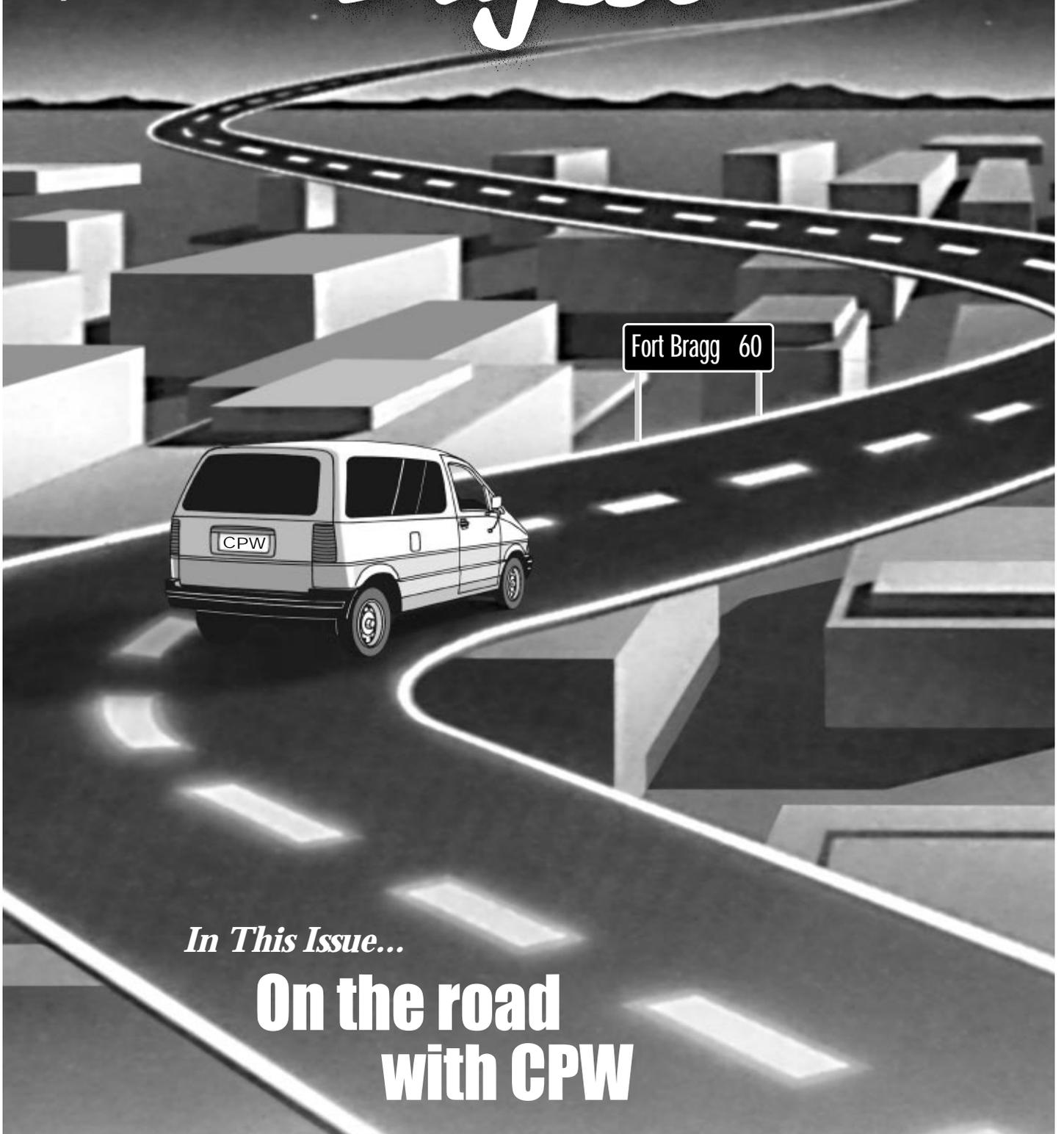


Public Works *Digest*

Volume VIII, No. 7
September 1996

A publication of the U.S.
Army Center for Public Works

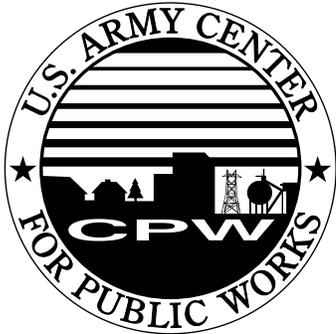


In This Issue...

**On the road
with CPW**

Public Works *Digest*

September 1996
Vol. VIII, No. 7



Public Works Digest is an unofficial publication of the US Army Center for Public Works, under AR 360-81. Method of reproduction: photo-off-set; press run: 4,000; estimated readership: 40,000. Editorial views and opinions expressed are not necessarily those of the Department of the Army.

Address mail to:

Department of the Army
US Army Center for Public Works
Attn: Editor, **Public Works Digest**,
CECPW-P
7701 Telegraph Road
Alexandria, VA 22315-3862
Telephone: (703) 428-6404 DSN 328
FAX: (703) 428-6805
e-mail: alex.k.stakhiv@cpw01.usace.
army.mil

Edward T. Watling
Director—U.S. Army Center for
Public Works

Penelope Schmitt
Chief—DPW Liason Office

Alexandra K. Stakhiv
Editor

Design and Layout:
Susan A. Sbugars
RPI Marketing Communications
Baltimore, MD

Installation Management



- 1-3 On the road with CPW *by Penelope Schmitt*
- 3 Hometown partnerships
- 4-5 Fort Bragg DPW: responsive to the needs of an urgent culture *by Penelope Schmitt*
- 5 Damage control in the barracks
- 6 Bridging the gap—Fort Bragg style
- 6 JOC News
- 7 PIF works—and that's not piffle! *by Penelope Schmitt*
- 8 Quality Services, Incorporated
- 8 Space management—just give 'em the facts
- 9-10 DEH in Panama sponsors Services Fair *by Gaby Capriles*

Environment



- 11-12 ASA (IL&E) memo sets ground rules for eliminating ozone-depleting chemicals at Army installations *by Thomas A. Bush*
- 13 Where to find ozone depleters on your installation *by Thomas A. Bush*
- 14 Panama combines Earth Day and Treaty implementation *by Gaby Capriles*
- 15 Indoor air quality—an environmental threat to public health *by Anna Lopez*

Facilities Engineering



- 16-17 Portable bunkers help maximize training area use
by Jerry Knapp and 1LT Adrian Donabue
- 17 Low-flow flusher fails the people test *by Kim Robland*

Automation



- 18-19 IFS-M update—the transition to client/server *by Martha Sharpe*
- 19 Fort Campbell recognizes CPW's help

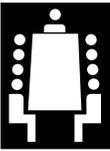
Professional Development



- 20-21 Environmental compliance course at Schofield Barracks:
Where the learning curve never ends *by Leslie Ozawa*
- 21 O&M training for HVAC control systems
- 21 Prime Power course offers hands-on experience and travel



Printed on recycled paper.



In the predawn of an August morning, a CPW staff assistance visit team began the drive toward Fort Bragg from Alexandria, Fredericksburg, and Norfolk, Virginia, and from North Carolina. Their missions? To get a rapid, but comprehensive view of one of the Army's biggest Directorates of Public Works and Environment . . . To solve problems on the spot . . . To learn and publish the DPWE's secrets of success. . . To carry back to the headquarters environment valuable lessons about the realities of managing an Army installation.

Milt Elder, the Staff Assistance Visit Coordinator at the Center for Public Works, had assembled the team and provided advance coordination with the DPW. "We will soon move to an invitational program," Elder said. "In the past, we visited installations on a rescheduled cycle. But we pay attention to our feedback. Some installations have told us they want to see us more often, while others only want us to come if they have a specific set of problems to address."

Future visits, like this one, will include specialists in a variety of areas, including those of particular interest to the DPW. The Fort Bragg team included:

Pete Sabo—Team leader, CPW Director of Facilities Management

Bill Allen—Structural engineer

Jane Anderson—Chemical engineer

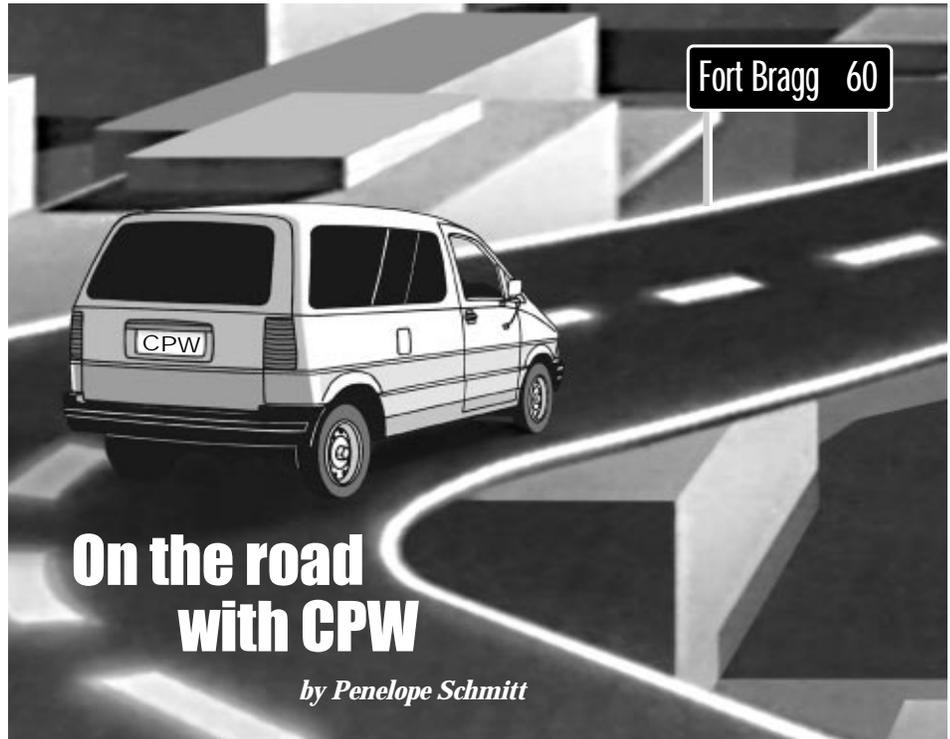
Johann Greico—Training specialist

Kimball Minter—Systems contractor

Penny Schmitt—Public affairs specialist

Jerry Zekert—Master planner

After an early afternoon in briefing with the DPW and principal staff, team members dispersed to start learning about Fort Bragg's DPW. Here's what they learned:



On the road with CPW

by Penelope Schmitt

Shop talk

Jane Anderson settled into a cubicle with her counterpart Brenda High. The two engineers exchanged notes about water treatment chemicals, and the upcoming effort to increase the rated capacity for the installation's water treatment plant. High described other innovations. A new UV disinfection system treatment facility will cut down on the need to use potentially toxic chlorine, benefiting both the installation and the environment. The installation is also moving from land application of sludge toward a lime stabilization process. "The resulting product is good dirt," High said. "We can use it for topsoil and cover, cutting back on purchases of those materials. We could sell this product, but we have plenty of uses for it on Fort Bragg."

