carson

to invade Navajo territory. Carson and his troops captured more than eight thousand Navajo and forced them out of their homes. The displaced Navajo were sent on foot to a reservation in Fort Sumner, New Mexico. The Navajos named the arduous journey to the reservation the "Long Walk." Many prisoners perished while incarcerated by contracting foreign diseases and by being attacked by other native tribes.

After four brutal years, the Navajo who survived the camp were allowed to return to what was left of their homes. They received livestock under the terms of an 1868 treaty. In return, they promised to live peacefully with U.S. settlers.

The Navajo began rebuilding in the decades that followed. The population of the Navajo tribe doubled, they gained additional land and found that newly established trading posts in the Southwest provided a lucrative market for their rugs and blankets. But the good times didn't last long. The large numbers of livestock on the generally arid land concerned people outside the reservation, because they feared that overgrazing would lead to massive soil erosion and silt-runoff into Lake Mead, above the Hoover Dam. The federal government, during the New Deal era, passed legislation to reduce the number of Navajo livestock.

The standard of living dropped dramatically for the great number of Navajo people who relied on their livestock for economic survival.

Editor's Note: The author is a reporter for Channel One Online, an online news service for schools. Article used with permission.

Multi-Functional Teams Prove Successful

by Leslie DeBellis

A year and a half after their formation, multi-functional teams in the Data Generation Division are experiencing benefits, team members report.

Thirty eight multifunctional teams now produce hard- and soft-copy maps from "cradle to grave" using segments of the Digital Production System: source preparation, data extraction and product generation.

"Critical to the success of these teams are the team leaders," said division chief Mikel Jackson. "The process takes time in proving its value, and their commitment has made the difference."

Besides knowledge of three production segments and the Production Management Segment (PM/S) of the DPS, managing production within a multifunctional team requires good communication, facilitation skills and energy.

Some team members have remained specialists with regard to a particular production segment, others have cross-trained, and everyone has become more knowledgeable of the different segment operations and requirements.

"Crosstraining takes time, but it is a great benefit for the entire team," said team leader Allison Cornell in Bethesda. "It promotes understanding of each other's processes and respect for each other's efforts. It also provides a common ground for production-related conversation."

Cornell brings team members, who work at different locations, together on a regular basis to share information about themselves or their jobs. She also holds team luncheons off site a couple of times a year to share in a more relaxed environment. When team members have questions regarding jobs/production issues, she encourages them to seek out their teammates.

Team leader Calvin Lucy in Reston is a proponent of both crosstraining and segment-to-segment communication. He builds

intersegment communication skills by encouraging team members to meet with teammates who are next in the pipeline.

"This type of [segment-to-segment] communication helps dissolve problems sooner," he said.

Lucy's team has directly benefited from being multi-functional. With input from experienced cartographers in each production segment, the team discovered it is more beneficial for the system, team and production flow to pre-plan jobs in larger extraction areas. Edge-matching and database integration problems are reduced, and finishers are able to work on the same job simultaneously. The larger extraction area — a one-by-one-degree cell — will produce four 1:100,000-scale Topographic Line Maps and put eight Product Generation Segment finishers to work. Lucy said the team didn't realize pre-planning jobs was an area that could be improved until they all started working together. Not only Lucy's team, but other multifunctional teams will benefit from this creative approach.

Team leader Jerry Egler in St. Louis said the enhanced communication provided by multifunctional teams helps the cartographers deal with technical issues.

"Communication of the latest and most current requirements, procedures, product/extraction specifications, and interpretation of unique areas of the job are ongoing challenges," Egler said. "The whole advantage of the multifunctional team is that the team has learned all facets of the job. You know exactly where to go and who to see for most questions or concerns." For a multifunctional team, when issues arise, they become the concern of the entire team, he added.

Meri Ford, team leader in Bethesda, believes that the best advantage of having an "end-to-end" team is that the team has more ownership and gets to see the final product.

