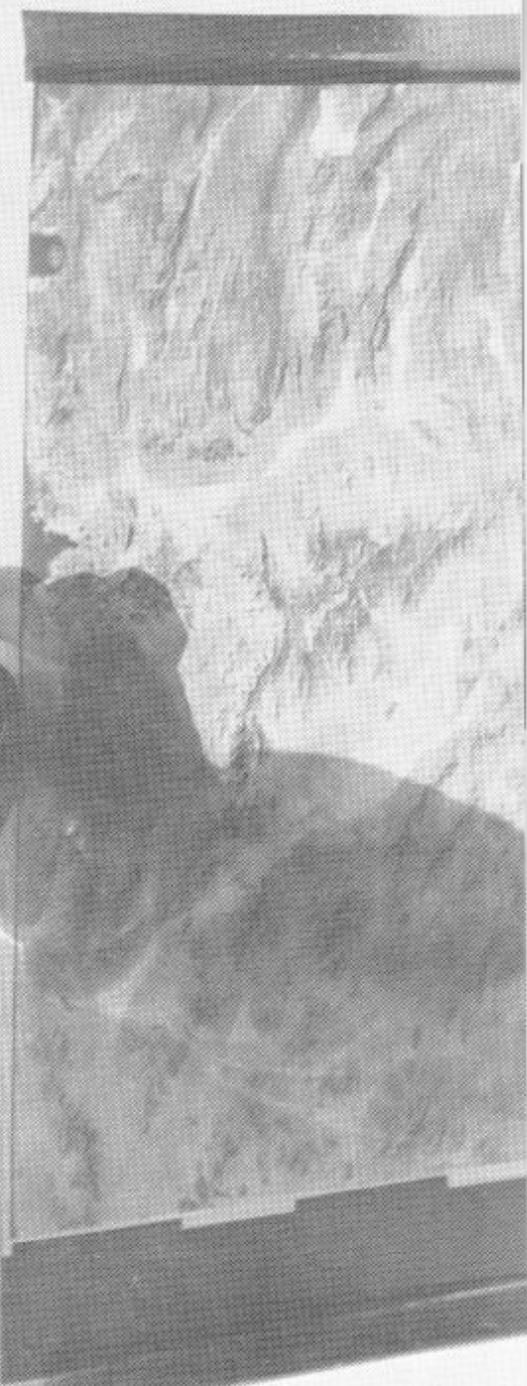


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DMA News
LINK
West



*Russian imagery:
How good is it?
Can we use it?*

Bits and Bytes from the Director

Air Force Maj. Gen. Philip W. Nuber

On March 24, I had a great experience with some of DMA's leaders on the final day of one of our Leadership Training courses. What made it such a terrific time was that they told me the most important things that DMA needed to do to ensure we were successful in the future.

They spent the week — like all other similar courses — discussing key issues and strategies for success as a leader/manager and then each team prepared a briefing for me. The major difference between this day and previous leadership sessions was the fact that I had just finished a three-day, first ever, session executive board



focused on the theme "DMA's future."

The Executive Board discussed what should be the "New DMA's" mission, what we thought the agency's core values must be and what strategic issues should we be trying to solve. What made

March 24 special was the simple fact that the Leadership Teams came to the very same conclusions that the Executive Board did on the keys to successful implementation of the Reengineering of DMA.

Where do we go from here? The Leadership attendees tasked me to communicate, communicate, communicate. I tasked them to communicate, communicate, communicate. To get started on my task, I have sent members of the Executive Board on the road to brief each location and to get your ideas on the results of our Strategic Planning to date. I heard from a small group of leaders on March 24 and now it is up to each of you to take up the challenge of communicate, communicate, communicate.

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COVER: Ron Updegrave, photographer in SDR, takes a close look at a Russian satellite photo.

Cover photo, pages 3 through 7 by Jim Stepanik

St. Louis cartographers evaluate first Russian satellite imagery

One benefit of ending the Cold War is that DMA cartographers are getting a good look, for the first time, at the relative quality and reliability of Russian satellite imagery.