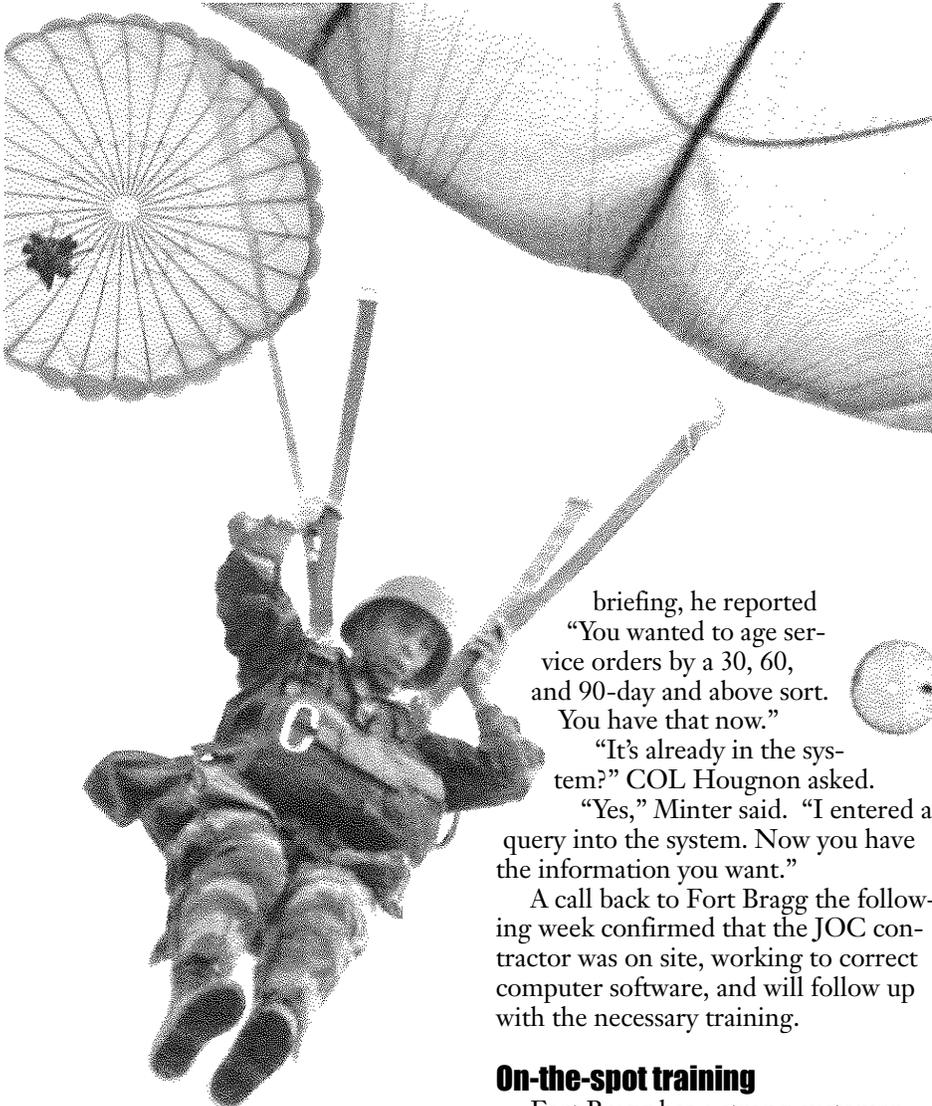
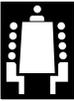
Anderson noticed that the operations and maintenance manual for the water plant was published by CPW's predecessor organization, FESA, sometime in the 1970s. Through CPW's contracts, she told High she could assist Fort Bragg in getting an up-to-date manual that would reflect real operating conditions at the plant and today's environmental regulations. Boiler Op-

erators at Fort Bragg will soon be required to get state certification, which a CPW training program supports.

While they talked, High paused to handle a staffer's question about the cost of time and materials for a small spill cleanup on post. She turned to Anderson. "How do other installations handle hazardous and toxic waste cleanup?" she asked. "Our fire department contains the spill, and moves on. Normally, maintenance would clean up the contained waste, but we are so short staffed that sometimes we go out from this office to do the hands-on work . . . I think maybe we need to create a response team," she continued.

Such conversations are typical during a visit, Anderson said. "You are right there, sharing the day-to-day problems with someone who has similar expertise. Just the contact can spark ideas for solutions to problems. There's no substitute for that face-to-face contact."

During the next two days, Anderson accompanied Linwood Hill, of the DPWE plants branch, on a nuts-and-bolts tour of the utilities plants. "They have a good program here," she said. "It's great to see such a well-run program. My



Need help? Request an SAV!

If requested, the US Army Center for Public Works can arrange a staff assistance visit (SAV) to your installation to cover such areas as resource and work management, technical operations, planning and real property, housing management, and other special interest topics. For more information, please call Milt Elder, SAV program coordinator, at (703) 428-7969 DSN 328 or e-mail: milt.r.elder@cpw01.usace.army.mil

briefing, he reported
“You wanted to age service orders by a 30, 60, and 90-day and above sort. You have that now.”

“It’s already in the system?” COL Hougnon asked.

“Yes,” Minter said. “I entered a query into the system. Now you have the information you want.”

A call back to Fort Bragg the following week confirmed that the JOC contractor was on site, working to correct computer software, and will follow up with the necessary training.

On-the-spot training

Fort Bragg has a strong customer service program. COL Hougnon and Jack Cox, Chief of the Customer Service Center, described Fort Bragg’s special needs for responsiveness and fairness. “We have 17 General Officers on this installation,” Hougnon said. They lead a whole constellation of commands, each with its own urgent needs and priorities.” Responsive service in such an environment presents some special challenges.

To enhance the installation’s strong customer focus, CPW brought in the expertise of Johann Greico, of the CPW Training and Professional Development Division. He offered two customer service training sessions during the SAV—one for supervisory staff and one for line employees.

“Learning about customer service is always a two-way street,” Greico said. “They have some excellent programs here. Feedback on service orders, for ex-

ample. Customer evaluation is an essential part of the service receipt. Contractors must get customer feedback in order to be paid for their work. That really makes measurement possible. The installation also offers several good phone access lines to make sure customers can call in and get any problems addressed.”

Like any good organization, Fort Bragg wants to improve. “The Customer Service Center really wants to find a good way to let customers have a read-only capability to find out the status of their service orders,” Greico said. “They were thinking about putting this on a web site. We kicked this around during the week, and it seems there might be a better way to do this on a local or wide-area net. CPW is going to see if we can work out a way to query the system so that customers can see the status of their own work orders, not the whole spectrum.”

“That is a better idea,” Cox agreed. “It is important to help customers see where they are with their own priorities, and not raise a host of complaints based on their comparing the status of their service orders with unit x or y or z.”

Engineering questions answered

Bill Allen, of CPW’s Engineering Directorate, encountered a wide variety of questions.

How can we get Corps of Engineer Guide Specs? “There’s a real quick answer. Go to the Huntsville web site. They are all there in full!”

How can we address training and planning needs for our high-hazard dams? “I was able to identify a class where they can

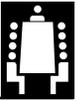
suggestions to this operation were all about resources they could tap to further improve on what they are doing well.”

Troubleshooting

Kimball Minter, a CPW contractor team member from E.L. Hamm, met with the kind of challenge SAV teams often find—a trouble spot where they can help. “The software for Fort Bragg’s JOC program just wasn’t working, and it wasn’t obvious why. I called back to the CPW contractor for another set of discs to be sent down by express mail. We also arranged for the JOC contractor to come down next week, ensure the software was working, and provide-on site training to employees.”

At the in briefing, work managers had requested that CPW look into a way of sorting service orders to tell how long they had been waiting. At the out





send an inspector. We also have contracts available to help them write up the required emergency plans for each dam.”

How can we ensure our barracks upgrades won't hit a bureaucratic snag? “CPW can write and submit the needed paperwork and get this issue cleared up quickly. We will also talk to higher headquarters about some puzzling language in regulations that seems to conflict with the much looser legislative dollar limits.”

What can we do about lead-based paint? “I was able to tell the basics of our LBP indefinite-delivery order contract. Fort Bragg and other installations can make calls on it. Our contribution is they won't have to write a scope of work or wait until a contract is let. They can just make a call.”

We need more help with outdated fire equipment, where can we get it? “Karl Wolfe, our equipment specialist, can offer Fort Bragg some assistance. In addition, the fire chief here is willing to act as “point man” for fire equipment needs at Bragg, Knox, Polk, Stewart and Campbell. This is an example of good ideas going both ways.”

Seeing the big picture

For Jerry Zekert, Chief of Master Planning at CPW, Fort Bragg is home. “I started my Army career here in the DPW,” Zekert said. “It is great to be back and see the tremendous job people are doing, and the innovations all around.”

Highlights for Zekert included a well-coordinated disposal program. “They have a great team effort,” he said. “There is a team meeting every two weeks, including the shops and the fire department. They make sure the program stays on track and everyone is informed. We are also happy that the McKinney Act support CPW's Derrick Mitchell offers is working. Their backlog of buildings waiting to be released has gone down from 50 to 4. That's success!”

“Their commercial, off-the-shelf software for space management is a great tool,” Zekert said. It is very customer oriented, and can get down to room level in buildings. That's important to an installation with many different commands sharing facilities..”

“We need to do our part to make sure that HQRPLANS and other Army systems are fitted with interfaces that let excellent systems like this work. All our systems do support upward reporting, but they don't support day-to-day installation work at the detailed level. This is one of those issues we carry home to work on for the good of the whole Army.”

Another, similar issue Zekert heard about was the need to build 1354 reporting into the JOC system to ensure capital improvements are seamlessly built into the installations real property records. “The easiest way to make sure nothing drops through the cracks is to make this an automatic process,” Zekert said.

Two-way learning

Team leader Pete Sabo has participated in dozens of installation visits over the years. “This was very good,” he said. “You always learn a lot. You see here an installation under tremendous pressure to produce. They are doing a terrific job of being responsive. Our job is to help them stay as productive as they are, and smooth out some of the roadblocks that could get in their way. We can do that by offering support ourselves and through our contracts, and by helping them build in procedures that will keep them in the best possible posture for funding and support from Army leadership.” **PWD**

Penelope Schmitt is Chief, DPW Liaison Office, CECPW-P, (703) 428-6933 DSN 328.

Hometown partnerships

Fort Bragg's 500,000 acre sprawl is the heart of North Carolina's sandhills region, and community-military relationships are as close as the grains of sand under the pine trees. “Fort Bragg is the biggest employer in the county and the largest single piece of the economic pie,” said Ann Krieger of the Real Property and Planning Division. “What we do affects every aspect of life in the region.”

“This can't be a ceremonial relationship,” she said. “Partnership doesn't happen when the Commanding General calls the Mayor of Fayetteville; it happens when our fire chief calls the Fayetteville fire chief, when I talk to the county planning board, when Bob talks to Joe.”

Here, partnership is built up a little bit every day. “Glen Prillaman,” our division chief, was instrumental in getting us started on the Joint Regional Land Use Group. Every three months we get together with the city and county managers either here or at the Pope Air Force Base Officers Club. Cooperation has really grown.”

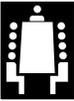
Some of the steps military and community partners have taken include:



- We are now voting members of the Regional Transportation Advisory Committee.
- We attend quarterly zoning meetings.
- We are sharing Geographic Information Systems (GIS) data as the county and the City of Fayetteville start up their systems. We are working on standards for data sharing.
- We attend Chamber of Commerce Meetings.

The results? “The community really understands the concept of buffering now. They do still build near our boundaries, but we no longer have to worry that they will permit a housing development in an area that will be subjected to a lot of noise from training impact areas. We are looking toward partnering in new housing construction, and initiatives we have never tried before. Those who once wanted us to handle the red-cockaded woodpecker issue solo are now full partners with us. Partnership takes time and cultivation, but it pays great dividends.”

POC is Ann Krieger, Chief Planner for the Fort Bragg Real Property and Planning Division (910) 396-6761. **PWD**



Fort Bragg DPW: responsive to the needs of an urgent culture

by Penelope Schmitt

"The pace is enormous," said COL James R. Hougnon, DPW at Fort Bragg, North Carolina. "These 500,000 acres are the most intensely used training land in the US Army. We don't just deploy the 82nd Airborne, we deploy a host of units. It took two months for Fort Hood to deploy its armored units for Desert Shield and Desert Storm. When they were gone, there was nothing left behind to take care of but bare concrete hardstand. It's not like that here. The 82nd lives on an 18-hour string. Others have to be ready to be wheels up in as little as two hours. Facilities are in a 'lock and leave mode' with no available space freed up during deployments."

