

Vol. 2, Issue 2 • April 21, 1995

DMA News
LINK
West

Hands over South America
--see page 3

**BUY
UNITED STATES
SAVINGS
BONDS**

Campaign
begins
May 2



Alternative Dispute Resolution saves time, dollars

DMA's Alternative Dispute Resolution program, recently offered as training and as a pilot program for processing Equal Opportunity discrimination complaints, will be used in future to process both informal and formal complaints. Human Resources officials participating in the pilot study say it has proven to be a cost-effective and viable option in handling EO complaints, with a success rate of 85 percent and a savings to DMA of countless dollars and litigation hours.

DMA is not the only organization to discover the benefits of ADR. In 1993, the Federal Deposit Insurance Corporation saved \$9.3 million in estimated legal fees and expenses by using ADR rather than litigation alone.

Primarily used in the informal stage, ADR gives complainants and management officials the opportunity to participate in a mediation process. Mediators for the study were from the Bowie State University Center for Alternative Dispute Resolution.

For more information about the ADR, contact Gonzellas Williams at 703-285-9163 or Gail Evans, 34276.

Government-sponsored credit card saves

DMA employees who use their AMEX Government-sponsored charge card for official travel expenses benefit the agency and themselves.

DMA earns rebates on all charges made for lodging, rental cars, and transportation made by its Commercial Travel Offices (CTO), Carlson Travel in the Washington area and Gwin's Travel in St. Louis. In fiscal year 1994 these rebates amounted to over \$73,000.

Under the current contract, employees using the card are provided with \$200,000 life insurance for door-to-

door travel and baggage claim coverage of \$1,250 for carry on and \$500 for checked.

And an Office of the Secretary of Defense Travel Task Force report indicates additional benefits in cash management and management information accrue to DoD agencies when employees use their Commercial Travel Office (CTO) and AMEX Government-sponsored travel card for official travel expenses. A DMA travel team has been established to streamline the travel process within DMA. The team is keeping abreast of the OSD Travel Task Force initiatives and implementation efforts.

Human Resources will ask about services

A survey to determine the baseline of Human Resource services currently being used by DMA employees will be conducted April 26. Results will be used to help plan effectively for the new Central Region Center.

As reported earlier, DoD agencies have been authorized to set up two Regional Service Centers within the current and the next fiscal years, to be known as the National Capitol Region and the Central Region centers. The Central Region Center is being set up and managed by DMA and will be located in St. Louis. This Center will provide regional services for all DMA locations as well as for other customers.

The Huntsville Alabama Field Office of Defense Information Systems Agency (DISA) will administer the survey, in which about 30% of DMA employees will be randomly selected and asked to complete a questionnaire containing 40 questions with multiple choice answers. Questionnaires will be given to these employees at work locations on April 26, and answer sheets will be collected the same day. Employees selected are urged to give the survey their cooperation and support.

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COVER: In the skilled hands of Joe Milchak, MCA, Peruvian maps are combined with Landsat imagery.

Photos except as noted by Jim Stepanik

DMA comes through for SOUTHCOM

Escalation of a border dispute between Peru and Ecuador produced a crisis situation for a joint U.S./South American observer team last month. And that crisis produced some interesting map-making consequences, some of them clearly indicating future trends for DMA.

One involved the first DMA maps printed by remote replication, on a machine that works like a color copier but with digital input (see story on this page.)

In St. Louis, cartographers, geodesists, and specialists in everything from geographic names and aeronautical information to printing and distribution did their part.

Landsat imagery was used for the first time in a production environment to fill void areas

on Joint Operation Graphics maps and on a special large format briefing chart. Using the Map Publishing Environment, scanned data and Landsat data were merged to produce color separations.

The crisis-produced products included two new JOG-A base maps and six revision (update) assignments, eight Landsat Image Maps, and Special Aeronautical Information Requests for 23 airfields.

David Taylor, production manager of the SOUTHCOM support team at DMA, had high praise for all the workers involved. "Everyone involved in supporting SOUTHCOM delivered their products in the quantities and time needed, in most cases early," he said.

New remote replication system used to meet South American crisis

by Paul Hurlburt

When the border conflict between Ecuador and Peru resurfaced in January, DMA launched its new Remote Replication System, months ahead of schedule, to respond to an urgent customer requirement.

The system, which prints maps and charts from hardcopy and digital sources at customer sites, was used to provide maps for an international observer force in South America that needed them in a hurry.

The requirement was received by Air Force Capt. Steve Michael, mapping, charting and geodesy officer for U.S. Southern Command in Panama.

