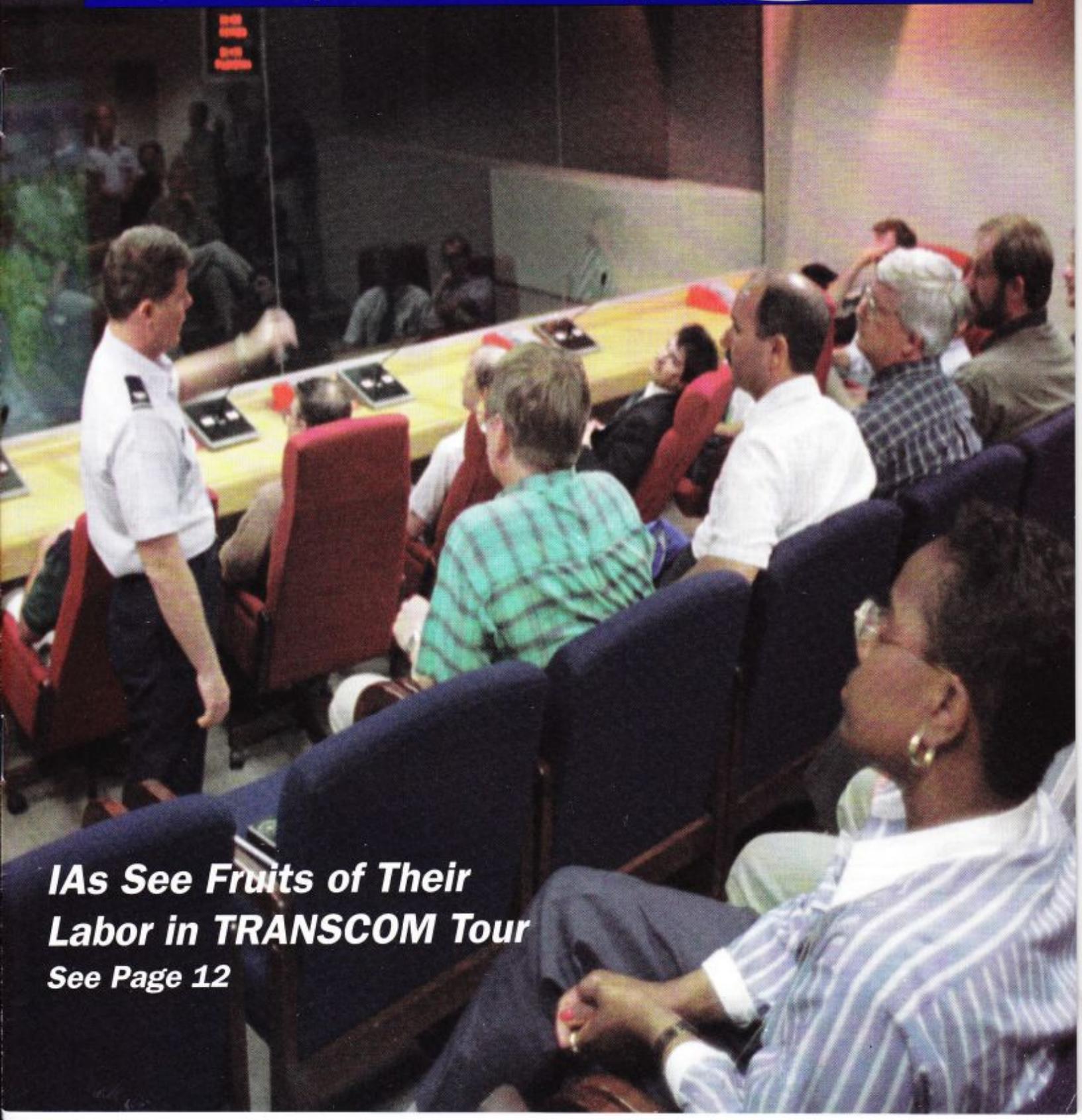


# The Edge

August 1997

National Imagery  
and Mapping  
Agency

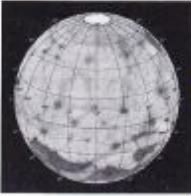
Guaranteeing the Information Edge



**IAs See Fruits of Their  
Labor in TRANSCOM Tour**

**See Page 12**

# in this issue

- 
- 4      Image Processing: Looking to Future, Building on Past**  
by Dennis Rooney
- 
- 
- 7      NIMA Repository Gives Smaller Contractors Shot at the Pot**  
by John Iler
- 
- 8      Mobile Team Investigates Computer Security Incidents**  
by Paul Hurlburt
- 
- 11     Customer Kudos: Just Dropping by to Say Thanks**  
by Denise Vermeulen
- 
- 14     Pathfinder Blazing New Trails for Imagery Intelligence,  
Geospatial Information**  
by Sharon Alexander
- 
- 
- 22     Mars: From the Past, A Glimpse of the Future?**  
by Don Kusturin
- 

## Departments

### *Update*

- 
- 6      Red Team Update**

### *Off Hours*

- 
- 18     The Pastor's Wife: Reaching Out to Give the Gift of Self**



### *On the cover:*

NIMA imagery analysts get a firsthand look at how their reports and graphics are used by U.S. TRANSCOM, Scott AFB, Ill., page 12. Photo by Jim Stepanik.

### *Retirements*

- 
- 20     Navy Captain Richard E. Blumberg**

### *On the Move*

- 
- 19     Personnel Changes**

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Editor: John Iler  
Associate Editor: Mundith Winder  
Staff Writers: Sharon Alexander, Don Kusturin, Jennifer Lafler  
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Correspondence should be addressed to:  
The Edge, Public Liaison Office, 4600 Sangamore Road, Mail Stop D-39,  
Bethesda, MD 20816-5003  
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# As I See It

I went to an awards ceremony today in honor of Col. Jim Walter, our CENTCOM customer support leader. He's done a wonderful job at NIMA and is going back to the Army and command.

He took a few minutes to say a few words to about 50 of us. His message was to remind us that our work, and the excellence that we achieve, directly affects the security of our nation. The stakes in our daily successes and failures are very high. And that we should never forget.

Thanks Jim, for your energy and for your wisdom.

*"Each man must do all in his power for his country."*

Captain Isaac Hull,  
*USS Constitution, 1813.*

A handwritten signature in cursive script, appearing to read "Isaac Hull".



Imagery scientist Dennis Rooney seated at the Digital Image Manipulation (DIM) terminal during the initial test and evaluation stage in 1970.

# Image Processing

## *Looking to the Future, Building on the Past*

by Dennis Rooney

Early in the 21st century, imagery analysts will be able to perform daily tasks at off-the-shelf softcopy workstations complete with multimedia capabilities such as color, video imagery, sound, text, geospatial information, multi-dimensional drawings and smart algorithms.

After the imagery has been manipulated and exploited, the imagery analysts will verbally update databases, where entries will be converted to text. A report, complete with the day's imagery, will be available for transmission at the lowest possible classification to the appropriate customers worldwide (and conceivably, even on the Internet).

Farfetched? Not at all! Most of these technologies will be integrated into a softcopy environment as technology becomes more affordable. Technologies in image processing gradually evolved from government-funded research that resulted in the Interactive Digital Image Manipulation System (IDIMS) and the Image Data Exploitation (IDEX) system, to commercial off-the-shelf technologies. However, not too long ago, image processing research was laying the groundwork for softcopy exploitation.

### A Quantum Leap

A quantum leap in image-processing technology tools and computing power occurred since the former National Photographic Interpretation Center (NPIC) became the first Intelligence Community (IC) organization to venture into this research and development in May 1966. At that time, the most prominent place where digital images were processed was at NASA's Jet Propulsion Laboratory (JPL) in California, where scientists processed and analyzed lunar digital data.

NPIC's foray into this technology was to investigate if digital image processing or manipulation could conceivably correct smeared or out-of-focus targets on imagery acquired from national collection systems. NPIC was the IC's main organization in exploitation research and development technologies that could be delivered to support imagery exploitation in the exploitation community.

Between 1966 and 1972, NPIC, along with the U.S. Air Force serving as the Advanced Research Projects Agency's (ARPA's) executive agent, co-sponsored a research and development (R&D) digital image-processing program with the Visibility Laboratory, a research arm of Scripps Institute of Oceanography, University of California, San Diego. →

## Directives, Notices, Instructions Now Approved

NIMA's policy-development process was approved by Rear Adm. J.J. Dantone in March. Since then, the Policy Directives, Policy Notices and NIMA Instructions listed (right) have been signed, printed and distributed.

A list of newly issued policy documents will be included each month in The Edge. Electronic versions of the policy documents will also be posted on the NIMA Intranet and Intelink. NIMA's Mission Support Office will distribute paper versions until NIMA's softcopy storage and distribution capability is mature.

For paper copies, call Jim Newman (MSAB) at DSN 290-0009 or Cindy Haegele (MSASL) at DSN 693-4216. For information about the NIMA policy-development process, call the Customer Service Division in NIMA's National Imagery and Geospatial Policy Office at DSN 235-8685.