The implications for the DPW in charge of Fort Bragg's Power Projection Platform match the intensity and pace of the military mission. "We have a stable military population here, we are gaining new facilities, and the tempo of training and deployment continues to intensify," Hougnon said. "Yet, like other DPWs in the Army, we are facing pressures to downsize, contract out more activities, and cut our civilian work force."

"The deployment attitude here at Fort Bragg finds its way into our business. There is strain on our land, urgency to renovate and build to meet the need."

Meeting the facilities need

"Changes in barracks and facilities standards challenge us. We have 25,000 soldiers living off-post. Many must have their field gear ready to go at all times. They don't have time to go home and pack their bags. And now we are moving to private rooms with private baths, they won't find gang latrines and showers in the barracks to use any more. The new barracks, with their associated operations facilities, will be a great asset. They can store field gear there in lockers, shower after unit PT,

and not live with field gear in the car or stashed in the office all the time."

Though the installation's strong construction program is apparent to anyone who drives through Fort Bragg, Hougnon emphasized that Bragg isn't a "have plenty" installation in a have not Army. "Even though Fort Bragg has not been affected by BRAC downsizing and remains one of the Army's busiest,

"Because we responded to the law and have done the right thing, the woodpecker is turning out to be a benefit to us rather than a burden."

—COL James R. Hougnon

most used posts, we still have a lot of facilities deficits," he said. "We didn't 'get well' in the 1980s when funding was more plentiful. What we did was put most of our available funding into the Special Operations Command area. In other areas we still have nine Colonel-level Brigades in World War II wood buildings. We have 53 units still using temporary maintenance facilities."

Although he agreed that getting rid of excess space was a priority, and is proud of Fort Bragg's record of divesting World War II Wood, Hougnon cautioned that "excess" space was a relative term. He pointed out that the current Army Stationing Plan (ASIP) records show when a unit is occupying more space than it needs. "But when there's a deficit below the required space, all that shows in the ASIP is a zero excess—when you compare that with the true figures you find in real property records, Fort Bragg doesn't look nearly so overloaded with excess space."

New facilities are intended to meet soldiers' most basic needs. "A four-phase project has begun to improve our deployment facilities—what we call Greenramp. We will be building three

shelters, each of which will cover 1,000 soldiers and their gear. Why? Because what we have now is one passenger shed that shelters about 450 troops—that's half a battalion. Anyone who remembers the cold, rainy deployment in December of 1989 for Operation Just Cause, or the sunbaked hours waiting to deploy for Desert Shield a year-and-a-half later, knows these facilities matter."

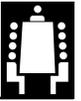
Hougnon noted that Greenramp is used every day for training. "Soldiers move in a constant stream through the jumble of roads that ferry cargo and passengers to the deployment area, through the pack shed and the heavy drop rigging facilities for training deployments to the Joint Readiness Training Center or the National Training Center."

Supporting the training mission

Environmental responsibilities and training demands have been a long-term concern at this southeastern installation. The home of the Army's toughest airborne troops is also the home of the country's second largest population of endangered red-cockaded woodpeckers. At times, training ranges have been shut down and the training mission curtailed to protect the bird.

"To me, the real story is that Fort Bragg was here all the time, preserving this specialized habitat while surrounding areas took it down for development. We have always been a great natural resource," Hougnon said.

"Because we responded to the law and have done the right thing, the woodpecker is turning out to be a benefit to us rather than a burden," he said. Years of preventing fires and letting the understory choke up with scrub oak made movement through the wooded areas difficult or impossible. "Returning habitat to its original long-leaf pine and wiregrass has greatly improved the quality of the land for training. Now



we have learned that prescribed burns done when nature would like to do them—in the growing season—opens up the woods and makes conditions better for training.”

According to Scott Bebb, Chief of the DPW endangered species branch, careful research, protection, and conservation of the woodpecker have also moved the installation from a stance of erring far on the side of caution. “Our original guidelines for training were extremely restrictive. As a result of research and record keeping done in cooperation with wildlife experts, we are finding out that the bird is more tolerant of human activity than we had feared. We will be initiating new guidelines in the fall that should enable us to continue to increase the number of woodpeckers living here, and also increase the amount of training land we can use.”

Fort Bragg’s private and public neighbors have also become more active in conservation projects with the installation. “With the help of the Army Environmental Center’s funding,” Bebb explained, “we will be able to do what we call gap analysis to find ways to improve habitats on the non-federal lands that lie between Fort Bragg and its sub-installation Camp McCall.”

“A high point will come for us this fall when we have a ceremonial signing of new training guidelines,” COL Hougnon said. “The Secretary of the Army and the Chief of Staff will be here—that’s how important our success in this area is to the training mission at Fort Bragg.”

In the business of supporting soldiers

In Fort Bragg’s urgent atmosphere, even day-to-day maintenance jobs are subject to high expectations. Rod Chisholm, Deputy Director of Public Works and Environment, said, “Everything from grass cutting to a new wastewater plant carries an added sense of urgency. Time and responsiveness is the number one customer requirement here. Units tend to care less about the cost than about getting the job done.”

“Fortunately we are able to use economic market forces to offset the time pressures. New rules for using credit cards and higher dollar limits on our

JOC contracts help us to be more responsive. We work with a wide variety of contractors and vendors. We see to it that they compete for our business, and that ensures our costs remain reasonable.”

“Like others in our business, we are being pressed to pare down staff and make do with lower funding levels. Our customers’ expectations for barracks, housing, and other facilities are steadily rising. We try to run our post like any well-run off-post community. But we can’t raise our prices to help us meet our customers’ needs and desires.”

COL Hougnon described his business philosophy for Fort Bragg’s organization. “Rod is right that we can’t adjust prices the way a business can. Yet I do see the DPWE as having its own version of profit motive. In the private sector, profit is the difference between costs and revenue. Even though we can’t control the revenue the way business does, we can still seek to drive down costs and make the most of our revenue. We plow all that ‘profit’ back into the business of providing facilities and related services.”

A sense of community

“Community support makes this work,” Chisholm said. “The economic impact of this installation is huge. We are the biggest employer in the county, and more than a third of the Fayetteville economy. The community feels the pinch with us when there’s a major deployment. They support us when they are at home. We must work closely and constantly with the local planning commission, with the county, with the City of Fayetteville, to make sure we stay viable. This is a noisy post—we have to attend to our relationships to make sure they stay good. We have agreements with the city and county about a number of issues—fire protection, transportation planning, and the like.

“Our biggest asset is our people. People who care about the Army gravitate here. They have the highest dedication. They’re here for much more than just the job. That’s why supply works. That’s why our service order system works. It’s the dedication piece. They’re just not going to let the soldier down.” **PWD**

Damage control in the barracks

They’re young, they’re strong, and they break things. That’s just the truth about troops.

For years, Fort Bragg has handled non-fair wear and tear in the barracks in the traditional way.

“We would get a report about a door ripped off its hinges or a smashed light fixture, and there would be a whole lot of paperwork,” said Jack Cox, Chief of the Customer Service Center in the Fort Bragg DPWE.

“Weeks or even months could go by while the unit tried to figure out who shot John, or do a report of survey and statement of charges.” Meanwhile the damage would go untouched, the barracks would look shoddier, and soldiers would have less motivation to keep

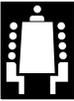
their living quarters in good condition.

“This isn’t a bureaucratic issue, or a DPWE issue.

It’s a leadership issue. We are changing the way we handle this.”

Now, when non-fair wear and tear comes in to the DPWE, it will be treated like any other service order. The labor and equipment card or contractor will identify the work as non-fair wear and tear. “Then we just fix it,” Cox said. “But we keep records. We will roll that up either monthly or quarterly, and forward the cost data to budget, who will send it to the comptroller. The unit will get a bill for the costs. They figure it out from there.”

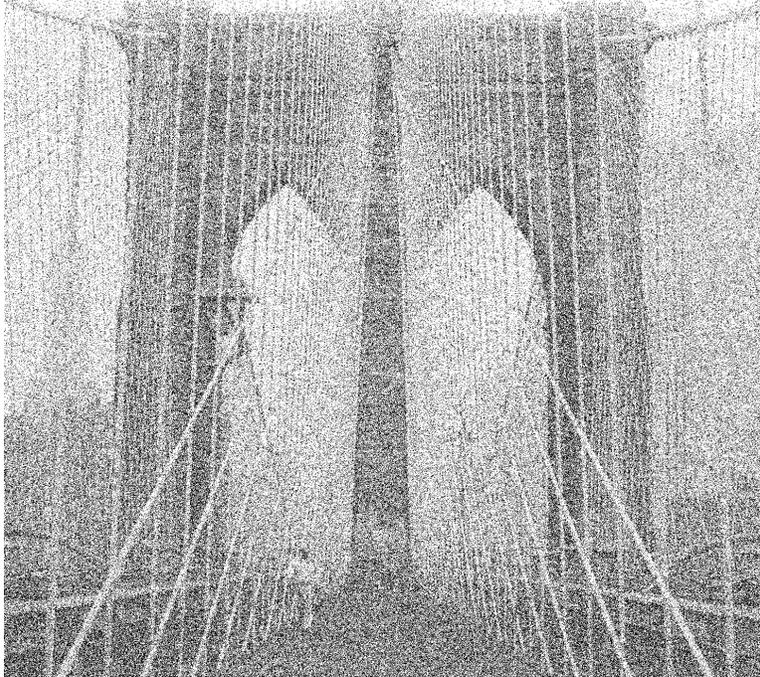
PWD POC is Jack Cox, Chief, Customer Service Center, Fort Bragg, NC (910) 396-1619. **PWD**



Bridging the gap— Fort Bragg style

A new PFC could become a seasoned Master Sergeant by the time the Army's new one-plus-one barracks are all built. That's why Fort Bragg has initiated an aggressive Bridge the Gap program that is completely renovating some of its barracks to meet the needs of today's soldiers today.

Greg Jackson, Chief of Fort Bragg's Engineering Division, is proud of the installation's programs for new and renovated barracks. "Many of our barracks buildings just couldn't be renovated and come anywhere close to new standards for space," he explained. "We realized the only solution was replacement. This costs about \$70 million per building. We do it one block at a time—move everyone out, build, and move the troops into the new building. We have finished the second phases, and have funding for the third phase."



Jackson also oversees the innovative program to turn 60s- and 70s-era barracks into modern living quarters for troops. "Our brand new soldier community projects will take care of the 82nd Airborne by the year 2010-2012. What about the interim?"

Thanks to the Army's Quality of Life Initiative, the DPWE was awarded \$5 million by Fort Bragg's commander to design and renovate some "H" style barracks.

"Every Army installation that has these knows there's a lot of wasted space," Jackson said. "The atrium and foyer area are just about unusable. So we went to a design that pulls the walls out and creates lockable storage for field gear. We used the remaining extra space for washer and dryer units. We decided on this because troops told us they didn't want to have to walk downstairs and outside to a basement laundry room."

"The rooms had been housing three soldiers. We cut that down to two soldiers per room. To redesign for privacy, we went to UNICOR, the federal prison industries people, for a special furniture design. They came up with a unit that creates a "wall divider" for the room,

and gives each soldier shelf space for entertainment equipment, books and other items. In the third bed space, we built lockable walk-in closets."

The new rooms have been stripped to the walls and refinished in a more apartment-like style. "We put in suspended ceilings, bathroom exhaust fans, vanity and medicine cabinets, and moveable track lighting."

"We are also looking at some plans for 2 + 2 barracks later on," Jackson said. "Our approach has to be methodical. We can't do it all at once, but we do keep plugging. The soldiers watch our progress and know that we are trying to improve their living conditions."

Self Help and U-Do-It are also part of the picture. "We have put together

some design packages with choices of wall coverings and carpeting. Units can put together the packages with some help and oversight from our staff."

"Little by little, we are doing all we can to make life better for the soldiers who live here on Fort Bragg."