"When the crisis broke out my job was to supply maps," Michael said during a telephone interview. "The border dispute was in an area that is not well mapped."

The observer force — Argentina, Brazil, Chile and the United States — required cartographic support to oversee a cease-fire.

"DMA's Latin America Office, another combat support element, had 'stocks of native-edition maps to pull from to get the planners started,'" Michael said. "But we needed these products in large quantities to support the observer force. In some cases the suspense



Checking the color on a map being printed on the Remote Replication System are, from left, Navy Petty Officer 1st Class Arnold Boyd, Petty Officer 2nd Class Willie Johnson and Petty Officer 2nd Class Tammy Green. The fourth member of the RRS team, Navy Petty Officer 2nd Class Anthony Benton, in back, manipulates the drum scanner. Photo by Paul Hurlburt

was 10 days. That's when the call went to Headquarters DMA."

Besides 1:50,000-scale native products, SOUTHCOM had a requirement for small- and medium-scale briefing maps with overprinted annotations and Landsat Image

Support for SOUTHCOM

continued

Maps for unmapped areas, enlarged to a 1:50,000 scale to match the native products.

"The Remote Replication System was a big part of satisfying SOUTHCOM's requirement," said David Taylor, production manager of the SOUTHCOM support team at DMA. "A minimum press run requires at least 300 copies, but SOUTHCOM needed fewer."

Also, pre-press activities like the creation of negatives and litho plates to produce the different colors are time consuming. The RRS, on the other hand, utilizes electrostatic printing. Its ability to replicate from digital sources differentiates it from a color copier.

The development and procurement of the Remote Replication System originated from DMA's need for large-format color copying at remote sites and a system with digital input and output capability. Air Force Maj. Sherry Fascia, program manager in DMA's Product Distribution Division at SC, led the effort to develop and acquire the system.

"We found a commercial, off-the-shelf system that was being used to print wallpaper and billboards in strips and posters from digital files," Fascia said. "However, the pixel [picture-element] size provided by the software was too large for our needs." To meet DMA's needs, the RRS contractor, 3M, integrated the commercial system with additional hardware and software, linked with fiber optics cabling.

Image data is acquired at a central work station and transmitted to another work station for output to a 54- by 60-inch or a 24- by 36-inch printer. It is stored on 8 mm



Next to one of two large-format printers, Petty Officer 2nd Class Willie Johnson monitors printer operations while team members in the background quality check a printed map. (Official Navy photo by Petty Officer 2nd Class Curtlis Biasi.)

tape or other media. Operating under the UNIX system, the RRS software provides data compression and decompression and a tool kit to manipulate and tailor the map graphics, and allows input of satellite imagery, Arc Digitized Raster Graphics data in the Vector Product Format and Digital Terrain Elevation Data. It is compatible with a variety of geographic information systems.

The scanner typically scans one hard copy in 30 to 60 minutes at 400 dots per inch and converts the graphic information to digital files in a standard raster format. Each pixel has a single shade and color that forms the image when combined with other pixels. At the central work station, unique software is used to process the scanned cartographic images for printing.

The system's two electrostatic printers lay down in succession four colors, providing a range of shades and colors. Resolution of the hardcopy product is 400 dots per inch, and printing speed varies from one to 12 minutes per copy, depending on the size and complexity of the graphic.

The first new system had been in place less than a month at the agency's Atlantic Office (DMACSC/OA), a combat support element in Norfolk, Va. Four sailors assigned to OA were being trained to operate the system, and testing by DMA's Systems Center was underway.

"It wasn't located at SOUTHCOM, and it hadn't been turned over from Systems Center for production yet," said Taylor. "So the possibility of using it for crisis support was unknown."

Team members met with systems, production and distribution representatives to consider the alternatives on a Saturday morning at DMA's Hydrographic/Topographic Center. They decided to give the RRS a try, with additional and back-up production from DMA sites in St. Louis and Bethesda.

Air Force Maj. Sherry Fascia, RRS program manager at SC, left for Norfolk the next day to meet with contractors and Atlantic Office personnel.

"Nobody had envisioned this level of support for [RRS] at this time in its development, but since OA had the only system, CSC gave us the go-ahead to try it."

Putting in a 60- to 75-hour work week, three sailors scanned and enlarged maps and then printed out and sized over 450 specially annotated, small-scale maps and



Negative engravers Gary Holland, Jerry of physically combining Landsat images



Michael and Joe Milchak, MCA, had the job with conventional lithographic negatives.

two Landsat maps. Subsequent production by OA raised the total to 980.