### Directives

D 5025.1 *Policy Development Process* (3/17/97)

### Policy Directives

PD 5200 *Operational Security* (7/3/97)  
PD 5300 *Administrative Management* (7/3/97)  
PD 6000 *Safety & Environmental Protection* (7/3/97)  
PD 8000 *Information Management* (7/3/97)  
PD 8600 *Commercial Affairs* (7/3/97)

### Policy Notices

PN 7000.1 *Budget & Finance Reimbursements: Civilian Permanent Change of Station* (5/7/97)

### NIMA Instructions

NI 1403.1 *Performance, Planning, & Evaluation in the DISSES* (5/21/97)  
NI 5110.1 *Issuance of Other Business Agreements* (7/2/97)

## Image Processing

Continued from previous page

ARPA had contracted with Scripps in 1961 to investigate the removal of smear and blur from images of satellites acquired at Patrick Air Force Base's Eastern Test Range in Florida. NPIC and the Air Force forged a joint-research program — totaling \$5.5 million — to build an R&D image processing lab, develop algorithms and perform R&D experiments on unclassified, digitized imagery. NPIC contributed approximately \$1 million towards this R&D effort.

The Visibility Laboratory and JPL efforts resulted in the CIA's Office of Research and Development (ORD) building a Digital Image Manipulation (DIM) system in 1967. It consisted of a dual-image display, a small Honeywell computer and a high-speed, high-resolution microdensitometer. After delivery to ORD in 1969 for testing, the system was delivered to NPIC where imagery scientists began using it in 1971.

### Picture Enhancement Capability Operating System

After delivering the DIM system to NPIC, ORD began a more ambitious effort in image processing R&D in 1971. This system became known as Picture Enhancement Capability Operating System (PECOS).

The basis for PECOS was JPL's Video Image Communication and Retrieval (VICAR) system, developed in 1968. The interactive PECOS system, or IDIMS as it was later known, was delivered to ORD

in late 1974. Efficacy testing of imagery analysts' problems in 1975 indicated that improvement was shown in 12 of the 16 problems proffered. This effort gave impetus to the need for a production image-processing (or softcopy) system. The IDIMS was eventually transferred to NPIC in mid-1976 and used to support IA's problems on a limited basis. In 1977, original digital data from a new collection system were used to support IA problems.

In the 1970s, the CIA's Office of Development and Engineering (OD&E) began developing a production softcopy system called the Image Data Exploitation (IDEX) system. An engineering version of IDEX was delivered to NPIC in 1978 for IA test and evaluation. Softcopy exploitation test results allowed IAs to glean more detail and higher

*Continued on page 10*



*The Image Data Exploitation (IDEX) I system, pictured above, was installed at NPIC in 1981. It was upgraded in 1981 and eventually replaced by the IDEX II system in 1991.*

update update update update

# Red Team Update

The Red Team briefed the Director and Business Unit Chiefs at the Senior Staff Meeting, June 25, on the following nine processes. Findings and results for this cycle include:

## Training

Employees and business unit training coordinators are very dissatisfied with the process. The process is complicated, takes too long and has many duplicate reviews. The team recommended that the form be automated and multiple steps be eliminated. Specific process improvement actions will be identified in concert with the process owner.

## Submitting Air Force Form 9

Even though the team found that affiliates lack knowledge of the process, submitting an Air Force Form 9 for a fund citation through the Comptroller's office is expedient and straightforward. However, the cycle time for acquisition of the goods and services has suffered due to installation of the new PRISM system. PC is working to reinstate the five-day delivery of goods by the end of the fiscal year.

## Couriering SCI Documents

Currently there is limited knowledge of the process of how to courier SCI documents between NIMA sites. All sites reported that the registry staff provides an outstanding job of educating users and facilitating the process. One area of improvement noted was to implement a courier badge similar to CIA's that is easily recognizable, rather than the use of a courier letter.

## Transporting Laptops

The team found no formal process in place to transport laptops or import computer discs into NIMA facilities. It was determined that an Automated Information Security Material Accountability Record is still required for both laptops and disks. Mission Support plans to disseminate policy to ensure employees are aware of the procedures.

## Employee Relocation

Westfields and the Washington Navy Yard have detailed indoctrination procedures for employees relocating to these sites. The team recommended that a Welcome Aboard Package be developed for each NIMA site that facilitates employee transition.

## Office Space Reconfiguration

Employees surveyed had little information about how this process worked; they felt that it took too long for routine projects and they were uncertain which projects took priority. The team in combination with the process owner recommended to leadership that regional space boards be established to set priorities and that office space standards be developed to minimize reconfiguration.

## Computers

(Ordering a PC, installing it and ensuring it is operational): Employees were generally very dissatisfied with the process, which requires multiple statement of needs, cycle times for orders greater than six months and multiple visits required for installation. CN has initiated many recent improvements to this process: 1) PC template ordering; 2) vendor installation of software; 3) common hardware/software platform; and 4) direct vendor delivery to customer. Additional improvements are planned pending completion of the consolidated site support pilot at Fairfax.

## Software Installation

Employees currently install software themselves, bypassing the CN process. Different processes exist at the various NIMA sites, and customers are required to complete a statement of need. Improvements noted for this process include installation of the Systems Management System (SMS) which will automatically upgrade all software via servers. Installation of SMS is to occur in December. Business Units should continue to coordinate installation of unique business application software with CN.

## Completing a Statement of Need

Employees were very dissatisfied with this process. Although a statement of need is only required for purchases over \$500,000, offices currently complete one for most hardware and software installation requirements. CN is reevaluating the documentation requirements for all work requests.

Other improvement actions identified at the Senior Staff Meeting include reengineering of CN business processes and a migration to a common Agency hardware/software platform during the next two years. A preliminary estimate also has been inserted in the program development for fiscal '98 and '99 to ensure all NIMA employees have access to e-mail, Internet and the unclassified network.

If there is a process or suggestion you would like the Red Team to consider, call 1-888-NEW-NIMA—or send an e-mail to team leader Mary Ellen Seale (CA/PA) at SEALEme@nima.mil. ●

# *NIMA Product Repository Gives Smaller Contractors a*



*photo by John Iler*

*Bob Smith (l) and Darryl Crumpton*

**W**ith computer and digital technology advancing at a rapid pace, smaller contractors who just a few short years ago were unable to vie for government contracts are now finding it easier to acquire the tools necessary to compete.

To facilitate this new competition, NIMA recently established a repository of information it will make available to contractors on a limited basis. Located at NIMA St. Louis, the repository will make available a series of current products produced by the Agency. These will include maps, charts, software samples, specifications, digital terrain data, digital feature data, interim terrain data and other products contractors can review prior to making bids.

"This initiative was a proactive reaction to numerous contractor comments and feedback," said Darryl Crumpton, associate director, Contract Production Division (GIC). "By having access to current products, the contractors will generate greater competition resulting in future products that are cheaper, better and more efficient." Product delivery time may be improved as well, he added.

Because of the sensitive nature of many of NIMA's products, reliance was placed on larger, well established

## **Shot at the Pot**

*by John Iler*

contractors under the Agency's predecessor organizations.

"The fact is, there were just too many barriers for the smaller contractors, who many times lacked the ability to produce what we needed," said Bob Smith, director of Information Services and Training. Crumpton agrees. "It was easier to just say no to inquiries by smaller, less established contractors."

Much of the feedback from contractors was gleaned through forums such as NIMA's Industries Day, held in March. Responding to contractor concerns, Crumpton and Clay Ancell, the Agency's commercial advocate, developed the idea of the repository. Les Kemp, with the St. Louis Production Support office, took the lead in formulating a concept of operations, coordinating with other Agency organizations to acquire sources and products and even determining where the location of the repository would be.

The repository not only will benefit contractors, Ancell said, it will benefit commercial off-the-shelf software platform vendors. "Some had been trying to obtain sample products and specifications in order to modify their software, at their own expense, so that their commercial packages could input,

*continued on page 21*

**T**hey're known by many names—such as "virus busters" and "computer police"—but these monikers don't capture what the NIMA Incident Management Team does.

