
Public Works

Digest

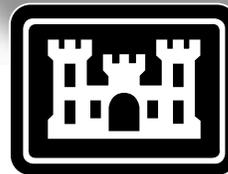
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In This Issue...

Facing A-76



**US Army Corps
of Engineers®**

Public Works *Digest*

May 1998
Vol. X, No. 4



**US Army Corps
of Engineers®**

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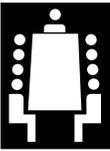
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Results for Garrison Commanders

by Penelope Schmitt

Results. That's what you want for your installation: Better homes and barracks for your soldiers and their families . . . top quality facilities that support the work and training environment . . . a power projection platform that can launch your forces without a hitch.

We in the U.S. Army Corps of Engineers are revolutionizing our effectiveness to get you those results. We are creating new instruments to beef up your **buying power**, so that you can buy more quality for your soldiers and get facilities completed faster.

We are taking new approaches to design that ensure your voice and **choice** are the true powers that shape your installation infrastructure. Through collocation and forward assignment of our best talents, we are giving you added **control** of your facilities funding, your engineer assets, and the projects you want completed to support your soldiers.

Buying power

It's not just about getting you more for your money. It's about getting you top quality facilities in a timely fashion. "We know that our Garrison Commanders want FedEx speed, Kodak quality, and Wal-Mart prices," said MG Milton Hunter, Director of Military Programs. "In the real world, you sometimes have to make adjustments to one of those factors to get the other two. The crucial fact is, now we have contracts that let our customers choose what *they* consider most important."

How? With new contracting instruments that enhance your power to get what you want, when you want it.

IDIQs — renovating Forts Hood, Bragg

How much does III Corps and Fort Hood Commander LTG Thomas A. Schwartz care about barracks? He wants to be able to drive around Fort Hood and tell at a glance how fast his barracks upgrade program is progressing. The Fort Worth District Resident Engineer Office at Fort Hood is using an IDIQ (Indefinite Delivery, Indefinite

Quantity) Contract to renew VOLAR Barracks to 1+1 standards. There's a single design package that can be repeated for as many delivery orders as are needed. Any available funds can be quickly placed against the contract to renew more buildings. Completed projects get new paint trim that clearly identifies finished buildings. "Every windshield tour shows progress," said Resident Engineer Office staff engineer Bret Hammer.

What else has that same IDIQ bought for Fort Hood? Nine renovated gyms in a single year. Acres of new maintenance facilities.

Savannah District has let an IDIQ contract to support Fort Bragg. It can take care of paving, roofing, asbestos abatement and removal, miscellaneous construction and the Barracks Upgrade program.

"This is a total lifesaver for us. We have total trust and confidence in the IDIQ project engineer, the contractor and their abilities to work with us to keep the Command Group satisfied," said Rod Chisholm, Deputy DPW.

"This tool has enabled us to shed the image of being too slow and bureaucratic. We've made the Command Group believers in the ability of the

Engineer community to make things happen in a timely manner," said LTC John O'Dowd, Special Assistant to the DCG, XVIII Airborne Corps.

"We have accomplished 22 task orders in six months — all are complete, on or ahead of schedule with zero cost growth and complete customer satisfaction.

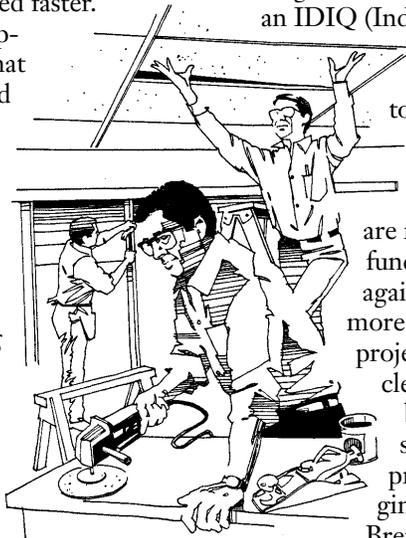
"In fact, the DCG says he 'owes a dinner' to Glenn Gunter, the IDIQ project engineer, because of the effectiveness and ability of this instrument to complete Command interest projects on time and within budget."