"The multifunctional team is able to follow the job from start to finish within the team. This process provides an incentive and is a motivator." She plans to get printed copies of sheets the team produced to give to members.

Jessup Ayala, a cartographer in Bethesda on Leslie DeBellis' team, believes multifunctional teams are "building consistency."

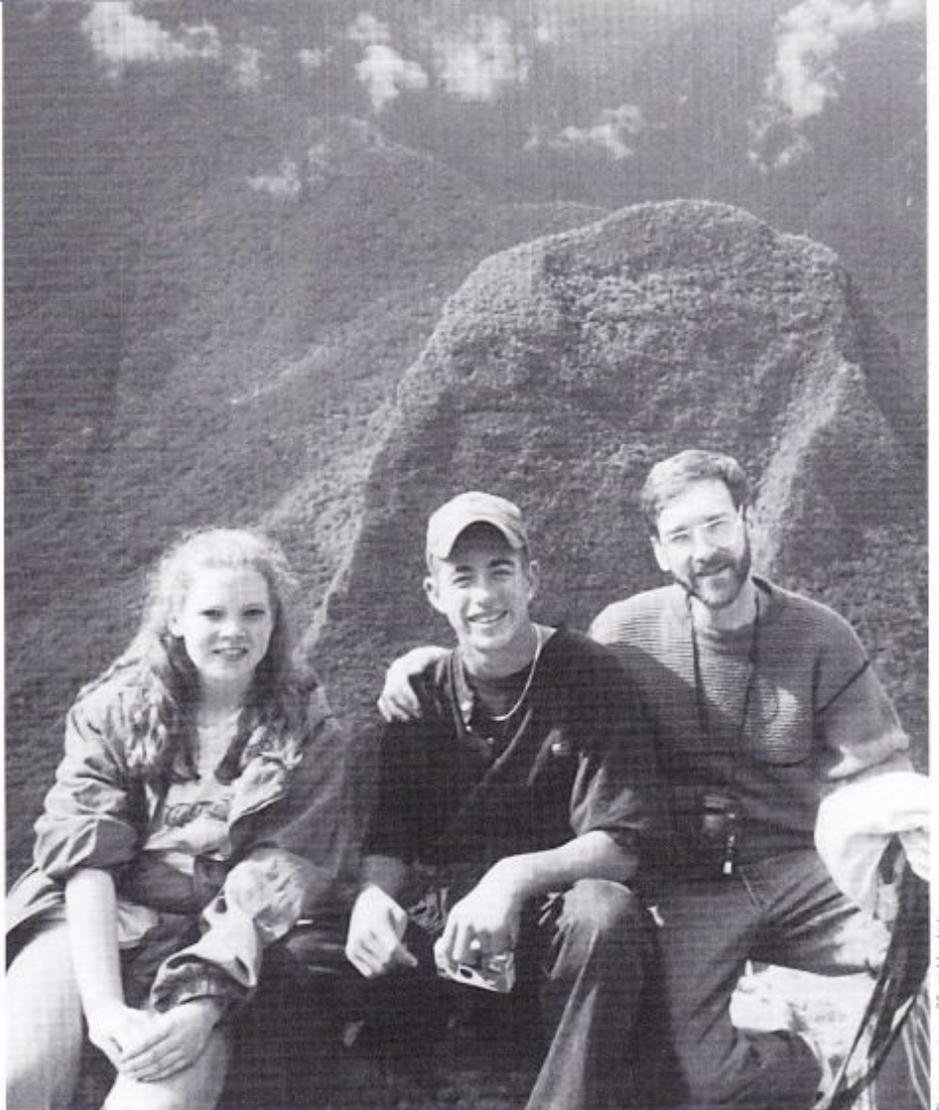
"Within a multifunctional team, it is easier to pass information and suggestions regarding the product. Improved communication has directly affected our morale."

Data Generation's multifunctional teams have been challenged over the past year. With these challenges, the teams and their team leaders have been given opportunities to be successful. ♦

Within a multi-functional team, it is easier to pass information and suggestions regarding the product. Improved communication has directly affected our morale."