Improving computer security is what the NIMA Incident Management Team aims for, says David

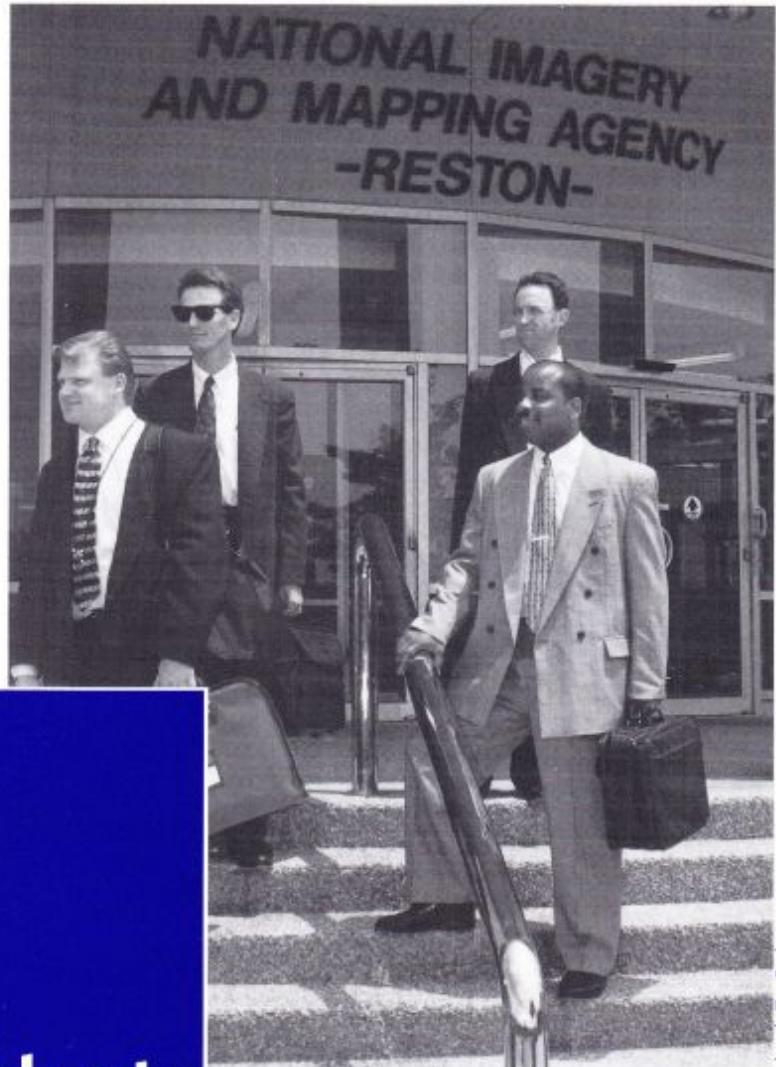


Photo by Tom Barron

# Mobile Team Investigates Computer Security Incidents

by Paul Hurlburt

Williams, leader of a four-person team of computer specialists operating out of Reston. Other members are Darryl Johnson, Greg Sadler and Darris Wynn.

"We investigate incidents involving automated information systems (AIS)," Williams said, "and make recommendations to improve computer security."

NIMA's IMT was formed in response to legislation mandating that every agency have a computer security incident handling capability. The team works closely with counterparts in the CIA, Department of Justice, FBI, National Reconnaissance Office and other agencies.

In designing their concept of operations, the IMT emphasized

education as a preventive measure. Team members have been traveling from site to site to train fellow employees and will soon transition their curriculum into NIMA College. The team is also responsible for the training and certification of computer security officers.

An AIS incident is officially defined as "an adverse event associated with a computer or network system such as 1) an attempted, suspected or actual compromise of sensitive information; 2) waste, fraud, abuse, damage or loss of government information assets; 3) disruption of mission support systems; or 4) the discovery of a vulnerability that may affect other NIMA systems."

# *Improving computer security is what the NIMA Incident Management Team aims for*

Among the types of incidents the IMT investigates are computer viruses, misuse of computers and inadvertent disclosures of sensitive unclassified or classified information involving an AIS.

"Basically, we investigate anything involving AIS security that needs further review," said Sadler, the lone contractor on the team.

An incident, such as using a PC to prepare a tax return, may involve only one person, while another incident may involve hundreds, as in the case of a computer virus. Since the team's standup in January, members have responded to more than 360 incidents involving some 1,000 people throughout NIMA.

"Some incidents take 35 to 40 days to investigate," Williams said. "Some take an hour."

Recovery time also varies, depending on the extent of the damage, he added.

The IMT investigates incidents in the metro Washington area on site and relies on matrixed support from the Networks and Enterprise Systems Office (CN) in St. Louis and elsewhere.

Site visits are generally necessary to gather facts and data.

"You have to visit an office to understand their predicament, who they interact with and the topology of their system," Williams said.

"Often we find others were involved when we get there," added Darryl Johnson.

"We carry laptops with all the network connections, so we can sit down and conduct our investigations with

whatever system was involved," Johnson added.

Besides DOS and Mac laptops, the team carries cabling, hard drives, Zip drives, software packages and a collection of viruses in their "bag of goodies."

The virus library consists of pieces of malicious computer code pulled off of computers, Johnson said.

"We can do detailed analyses of a code to determine what's embedded and how it executes," Williams said. A bank of computers in Reston supplements their on-site investigations.

Malicious code found in the course of their investigations is saved and analyzed, Sadler said.

"It gives us more information for the next incident we investigate."

Careful detective work has enabled the team to trace a virus back to its point of entry on a NIMA desktop.

"In some cases we can detect the location of the computer, what drive the virus is on, where it is on the drive, and in what folder and subdirectory," Johnson said.

*continued on page 20*



*Darris Wynn, left, and Darryl Johnson compared malicious code found during an investigation with samples from their virus library.*

# ICAP Reopens For NIMA Employees

The second iteration of the Intelligence Community Assignment Program (ICAP) vacancy announcements will be open for a six-week window Aug. 11 through Sept. 26.

ICAP allows intelligence community organizations to share the knowledge, skills and abilities of its professionals through two or three-year rotational assignments. All NIMA GS-13, 14 or 15 employees may apply for program vacancies.

The vacancies are separated into three categories: *operations/analysis*, *technical/automation* and *general support*.

NIMA employees can apply for up to five ICAP vacancies advertised by other intelligence community agencies. Potential applicants must discuss vacancy qualifications with the host sponsoring agency point of contact listed on each announcement before filling out an official ICAP application. The host POC can answer questions concerning duties and responsibilities, needed qualifications and particulars about the jobs. After employees have answers to their questions, they can discuss their intentions with their immediate supervisors, who will review the applications with the employees.

To be considered for any vacancy, employees also are required to send applications to Jim Girardi, NIMA ICAP program manager, at Mail Stop A-8. Girardi coordinates the NIMA-wide endorsement process.

A NIMA senior-level review board will endorse NIMA applicants for ICAP vacancies with other community agencies. Host agencies sponsoring the vacancy have the final decision on selection of NIMA applicants. If NIMA applicants are chosen for multiple vacancies, they will have the right to choose their preferred rotation. A NIMA employee selected for an ICAP vacancy is required to sign an ICAP Service Agreement, which explains the

new assignment and employee requirements.

Vacancies will be posted through e-mail, NIMA Intranet-HR Homepage (<http://hr.nima.mil/> — Job Opportunities), Intelink, info servers and NIMA's career management centers. Each vacancy notice will contain important information concerning program and application guidelines as well as contact numbers for host POCs.

For additional information, contact a NIMA ICAP POC:

• **NIMA Headquarters:**

Jim Girardi, Rm. 1N22, (703) 275-8432 DSN Prefix 235

• **St. Louis:**

Judy Wolf, Bldg. 36, Rm. 1A77, (314) 263-4177 DSN, 693

• **Bethesda:**

Laura Jones, Erskine Hall, Rm. 558, (301) 227-2205, DSN, 287

• **Reston:**

Alexandria Reidy, Rm. T-134, (703) 264-2135

• **Washington Navy Yard:**

Cynthia Watson, Rm. 4N400, (202) 863-3047

• **Area 58:**

Vicki Thompson, Rm. 1PA03F, (703) 684-8122

• **Ft. Belvoir:**

Charlotte Bernard, Bldg. 211, Rm. 119, (703) 805-2039, DSN, 655

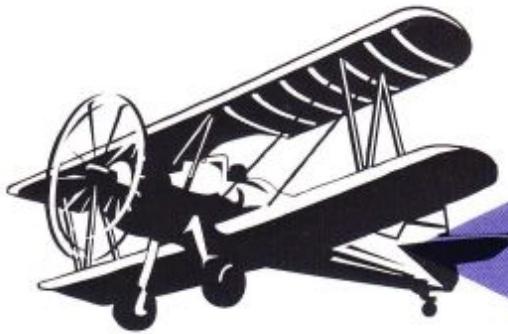
Employees at other locations may contact any NIMA ICAP POC convenient to them. ●

## Image Processing

**Continued from page 5**

national imagery interpretation rating scale (NIIRS) ratings. In 1981, the IDEX I system was installed at two NPIC locations. In 1985, the IDEX I system was upgraded to handle new system capabilities and was eventually replaced by the IDEX II system in 1991.

Because of R&D developments over the past three decades and continuing strides in computing power, workstations and communications networks, affordable softcopy imagery exploitation appears to be just over the horizon. Today, softcopy is the choice of organizations across the exploitation community. NIMA's goal is to integrate, as much as possible, commercial off-the-shelf hardware and software components to make this digital technology available to as many exploiters as possible. ●



## Customer Kudos

# Just Dropping by to Say Thanks!

by Denise Vermeulen

Air Force Maj. Don Mattner flew 28 missions in a B-52 bomber during Operation Desert Storm. An electronics warfare officer at the time, Mattner knows first hand the invaluable support NIMA provides the U.S. warfighter.

He and Vic Kuchar, a former customer support officer at the Pentagon, were so impressed by this support that they visited NIMA St. Louis recently for the sole purpose of saying "thanks!"