POC is Greg Jackson, Chief, Engineering Division, Fort Bragg, NC (910) 396-2308. **PWD**

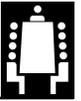
JOC News

Army Acquisition Circular, Number 96-1, dated 1 August 1996, implements changes to AFARS Subpart 17.90, Job Order Contracts. This change gives installation/garrison commanders the authority to increase the JOC delivery order maximum limit commensurate with the installation commander's approval authority for execution of real property repair and maintenance projects (but not to exceed \$2 million). This change applies to JOC contracts awarded after 1 August 1996, **not existing JOC contracts.**

POC is Lu Lillie, DAIM-FDF-M, (703) 428-7616 DSN 328, e-mail: lillie@pentagon-acsim3.army.mil. **PWD**

Submit your articles and photographs to the *Public Works Digest*

Department of the Army
US Army Center for Public Works
ATTN: Editor, *Public Works Digest*, CECPW-P
7701 Telegraph Rd.
Alexandria, VA 22315-3862
Phone: (703) 428-6404 DSN 328
FAX: (703) 428-6805
e-mail: alex.k.stakhiv@cpw01.usace.army.mil



PIF works—and that's not piffle!

by Penelope Schmitt

Can a paperwork drill really change your business profile? Jack Cox says, yes, it can. "The biggest problem in work management is the control of work requests. Where is it? Who has it? Who is responsible for it? At Fort Bragg, we can answer all those questions about every project—all the time."

How? You just follow the PIF. That stands for Project Information Folder, and for a successful way to maintain priority, accountability, and tracking throughout the life of a DPWE project.

Jack Cox, Chief of the Customer Service Center at Fort Bragg, explains the multi-step process. "This is how we manage our annual work plan," he said. "It really keeps us on track, even with constant pressures to change our priorities. One of the big successes we've had is that we truly know by March or April what we will be able to accomplish, and if necessary we can release money back to the units so that they can use it for other work. Customers really love this!"

The PIF list also gives the DPW a situation-at-a-glance look at all the installation projects. The record, listed by project, shows the status of project scope, costs, funding, and progress toward completion. "We show a Red-Amber-Green status. Project managers update the PIF list every month, so we always know where our whole workload is. It's easy to track. In fact, it's been a jewel."

Here's what the flow looks like:

1 Customer service representatives receive project requests. For each project, they assign a priority set by the requesting unit, and set up a folder with complete information about the project. Where will it be built? What is its purpose? Is site approval documentation complete?

"We keep the original folder here," Cox said. "Copies go out for coordination and come back. We always have a record here, updated each step of the way. Nothing can get lost in the shuffle."

2 Real Property and Environmental approve the project. "They attach the appropriate documentation to their copies and send them back to the customer service rep," Cox explained.

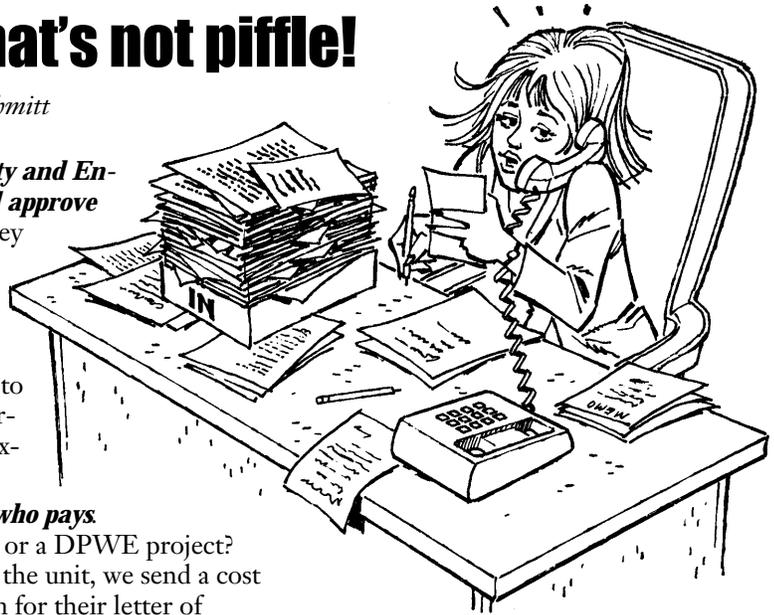
3 Determine who pays. Is this a unit or a DPWE project? "If it belongs to the unit, we send a cost estimate to them for their letter of comment or MIPR (Military Interdepartmental Purchase Request). If it is ours, we hold the folder until the Annual Work Plan meeting. Any '96 folders left will be on the table at the first FY 1997 meeting."

4 Does this project still fit unit priorities? "We send the plan to the unit. We ask does this work? Do you need to scrub your priorities? If so, send us the new agenda."

5 Meet with the Deputy DPWE on funding. "Once we have the complete, scrubbed list, we meet with Rod Chisholm to determine which projects we will be able to fund."

6 Assign the project to a manager. "Only after all the preliminaries are complete, and we know we have a live project, do we hold an assignment meeting. We include the shops, engineering, contracting, and environment. The customer service rep briefs projects, and we decide which division will take responsibility for the project. Projects are given to division chiefs who assign each project to a manager. Now the PIF is handed off to the project manager."

7 Call the customer. Within two days of receiving a project, the project manager calls the customer. The Project manager takes over the whole big picture of the project. He consults with Real Property if people must be moved, with DOIM if communications are an issue. All these aspects are the property



and clear responsibility of that project manager now.

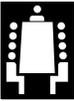
8 Contract award. Upon award, the PIF is passed to the Quality Assurance person. That person now becomes the project manager and controls the project to completion.

9 Wrap up the record. Only after the customer accepts the project does the QA inspector wrap up that folder and return it to customer service.

"This is the way we handle all jobs of significant size," Cox said. "Smaller jobs we handle differently. You don't need such a process to cover striping a parking lot." Cox said that items like fences, landscaping, pothole repair, and painting buildings can be handled directly from the Customer Service Office in as little as a day. "Last year we handled more than 700 work orders right here. If it is under \$2500, we can do it as a straight credit card order. We can write a letter describing urgent and compelling needs and get our DOC's assistance to award up to \$25,000 jobs. We are working to get in-house authority for those situations."

JOC is the final piece of the picture. "Our former contract had a \$125,000 dollar limit for projects. We really appreciate the increase in limits to \$300,000. We think that will help us a lot."

POC is Jack Cox, Chief Customer Service Center, Fort Bragg DPWE (910) 396-1619. **PWD**



Quality Services, Incorporated

Zero backlog. No kidding, that's the goal for Fort Bragg's QSI (Quality Services, Inc.) Operation. In the '80s, you knew it as the Do-It-Now shop, an award winning operation headed up by Tommie Douglass. Today, Douglass is still winning, with an operation that takes fullest advantage of the Army's move toward IMPAC-purchased contractor services.

"Our work force here in the DPWE used to number about 2,000. Now we have 543. No matter how well we managed, our service order backlog was just too high. This program has enabled us to bring our backlog down from 5,500 when we implemented in 1995, to under 800 today."

How has the QSI shop done this? By making maximum use of credit card-purchased services to do priority two, three, and four service orders. "Our employees respond to the priority one calls, and we spend the rest of our time on preventive maintenance," Douglass said. That's another "no kidding." Fort Bragg's in-house maintenance staff now spends a whopping 36 percent of its time on preventive maintenance. "As a result, we are beginning to see the number of new service orders shrink. That will bring our backlog even closer to zero."

Fort Bragg receives about 50,000 service orders each year. Half of those are now executed by contract using credit card orders. "We have been able to make this work because this is a big market with a lot of potential contractors," Douglass explained. "We check the contractors out to ensure they are qualified, we get a price list and a labor cost, and them we include them on our board. We have about 15 to 20 plumbers available, for example. We may start out by going to the guy with the cheapest labor rates and then if our volume increases, we move up to a contractor who is a little more expensive."

"We have learned rapidly how to get the best prices in this process," he said. "We have some basic advantages built in. We don't pay for estimating, but only for actual work. We pay for exact time worked—if it is 45 minutes, we don't pay for a whole hour."

"Jobs under \$100 don't have to be bid. We have them show a priced-out

parts list, that's all. We inspect aggressively. We ensure quality by inspecting 10 percent of all jobs under \$100 and inspecting 100 percent of all jobs over \$500. There's no part of this system left up to chance."

Customer satisfaction, for example, is closely tracked. An easy-to-use Customer Comment Card accompanies all service orders, and must be completed by the customer before the contractor can be paid.

A key to the program's success has been the work of expeditors assigned to the shop. They handle incoming service calls, assign them to a contractor, and award the work, often within a day. They also handle transactions with the credit card company, and reconcile the bills each month.

"Our window for completion is now five working days," said COL James R. Hougnon, Fort Bragg DPWE. "I regard zero backlog of orders over five days a completely reasonable goal. When we get there, I think we could move it back to four, or even three days."

"This is a complete reversal from what we had been doing in the past," Douglass said, "but I can see the good it has done for us. Documentation has been a big factor. I'm a mechanic at heart, but I have to tell you that we have made this work by doing the charts, tracking, documenting, managing it all the way. It's still new. It's still changing. We stay open to advice and we add and adjust all the time. FORSCOM is interested in what we are doing—we think it could be a good way for other installations to go."

POC is Tommie Douglass, Chief of Facilities Branch in Fort Bragg's Facilities Maintenance Division (910) 396-2772. **PWD**

Space management—just give 'em the facts

An office with a window, a view of the golf course or a few extra square feet of maintenance area or storage—everyone wants to acquire more and better territory. Sue Ackerman, Fort Bragg's Space Manager, deals with the demands for space the only fair and reasonable way.

"I don't tell units what they can have. I *show* them," she says. "I give them a factual picture of their authorized space, and if possible, I give them alternative ways to have that space. Then I let them decide."

Technology allows Ackerman to give units these precise maps of facilities. "I am using a commercial program. It lets me look down inside our buildings, to room level," she said. "With all the different organizations here on post, we have to be able to get down to details just to function."

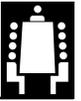
She unrolled a large schematic. "This is a map I was able to produce

with the help of our CADD system," she explained. "The ROTC staff and another unit must share this facility. The large green areas show the ex-

cess space one organization is occupying. The red and blue show different ways they can arrange the space each unit is authorized. I will present them with this, and let them work out which arrangement they think is best."

"Over time, an installation can wind up with facilities where some people are crowded, while others have a Taj Mahal. Those inequities just don't sit right with me. Being able to graphically show the exact layout really helps to level the field. I don't make the decisions, but I do recommend the solution that is least expensive and takes care of the most people with the least possible amount of displacement."

POC is Sue Ackerman, Real Property and Planning Division, Fort Bragg, NC (910) 396-7819. **PWD**



DEH in Panama sponsors Services Fair

by Gaby Capriles



The Services Fair—winding down after a long, fruitful day.



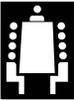
Mr. Juan Fagette (left), Chief, Systems Branch, Resources Division, shares a laugh with MG Lawson W. Magruder III, Commanding General of U.S. Army South, Panama.

The Directorate of Engineering and Housing (DEH) in Panama recently sponsored a Services Fair. The intent of the fair was to show customers the variety of services and programs provided by the DEH.

Due to the Panama Canal Treaty, all military installations in Panama are scheduled for closure by the year 2000. Despite dwindling resources and manpower cuts resulting from the drawdown, the mission of the DEH continues in high gear.

According to LTC Patrick L. Staffieri, Director of Engineering and Housing, "We are faced with the same, if not more, workload because facilities and infrastructures must still be maintained at acceptable levels of Army standards. In Panama, we have contracted out much of the work previously done by in-house personnel, such as the Total Housing Maintenance contract, which has somewhat lessened the burden."

Staffieri continues, "We have found that by communicating directly with our frontline customers, mainly family and unaccompanied personnel housing residents, the burden has been further minimized. An informed customer is more understanding of the situation and tends to be a better team player. A Services Fair represents the perfect opportunity to eliminate barriers and open up lines of communication."