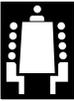
Under the Barracks Upgrade IDIQ, one VOLAR Barracks supporting the 20th Engineer Brigade is under renovation to interim 1+1 standards. The contract enables the installation to quickly obligate funds as they become available. At this time, 15 of the 19 buildings have been placed under contract. The other four are expected to be funded prior to the end of the fiscal year.

MEDCOM JOC

Some of your facilities are highly specialized. That's why Fort Worth District devised a Job Order Contract especially to support medical facilities. When MEDCOM wanted to cut design and acquisition costs and at the same time speed the delivery of minor construction and repair of its facilities, it asked the Fort Worth District to award two "medical" JOCs. Now, a combined technical and administrative team at Fort Worth District — fully funded by MEDCOM — administers two MEDJOCs for facilities nationwide, including Alaska and Puerto Rico.

The MEDJOCs provide for a wide variety of construction and repair projects while eliminating the time-consuming, costly aspects of the traditional design and construction process that uses separate contracting actions. MEDCOM pays no work plan cost and no management fee and saves 10-15 percent over typical Design Bid





Build (DBB) design and acquisition costs. The project execution process is faster than typical DBB, too; the expedited process results in projects awarded within 60 days of request. In addition, the MEDJOCs put the medical facility manager in control of the process for responsiveness, cost and quality.

ESPC

Energy Savings Performance Contracts are a great way to enhance your installation's buying power and upgrade your facilities.

Under a nationwide ESPC created by Huntsville Engineering and Support Center, you can contract with a major corporation to survey your installation, install energy-saving upgrades, and get operations and maintenance on the new, energy-saving equipment. The vendor bears the investment costs, and makes his profit by sharing in your savings. Office of the Secretary of Defense has centrally funded the services to initiate ESPCs. You can get on board without spending a dime up front!

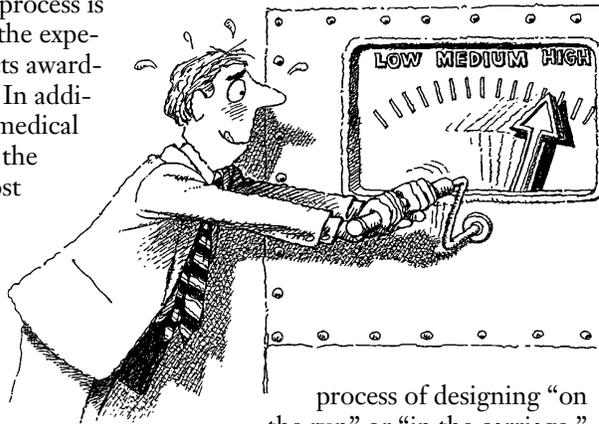
To learn more, contact Bobby Starling, Huntsville Center's Energy Program Manager, at (205) 895-1531.

Choices — throughout the life cycle

Charrette

It's not a cough drop, it's a design tool that gives you and your installation customers a powerful voice. The phrase "design by charrette" describes a

ENERGY SAVINGS PERFORMANCE



process of designing "on the run" or "in the carriage."

Everyone who has a stake in the installation project has a strong voice in the design process, from the Garrison Commander to the facility owners and users to the maintenance crew that will keep its systems operating. The process also speeds up the concept design process, reducing the time required to come to final design.

When Fort Leonard Wood began transforming itself into a major TRADOC training center, the Corps turned to the charrette process to ensure all players would be consulted and content with the design process. Folks "in the carriage" included Kansas City District, the Architect/Engineer firm hired to do the design, Command and Staff of the Engineer Center, the Chemical and Military Police Schools and installation facilities managers. As a rule, charrettes include a Team Leader, the Project Manager, Owner/User, Cost Engineer, Design Team, Construction Engineer and may also include maintenance staff.