According to Mattner, NIMA and its predecessor organization were his sole suppliers of geospatial information.

And Kuchar said that the National Military Joint Intelligence Center (NIMJIC) couldn't do its work without NIMA products.

"We have a dirty job," Kuchar said. "We put the bombs on the dirt [earth] or pick people up from the dirt, drop forces off on the dirt or assess bomb damage to the dirt." NIMA, he said, supplies the source that shows "where" in the world those spots happen to be. The center's intelligence information also is used by the United Nations.

Dropping by to say thanks was something the two of them had contemplated often. When Kuchar recently transferred to the Geospatial Information, Contracting Department (GIC), the decision was made to do it under the auspices of GIC. Mattner, who is currently assigned to NIMJIC at the Pentagon, was happy to be included.

During their briefing to NIMA in St. Louis, the two explained how NIMA products are used daily

at NIMJIC to fulfill its mission. This, they said, includes the day-to-day intelligence/operations reporting, support to Noncombatant Evacuation Operations (four this year), operations planning, targeting and battle damage assessment. The center also must determine what the battlespace of the future will be like as well as the intelligence needs required for it.

Formed in 1992, NIMJIC responds instantly to the President, secretary of Defense and the chairman of the Joint Chiefs of Staff. Center personnel monitor world activities around-the-clock to highlight crisis areas and future hot spots.

They also produce the Chairman's [of the Joint Chiefs of Staff] Daily Intelligence Update, which includes news information and images of hot areas. The center also provides information for continuous news coverage by

the Defense Intelligence Network (DIN), a classified news network for the intelligence community and military forces, as well as data that influence the decisions of United States foreign policy makers.

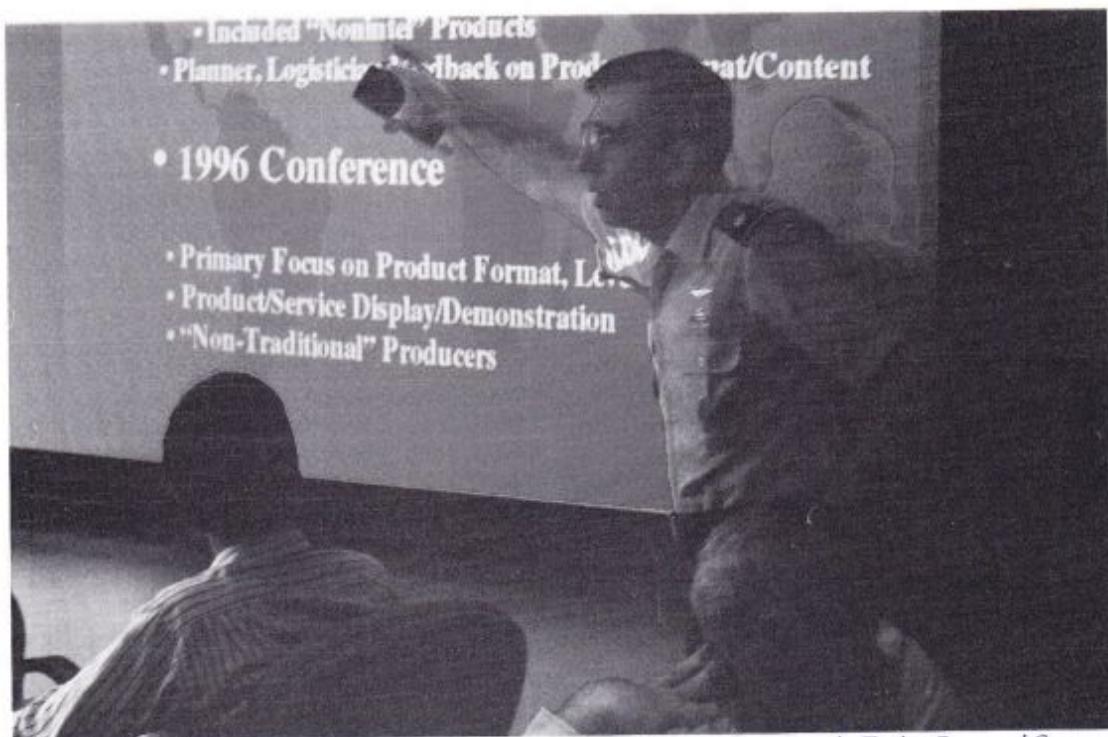
A "desk note" containing a one page summary report of a targeted area and a map of the region is done when requested and usually has a very short time line, sometimes as short as 20-30 minutes. This could be read by anyone from the President to the secretary of defense.

"It's nice to see all the services and intelligence community use our products, from the guys doing the fighting to the President," said Scott Schuchardt, who attended the briefing. ●

***"The National Military Joint Intelligence Center (NIMJIC) couldn't do its work without NIMA products."***

# Are We Good? Seeing is Believing!

by Don Kusturin



Imagery analysts get a glimpse of a day in the life of AMC's planes on theater-sized screens at the Tanker Command Center.

Photo by Jim Szymk

Some St. Louis imagery analysts got a first-hand look at how their airfield reports and annotated graphics are used in the global environment of two major commands.

The NIMA analysts recently visited the United States Transportation Command and the Air Force's Air Mobility Command, Scott Air Force Base, Ill., where they were greeted and briefed by Col. (select) Ralph Pubillones, U.S. TRANSCOM Joint Intelligence Center commander.

Pubillones came right to the point. "You have a direct impact on our mission," he said. "That mission is to provide decisive intelligence to strategic mobility forces in peace and war."

To fulfill its mission, the center must be aware of what's happening worldwide in real time.

"We're involved in the entire continuum because we are part of the U.S. Transportation Command; it doesn't matter where anybody goes, we're involved."

"We're not interested in publishing the most information. We are interested in publishing the best transportation intelligence there is because that is our mission—to provide decisive intelligence."

So why is the role the imagery analysts play so critical to that mission?

"It makes it significantly easier for us to convey decisive intelligence to our leadership," he said.

In a typical week, U.S. TRANSCOM is involved in 1,390 missions covering 76 countries for the Air Military Command. It also supports 30

Navy Military Sealift ships underway to 13 countries and delivers 304 major shipments to 12 countries for the Army's Military Traffic Management Command.

A portion of the JIC's responsibility is identifying threats to U.S. TRANSCOM missions. Potential threats include crafts en route and within the theater of operations, surface-to-air missiles, mines, sabotage and counterintelligence.

Another responsibility is identifying capabilities of transportation infrastructure, including land, sea and air. Pubillones' group looks at runway lengths and make-up, railway structure and passability and lengths of piers and water depths.

**"I thought it would be very beneficial, not only for the imagery analysts to visit their customers to see this, but for their customers to give some feedback on possible improvements to the process."**

The tour took the analysts through different organizations and units at the base, such as the Tanker Airlift Command Center where they received an intelligence briefing. Once again, the NIMA representatives were told how important their work was. All the U.S. military aircraft were shown on a near-real time screen, over a story high, giving a glimpse of where NIMA products were needed.

The tour was arranged by then NIMA liaison officer to U.S. TRANSCOM, Tom Bowes (who has since rotated out of the position). He said he felt that it was important to get the two groups together.

"The airfield imagery analysts in St. Louis have done a vast amount of work for both the United States Transportation Command and the Air Mobility Command and never had the chance to visit their customers," he explained. "Since they use the products in a variety of ways, I thought it would be very beneficial, not only for the imagery analysts to visit their customers to see this, but for their customers to give some feedback on possible improvements to the process."

Bowes also said the people from Scott AFB wanted to give thanks to the folks from NIMA for their support to the many recent missions they have covered.

Airfield imagery chief Dale Winters expressed his thoughts on why he thought the visit was helpful.

"I think if they have a better understanding how the customer is actually using our products, it will help them to do a better job producing the products," he said. "Then everybody benefits."

One imagery analyst found that to be true.

"I think meeting the people using our products is always beneficial," said Lori Le Blanc. "It was good to discuss how our products are used. This knowledge also boosts our motivation." ●



*Joint Intelligence Center commander, Air Force Col. Ralph Pubillones briefs NIMA airfield analysts on their role in the U.S. TRANSCOM mission.*

# Pathfinder Blazing New Trails

## for Imagery Intelligence, Geospatial Information

by Sharon Alexander

**A**nalysts in NIMA's geospatial and imagery intelligence environments can begin using tomorrow's tools to meet customer needs today, thanks to the Pathfinder.

No, not the mechanical device wheeling around the surface of Mars. NIMA's Pathfinder, according to Jim Kwolek, government lead for the project, is geared to expediting the transfer of critical exploitation tools out of the lab and commercial markets into geospatial and imagery production.

The project is outgrowth of two projects from two NIMA predecessor agencies. One provided recommendations for technology areas assessed with high potential to improve imagery search exploitation; the other identified available, mature tools that could be used immediately at exploitation sites.

However simply stated, the Pathfinder Team is the first to admit that selecting the tools to recommend for transfer, or insertion, is anything but simple.