The opportunity became a requirement when the DoD Appropriations Act of FY 94 was passed into law. One provision directed DMA to acquire and evaluate available photos and materials from successor states of the former Soviet Union. Neither job was routine.

"The current Russian marketplace is fluid and unreliable," according to Bill Heidbreder of System Center's Engineering and Integration Directorate (SC/EIWS), and senior member of the St. Louis task force that made the evaluation. Bill adds that "Russian vendors don't follow formal free enterprise business practices." For these and other reasons the acquisition was not completed until July of last year, leaving only three months to complete the requirement.

A total of 26 pieces of film and two digital tapes were acquired, representing output from all the Russian sensor types; large format cameras with footprints ranging from the 21-by-21 kilometer view of the KFA-3000 up to the 45,000- and 50,000-square-km views of the TK-350 and KATE-200.

The imagery acquired was of two areas of special interest for test purposes: the Nellis testing area near Las Vegas, Nevada and an area around Lubbock, Texas.

Because of the short timeline of the project the cartographers were organized into two teams, one team to do triangulation testing, the other to examine and test the quality and utility values of the sensor information.

"We used available resources," says Heidbreder. "The triangulation data evaluation, for example, was unique. We were able to use COTS (computer off-the-shelf) software, a program called PC Giant. What we had to do was to make sure the data was in the proper format to load it into PC Giant."

Paul Basgall, SDCB, who led the triangulation team, was soon aware of some special challenges. "Some of the film was much larger [up to 30 by 45 centimeters] than we usually see. Also, we had very little information on their cameras—things like focal length, calibration, and corrections for lens distortion."

Edwin Wright, another member of the triangulation team, remembers other areas of concern: "We didn't



Ed Lutsky, SDCD, (left), and Edwin Wright, SDCA, (right), examine samples of the Russian imagery. At the AS-II at center is Paul Basgall who led the triangulation testing group.

know their conventions, or the Cyrillic language."

Nevertheless, the tests went forward, and the project had its positive side.

"I thought it was an interesting assignment," comments Ed Lutsky, SDBC, the other St. Louis cartographer who did triangulation testing. "Here we were looking at something they took of our facilities, and comparing its accuracy with the other materials available to us."

The second team had its own daunting assignment, to validate the integrity of the cameras as analog sensors, predicting future capabilities of equipment never before encountered in the Free World.

The team used a set of research tools and data to establish a basic Product-Source Prediction Capability (PSPC). Gary Duncan, another member of Engineering and Integration, was recruited to help them.

"Gary had worked with the PSPC functionality before in evaluating SPOT capabilities," Heidbreder notes. "It was logical that he be assigned to provide the tools for the Russian sensor evaluation."

The "tools" provide a data collection and analysis capability that aids in determining the optimum mix of source data to support each map-making process. Boiled

continued next page

first Russian Imagery

continued

down to the basics, this part of the evaluation probed two questions: (1) What MC&G products or percentage of products can be produced by a given sensor, and (2) what sensor or suite of sensors is needed to produce a certain product.

Validation took many forms, both in the areas of triangulation and general utility of the Russian information. Tests were run using data supplied in digital format, others using data scanned from the various film formats with the softcopy then evaluated on a Sun workstation. "One problem encountered here, says Norm Adams, a member of Systems Center's Scientific Data Division who assisted both teams, "was the enormous byte size of the image file. We had to break it up into a series that could then be manipulated."