At the Panama DEH Services Fair, hundreds of customers received information about available Directorate of Engineering and Housing services and programs. Individual areas were set up to provide information and answer questions regarding family housing services, self-help programs, J & J Maintenance services (Total Housing Maintenance Contractor), general engineering services, environmental programs, fire prevention and safety programs, contract services, and entomology programs.

Displays included heavy mobile equipment; a fully functional Service Order Reception Center; a display of self help items; family and unaccompanied housing new furniture displays, Autocad computerized drawings and plans demonstrating drawdown milestones, a display of asbestos abatement, 3-dimensional displays of electrical and water distribution systems, desiccated animals and insects, and much more.

The local Exchange and Commissary also participated in the event with health food displays and displays show-



The Heavy Equipment display was very popular with the kids.

ing home security devices. Free health screening for high blood pressure and cholesterol levels were also provided by

Panama's Medical Department Activity (U.S. Army MEDDAC).

One very satisfied fair participant, LTC Virgil Priestley, highly commended the DEH efforts. He said, "This has been a great learning experience that should continue every year. I have talked to expert people who know their area. I even placed a service order from the fair." Furthermore, all service calls placed from the fair were automatically classified as Priority 1 jobs and resolved within 24 hours.

As an added incentive for customers, door prizes were given away during the Fair, including free overnight stays in a classy beach resort and free dinners at exclusive local restaurants.

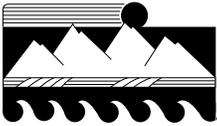
According to Staffieri, "A lot of work went into putting this show together. The return on our efforts investment was incredible. Many customers did not fully understand the scope of our \$80 million operation until the fair. I think we turned quite a few heads around that day in the perception of the DEH and what an excellent job my folks really do here despite limited resources." **PWD**

Gaby Capriles works in the DEH Public Relations Office in Panama.

Tel: 285-5447 Fax: 285-6219



The Entomology display was another popular attraction.



ASA (IL&E) memo sets ground rules for eliminating ozone-depleting chemicals at Army installations

by Thomas A. Bush

The February 1996 ASA(IL&E) memo sets the ground rules for ODC elimination at Army installations. First and foremost, it identifies installation commanders as responsible for the installations' ODC elimination programs.

Commanders, directors, and chiefs of Army tenant organizations are responsible for complying with their host installation policies and supporting their ODC elimination efforts. Host-tenant agreements that aren't consistent with this policy, and/or do not specifically address resourcing responsibilities, should be renegotiated as soon as possible.

In any event, installation commanders are responsible for ensuring Class I ODCs are eliminated in all facilities on their installations by the end of fiscal year 2003.

The February 1996 memo also identifies the most valuable tool installation commanders have in developing and managing their programs — the Strategic Guidance and Planning for Eliminating Ozone-Depleting Chemicals from U.S. Army Applications. Published in October of 1995, it not only provides information on the overall Army ODC Elimination Program, but also gives specific guidance for installations on the development and execution of installation ODC elimination plans.

Section IV, *Eliminating Ozone-Depleting Chemicals in U.S. Army Facility Applications*, describes a seven-step process for managing ODC elimination:

Step 1: Assign an Individual or Team to Manage the ODC Elimination Efforts

Step 2: Inventory ODC-Using Equipment and Support ODCs

Step 3: Enact ODC Conservation Measures

Step 4: Establish ODC Recovery and Logistics

Step 5: Build Your ODC Elimination Plan

Step 6: Resource Your ODC Elimination Program

Step 7: Yearly Reporting Requirements and Plan Updates

Also provided in Section IV are specific subsections which describe the seven-step process as it applies to the three ODC uses at Army installations.

Section IVa, *Guidance for Developing Your Plan for Eliminating Halon 1301 and Halon 1211 Used in Facility Fire-Fighting Applications*:

- Identifies where halon fire suppression systems are commonly used (such as computer rooms, telecommunication areas, and flight simulators).
- Describes the information an inventory should gather on each system (location, equipment protected, quantity of halon, and location of back-up material).
- Discusses leak prevention and ways to avoid accidental discharge.
- Emphasizes the requirement to turn in all recovered halon to the Army ODC Reserve in Richmond, Virginia, to support mission-critical weapon system requirements, and describes the turn-in procedure.
- Provides step-by-step instructions on how to build a halon elimination plan, including the need to perform a fire risk inspection, how to inspect existing halon systems, and how to assess alternatives.

Section IVb, *Guidance for Developing Your Plan for Eliminating Chlorofluorocarbons (CFCs) Used in Facility Air Condi-*

tioning and Refrigeration Applications:

- Emphasizes the need to first conduct a complete inventory of CFC equipment on the installation and describes what information should be gathered for each system (location, load of area supported, quantity of refrigerant, and quantity and location of replacement material).
- Addresses how conservation measures should be the main component of ongoing maintenance activities, and how leak detection systems and/or purge units are integral to proper CFC refrigerant management.
- Stresses that all CFC refrigerant in retired systems must be recovered, before dismantling, salvaging to a contractor, or forwarding to the DRMO.
- Explains how CFC refrigerant should be "cascaded" on the installation; i.e., recovered from retired systems, recycled, and reused to support current systems, making the installation virtually self-sufficient.
- Emphasizes that all CFC refrigerant in excess of what is required on the installation must be turned in to the Army ODC Reserve.
- Discusses alternative refrigerants and technologies available to assist the conversion effort.

Section IVc, *Guidance for Developing Your Plan for Eliminating Ozone-Depleting Chemicals in Production and Maintenance Processes in Facility Applications*, describes how ODC solvent use is mostly a requirement passed down from the weapon system manager. Some installation applications may be discretionary, however, as in solvent use in the motor-pool, which can be dealt with on the installation level.



Section IVc:

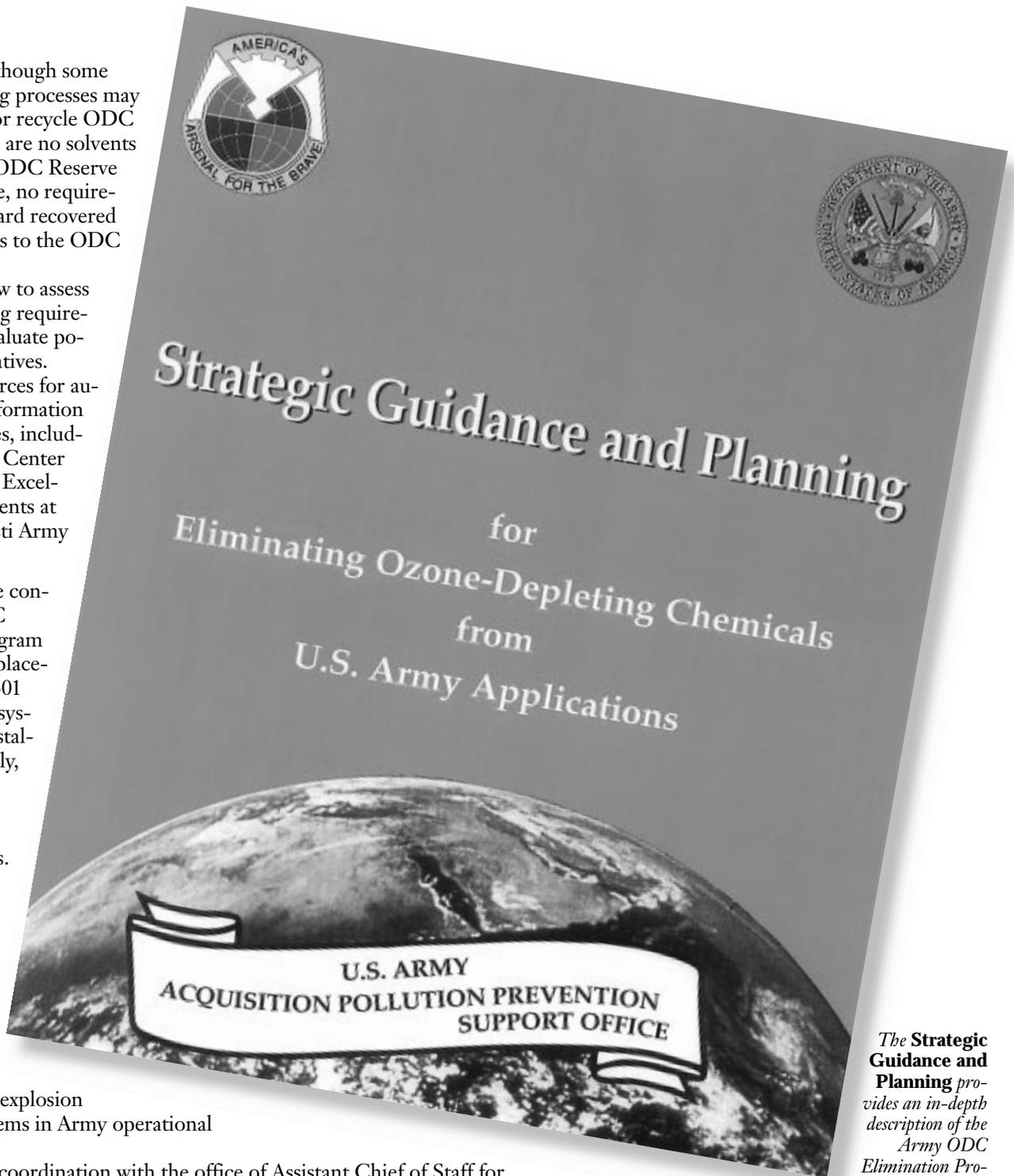
- States that although some manufacturing processes may reclaim and/or recycle ODC solvent, there are no solvents in the Army ODC Reserve and, therefore, no requirement to forward recovered ODC solvents to the ODC Reserve.
- Addresses how to assess ODC cleaning requirements and evaluate potential alternatives.
- Identifies sources for authoritative information on alternatives, including the Army Center for Technical Excellence on Solvents at Corpus Christi Army Depot.

Of immediate concern to the ODC Elimination Program is the retrofit/replace-ment of halon 1301 fire suppression systems in Army installations. Currently, there are over 3,600 such systems installed in Army facilities. According to Army policy, all halon 1301 must be recovered and forwarded to the ODC Reserve as expeditiously as possible, to support fire and explosion suppression systems in Army operational equipment.

AAPPSO, in coordination with the office of Assistant Chief of Staff for Installation Management and the U.S. Army Corps of Engineers, is developing a software tool to assist installations in identifying cost effective alternatives to halon systems. This tool will also provide both a standard process for selection of halon alternatives and a way for installations and MACOMs to gather and manage the halon elimination costs. The MACOMs should receive this tool before the end of the calendar year.

For more information, please contact Dave Koehler at Ocean City Research Corporation, (703) 212-9006, ocrc@haven.ios.com. **PWD**

Thomas A. Bush is the Director of the Army ODC Elimination Program.



*The **Strategic Guidance and Planning** provides an in-depth description of the Army ODC Elimination Program and includes detailed instructions on the development and implementation of installation ODC elimination plans.*



Where to find ozone depleters on your installation

by Thomas A. Bush

On February 16, 1996, the Assistant Secretary of the Army for Installations, Logistics, and the Environment (ASA(IL&E)) signed a policy memo on "Ozone-Depleting Chemicals (ODC) Elimination at Army Installations." The memo identifies the need to rid all Army installations of their dependency on Class I ODCs and establishes the requirement for Army facilities to be ODC-free by the end of fiscal year 2003.

This memo, and others like it, represents the Army's response to expanding national and international legislation that, by limiting the production and use of ODCs, poses a serious threat to Army readiness and quality of life.

In September of 1987, representatives from the United States and 120 other nations signed the *Montreal Protocol on Substances that Deplete the Ozone Layer*. Amended in 1990 and 1992, it identifies as Class I ODCs those man-made compounds which are most responsible for the destruction of ozone in the upper atmosphere. It also establishes phase-out dates which dictate when the signatories, which now number over 150, must stop producing these chemicals.