"We manage the process of identifying, evaluating, selecting, testing and recommending tools to be introduced into the exploitation environment," Kwolek said. Earlier this year, before the eight-member team from NIMA's Technology Directorate began its task, the Geospatial Information Integrated Product Team (GI/IPT) provided the focus of and guidelines for the tools for Pathfinder 98, the current project.

"The GI/IPT, with support from the Open GIS Consortium (OGC), cast a wide net to gather tools and participants," Kwolek said. Afterward, the Pathfinder Team began conducting extensive research to gather data, overseeing functional crosswalks to determine the tools most needed by the users, performing usability and interoperability tests (technical crosswalks) on the tools selected and making

final recommendations on which tools to recommend for insertion.

Team members agreed the most valuable steps in the process are the crosswalks.

"The crosswalks are how we evaluate tools and pare down the list [of tools]," said team member Rob Alcaparras.

Explaining that one tool is evaluated during each functional crosswalk session, which lasts approximately 30 minutes, Alcaparras said as many as 50 to 60 tools may be considered in an entire crosswalk. During the first 10 minutes, analysts or subject matter experts familiarize themselves with the background materials on the tool being evaluated before listening to a 10- to 20-minute presentation from the vendor. Participants discuss the tools among themselves and vendors answer questions about the tools.

"These crosswalks really provide a better understanding of the tools and potential benefits based on the criteria," Alcaparras said. "Assessing tools is often difficult, since most are good candidates for insertion," added Kwolek.

Both vendors and subject matter experts benefit from the functional crosswalks, even if the tool is not ultimately selected for insertion. Vendors benefit because they tweak the tools based on feedback and subject matter experts because of the concentrated, intense exposure to the tools presented.

"Just because a tool is not recommended for insertion does not mean it is of no value," Alcaparras said. "It simply means that when measured against the current criteria, other tools were ranked higher."

Kwolek added that sometimes a tool is resubmitted the following year or

an office adapts a tool for immediate use.

Tools selected during the functional crosswalks are further assessed during the technical crosswalks. Data to support these assessments are gathered from briefings, vendor submissions to the OGC and other written materials.

The focus, Alcaparras said, is on human interface and usability—navigability and screen characteristics, for example—and on interoperability (input/output, standards, guidelines and compliance). This crosswalk also is conducted with participation from subject matter experts in the geospatial and imagery analysis arenas.

### Pathfinder 97

Pathfinder 97 focused on identifying tools that could be used to access, integrate and manipulate geospatial imagery intelligence information and/or support the downgrading and declassification of imagery products.

For 1997, 36 tools were submitted by 14 commercial vendors. Tom Purcell, a Pathfinder team member since project initiation, added that the evaluators—from 19 imagery and geospatial sites—included tactical and theater-level units, imagery analysis organizations who serve national customers

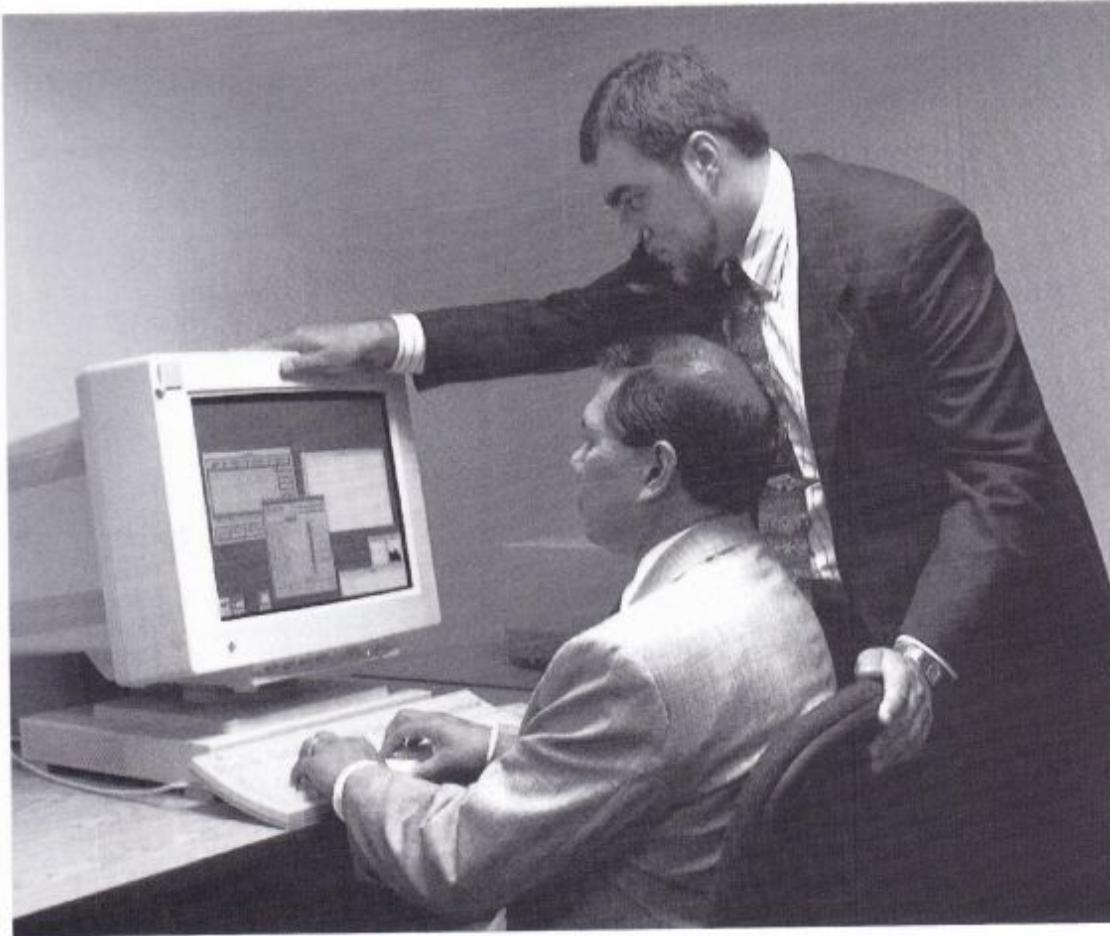
as well as national requirements and civil applications communities.

According to Purcell, examples of the tools from Pathfinder 97 selected for transferral include a three-dimensional modeling tool, spatial image annotation tool and collaborative exploitation application.

### Pathfinder 98

For 1998, Pathfinder is concentrating on geospatial tools that can integrate imagery intelligence and geospatial information as well as support information for the Geospatial Information Infrastructure (GII).

According to the team, more than 50 tools were assessed during the functional crosswalk in mid-May and 25 were further evaluated in mid-July during the technical crosswalk. The final recommendations are due in early September and will go to the Information Applications Working Group of the GI IPT for use in the GI IPT master plan and to NIMA's Technology Directorate for use in future insertions. ●



*Pathfinder team members Rob Alcaparras (seated) and Jim Kwolek test tools being evaluated for Pathfinder 98. Not pictured are team members Tom Purcell, Jan Sargent and Tom Johnson.*

## **Protecting Your PCs**

# **Don't Let Stormy Weather Destroy Your Data!**

**S**ummer storms can bring much needed rain to dry areas and provide a respite from long hot spells. But the wind and lightning associated with such storms can also result in sudden power outages that can cause loss of data.

According to NIMA's Network Management Center (CNNEC), recent weather-related incidents have caused power outages at a number of Agency facilities throughout the world. This has raised serious concerns about proper protection of work-related data on NIMA personal computers.

The following guidelines should be implemented by all NIMA employees and contractors using NIMA personal computers during periods of inclement weather. In the event of power fluctuations, these procedures will help prevent not only the loss of data, but damage to the computer as well. Even those with uninterruptible power supplies (UPS), which provide sufficient battery power for a short period of time, will benefit.

### ***Save Data More***

#### ***Often:***

Whether using a word processing, graphics or spreadsheet program, save data often! Every five minutes is a good time interval for most situations. If you are updating, editing or accessing Server based data files (i.e. payroll), again save often and make your time within these programs short. Do not open files and leave them open on your computer for protracted periods of time.