EDITOR'S NOTE:

Leslie DeBellis is a Multifunctional Team Leader in Bethesda.



Photos courtesy of Scott Hendrickson

Scott Hendrickson, right, with Heidi York and Carl Wheelhouse, members of youth group he supervised in Peru.

by
Howard Cohen



It is a cold Friday night in February. While most people are enjoying the comforts of a warm home, Scott Hendrickson is in Lafayette Park, across from the White House, distributing food to Washington's homeless.

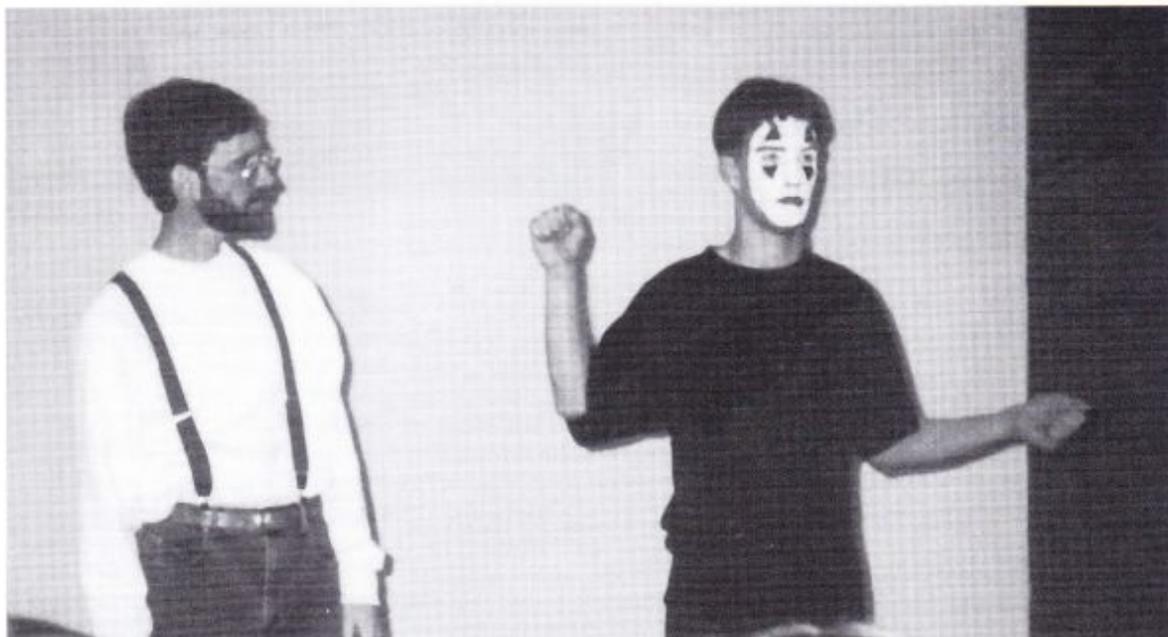
Hendrickson, a Bethesda cartographer by day and a helper of the needy by night, is not alone. He's leading 15 teenagers from his church—the Church of the Redeemer, in Gaithersburg. "I've been involved as a volunteer with teenagers since I was a teenager myself," he says.

Earlier that evening, the group had met at the nearby youth group center to gather and load bagged lunches into a van. Less than an hour later, they were in a different world.

"Seeing the homeless made me feel that life has more purpose than the day-to-day grind; that God gives you a sense of purpose," he says. "The destitute look in their faces will not easily be forgotten." There was one person so covered up, he adds, that they couldn't tell if it was a man or a woman.

Hendrickson was surprised mid-way during their visit when another group of homeless showed up to try to help them distribute the lunches. "This was unbelievable! They were an inspiration to us. They were glad to see others getting help."

Goodness fr



Scott and Kyle Lewis perform at a church in Lima.