In 1990, President Bush signed into law the Clean Air Act Amendments, which included in Title VI the production phase-out schedules of the Montreal Protocol and also limitations on the servicing of ODC-using equipment. Additionally, Congress passed legislation in 1992 which levied restrictive taxes on the sale, import, and storage of Class I ODCs. Other laws and regulations have also been enacted that severely limit the Army's ability to purchase and use Class I ODCs.

The bottom line is: the last domestic production of Class I ODCs ended on December 31, 1995. Prohibitive taxes on ODC imports make them too costly to use, and the recycled product is currently selling at ten to fifteen times the price of just five years ago. So, what are Class I ODCs, and where do you find them? At Army installations, you'll find them in three different areas:

- Fire suppression systems.

- Refrigeration and air conditioning equipment.
- Solvent applications for metal cleaning and degreasing.

The ODCs used in fire suppression systems are called halons, and are typically found in hand-held fire extinguishers (halon 1211) and total-flooding fire protection systems (halon 1301). Total-flooding refers to automatic systems which rapidly fill the area with halon, and are used to protect high-value items like computers, communications, and simulators. DLA and GSA have replaced the halon 1211 in their hand-held fire extinguishers with other chemicals, and almost 50 tons of halon 1211 have already been recovered. However, surveys indicate there are still up to 300 tons of halon 1301 installed in Army facilities.

The Class I ODCs used in air conditioning and refrigeration are called CFC (chlorofluorocarbon) refrigerants. The CFC refrigerants used on Army installations, commonly referred to as FreonJ, are R-11, R-12, R-500, and R-502. They're in most refrigerators and freezers and almost all large-capacity air-conditioning units (over 100 tons).

Hermetically sealed systems, such as water fountains and household refrigerators, aren't a problem since they don't have to be recharged and are replaced with non-CFC units through attrition. Larger systems, however, routinely leak and so must be periodically serviced, requiring additional ODCs. Recent estimates indicate there are still over 400

tons of CFC refrigerants installed in Army facilities.

The last ODC use common to Army installations is metal cleaning and degreasing solvent applications. There are only three Class I ODC solvents:

- Carbon tetrachloride.
- Methyl chloroform.
- CFC-113.

These solvents are heavily used in repair and machine work at depots, arsenals, GOCOs (government-owned, contractor-operated plants), and unit maintenance shops.

The use of ODC solvents in Army operations has been extensive. In the 1994 Army Toxic Release Inventory, the Army reported the release of over 100 tons of methyl chloroform alone. Much work has been done in recent years, principally at the depots, to convert cleaning systems to non-ODC solvents. But much work still remains, especially with applications that use smaller quantities of ODCs and so may not have received adequate attention.

Because of the decreasing supply and

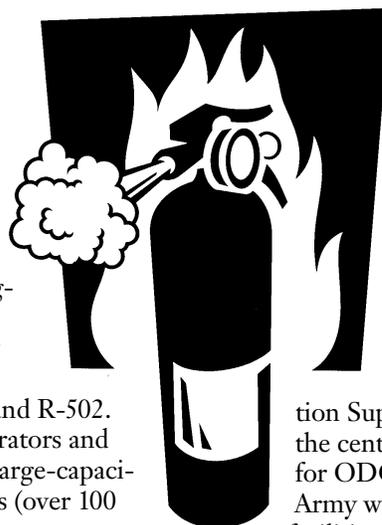
increasing cost of Class I ODCs, the Army recognizes that continued dependency could have a catastrophic impact on Army readiness.

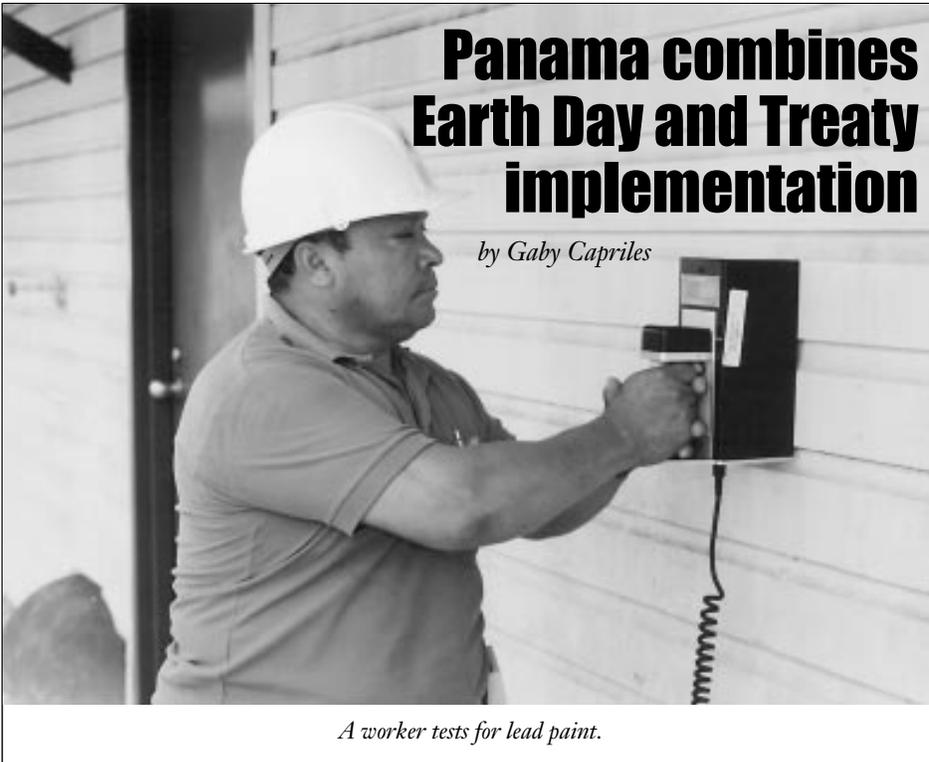
The ASA(IL&E) and the Assistant Secretary of the Army for Research, Development, and Acquisition (ASA(RDA)) have designated the Army Acquisition Pollution Preven-

tion Support Office (AAPPSO) as the central manager responsible for ODC elimination in both Army weapon systems and Army facilities. The objective of the

Army ODC Elimination Program is to remove, retrofit, or replace all uses of Class I ODCs as quickly as technology will allow.

For more information, please contact Dave Koehler at Ocean City Research Corporation, (703) 212-9006, ocrc@haven.ios.com. **PWD**





Panama combines Earth Day and Treaty implementation

by Gaby Capriles

A worker tests for lead paint.

Earth Day is officially celebrated worldwide during the month of April. However, in Panama, Earth Day activities continue throughout the year and fit in very closely with implementing the Panama Canal Treaty.

During 1995, United States Army Garrison and United States Army South went the extra mile in the transfer of two Atlantic-side installations to the Government of Panama by implementing an environmental transfer strategy that was initiated many months before the actual transfer took place. This successful operation went smoothly thanks to the Partnering concept envisioned by the MACOM in Panama, the Deputy Chief of Staff Engineer (DCSENG), and actively supported by the Directorate of Engineering and Housing, United States Army Garrison Panama.

This environmental strategy will continue to play a critical role in future transfers of all military property, including live fire ranges, to the Republic of Panama. In addition to the DCSENG and the DEH, other agencies involved in the environmental partnering initiative include the Navy and Air Force, the Government of Panama, the Panama Canal Commission, and non-gov-

ernmental organizations, both from the Continental United States and Republic of Panama. By working in unison, many benefits are accomplished such as identifying common goals, discussing prospective projects, and funding those that make sense in the drawdown mode.

According to LTC Patrick L. Staffieri, Director, DEH, "The strategy, involves a three-step process: analyzing current overall environmental conditions of installations or areas; conducting physical site inspections and risk assessments; and programming and executing the removal, if practicable, of hazards to human life, health and safety. Once this process is concluded, all final environmental conditions are documented for posterity.

In the transfer of the two Army Atlantic-side installations, Fort Davis and Fort Gulick, a lot of effort and time was dedicated to researching documents and locations, interviewing personnel who worked in tasks and facilities no longer in use, and testing known and unknown materials and wastes. The strategy also included completing risk assessments and interpreting complex chemical results. Additionally, Republic of Panama officials received technical briefings on standards and operation

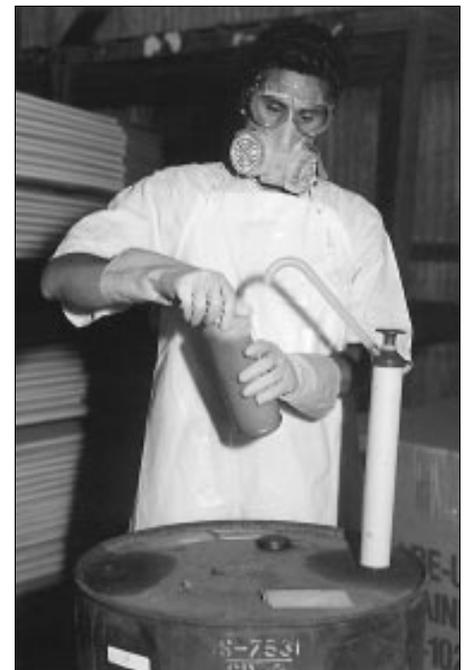
and maintenance activities typical of any U.S. installation, said Staffieri.

According to Staffieri, "Through this initiative we are also able to obtain Legacy funds for the preparation of detailed fauna and flora inventory for lands under U.S. military control, to prepare brochures documenting the American heritage of U.S. forces in Panama, to select and preserve original archival records and drawings from archeological and historical buildings and facilities, and to fund several tropical rain forest research projects conducted by the Smithsonian Tropical Research Institute on Department of Defense controlled lands."

"As we move towards the last years of U.S. military presence in Panama, we must continue to provide sound environmental management of the lands and waters entrusted to us by the Treaty. As stewards of this incredible legacy, both natural and cultural, we will not only have fulfilled our duty in a responsible manner, but will also be contributing to ensuring a better environment for future generations in Panama," added Staffieri. **PWD**

Gaby Capriles works in the DEH Public Relations Office in Panama.

Tel: 285-5447 Fax: 285-6219

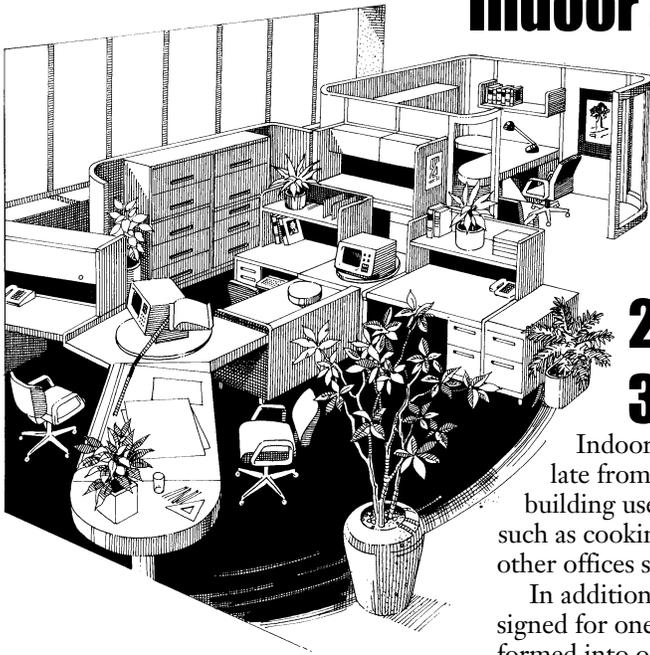


A worker tests for hazardous waste materia in Panama.



Indoor air quality—an environmental threat to public health

by Anna L. Lopez



Indoor air quality is an issue that has significantly grown in importance. The EPA and its Science Advisory Board have ranked it among the nation's top five environmental threats to public health.

Surprisingly, studies also show that indoor air pollution is more hazardous to your health than outdoor air pollution! With that information in mind, we must all strive for good air quality to keep a healthy working environment.