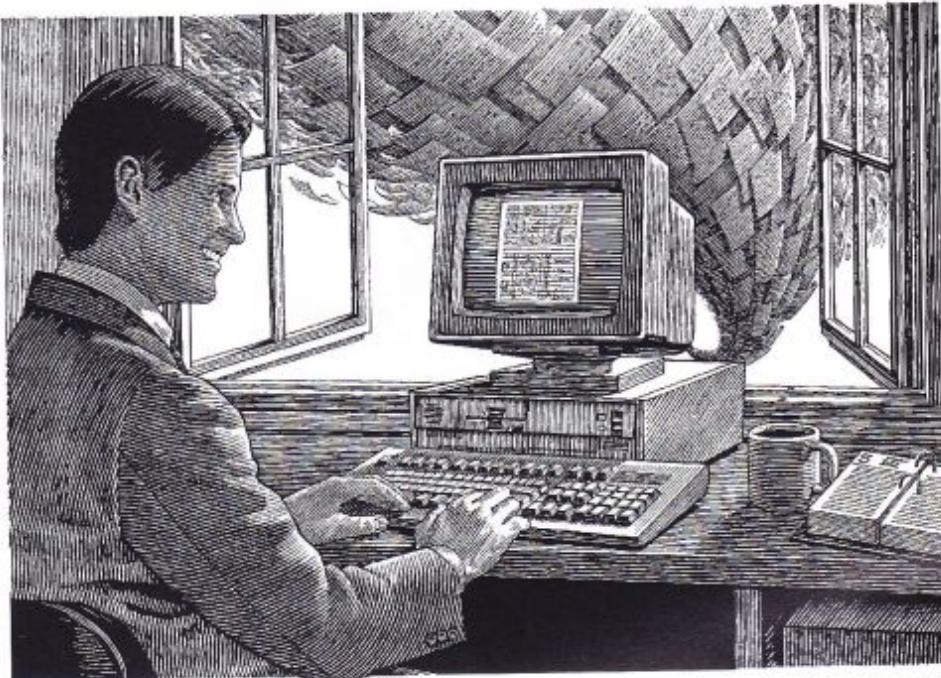
### ***When Away From Your Computer:***

If you have to leave your computer for a short period (15 minutes or less), save your files and close them before leaving your desk. If you are going to be gone for a longer period, close all files and programs and shut down your computer and peripherals, such as printers and other electronic devices.

### ***When Warned of Severe Weather:***

If announcements of impending severe weather are made via the Public Address System or other means, save and close your files as suggested above. Supervisors should ensure that computers left on by absent personnel are shut down.

NIMA supervisors are responsible for developing in-house guidelines and procedures for their workplace. They should ensure employees are properly trained in the use of personal computers and peripherals. The mission for safeguarding data in the workplace ultimately falls to each individual employee. ●



# NIMA Hosts Health Fair

by Monica L. Conroy

**N**IMA Reston, Fairfax, Bethesda, St. Louis, and Washington Navy Yard recently took part in the Human Resources Wellness Team's first health fair.

"The goal of the HR Wellness Team," said John Turner, HR Wellness program manager, "is to provide all employees with an opportunity to improve their personal well being by offering programs that encourage employee participation."

The team did just that as approximately 2,000 NIMA employees participated in vision and cholesterol screenings, nutrition counseling, healthy cooking demonstrations, chiropractic evaluations and seated chair massages at fairs held at the different NIMA facilities.

St. Louis activities included a "Bike Day," which offered employees information on healthy cycling. Bethesda included a five-kilometer run and two-mile walk to its list of events.

"The wellness industry encourages striving for small lifestyle changes to improve one's well being, rather than undertaking large changes that are normally difficult to maintain," Turner said. He sees the wellness and fitness activities held throughout the year as a great start on the road to healthy living.

Turner is quick to credit the Civilian Welfare Council, Constellation Credit Union, American Federation of Government Employees and many people in HR and Mission Support who helped with the coordination and set-up of the events. ●



Photo by Ted Korb



Photo by Rob Cox



Photo by Rob Cox

*NIMA employees Agency-wide take advantage of health fair activities.*

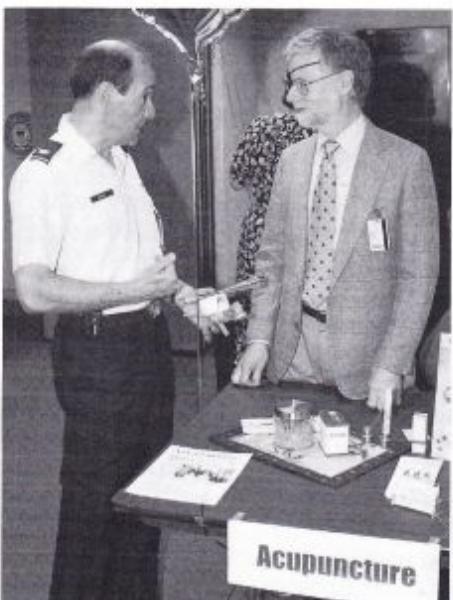


Photo by Ed Gandy

# OFF HOURS

**I**t's been said that the greatest gift one can give is the gift of one's self. That is something Jackie McGraw, a NIMA Bethesda legal assistant, practices daily.

She and her husband, Pastor Sullivan McGraw, lead the multi-cultural New Life Assembly of God Church in Capitol Heights, Md.

Born and raised in Cleveland, Jackie grew up with a strong sense of values. "The importance of family and helping one another was instilled in me from childhood," she said. For over three decades, her childhood home also became home to numerous foster children. Through the example of compassion and sacrifice her family set, extending herself to others was something that came naturally as an adult.

In 1966, she married Sullivan, who was then stationed at England Air Force Base, La. In 1983, they began what would become their own mission for mercy.

After years of working in the Evangelical Assembly of God, focusing on Christian Education, Jackie and Sullivan answered the call to pastor their own church.

"Even though Sullivan was called to be the pastor," she said, "I too, was called to do service." This calling led them to the inner city of Washington, D.C.

With faith as their guide, they built their church from scratch.

"It wasn't easy," Jackie said, "but seeing the fruit of our labor made it all worthwhile."

**"We try to reach the people in our community and satisfy their practical needs. Whether or not they are part of our church doesn't make a difference...we do everything we can to let them know we care."**

Today their church congregation numbers close to 300 and can be described as a mosaic of colors and cultures.

"Jackie brings that warm, personal touch to whatever she does," Sullivan said. "She has accented and complemented me for over 30 years."

While coordinating the women's ministry, Jackie oversees and teaches Sunday school and directs the altar counselors. A mother of four, with three adopted children, she was just named Mother of the Year by her daughter's elementary school. Those who know Jackie describe her as an individual who opens her heart and her home to anyone in need.



Photo by John Iler

McGraw

## Pastor's Wife: **Reaching Out to Give the Gift of Self**

by Monica L. Conroy

She also is known for practicing what she preaches—a genuine love and compassion for one another.

"People need to stop seeing all the stereotypical barriers and care for each other as human beings," she said. "When you respect someone for who they are inside, it makes such a difference on the outside—in the way they talk, act and react to one another."

Her ministry has included organized tent revivals for the distribution of clothes and food to the needy and it offers employment partnership programs for people on welfare. A daycare center is in the works along with General Education Diploma (GED) programs and classes on how to go about getting a job.

"We try to reach the people in our community and satisfy their practical needs," Jackie said. "Whether or not they are part of our church doesn't make a difference. They are individuals who need our help and we do everything we can to let them know we care."

Nestled in room 278, with a warm smile and a strong sense of self, Jackie McGraw goes about her daily routine. And many of those who take the time to get to know her say their faith in society is restored. ●



# ON THE MOVE

**Leo Hazlewood**, deputy director for Operations, was selected last month as deputy director, NIMA, by Rear Adm. J.J. Dantone Jr.

**Air Force Brig. Gen. John W. "Bill" Rutledge**, director, Customer Support Office, departed NIMA for a new assignment in the United Kingdom. He will be dual-hatted as assistant chief of staff, Operations, Headquarters Allied Air Forces, Northwest Europe, at Royal Air Force High Wycombe in Great Britain. He also will serve as deputy commander, 3rd Air Force for NATO Affairs.

Prior to his departure from NIMA, General Rutledge said, "While I'm looking forward to the challenges of the new job, I will definitely miss all the great people I've worked with for the past 22 months in the former Central Imagery Office and in NIMA. In the midst of very rapid change, our people have kept their sights on providing our customers what they need to do their jobs, whether those jobs involve imagery, imagery intelligence or geospatial information. I am proud to have served with the people of NIMA and to have been a small part of its standup."

Replacing General Rutledge as director of the Customer Support Office is **Air Force Brig. Gen. Art Sikes Jr.** General Sikes previously served as deputy director for Intelligence, Surveillance and Reconnaissance, deputy chief of staff, Air and Space Operations, Headquarters U.S. Air Force, at the Pentagon. He is an experienced intelligence professional who brings substantive expertise in a broad range of intelligence matters to NIMA.

**Army Col. James A. Walter**, chief of the U.S. Central Command Customer Support Team, departed NIMA early this month for his new assignment as commander, U.S. Army Corps of Engineers Construc-

tion Engineering Research Laboratory in Champaign-Urbana, Ill.

Rear Admiral J. J. Dantone Jr., recently approved the reorganization of the Systems and Technology Directorate, which is responsible for the development, acquisition and sustainment of systems, standards and technology which advance a national leadership role in the imagery, imagery analysis and geospatial information community. Continuing under the leadership of **Dr. William M. Mularie**, ST was divided into six offices that resulted in the following assignments:

**Tom Early** is dual-hatted as the associate deputy director for Systems, and chief of the Systems Office. ADD/Systems acquires and maintains components of the U.S. Imagery and Geospatial Information System (USIGS) architecture necessary for imagery exploitation.

**Darryl Garrett** is dual-hatted as the associate deputy director for Technology, and chief of the Technology Office. ADD/Technology conducts and sponsors research and development in support of NIMA's Strategic Direction. Additionally, ADD/Technology provides technical assistance and coordinates the technical and program activities associated with international programs.