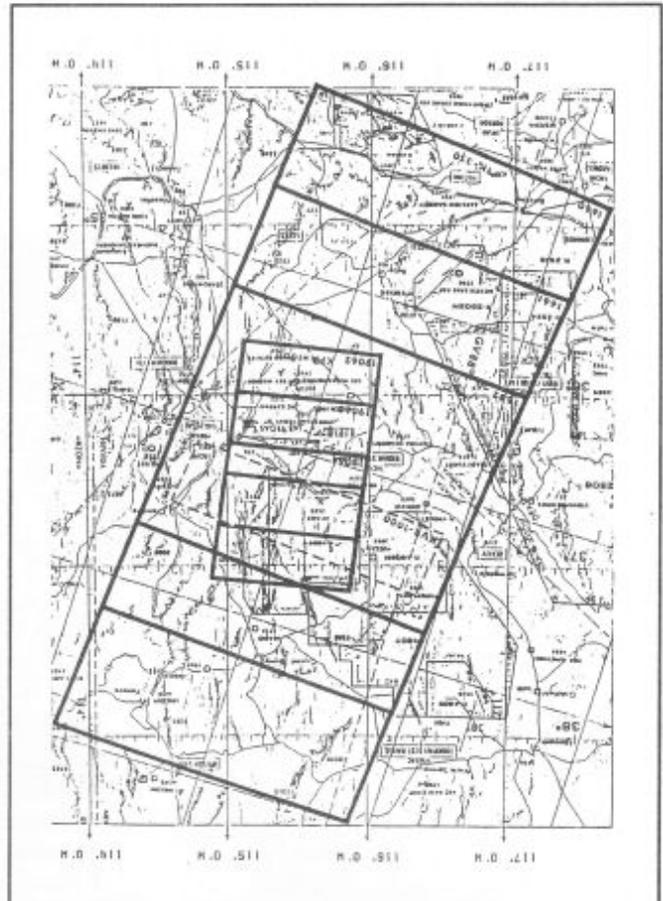


The sensor evaluation team (l. to r.): Barry Roslin, Tom Ritzheimer, and John Chaikowsky, all of SDCD.

The Center's Mapping and Charting Department assisted the evaluators by providing feedback on the FE/S feasibility. Susan Allersmeyer-Rosendale and Steve Durnal, managers in the Feature Extraction division (MCD), used the Russian data to create data collection models on FE workstations. In the Automated Cartography Division (MCF), cartographer Terry Wilcox proved Russian digital data could be downloaded to the Map Publishing Environment (MPE). The Mapping and Charting Division (MCA) used the imagery as ancillary source while producing a Nellis Test Area Range Chart.

"We spent quite a lot of time looking at what we had," Bill Heidbreder asserts. "At the end we were satisfied with the input, but we just did some preliminary work. As we go on with more Russian Imagery, we want to be sure it's properly formatted for Feature Extraction."

Indications are the agency will soon have the opportunity to go farther. Last May DMA began the process to acquire 300 to 400 pieces of film shot over Iran, Iraq and



Nellis Test area, showing coincident views from three sensors, the KVR-1000, KFA-1000 and TK-350

the former Yugoslavia. The acquisition is still in process.

Jimmy Boyd, MC department chief, thinks Russian imagery will provide another alternate source DMA can exploit to support customer needs. "Our goal," he states, "is to provide complete coverage over the product area. This imagery could fill voids in our production process."

John Haddick, DMA/PRA, believes that despite the

continued on page 8.

As a result of the work of the Russian Imagery task force, two technical papers were prepared and presented at professional gatherings this spring. The first, "DMA Evaluation of Russian Imagery," by William H. Heidbreder, C. H. Cook, Ronald G. Davis, Paul L. Basgall, Edmond H. Lutsky and Edward L. Wright II, was presented by Basgall at the annual meeting of the American Society of Photogrammetry and Remote Sensing (ASPRS) in Charlotte, North Carolina in February. The second paper, "Evaluation of Russian Sensors KVR-1000, TK-350 and KFA-1000," by Gary Duncan and Bill Heidbreder, will be published in the proceedings of the International Society for Optical Engineering, meeting in Orlando, Florida April 17-21. Basgall, Lutsky, and Wright received a special Scientific Data Departmental Award March 30. All six AC/SD cartographers have been nominated for a Federal Executive Board Award (see page 7 of this issue.)

Director's Awards



Hopkins

Jacquelyn J. Hopkins, a supervisory cartographer in the Product Services Division of Mapping and Charting, receives the Director's Award for 1994 in the supervisory category.

During the year, officials said, Ms. Hopkins utilized innovative management and supervisory techniques to improve performance of the division, whose four branches are involved with translations, geo-names, Point

Positioning Data Base (PPDB) shipments, hardcopy maps and charts, and the Reference Library.