The church youth group spent about two hours helping the homeless. "Not everyone said thank you, but you could tell by the look in their eyes that they were thankful and the bagged lunches meant something to them," he said. "It's a fantastic opportunity to interact with the homeless, to let them know God and people care about them."

Hendrickson found the cold evening a "warm experience." Driving back, the mood in the van was varied among the teenagers. Some were somber and reflective. Others were inspired that they had played a part in something that made a difference.

Hendrickson's work is not confined to the winter months. During the summer, he is one of the youth group leaders who help supervise the teenagers for two weeks in Lima, Peru.

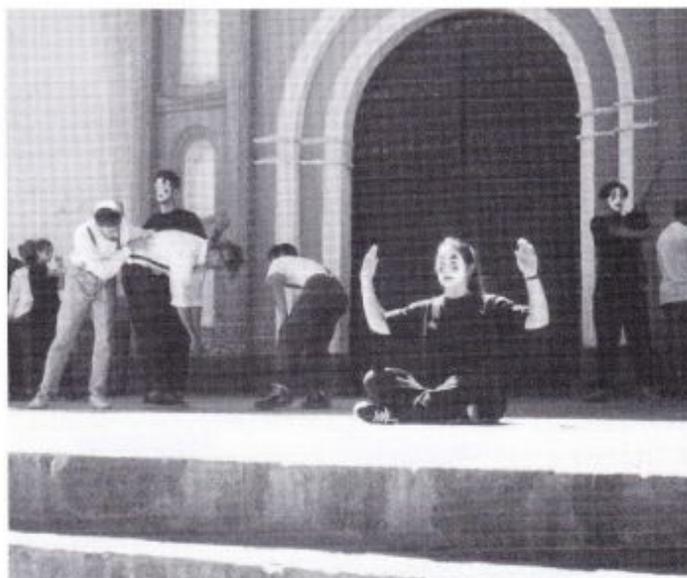
"Students raise money to get there through bake sales, yard sales, car washes, odd jobs and sponsors from their church. Last year, they put on a play to communicate since language was a barrier to most. They brought simple costumes and a small set to perform in parks, open squares and even a local college," he said.

The drama depicted the biblical creation of the world and the fall of mankind in the Garden of Eden. Often

playing before crowds of more than 100 people, the locals cheered and applauded their performance wherever they went.

The youth group believed the message was heard. Some of the youth group members realized that they might consider missionary work as a profession.

"This was not just a short-term experience, but a lifetime-changing experience," he says. "As for myself, it caused me to reflect on my own priorities in life. What else can I do to help? This gave me a sense of purpose. The trip was a success; I'm looking forward to going back this summer." ♦



Youth group members perform in Cusco, Peru

IG Office Gleans Info from Security Questionnaires



by James Kasab, IG

Late last July, 238 security questionnaires were randomly issued to DMA employees by the Inspector General's office. The questions centered largely around automated data processing, information and physical security.

There were 113 responses from Bethesda, Fairfax, Reston and St. Louis. Data from all, including comments, were summarized and are currently being reviewed by management to identify areas where processes are working and address areas where improvement is needed. Responses highlighted the following areas:

- More than 91 percent of the respondents said they know where to get help if they are uncertain about a security issue.

- There was a desire for additional security training and/or information on a regular basis, such as a monthly bulletin on current information, issues and concerns.
- Employees noted that supervisors should place additional emphasis on security awareness.
- There is the perception that penalties for security infractions/violations may not be imposed in a uniform manner.
- There is a perception that there might be a negative reaction by management for speaking up about a security concern.
- The respondents at the Reston site expressed that there was a positive security environment, and areas noted might serve as a benchmark for other sites.

Since NIMA's standup in October, the Security Services Division has been actively working to address customer concerns relative to security. New briefings have been prepared for travel and to better define what it means to be in an intelligence organization. These will soon be available to all employees.