**Jan Schneier** is special assistant to Dr. Mularie, deputy director of Systems and Technology, and chief, Technical Assistance Office (CC). CC provides technical assistance and coordinates the technical activities associated with Consortia and Cooperative Research and Development Agreement (CRADA) activities. Additionally, this office provides ST reengineering focus and liaison to the Operations Directorate.

**Russell Gustin** is chief of the Resources and Programs Office (RP). RP develops the plans and guidance regarding the Technology Directorate's program integration, budget development, budget execution and business planning activities.

**Keith Littlefield** is chief of the Architecture Office (AR). AR develops and evolves the USIGS architecture within the Command, Control, Communications, Computers and Intelligence, Surveillance and Reconnaissance (C4ISR) architecture framework.

**Teri Dempsey** is chief of the Requirements Office (RO). RO manages USIGS Systems and Technology requirements across the imagery and geospatial community, providing recommendations to NIMA management for optimum implementation and expenditure of resources to best meet the customer needs.

## Retirements Retirements Retirements



### Navy Capt. Richard E. Blumberg

Special assistant to the associate deputy director for Systems in the Systems and Technology Directorate, retired from the Navy after 30 years of service. He and his wife, Barbara, plan to remain in the Washington area.

## Mobile Team Investigates Computer Security Incidents

Continued from page 14

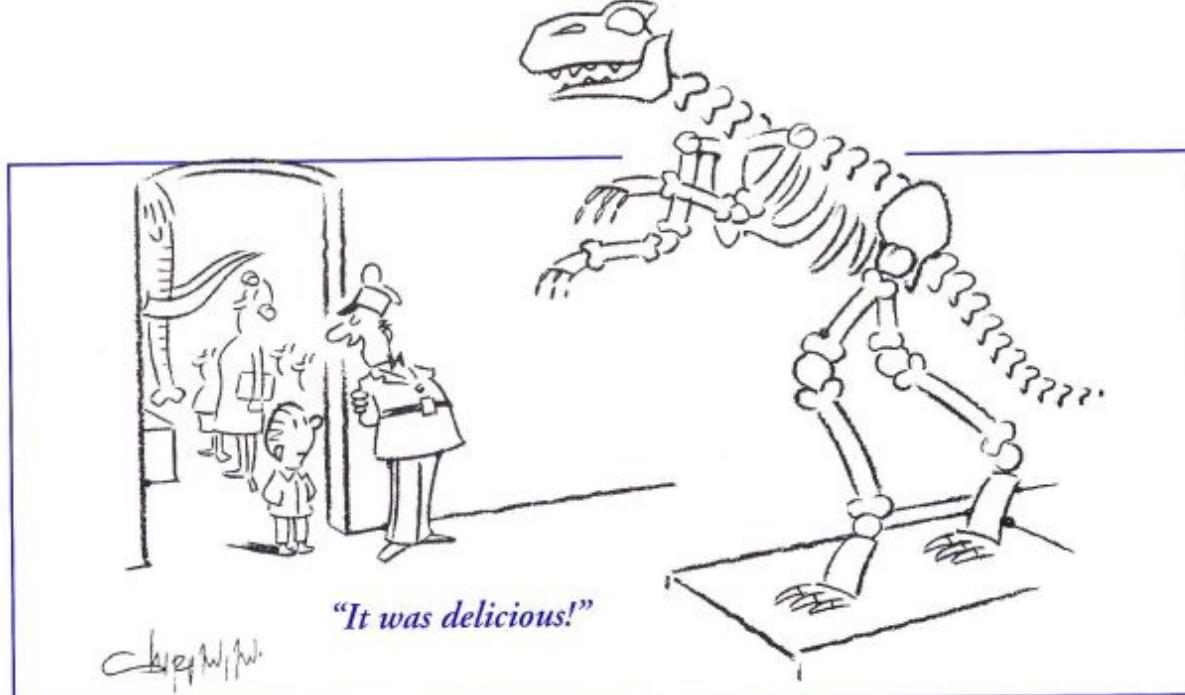
By relying on contractors and vendors to provide the products the Agency needs to fulfill its mission, the repository will ease the pressure of internal downsizing. And for the first time, many smaller contractors can afford cheap, powerful computers and software capable of doing the labor intensive work necessary for production.

"Providing this repository," Crumpton said, "will give contractors the motivation to determine their own production capabilities at their own expense and establish ways to develop new and more efficient production of hardware and software which can then be incorporated into the NIMA in-house production." In turn, he added, this will increase the production of NIMA geospatial information.

Under the present plan, data will be supplied to contractors on paper, CD-ROM, 8mm tapes, 9-track and D2C format tapes at the repository. Repository usage is arranged by appointment and requests may be received via mail, e-mail or telephone. (Directions are on NIMA's home page, [www.nima.mil](http://www.nima.mil)). Usage, says Crumpton, will dictate the life of the repository and a review will be conducted after one year of operation.

Looking ahead, Crumpton is working on developing "demonstration" contracts, where competitively selected contractors will demonstrate their ability to produce certain NIMA products, with production contracts following the demonstrations. He's also looking at new contract vehicles with emphasis on "best value" to the government, and potential production through Foreign Military Sales. "All of these," he said, "are designed to increase production of NIMA geospatial information through partnerships with the commercial sector." ●

"That takes a lot of work, but it pays off."



## **NIMA Product Repository Gives Smaller Contractors a Shot at the Pot**

**Continued from page 8**

process and output various NIMA data and media formats, thus improving the flexibility and marketability of their products."

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# **NCIS Discussion Group Recommendations Update**

**S**even major recommendations to improve the NIMA Career Inventory System, resulting from nine employee and manager discussion groups, were recently approved by Rear Adm. J. J. Dantone Jr. Here is an update on their implementation:

1. The names of all self nominees are now provided to managers (*fully implemented*):

*For non-bargaining unit positions, managers receive both the referral certificate and the list of all those who self-nominated for a position. For bargaining unit positions, managers receive only the referral certificate listing employees who meet qualifica-*

*tions requirements and have been determined to be best-qualified.*

2. Skills extraction procedures have been improved (*fully implemented*):

*HR conducted 65 on-site NCIS education sessions for employees during May and June. A skills quality control unit now compares resumes to skills extracted.*

3. The referral process has speeded up (*fully implemented*):

*HR is helping managers choose skills criteria proven to identify highly qualified candidates and is forwarding referral certificates via overnight mail or e-mail.*

4. Relevant information is being provided on vacancies (*fully implemented*):

*Vacancies include user-friendly information with expanded duties, education and experience-needed sections.*

*Continued on page 23*



# Mars

## From the Past, A Glimpse of the Future?

by Don Kusturin

*"Whether an estimate of the amount of water on Mars is true or not matters little because everything about Mars bespeaks that it is a planet more desert-like than anything we know here. That oxygen once was there is evidenced by the strong red color of the surface, an aspect to be expected from oxidation."*

**A**lthough the above could be taken from today's papers reporting on the Pathfinder mission, it wasn't. It appeared in 1962 in a book published by a NIMA predecessor organization, the Aeronautical Chart and Information Center.

The book, titled *A Photographic History of Mars (1905-1961)*, was built around a photographic record of the Red Planet made by Dr. Earl C. Slipher, a former astronomer at Lowell Observatory in Arizona.

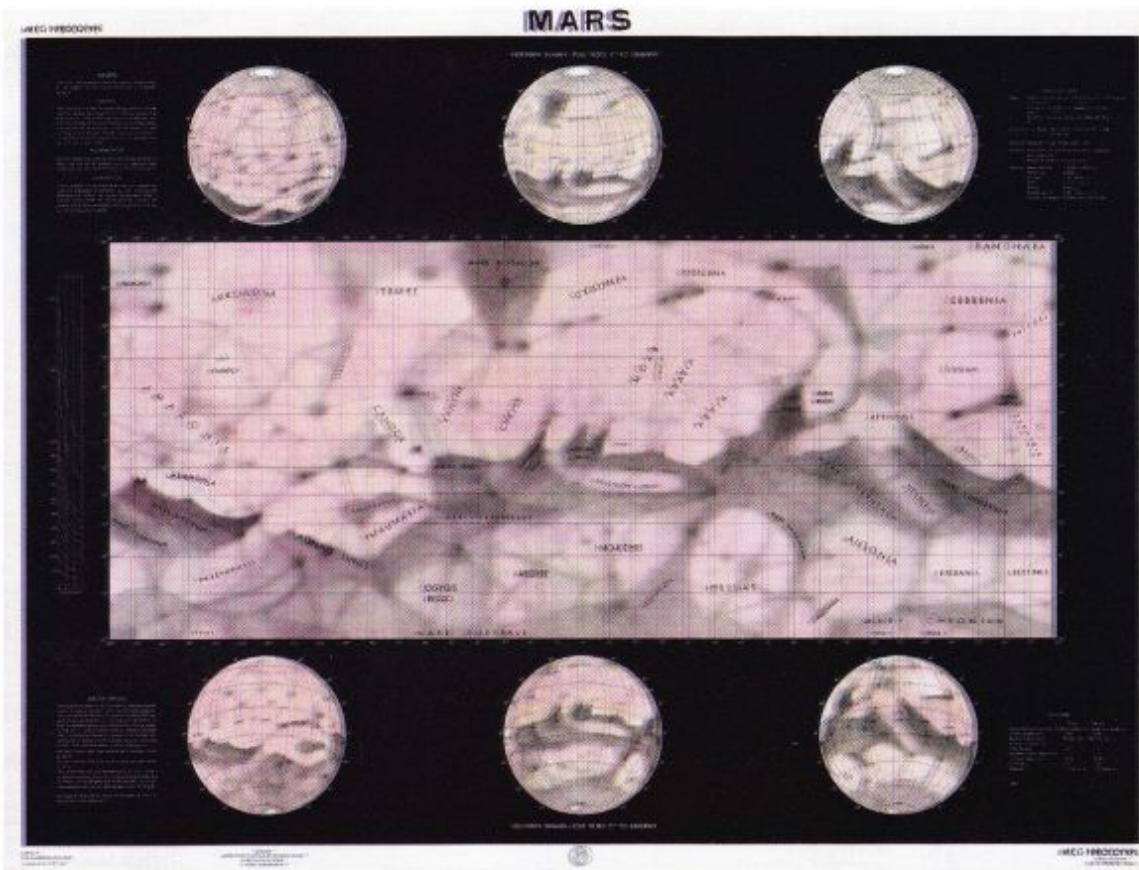
NASA's Pathfinder July press kit discusses the similarity of Mars and Earth and a suggestion of the presence of water.