Fascia and RRS contractor personnel worked together to adapt the system to handle a 42- by 106-inch map that exceeded system design parameters.

Besides the products produced on the RRS, about 60 copies of a 1:500,000-scale special-edition briefing graphic were copied in Bethesda.

In St. Louis, the Map Publishing Environment was used to fill in blank areas on 1:50,000 Peruvian maps with Landsat imagery; and on four

1:100,000 maps that were then joined on one sheet to provide a planning document. Six newly updated 1:250,000-scale maps were also produced, and special aeronautical information requests pertaining to 23 airfields were met.

"The maps [dispatched] by DMA put us in good shape," Michael said. "We have met our requirement for the operation as it stands now."

But as far as Navy Lt. Cmdr. Ed Nelson, commander of DMA's Atlantic Office is concerned, the RRS and the sailors who operated it were key to DMA's latest success in supporting its customers.

"We were lucky to have had people with initiative and ability in the right place at the right time," he said. "With little computer experience, they have succeeded in running a complex, UNIX-based system."

"There is great interest in the user community in systems like the RRS," adds David Taylor. "Our experience with SOUTHCOM was enlightening because it showed that requirements can be satisfied in a different way. By using the RRS, we can relieve the presses of making limited numbers of copies."

Adds Nelson, "The ultimate reason we are going to the RRS, as I see it, is that it can use digital files."

Also, once up and printing the RRS can easily be operated by one person, he noted, though for getting the scanner set up and doing housekeeping, two people are better. Rollers on the printer require periodic cleaning and the toner must be treated to keep the right consistency.

"We have a requirement to install the system in the consolidated printing and distribution facility in St. Louis for low-volume printing," said Fascia. "About 80 percent

of our production is in the 24- by 36-inch format and, of this, 75 percent is low volume. With the RRS, we could print on demand and keep the presses busy with the high-volume printing."

RRS setups at customer sites will provide a faster response and eliminate transportation costs. By the end of the summer, printing from digital files received over communication lines is planned, said Fascia. She and her colleagues are working with the contractor to install a product catalog system, among other enhancements.

"It would take half an hour to upload a map on 8 mm tape, half an hour to send it over the [communication] line, and half an hour to download it at the other end." With such capability, one-of-a-kind, newly produced or updated products can be replicated in theater and delivered to users in near real time.

The next RRS will be installed this summer in the Army's Topographic Readiness Facility at Fort Bragg, N.C., Fascia said. Although DMA-owned, it will be manned and controlled by the Army.

DMA offices in Florida, Panama, Europe and the Pacific are scheduled to receive the RRS, and systems are planned for the three production centers and for Defense Mapping School, where customers can be taught how to use the system. And a system is already visualized for the Pentagon

"Demand printing fits the new DMA philosophy," says David Taylor. "Instead of having large stocks on the shelf, the idea is to have limited numbers of planning stocks and print as needed, based on world crises. In a digital format, it will be much easier to print, in large and small quantities, and the user will have the option to look at the information in soft copy."

Tried under fire, the RRS is poised for its future role in guiding the movements of the warfighter.



Gregory Ligibel, SDAB, checks the source package for a JOG-A update. Two new base maps and six revisions were required

Employees with disabilities reach out to help others

Schmitt visits St. Joseph's

On March 2, 1995, Robert E. (Bob) Schmitt, DMAAC(SDFB), presented a series of briefings to the fifth, sixth, seventh, and eighth grade students at St. Joseph Institute for the Deaf. The topic was cartography.

Bob, who is deaf, is himself a 1980 graduate of St. Joseph. He decided to give the briefings after he received a request from his former teacher at the school, Sister Laura Gruber.

His discussion touched on the types of information cartographers use to



Bob Schmitt at St. Joseph's

make maps. He showed examples of unclassified aerial and LANDSAT photography to the children. He also explained how stereographic image pairs are produced and showed the children how to view stereographic images through a hand-held stereoscope. According to Bob, "As the children viewed the images, they were very excited about the three-dimensional effect."

Bob showed the children examples of unclassified map products produced by the Center. He explained the uses of each of these products in terms of military activities. The children were particularly interested in the Escape and Evasion Chart (EVC) and the Blood Chart. When Bob left, he provided Sister Laura with copies of Landsat stereographic pairs and the map products except for the EVC which has limited distribution.

Bob says the briefings improved the students' knowledge of cartography and of DMA. According to him, "everyone had a good time and learned something, too."