Upon assuming the duties as division chief in November, 1993, she was confronted with many issues, including a shipping backlog of 1900 PPDB's to customers and numerous bargaining unit disputes. "By using overage clerical and cartographic skills, she was able to eliminate the two-year shipping backlog. Through her initiative, the geo-names flow was restructured to improve response time while also saving resources." She also worked with the Union to resolve issues to the satisfaction of both parties.



Beard

John E. Beard, Jr., an aeronautical information specialist in Mapping and Charting, receives the Director's Award for 1994 in the non-supervisory category.

Beard was commended as a "truly flawless performer who is continuously working for his branch, doing any and all tasks that are necessary to accomplish mission objectives." Maintaining a high-volume geographical area that includes the former East Germany, he is the primary East

German analyst, doing any and all tasks necessary to accomplish an extensive work load and bring Eastern Germany aeronautical information accurately into Western Flight Information Publication (FLIP) products.

"Mr. Beard is a proven performer on AAFIF (Automated Air Facilities Flight Information File) and DAFIF (Digital Flight Information File) data base manipulation," officials said. "He has an outstanding ability to interpret regulations and procedures, and then apply them correctly."

He was also cited for being extremely successful as the branch's primary upward mobility trainer.

Receiving the Quarterly Director's Award in the supervisory category is Wyman E.

Skaggs, boiler plant equipment mechanic supervisor in the Operations and Maintenance Division of Facilities Engineering.

Officials said Skaggs, who has won many individual performance awards, was a key worker and supervisor in several projects during the fourth quarter of the calendar year, including solving the annual problem of lack of heat in the lobby of Building 36, design and installation of a new hot water heating system in Sections 2D and 5B of the building, and the removal of asbestos floor tile in those two sections, allowing contract construction projects to stay on schedule and saving the agency thousands of dollars. He has contributed significantly to the ability of FE to support the DMA mission, officials said.

Receiving the Quarterly Director's Award in the non-supervisory category



Skaggs

is Tim D. Washechek, cartographer in the Production Support Office of Scientific Data.

He was cited for his passion to improve data bases, primarily within DPS; for developing relevant uses of existing data bases and assisting in the design of complimentary PC data bases for data manipulation; and for his "relentless pursuit of innovative uses of Mapinfo."

"Tim is called upon by SD divisions to resolve difficult technical problems," said one associate. "He handles them in a steadfast manner." His plan to transfer mainframe data to PCs to allow the use of off-the-shelf software is affording a large savings to the agency by satisfying many information requirements, as documented by a recent Process Improvement After Action Report.

Lewin M. (Skip) Ellis, aeronautical information specialist in Mapping and Charting, is the winner of the quarterly



Washechek

DMA Image Award, recognizing employees who make an extra effort to serve customers.

Officials said Ellis, as manager of the Air Facility System (AFS) and the Automated Air Facility Information File (AAFIF), has distinguished himself by providing outstanding support to DMA customers. "Hundreds of military units and other DoD agencies, as well as internal customers, benefit greatly from Mr. Ellis' dedication to their needs. His resourcefulness has permitted him to learn new processes, and to integrate new production procedures."

During the period he maintained a heavy production schedule of output to regular customers and handled a myriad of ad hoc Special Air Information Requests (SAIRs). Other outstanding accomplishments were the initiation and management of the Joint Deployable Intelligence Support System (JDISS), which gives the Center the capability to transmit Aeronautical Data worldwide.



Ellis

Turner students become 'carto trainees'

The second phase of the Partnership-in-Education Program (PIEP), the Teaching Program, began 14 February at Turner Middle School with nine teaching volunteers and the DMA St. Louis Steering Committee participating. In turn, each attendee gave a brief description of his or her background, the role played here at the Agency and a brief description of what the succeeding sessions would entail, including a tour of Agency facilities.

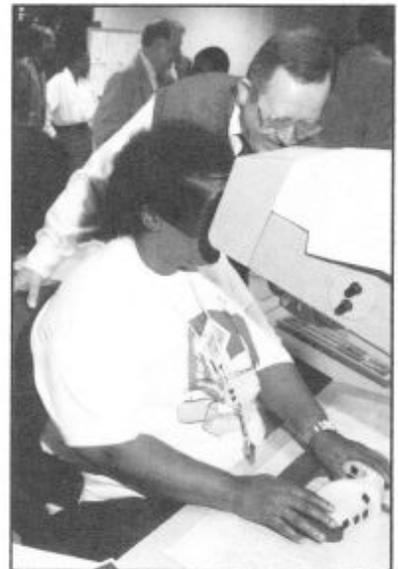


Matt Kellner, MCDB talks to a student about map features.