We have become particularly concerned with indoor air quality because it is estimated that most people spend up to 90 percent of their time indoors. A variety of factors are responsible for the increased concentration of indoor air pollutants:

1 Inadequate ventilation. To save energy, tightly sealed buildings were designed. This, however, resulted in poor ventilation and increased indoor pollutant levels by not bringing in and circulating sufficient amounts of outdoor air. Inadequate ventilation also occurs when the air supply and return vents are blocked or improperly placed where the ventilation air is unable to reach the people. Sometimes outdoor air intake vents are placed where polluted air (i.e., exhaust from motor vehicles, boiler emissions, fumes from dumpsters) is drawn into the ventilation system. Lastly, ventilation systems can be a source of indoor pollution by spread-

ing biological contaminants that have reproduced and multiplied.

2 High temperature and humidity levels.

3 Poorly planned or renovated office space.

Indoor air pollutants can circulate from other sections of the building used for specialized purposes such as cooking areas, restrooms, and other offices sharing the same building.

In addition, buildings originally designed for one purpose may be transformed into office space. Improper renovations or modifications can restrict air circulation or provide an inadequate supply of outdoor air. Consider the location of air vents, partitions, and other office equipment when renovating offices.

Other pollutants that are found in the workplace include cigarette smoke; asbestos from insulating and fire-retardant building materials; and fumes from carpets, cleaning materials, paints, etc.

There are many adverse effects caused by indoor air pollution. Some immediate effects that are short-term and easily treatable include irritation of the eyes, nose, throat, headaches, dizziness, and fatigue. If the source can be easily identified, these short-term effects can be treated simply by removing the source of the pollution.

Other effects may have symptoms similar to the common cold or other viruses. These are more difficult to determine if indoor air pollution is the source.

Still other effects may appear years after exposure or after repeated exposure to indoor air pollution. These tend to be more serious and more harmful. The more common long-term effects include respiratory disease, heart disease, and cancer.

Large office buildings usually require comprehensive building investigations to effectively identify and remedy indoor air quality problems. These

investigations begin with written questionnaires and telephone consultations so the investigator can obtain information on the history of the building and of the occupants' complaints. Sometimes, this information alone is sufficient to discover the problem.

More often, though, on-site visits are necessary to collect more data and develop possible solutions to the indoor air quality problem. This process of finding a resolution to the pollution problem can be long, and may involve several trial solutions until the problem is solved.

If building occupants are complaining about the following items, you may have an indoor air quality problem:

- Mold and mildew on walls, fabric surfaces (partitions, chairs).
- Stiffness caused by high temperatures or high relative humidity levels.
- Odors — stale smells in the workplace.

Building Air Quality: A Guide for Building Owners and Facility Managers provides more information for identifying, correcting, and preventing indoor air quality problems. To obtain a copy, please call (202) 783-3238. Also for information on health hazard evaluations of your office, contact your local Preventive Medicine office.

Indoor air quality is and will always be a main concern for the workplace. The federal government and the private sector are working closely together to better understand and reduce people's exposure to indoor air pollution. We can accelerate this process by learning more about the indoor air quality causes and effects.

For more information on indoor air quality, please contact Dennis Vevang, (703) 806-6071 DSN 656 or e-mail: dennis.i.vevang@cpw01.usace.army.mil. **PWD**

Anna Lopez is a summer intern with the Mechanical and Energy Division of CPW's Engineering Directorate.



As the Army continuously prepares and trains to fight today's different types of conflicts, so too must our training change.

Adjusting training is relatively easy, adjusting training sites is not. Moving existing ranges, establishing new ranges in a cost-effective way, identifying range fans and safety or buffer areas, building new support facilities, and re-defining impact areas can be difficult to do with good environmental stewardship.

Another common problem trainers must face is the loss of training areas and the proverbial "doing more with less" situations. Downsizing and consolidation of range and training areas present many challenges. The United States Military Academy overcame similar challenges by successfully designing and installing a new demolitions training range bunker using state-of-the-art concrete technology. Here's how we did it.

During the planning process for Cadet Field Training for 1996, it be-

Portable bunkers help maximize training area use

by Jerry Knapp and
1LT Adrian Donahoe



Workers position the pre-cast concrete bridge span that acts as the bunker's overhead cover.

came clear that we needed to increase the amount of light infantry training and our training area. Since acquiring more training land was not an option, we knew we had to maximize the use of existing training areas.

The existing demo range occupied some prime training areas that needed to be used for light infantry training. Range Control personnel selected a site and decided to move the demo range to an area adjacent to the existing artillery impact area. This way, we could use the existing impact area as a safety zone around the new demo training site.

The overall design of the range was driven by the trainers' requirement to allow cadets to witness the detonation of the demo charges they prepared. Since this was the third site for the demo range in 5 years, ease of construction and portability were important issues.

While reviewing sales literature for pre-cast concrete bridge spans to use in our range and training complex, it occurred to us that these spans could be used for overhead cover protection for this range. We presented the manufacturer's shop drawings to the USMA Range Review Board, a group of trainers, Range Control managers, Directorate of Housing and Public Works (DHPW) and environmental personnel who plan and track range improve-



The portable training range bunker is made of four pre-cast pieces, including two concrete panels used for the floor



Low-flow flusher fails the people test

by Kim Robland

ments and upgrades. The plan was approved as presented.

The Engineer Platoon under the command of 1LT Donahoe did all the site work, including removal of the existing mortar pits, moving a set of bleachers, removal of the existing range tower and hauling suitable fill for the walls of the demo pit.

The bunker is made of four pre-cast pieces, including two pre-cast concrete panels used for the floor. Each panel is 9-inches thick, 21-feet long, 6 1/2-feet wide and 7.8 tons in weight. The panels are joined with a keyway that was filled with fast setting construction grout. The end wall is 10-inch thick reinforced concrete, 37 feet long; it weighs 14 tons.

The overhead cover is a pre-cast concrete bridge span 38-feet long, and it weighs 25 tons. The windows, installed by the DHPW shops, are 2-inches thick, multi-layered (laminated glass, polycarbonate and lexan), and bullet resistant. An inexpensive scar shield of plexiglass was mounted to both surfaces of the windows as protection from blast rock and vandalism.

The total cost for the project was about \$30K. The precast bunker parts, delivered to the site were \$19K, windows were \$6K and crane and riggers were \$4K. Site preparations were estimated at approximately \$1K. Although this sounds expensive for a bunker, **it is portable**. If the demo site is moved, the bunker can move with it. It also has a minimum 20-year usable life span.

Moving and consolidating ranges to meet financial and environmental constraints is a fact of life in our current downsizing phase. Using state-of-the-art construction materials creatively in our training areas can help keep training effective for soldiers and environmentally friendly and cost effective for the DHPW.

POC is Jerry Knapp, Operations Office, DHPW USMA, (914) 938-2926.

PWD

Jerry Knapp is the Operations Officer, DHPW USMA; and 1LT Adrian Donahoe is the Engineer Platoon Leader, USMA.

A low-cost retrofit toilet flushing device could potentially save water at military housing, but in actual practice, human factors precluded its success.

The dual-flush device known as the Select-A-Flush water conservation device from Aquatech claimed a 20 percent water savings, and was therefore installed on selected toilets at Fort Huachuca, AZ, in an attempt to find a temporary solution to the expense and wasted water encountered with the current 5-gallon flush toilets. After the installation of the devices, a demonstration was conducted by the U.S. Army Construction Engineering Research Laboratories (CERL) under the Facilities Engineering Applications Program (FEAP) project to determine the actual efficiency of the devices.

"The military plans to eventually replace current 5-gallon flush toilets with low-flow 1.6-gallon toilets," said Richard Scholze, CERL's lead researcher for this project. "But the cost of installing the new toilets combined with decreasing federal funding means that it could be years before the replacements are complete. The Select-A-Flush looked promising not only for water conservation, but it is also inexpensive and can be easily distributed in large quantities." The Select-A-Flush saves water because when the handle is pulled up, the entire tank flushes into the bowl for solids removal, but when pushed down, only a part of the tank flushes for liquid waste removal.

Once water meters were installed on selected toilets already equipped with the Select-A-Flush, additional toilets on post were equipped only with water meters to determine how much water was consumed and saved between toilets equipped with and without the devices. Data was collected for more than a year.

Despite the projections, results were not encouraging. The national average of water consumption in a single-family residence is 15 - 25 gallons per capita per day (gpcd), but residences at Fort Huachuca had an average of 38 gpcd. This was true for homes both with and without the retrofit devices.

After much analysis, researchers developed several reasons for the device's poor performance. The first problem

was that many of the retrofits were not functioning properly at the beginning of the study, and there was difficulty in adequately training residents how to use the new device. "We have such a large turnover rate of residents that it's nearly impossible to keep up with educating everyone on the proper use of the device," said Noe Barrera, engineering technician for the housing division of Fort Huachuca's Directorate of Public Works. "Many times, even if the residents were given instructions, there were still problems with remembering the correct way to use the device. There's just no way to guarantee the savings."

Some other findings not necessarily specific to the study are that many residents of military facilities have no incentive to conserve water, and since they don't pay for their utilities, are slow to report any problems with plumbing. Often when residents do report problems, repairs take longer than desired.

Although the retrofit devices do appear to be capable of providing savings in a residential setting, the savings depend on the awareness and willingness of residents to operate the systems appropriately and on the proper maintenance of the systems.

Because of the poor results of this test of retrofit devices, it is recommended that immediate attention be given to replacing older toilets with newer models. "For military or rental properties," said Barrera, "it seems more practical to just replace the old toilets. At Fort Huachuca, we've decided to replace them as problems occur. As we get calls for repairs, we'll gradually replace the 5-gallon toilets with 1.6-gallon toilets." In addition, water savings from the replacement toilets do not depend on special knowledge by residents. The 1.6-gallon toilets offer an estimated payback of 3 to 5 years.

For more information on this study or on water conservation in general, contact Richard Scholze, (217) 398-5590; toll-free 800-USA-CERL; e-mail r-scholze@cecer.army.mil; or USACERL, ATTN: CECER-UL-T, P.O. Box 9005, Champaign, IL 61826-9005. PWD

Kim Robland is a public affairs specialist at CERL.



Work is progressing on converting the Integrated Facilities System — Mini/Micro (IFS-M) to operate in a client/server environment. In connection with this action, which was approved by the Configuration Control Board, the IFS-M Program Manager addressed two letters of guidance to the IFS-M community. Dated 14 February 1996 and 18 June 1996, respectively, the letters referenced IFS-M's Migration Into the Future and IFS-M's Migration Into the Future — Revision #1. The following details concerning IFS-M Interim Change Package (ICP) #10-01 and System Change Package (SCP) #11 will serve as the third letter in this series.

IFS-M update—the transition to client/server

by Martha Sharpe

Interim Change Package #10-01 will enable installations to move the system's software/database off the UNISYS 5000 mini-computer and onto an Intel-based server. This means sites will be able to take advantage of the performance, reliability and lower maintenance cost offered by the server technology. Many of the UNISYS 5000 machines being used today are unreliable due to equipment failures, and contract maintenance fees average over \$20,000 per year.

The software development on this change package has been completed and ICP #10-01 is now available for deployment. Those sites which do not wish to move their IFS-M systems off the UNISYS 5000 computers at this time may continue to operate on the UNISYS computer under baseline #10 until System Change Package #11 is fielded.

To take advantage of this server option, sites need:

- An Intel-based server running the Solaris (UNIX) operating system.
- An Ethernet Local Area Network (LAN).

- PCs and printers connected to the server via LAN.
- An Oracle 7 license.

The cluster controllers currently being used by some sites will not work under this option. The February and June 1996 letters reference the requirements and cost for completing the hardware and software configuration changes for this option and purchasing the Oracle 7 license. Please contact Jim Webster, (703) 428-7101 DSN 328, for special assistance and coordination.