Sister Laura Gruber adds: "It opened up a whole new field for them. You have a dream of what you can do when

you get older, even when you are profoundly deaf, and you look for role models along the way."

Bob, a full-time cartographer at DMAAC since August of 1991, is definitely an example for the children, and his peers. In the short time Bob has been employed with DMA, he has been very successful. In 1993, he was selected as the Department of Defense Federal Employee With Disabilities and in 1994 Bob was DMA's Outstanding Employee With Disabilities.

Community service activities are not foreign to Bob. Besides his activities with St. Joseph Institute, Bob has served as the State Treasurer and Vice President of the St. Louis Chapter of the Missouri Association of the Deaf. He has provided counseling and support for the annual "MiniDeaf Olympics" in Louisville, Kentucky, and on the Deaf Culture Workshop Committee sponsored by the Roundtable Representatives of St. Louis. His presence at this event showed his commitment to advancing the positive image of DMA within the community as well as his concern for community service.

—Kim Moore, chief, SDFB

Beason talks with Clinton assistant

Perry Beason, MCFE, AC's Outstanding Employee with a Disability for 1992, was one of ten St. Louisans who met recently with Carol Rasco, Advisor to President Clinton on Domestic Policy.

"We expressed our concerns regarding a wide range of issues concerning the disability community," Beason commented. Those issues included independent living of people with disabilities, society's perception of disability issues and of the disabled in general, concern over crime on our streets, and about being able to return to the workforce.

Beason is a member of the Missouri Head Injury Advisory Council. "I expressed my concern over some issues regarding state legislation that is currently pending. We also discussed my employment as a Cartographer at Defense



Perry Beason

New IG on post

Air Force Lt Col Bertalan (Bert) J. Varady is the new Inspector General for DMA St. Louis, effective 28 March.

Col Varady arrived from Goodfellow AFB, Texas

following a 42 month assignment in two command positions, the most recent being Commander, 17th Training Support Squadron. His 22 years of service include a wide variety of leadership, teaching, and staff level positions in Illinois, Texas, Florida, and Iceland. Born in Cleveland, he received his bachelor's degree from the University of Akron in 1973 and was commissioned through ROTC. He holds a master's degree from Southern Illinois University at Edwardsville and has completed Squadron Officers School, Air Command and Staff College, and Air War College at Maxwell AFB, Alabama.

Col Varady's hobby is restoring antique cars. His current project is a 1936 Morgan.



Lt. Col. Varady

Hail and Farewell

Air Force Master Sergeant William Beam, chief of the Military Personnel Division (HRM) for DMA in St. Louis, retires from active duty May 1.

MSgt. Beam has 24 years of active military service, including a number of years at Scott Air Force Base. He was assigned to DMA in July, 1990.

atmosphere exhibited by the people here has made an impression on me. I feel very fortunate to have this position."

The discussion was held March 30 at Paraquad, an organization devoted to assisting people with disabilities.

Chinese scientists visit with DMA geodesists

The Aerospace Center's Geodesy & Geophysics Department played host to a team of Chinese scientists during the last week of March.

The Chinese visitors were NBSM's Chief Scientist, Dr. J. Y. Chen; Chief of International Affairs, Mr. Bai Bo; and two production managers, Mr. Niu Jing and Mr. Zhang Yanping. Dr. Muni Kumar from DMA's Office of International Operations (IO) accompanied the Chinese.

This meeting is part of an ongoing exchange of scientific information and ideas between DMA and the China National Bureau of Surveying and Mapping (NBSM). Discussions included the evaluation of earth gravity models and the establishment of a network of survey control stations in China using the Global Positioning System (GPS).

DMA and NASA are collaborating on a project to develop an improved earth gravity model. The goal of the project is to provide a global geoid accurate to ± 1 meter. This geoid will serve as a foundation for a global vertical reference system. NBSM is part of the international scientific community that will be evaluating the new earth gravity model. Other evaluating groups are the European Geoid Commission, the North American Geoid Project, Australia, and South America. Each of these groups will evaluate the geoid model in their respective regions of the world.

A DMA expert in earth gravity models will visit China in August to assist NBSM in completing their model evaluation plans. DMA will release the preliminary model and geoid for evaluation by the end of September. The Chinese will visit DMA again in January, 1996 to discuss the results of their model evaluation. DMA plans to release the final earth gravity model and geoid in March, 1996 and publish the final



Dr. J.Y. Chen, Chief Scientist of the China National Bureau of Surveying and Mapping, accepts data used in evaluating earth gravity from Ken Burke, chief, DMAAC(GG). Others in the photo, from left: Niu Jing, Dr. Muni Kumar, Zhang Yanping, and Bai Bo.

report in June, 1996.