"Early Mars may have been like early Earth. Current theories suggest that, early in its history, Mars may have once been much warmer, wetter and enveloped in a much thicker atmosphere. On Earth, evidence for life can be found in some of the oldest rocks, dating from the end of Earth's heavy

bombardment by comets and meteors around 4 billion years ago. Surfaces on Mars that are about the same age show remains of ancient lakes, which suggests that liquid water flowed on the surface at one time and the climate was both wetter and substantially warmer. If this proves to be true, then further exploration may reveal whether life did develop on Mars early in its history."

Slipher observed that if Earth shares a similar fate to Mars mankind could survive.

"It is possible that Earth's human race, at its present level of intelligence, would be able to secure its survival, though in diminishing numbers, in enclosures supplied artificially with oxygen, provided it had millions of years of warning that the changes would undoubtedly give and provided that it took the necessary precautions. At the present rate of rock weathering on Earth, however, there is enough oxygen in our atmosphere to last a billion years."



According to Bob Carder, ACIC's project director of the lunar mapping program, "Dr. Slipher knew more about Mars than any living person at that time."

After the book of photographs had been compiled and published, a decision was made to create a Mercator Projection based on the observations contained in the book.

"When we were phasing out the moon program, we wanted to take advantage of Dr. Slipher's life work," said Carder in a recent interview. "We made the map on his observations and under his guidance."

Slipher was 79 at the publishing of the history book and lived to shortly after the production of the Mars chart six years later. Carder describes Slipher's thoughts on Mars as being very "lucid," including vivid descriptions that made people see what he saw. And many of his observations dealing with statistical data, including physical and surface composition, have been correct.

As we head toward the future, we may just be revisiting the past. ●

## **NCIS Recommendations**

*Continued from page 21*

5. Transition former CIO and DIA employees to NCIS (*preparatory work begun*):

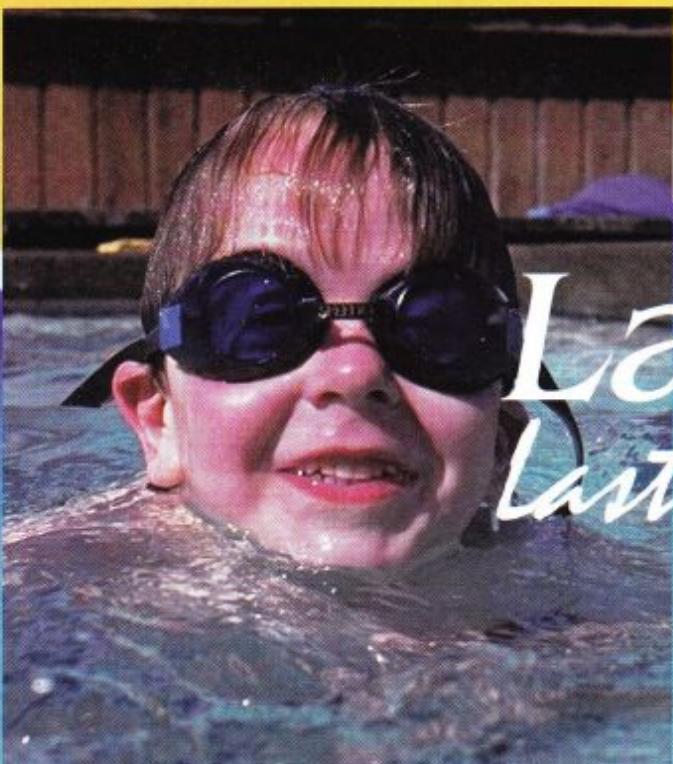
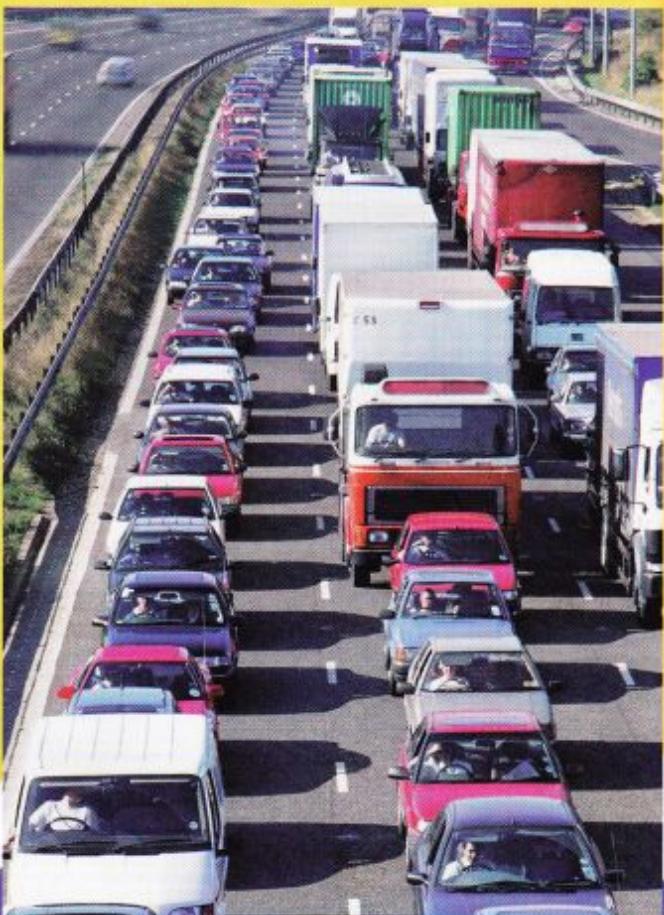
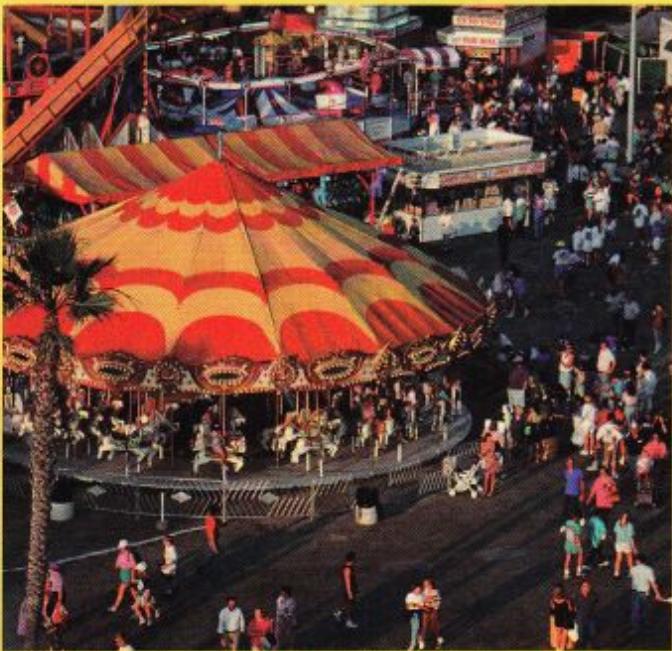
*Work has begun to discontinue the resume-each-time procedure for former CIO and DIA employees.*

6. Options to submit supplemental information are being tested (*testing phase*):

*For vacancies in "test" organizations, managers are specifying a particular knowledge, skill, system, product or experience requirement, or combination thereof. Employees submit 25 lines or less for each particular knowledge, skill, system, product or experience required. This information is included with employees' two-page resumes when forwarded to managers for consideration.*

7. With interactive voice response "Check Status," employees get feedback on their self-nominations (*fully implemented*):

*This capability was announced earlier by HR e-mail and is summarized in the companion article.*



**Labor Day**  
*Last Day of Summer*

*Remember to think safety, everyday.*