Security walk-around surveys are underway to assess NIMA's security posture and determine where improvements can be made to better protect employees and property. The Security Services Division is working to establish a NIMA Security Program that combines the best of the security programs from our predecessor organizations. Those with questions or concerns should contact the Security Work Team at their site. ♦

IN MEMORIAM

Joan P. Sun, 55, safety and occupational health manager, in Reston, died Feb. 6 at her home in Bethesda, Md., after a heart attack. She had been with NIMA and the Defense Mapping Agency for nearly 20 years.

"She will be sorely missed," said her colleagues. "She was always looking for ways to help and protect people."

Her hobbies included music and gourmet cooking. She played a violin, taught music to children and was a member of the Maryland Brass Society, the National Symphony Orchestra Society and Master Chefs of America. She also was a member of the Organization of Chinese-Americans, Bradley Grove Civic Association, Friends of the National Zoo and the Washington Hospital Center Cornerstone Society.

Norbert J. Kellner, 65, a retired negative engraver died in his sleep at his home in St. Louis, Jan. 20.

Kellner, a 42-year career employee retired from the Defense Mapping Agency in November 1991. His federal service includes serving in the Army during the Korean War.

Kellner, or Norb, was affectionately known as an aluminum can collector and tax preparer. He was a member of St. Mary Magdalen Catholic Church in St. Louis. He is survived by his wife of 40 years, Marie, his eight children and eight grandchildren.

Interment was at Jefferson Barracks National Cemetery in St. Louis County.

Commercial Imagery Task Force Established

A Commercial Imagery Task Force has been established by Leo Hazlewood, Deputy Director of Operations, to develop a plan for the incorporation of anticipated near-term U.S. commercial imagery capabilities into the U.S. Imagery and Mapping System (USIGS).

The task force will focus specifically on the incorporation of commercial capabilities into NIMA's internal business processes.

The CITF is expected to complete its task by June 1 and provide a final report to the NIMA Leadership Council. Specifically, the CITF will develop an end-to-end concept of operations and an implementation plan for the Conops to include a schedule and budget required to implement.

The task force will be led by Randy Ferryman, who will manage this effort out of the Central Imagery Tasking Office (TO). Terry Vernier, Deputy Director of TO, will provide strategic guidance and direction to the effort.

The CITF will be located at NIMA Headquarters in Merrifield and consist of the following full-time NIMA personnel: Bill Stein (Systems and Technology), Laura Robinson (Corporate Affairs), Mark Baker (Imagery Analysis), Kevin Howard (Data Generation) and Gary Lance (Advanced Technology).

Four other personnel are serving as points of contact for the initiative: Dick Beck and Dave Hartmann of Plans, Programs and Analysis, Kevin Cole (Financial Resources) and Bill Carruthers (Imagery Issues in TO).

"In order for the CITF to be successful, given its aggressive schedule, the task force needs the continued full support of all NIMA offices," said TO Director Brad Lucas.

Safety Officials to Sample Water

The Environmental Safety Group at NIMA's Bethesda location has been working hard to address indoor environmental concerns over the past several months.

As part of the group's ongoing effort to maintain a safe and healthy workplace, drinking water at various

locations throughout the Bethesda complex will be sampled over several weeks for lead content. The results will be publicized.

Walter Reed Army Medical Center's Office of Preventive Medicine provides monthly collection, examination and reporting of potable water samples for bacteriological, pH and chlorine analysis throughout the Bethesda Complex.

The Washington Aqueduct provides us with an annual analysis of the water at the DaleCarlia Water Treatment Plant (the Bethesda complex's water source). This comprehensive report provides an analysis of 54 volatile organic compounds such as benzene; 43 different pesticides; 23 inorganic metals such as lead, mercury, iron and arsenic; nine types of inorganic ions such as ammonia; and four categories of microorganisms and radionuclides. No problems have been reported with NIMA Bethesda Complex's water. Questions can be directed to Environmental Safety Group, MSABA, Mail Stop D-59, (301)227-5581.