A team of DMA surveyors will be visiting China during the first part of September to discuss the GPS project and perform reconnaissance for a GPS survey in 1996. During the 1996 survey, DMA will assist NBSM, through training and field surveys, to establish a very precise network of GPS control stations. This GPS network forms a foundation for a

WGS 84-type earth centered, earth fixed reference system in China.

The Office of the Secretary of Defense (OSD) is supportive of DMA's efforts to establish contacts with the Chinese through mutually beneficial projects like these. OSD is encouraging DMA to continue and expand cooperative projects with NBSM in the future.

—Scott True, GG

Burke, Dr. Kumar visit in China



In December of last year, DMA representatives made a get-acquainted visit to China. At left, positioned in front of a GPS station at Wohan University are Ken Burke, chief of the agency's Geodesy and Geophysics Department, an unidentified Chinese GPS program manager, and Dr. Muneendra Kumar of DMA's International Office. At right: Burke at the Great Wall.

Arsenal Bowling ... through the years By Pat Wiese

How long has AC/ACIC/ACP had a bowling league? For as long as there have been Air Force/Air Corps mapmakers in St. Louis. So says Pat Wiese. Here's her story about the first 52 years of the Arsenal Bowling League and its predecessor.--Ed.

For years, on a Wednesday, DMA employees can be heard in the halls and the break rooms discussing who they will be bowling against that night. Then on Thursday rehashing their scores.

It all started when a group of men and women working at the Aeronautical Chart Plant on 12th & Delmar decided to form a Mixed League. The Aeronautical Chart Plant No-Name Bulletin, October, 1943 on file in the CIW Office states the mixed league bowled at Esquire Bowl on Thursday. Also on file is a copy of an *Orienteer* from October, 1949 that says the league was then bowling at Pop Kaley's Recreation, 218 N. 7th St. Don Reeve, a former member of the league, said he started work at Aero Chart Plant in 1949, but did not join the league until 1951. At that time the league was bowling at Londoff Lanes, just north of 12th & Delmar.

In 1952 the Aeronautical Chart Plant became ACIC and moved to its present location at 2nd & Arsenal. So did the league. It moved to Chip-Wa

Lanes, located at Broadway and Chippewa.

The league stayed there until the 1957-58 season when it moved to DuBowl Lanes on Gravois near Grand. Sixteen teams bowled every Wednesday afternoon at 4:30 p.m.

During the 1961-62 season the name of the league was changed to the Arsenal Mixed League. The Arsenal bowlers remained at DuBowl until that awful night of Jan. 31, 1977 when a faulty furnace



Bowling champs in 1957: Jeanne Bauer, Earl Stephens, Shirley Kraemer. Kneeling: Bob Day, Charlie Denz

caused a fire that completely destroyed the bowling alley.

The league moved to Century

Bowl to finish out the season, and then moved to Western Bowl for the 1977-78 season.

In 1978 we moved to Stein Bros. Bowl on Hampton and Chippewa. They stayed there until Stein Bros. Bowl closed on Dec 31, 1986.

It was at that time that the league moved to Shrewsbury Lanes. During the time the league was at Stein's, Century Bowl also burned.

The league has seen many changes through the years. It went down to an eight team league.

This year we merged with the Trio League that had been bowling at the NEW DuBowl Lanes. We are back up to 15 teams. We welcome them into our league and hope they enjoy it as much as we do.

Earl Stephens has the proud distinction of being the "oldest" member of the league. He joined during the 1954-55 season. His team won the league the next year and he still has the trophy as proof.

The ABC has a plaque for a league that has been in existence for 50 years. If any retiree can help with information about the league prior to the 1951-52 season, please contact Pat Wiese/SDPA/4856. The ABC headquarters and WIBC headquarters only have league records back to 1957, due to a fire at the ABC headquarters.

In Memoriam

Francis H. Williams, who retired in 1975 from the Aerospace Center's Graphic Arts Department, died February 16.

At the time of his retirement he was chief of the press room.

He is survived by his wife Louise, three sons, eight grandchildren, one great grandchild, two sisters and three brothers. A nephew, Rick Williams, works in the Reproduction Division, Replication Department, DMA Combat Support Center. Funeral services were held February 18, with burial in St. Trinity Cemetery.

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