The tour was a great success. About thirty students, two teachers, two chaperons and two members of the School Partnership Program of the St. Louis Public Schools were escorted to the 1C large conference room in Building 36. Tour members were greeted there by Mapping and Charting Department Chief Jimmy Boyd, and attendees were brought in groups of nine from the conference room to MC's Feature Extraction Division for a ten- to fifteen-minute FE/S session, while others watched the DMA video, "Vital Support to Command and Control" and worked on word and manual stereo pair viewing projects.

At the end of the tour, Aerospace Center Director Bill Brown arrived and invited the students to ask him questions. Some of the questions were "What do you do?", "Why can't you discuss your job with others?" "How old are you?"--just to name a few. One student, Edward Brown, informed Bill Brown that he was going to be the next Director of DMAAC.

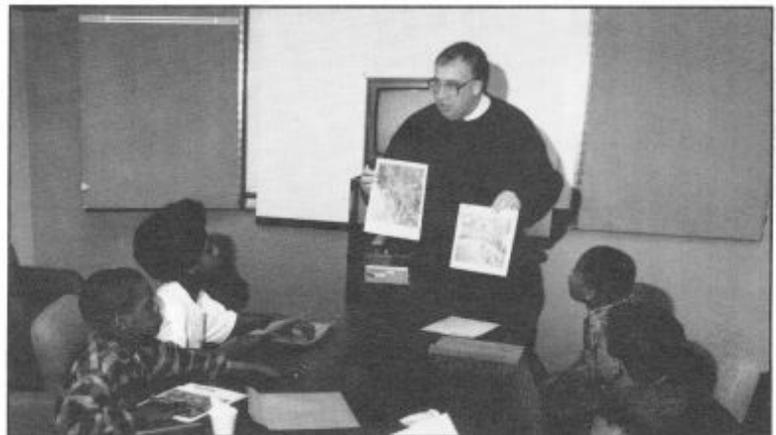
At the last session, the following week, a summary of the course was given and questions were answered. Certificates were presented to each student and teacher signed by Bill Brown which read "CONGRATULATIONS!! YOU ARE HEREBY CERTIFIED A DEFENSE MAPPING AGENCY "CARTOGRAPHER TRAINEE" OF TURNER MIDDLE SCHOOL" and Partners In Education plastic cups. Students and teachers loved them. Students and teachers were also given a variety of material, including Operation Desert Storm maps, Missouri maps, and St. Louis points-of-Interest maps. —Chris Reed, DMA/HRS



Uldis Alks, MCDB, coaches a student at an FE/S workstation.



On the tour, students saw a wealth of "show and tell" items.



While some students toured MC cartographer Gus Plening conducted carto-related class exercises in the "1C large".

14 DMA teams and individuals nominated for FEB awards

Nine DMA employees and five teams of employees have been nominated for awards in ten categories of the Federal Awards Program, conducted annually by the Federal Executive Board of St. Louis. They are as follows:

Individual award nominations:

For outstanding manager—
Jacquelyn Hopkins, MCE; Gerald Schuld, MCD.

For outstanding supervisor—
Linda Patterson, RSOSB

For outstanding trades and crafts employee—Matthew B. Day, FEMTC

For outstanding professional/scientific employee—Herschell F. Riggs, SDDA

For outstanding secretarial/clerical employee—Gloria J. Mundy, MC

For outstanding administrative/technical employee—Penelope A. Lanham, RD; Michael G. Platter, FEMP.

For outstanding individual community service—Margaret Mary Anderson, MCFC

Team award nominations:

For outstanding team performance of forty cartographers in three production departments (DP, MC and SD) who participated in the Team Production pilot last year.

For outstanding team performance of the AC in-house asbestos removal team led by Wyman Skaggs, FEMTH.