After satisfying hardware and software configuration requirements and purchasing the Oracle 7 license, sites that choose to take advantage of ICP #10-01 should contact Jim Godwin, (804) 734-1250 DSN 687, to arrange and schedule deployment.

Sites may acquire ICP #10-01 in one of three ways:

1 Complete SA/DBA training (2 days) at USACPW, Fort Lee and return to



the site with ICP #10-01 software and Oracle 7. The site is responsible for travel and per diem expenses. The USA-CPW technical hot line will support this effort with requests for assistance. The software installation will require 8 to 10 hours at an average-sized site.

2 Complete SA/DBA training (2 days) at USACPW, Fort Lee and receive on-site technical assistance during installation of ICP #10-01. The site is responsible for the travel and per diem expenses of USACPW technical personnel who provide on-site assistance.

3 Complete SA/DBA training (2 days) on site and receive on-site technical assistance during installation of ICP #10-01. The site is responsible for the travel and per diem expenses of USA-CPW technical personnel who provide on-site training and assistance.

Public Works problem?

Call us first!

1-800-RING-CPW





SCP #11 will move the IFS-M system into a true client/server architecture environment and facilitate the transition to and integration with commercial and government off-the-shelf software systems. This new system will incorporate state-of-the-art technologies such as:

- A multi-processor server.
- X86 Desktop PC Clients.
- An Ethernet LAN.
- Windows NT.
- ORACLE 7.
- SQL*NET.
- Graphical user interfaces.
- Windows on-line help functions.
- On-line glossary.
- Other Windows capabilities.

It will also eliminate the dependence on current costly hardware (UNISYS 5000). Fort Carson was selected as the Software Acceptance Test (SAT) site.

Minimum requirements for operating the SCP #11 baseline are:

- An Intel-based server running Microsoft NT (server).
- An Ethernet Local Area Network (LAN).
- 486/66 PCs with 12 MB RAM connected to the server via LAN.
- An Oracle 7 license.

Although Microsoft claims that its products will operate on a 386/33 Mhz PC, the 386 computer did not perform well during our test. Therefore, we do not recommend using this PC in your configuration.

Upon successful completion of the SAT, the SCP #11 baseline will be deployed in coordination with MACOMS to DPW sites that have the necessary hardware and LAN in place and are operational on a first-come, first-served basis. Please contact Jim Godwin, (804) 734-1250 DSN 687, for scheduling assistance. Sites may acquire SCP #11 in the same three ways offered for ICP #10-01; however, the SA/DBA training will require four days to complete.

CPW is prepared to assist the DPW community in preparing for both ICP #10-01 and SCP #11 by acquiring the necessary hardware and software on a reimbursable basis. We have already purchased the license for Oracle 7 on

behalf of IFS-M users, and USACPW, Fort Lee, will provide this software to the sites after they have completed site preparations and reimbursed USACPW for the Oracle purchase.

Please note that functional and technical support to older baselines will be phased out over time as the SCP #11 baseline is deployed. Sites should start

preparing now for this new environment since there is a three- to five-month lead time between order placement and product delivery.

☎ POC is Leo Oswald, CECPW-FB, (703) 428-7120. **PWD**

Martha Sharpe manages the IFS-M Acquisition Program at CPW.

Fort Campbell recognizes CPW's help

The Commanding General for Fort Campbell, KY, recently recognized CPW's own Beth Marty and Leo Oswald with the Commander's Award for Civilian Service for their November 1994-April 1996 efforts to implement Activity Based Costing (ABC) throughout the installation. Fort Campbell, home of the 101st

Airborne Division, was designated the FORSCOM Center of Excellence for ABC, making it the pilot program for the entire Army and the first installation in the Army to begin implementation of ABC installation-wide. CPW helped to implement ABC, not only at the DPW but throughout the post. **PWD**



From the left, Beth Marty; Leo Oswald, Chief of the Business Improvement Division; John Vann, a contractor who also worked on the Fort Campbell project; and Pete Sabo, Director of Facilities Management. (Photo by Penelope Schmitt)



If you build it, they will come. And come they have. Since January 1995, over a thousand students have graduated from a week-long course at Wheeler Army Airfield. The course is designed to train newly-minted environmental compliance officers and related staff for the 25th Infantry Division (Light) at Schofield Barracks. But its reputation has spread far and wide.

“Since we are the only ones in Hawaii teaching this type of course, we have students attending from all the services—the Army, Navy, Air Force, Marines, and the Coast Guard,” said Rick Rickel, who teaches the course with Marc Lawton. “We have active duty and reservists; we have military and civilian students. People have come from as far away as American Samoa, Saipan, Johnston Island, and Washington, D.C.”

This course was started as part of the 25th Division’s broad efforts to improve its environmental compliance program. The course was also established as part of a settlement with EPA for alleged environmental violations in 1994.

Since January 1995, all of the division’s military units down to the company level, as well as shops staffed by civilians, are required to appoint environmental compliance officers (ECOs). Some 400 ECOs and alternate ECOs are assigned at Army facilities throughout Hawaii. The alternate ECO ensures continuity in a unit’s environmental program, as soldiers transfer to other assignments.

Environmental compliance course at Schofield Barracks: Where the learning curve never ends

by Leslie Ozawa



Environmental Compliance Officer Course instructor Rick Rickel has taught over 1,000 students since the course was established in January 1995 by U.S. Army Garrison, Hawaii. (Photo by Dr. Raimo Liias.)

Twice a month, on Monday morning, about 30 students converge on U.S. Army Garrison, Hawaii’s Environmental Compliance Center’s classroom, operated by the garrison’s Directorate of Public Works (DPW). The students are handed a 3-inch thick binder filled with lecture notes, tables, forms, and regulations. For the next five days, they learn the details of their job:

- Managing hazardous materials and wastes.
- Minimizing hazardous wastes.
- Preparing and implementing emergency plans for hazardous spills.
- Managing storage tanks.
- Maintaining environmental records required by law.
- Protecting endangered species and archaeological sites.

The course covers all the regulated environmental “media”—drinking water, waste water, surface water, air, underground and above ground storage tanks, soil, as well as employee work-

place safety. Some regulations are enforced by EPA, others by the Occupational Safety and Health Administration, and still others by the Department of Transportation.

Four days of classroom training culminate on the fifth day with students visiting a unit’s motor pool and conducting an inspection, one that they themselves will face as ECOs. The inspection checklist has 219 questions, covering everything learned in the course.

The inspection program is also conducted by the DPW Environmental Compliance Training Center (ECC). “The inspections reinforce what the students learn in class,” said Rickel. “Inspections also provide us with feedback on how well our training programs are working. And of course, inspections ensure all units staying in compliance by noting deficiencies and getting them corrected immediately.”

The inspections are conducted randomly, four times a year, by four full-





time inspectors. "Our inspections are serious business," said Gary Akasaki, who heads the ECC. "EPA violations can result in heavy fines or jail terms or even both. Our goal is not to catch violators but to prevent violations, by correcting problems before they become violations."

Inspection scores show that quality training, regular random inspections, and timely consultations are a winning combination. Inspection scores averaged 86 percent for 22 units inspected from April to June 1995. A year later, these same units averaged 92 percent. Today the inspection program has expanded, and 115 military units and other activities have been inspected. Overall, Army units and support activities at Schofield Barracks are averaging 93 percent.

"Environmental compliance can't be accomplished by individuals alone," said Akasaki. "By educating and empowering those around you, it is achievable. It must be maintained at all times. We are all in this together and strive to work as a team to make the difference."

POC is Gary Akasaki, Hazardous Waste Program Manager, DPW, U.S. Army Garrison, Hawaii. **PWD**

Leslie Ozawa is a public affairs specialist in the Public Affairs Office, U.S. Army Pacific.

O&M training for HVAC control systems

A new training course helps DPW personnel learn how to operate and maintain controls for heating, ventilation and air-conditioning (HVAC) systems. PROSPECT Course 246, "HVAC Control Systems Operation and Maintenance," will be held March 17-21, 1997, in Champaign, Illinois.

CERL developed this new course based on the Army Corps of Engineers standard single-loop digital HVAC control systems and panels, which are now mandatory for Corps use. The course, with instructors from CERL and CPW, will provide the HVAC mechanic with the knowledge and skills needed to operate and maintain the standardized HVAC control systems.

For more information on the course content, please contact David Schwenk or Dick Strohl at CERL, (217) 373-7241 or (217) 352-6511, ext. 7570, or toll-free 800-USA-CERL. To register for the course, please contact Janine Wright, Huntsville Training Center, (205) 722-5813. **PWD**

Prime Power course offers hands-on experience and travel

Looking for a career that will give you hands-on engineering experience with electrical power generation and distribution systems? The U.S. Army's Prime Power Program offers this opportunity, plus travel throughout the world.

The Prime Power Production Specialist course is a year-long program of instruction. It's designed to train selected applicants to deploy, install, operate, and maintain the Army's Prime Power Program power generation and distribu-

tion assets in support of theater commanders under the provisions of AR 700-128.

The next available dates for the Prime Power Production Specialist Course are:

Class 97/1:

Report date: 06 January 1997
Start date: 20 January 1997

Class 97/2:

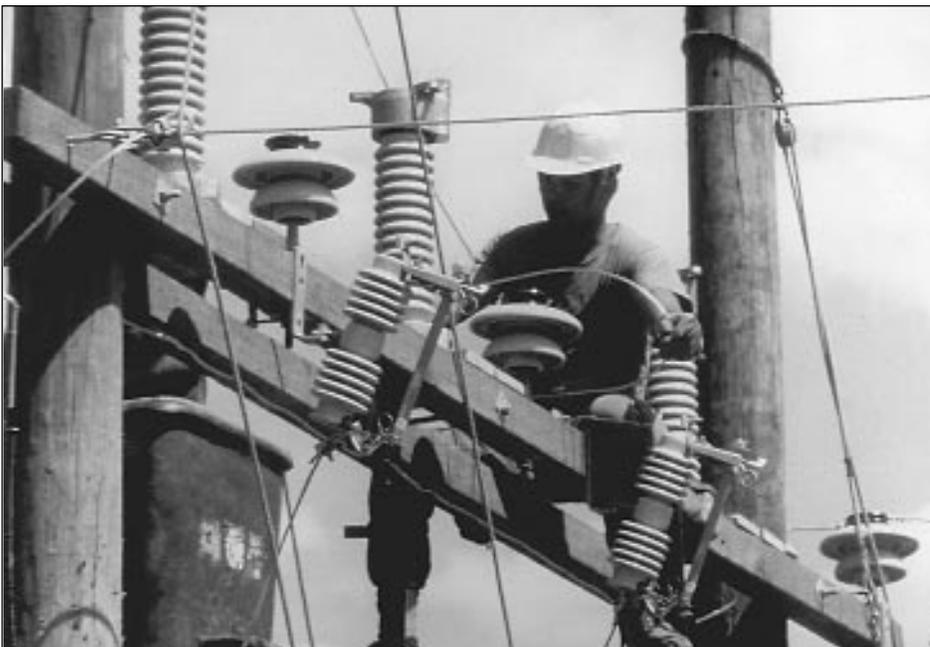
Report date: 28 July 1997
Start date: 11 August 1997

Suitable candidates must meet the following prerequisites to apply for this MOS:

- a. Be in Grade E-5 or below (subject to career field requirements).
- b. Be a high school graduate or have a General Education Development Equivalency diploma (GED).
- c. Have a standard score of at least 110 in aptitude areas EL, GT, and ST.
- d. Earn a score of at least 70% on the Basic Mathematics and Science Proficiency Test (BMST).

For any additional information concerning the prerequisites or the application procedures for this MOS, please call (703) 805-2510 DSN 655.

PWD



Public Works

Digest

In This Issue:

CPW pays staff assistance visit to Fort Bragg:

✓ **Supporting the training mission**

✓ **Changing barracks and facilities**

✓ **Managing space**

✓ **Keeping track of projects**

✓ **Purchasing contractor services**