WANTED: Your Ideas

The Plans, Programs and Analysis Office (PA) of the Corporate Affairs Directorate will soon launch a new NIMA suggestion program. Promoting and capturing new ideas are recognized as critical aspects of the agency's continuous improvement efforts. By combining and tailoring selected portions of suggestion programs from NIMA's legacy organizations and other federal and private sector organizations, PA will develop a comprehensive and integrated suggestion program that supports NIMA's new corporate culture. The goal is to provide effective conduits across the agency for submitting, processing, implementing and recognizing employee ideas.

PA's Corporate Improvement Team is currently developing the structure, policy and guidance and anticipates implementing the new program in early April. Suggestions on how the program should be structured, how it should work or even what it should be called may be sent to Rick Stidsen, NIMA/PA.



Safety Council Responds to Customers

by Don Kusturin

In the course of a hectic workday, it's sometimes easy to overlook items that are unsafe. Although each employee is duty bound to report unsafe or unhealthful working conditions, NIMA's safety community recently made it easier by contacting employees rather than waiting for the calls.

Members of the Human Resources Safety Office interviewed employees at all NIMA sites to discuss safety-related issues. Selected at random, employees were asked to respond to "Challenge of Change" interview questions. They were also asked to provide suggestions to improve the NIMA safety program, as well as concerns they have regarding those efforts.

"We need to ensure the workplace is safe for our employees, and employee feedback is critical to maintaining a safe workplace," said Corporate Affairs director Doug Smith. "Challenge of Change provided an avenue for employees to voice concerns and offer suggestions to improve their safety."

The Challenge of Change uses input from an organization's employees in an effort to change the organization's culture until safety becomes an internal value in all operations.

Responses from the interviews were compiled, analyzed and presented to the NIMA Safety Council,

which evaluated and ranked the concerns. Many issues were immediately resolved, while others required more in-depth studies.

The council agreed on 12 items that needed a plan of action. They include agency wide concerns such as safety training, ergonomics and snow removal; also, site-specific interests such as air and water quality concerns, and the crossing of heavily traveled roads in conjunction with work at NIMA.

"The Top 12 Challenge of Change Action Items are the result of a review of all employee input. The MS Safety Offices have taken these employee concerns and suggestions and developed a plan to address each of them," said Mission Support Director Jerry Dunbar.

When an employee notices an unsafe condition they should report the situation to the local work order/service desk and try to minimize the potential for an accident. For example, if a water fountain is leaking into a hallway, employees should call the work order desk to report the spill and mark the area so no one will slip. If there is a question about the safety of a situation, employees should call the safety office for assistance.

"While the Safety Council has the overall responsibility to focus and monitor safety programs, we can't do it alone," said Ernie Peters, safety manager in St. Louis. "It takes commitment by each employee to make sure our workplace is safe."

The following is a list of telephone numbers for reporting unsafe conditions:

Work Order/Service Desks:

Bethesda: (301)227-2350

Fairfax (Building Support Manager): (703)275-8640

Reston (Facilities Maintenance): (703)264-3491

St. Louis: (314)263-4023

Customer Support Desk:

Washington Navy Yard: (202)479-5950

Safety Offices:

Bethesda (including Reston and Fairfax): (301)227-5581

Philadelphia: (215)697-3812

St. Louis: (314)263-4621

Washington Navy Yard: (202)863-3660 ♦

Tornado Season Approaching

Staying Safe from Nature's Powerhouses

by
Steve Maneikis

They can appear out of nowhere or be seen coming for miles. Noted for their sleek funnels and unpredictable tracks, tornadoes have wind speeds ranging from 75 mph to nearly 300 mph. Their base can be a few feet wide or up to two miles in diameter, and their destructive wakes can be more than 100 miles. But whatever their variety, these raw powerhouses of nature merit extreme caution.