For outstanding team performance of six cartographers in the Geopositioning Division of SD who conducted the three month Russian imagery task force project.

For outstanding team performance of the Air Force Time and Attendance System (AFTAS) working group, a team of 13 analysts, computer specialists and pay technician from SC, RC and CM.

For outstanding team performance of the DS/S hardware team, Fred Clarke and Ed Fank, both TSSHB.

The annual competition is open to all employees of federal agencies in the greater St. Louis area. DMA nominations compete with agencies with 1000 or more employees locally.

Awards are to be presented at a luncheon presentation scheduled for May 23 at the St. Louis Airport Hilton hotel.

SERVICE AWARDS

45 YEARS

BAX, RUSSELL L., SDRE

35 YEARS

DOLLISON, ALLAN L., MCPB
TAYLOR, EDDY J., MCDB

30 YEARS

GERSZEWSKI, GERTRUDE A., SDAE
TAYLOR, JEAN, MCBO

25 YEARS

FERRELL, EARLINE A., LOTA
DUNNE, JOHN F., SDDA
FOGWELL, JAMES F., TSSHC
SCEARCE, SAM F., RSOF
TIDWELL, HUBERT C., RDRD

20 YEARS

RUTLEDGE, LINDA M., CMCAL
WASHINGTON, ROSCOE E., MCBG
WILLIAMS, ALLEN H., SDFG

Women's History speaker wants DMA workers to fight stress with humor

"Try Humor—for a Change!"
Karyn Buxman urged DMA employees. In her presentation on that subject March 14 as part of the annual observance of Women's History Month, Ms. Buxman asserted that a good laugh is still the best medicine, particularly in today's stressful work environment.

She also cautioned that some office humor is inside or "you had to be there" humor, and that while it can make folks feel like "part of the gang", it can also make others feel excluded.

"You have to be careful that you use it constructively, and not to shut out others." She suggests some helpful tips for getting started:

—Set the tone. "If you're in a position of leadership, don't put on excessive restraint. Try to keep the atmosphere informal."

—Set the environment. Think about humorous posters, memos and signs. "Your surroundings have a tremendous effect on morale."

—Make a contract with yourself. "Studies show that folks are likelier to follow through with a commitment if they make it in writing."

At the presentation, copies of a specially prepared 48-page booklet, "Promises to Keep"—a booklet to help you keep your promises, was made available to all who attended. More copies are available. Contact Margie Spezia, Federal Women's Program Manager, at 34034.



Karyn Buxman warms up her DMA audience during her recent talk.

first Russian imagery

continued from page 4

vagaries of dealing with current free-world marketers in the former Soviet Union, the future availability of Russian satellite imagery holds real promise. "It's good competition for SPOT imagery," he says, noting that Russian competition could force the SPOT organization to be more competitive in its pricing.

Retirements

March 31

Thomas P. Dougherty, (FEMTU) pipefitter, 17 years.

Melvin Gillespie, (HRSF) administrative services specialist, 30 years.

In Memoriam

Robert W. Graves, who retired from the Center's Digital Products Department in September, 1989 died March 14 at his residence in Belleville, after a long illness.

He was a cartographer at the Center for 35 years, and was a U.S. Army veteran.

Surviving are his wife, Henrietta "Bunny" Graves; his father, John H. Graves of Belleville; a daughter, Jennifer Graves of Chicago; a son, Jeffery, of Cincinnati; two brothers and a sister.

Funeral services were held March 18, with burial in Green Mount Catholic Cemetery, Belleville.

Arsenal Mixed League Standings

After the position night for the second half, the Alley Slugs have moved to the front of the pack. They are followed by Bears, Fab Four, Hot Shots, Brooklyns, Defcon-4, Two of Hearts, Tom's Cats, Balls on Nine, The Real McCoy's, Strikebreakers, We Four, Roller Coasters, Mean Anomalys, and Purple Turkeys.

--Pat Wiese



Las Vegas and a bit of Lake Mead are at top right in this photo taken by a camera aboard a Russian satellite. It is one of a group of photos evaluated at the Aerospace Center last summer. For the story, see page 3.

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