The National Weather Service says tornadoes can occur in all 50 states, during any month or at any time of day. However, they occur most frequently in the spring and summer, between mid-afternoon and early evening (2-8 p.m.). Technological advances in radar, better warning procedures, improved communications and more public education about severe weather all have contributed to increased public safety. Even so, tornadoes continue to pose a significant threat. Fortunately, there are precautions that can be taken at home and work to improve your chances of surviving and escaping major injury.

If severe weather is looming, or is already occurring, one of the following will be issued by the Weather Service:

- **Severe Thunderstorm Watch:** conditions are favorable for the development of severe thunderstorms (heavy rain, damaging winds, large hail, lightning).
- **Severe Thunderstorm Warning:** indicates a severe thunderstorm is in your area. You should be prepared to take cover if threatening weather approaches.
- **Tornado Watch:** conditions are favorable for the development of tornadoes and severe thunderstorms.
- **Tornado Warning:** a tornado has been spotted or is indicated on radar. You should take cover immediately!

Although the first two conditions do not mention tornadoes specifically, severe thunderstorms are capable of generating tornadoes with little or no warning. Therefore, all severe weather statements should be taken seriously and you should remain alert for threatening conditions.

Tornado Warning

When a tornado warning is issued, it's a good idea to immediately seek cover. Basements offer the best protection. In the absence of a basement, move to an interior room of your house on the lowest floor away from windows, such as a bathroom or closet. If neither of these is possible, move to the middle of a room and get under a piece of heavy furniture. In addition, cover the back of your head and neck with something such as a book or briefcase as protection from flying debris, which are responsible for most tornado injuries and deaths. Those who have experienced tornadoes firsthand describe their roar as that of a speeding freight train.

If you are caught outside as a tornado approaches, seek cover in the lowest spot you can reach safely, such as a ditch or culvert. However, since very heavy rain can accompany tornado-producing thunderstorms, there is a threat of rising water. If water begins to fill the area in which you are taking shelter, leave at once and seek shelter elsewhere.

You Can Hide, But You Can't Run

If you see a tornado while driving, do not try to outrun it. Tornadoes are capable of ground speeds up to 70 mph. This speed, combined with their erratic and often unpredictable movement, makes it dangerous to stay in a car. Tornadoes can flip vehicles several hundred feet in the air and, on April 10, 1979, more than half of the deaths in the infamous Wichita Falls, Texas, tornado were attributed to people trying to escape in vehicles. At the first sign of a tornado, stop your car and take shelter in the nearest building. If a building or other shelter is not available, move away from your vehicle and take cover in a low spot. This reduces the possibility that you will be trapped underneath or injured by the car if it's blown over.

You should use your vehicle for shelter only as a last resort. If you feel you have no other alternative, drive parallel to the movement of the tornado, adjusting your course as the tornado changes direction, until you can find more appropriate shelter. Be aware of where you are and avoid



"A single experience of this awful convulsion of the elements suffices to fasten the memory of its occurrence upon the mind with such a dreadful force that no effort can efface the remembrance of it. The destructive violence of this storm exceeds in its power, fierceness, and grandeur all other phenomena of the atmosphere."

John Park Finley,
Early Pioneer in Tornado Research – 1887

A tornado which formed in Illinois and Indiana June 2, 1990. Categorized as a severe storm (F4), it killed one and injured 11. Tornadoes range in severity from F1 to F5. The most severe (F5s) make up only about one percent of all tornadoes.

any roads that dead-end. If you become trapped or the road is blocked, leave the vehicle immediately!

A recent article in USA Today warns that tornadoes can appear suddenly and that they aren't always seen coming. Clouds, hills, rain and hail can hide them up to the moment they make their appearance. Hail, the article added, is many times an indicator that a tornado is near.

Your best chance of escaping injury in a tornado is by knowing (and practicing) where to go and what to do before a storm arrives at home, work, school or when outdoors.

Keep an 'Eye on the Sky'

Keep an "eye on the sky" if there is a threat of severe weather and stay tuned to local radio or television stations or NOAA Weather Radio for current information. ♦