To ensure everyone's voice was heard in the Fort Leonard Wood Project, Team Leader John Morrissey said, "We held teleconferences with commanders at Fort McClellan every evening. Sometimes they went on long into the night.

"Our DPW operations people were part of the planning process right along with us," Morrissey added. Mike Keeling, chief of Operations at Fort Leonard Wood, agreed. "Face-to-face, you can explain to the A/Es what you need and how things work in the real world. You could see them thinking, "Oh, there's real, live customers out

there; we should take them into account."

Those "real, live customers" brought the complex project to a state close to 35 percent design by the end of the charrette process. The result will be a Maneuver Support Center that fully meets the needs of three commands, acknowledges the special identities of each, and is built to work, to last, and to be easily maintained.

The advantages of design charrette across the board?

- Customers get what they want! Showstoppers and conflicts emerge and get resolved early and rapidly.
- Cost and time growth during both design and construction are avoided. All parties get the design the way it needs to be, the first time.
- The final product works better. Those who use and maintain the facility have identified their major needs and solved problems before they can occur.
- Total design costs fall. Timeliness and responsiveness improve.

MG Milt Hunter urges DPWs and Garrison Commanders to make use of this design tool, especially for barracks renovation projects. "We can avoid costly changes at 95 percent design!" he said.

Public Works Service Center

You've built your new barracks, torn down the World War II wood, renovated a swath of facilities. But that doesn't take the pressure off your shrinking installation staff or the constant vigilance it takes to maintain facilities in good condition — with too little money. Where do you turn?

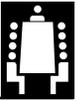
What would you say to an entity that allows you to retain control of all your Real Property Maintenance Activities (RPMA) services while reducing your overall operational costs?

The Public Works Service Center is a virtual organization the U.S. Army Corps of Engineers can help you put in place to run your installation the way you want it to be run — with a constellation of resources pulled from the private sector, your own installation staff, and Corps assets. We can help you build a PWSC to be your customized,

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 For more information, call the Reinvention Center for Installation Support, 1-800-250-1746.



Burl Ragland

**Burl Ragland —
Tulsa District and Fort Sill**

“I’m going to rent an apartment in Lawton pretty soon,” said Burl Ragland, the Corps’ forward engineer for Fort Sill. “Last year I was spending three days a week at the installation, now it’s four. I want a place for my hard hat, my boots, and my other gear.”

One day a week, Ragland revisits his home district in Tulsa to coordinate Corps support to the many projects going on at Fort Sill. The rest of the time, he’s on the installation, coordinating Corps support.

“The Deputy DPW, Dennis Hergenrether, wants differences between his people and the Corps to be invisible,” Ragland said. “We are getting very close.” Within weeks, Ragland will ensure that installation DPW staff are trained to use the Corps

of Engineers Financial Management System (CEFMS). “Our mutual business transactions will be on the DPW’s desk, real time,” he said.

“Just a year ago, we were still getting ready to install the T1 lines that would link us as one organization. The difference it makes to be on the same LAN and to have our Area Office right in the DPW compound? We are at all the staff meetings and truly part of the installation team.”

With a knowledgeable forward presence like Ragland, many Corps capabilities can be brought to a project. “To carry out a major environmental project we combined folks from the Fort Worth, Tulsa and Little Rock Districts with talent from the installation and the contract Architect/Engineer,” he said. “That’s what it means to build a virtual team.”

**Ron Rowland —
Fort Worth District and Fort Hood**

“What do I do at Fort Hood? Anything the DPW needs to have done!” That’s the attitude and the mission for Ron Rowland, the U.S. Army Corps of Engineers representative assigned to Fort Hood. “This installation has a huge OMA (Operations & Maintenance) program. The Resident Engineer Office deals with major construction (MCA) and larger projects once they get under way. I am here to work with OMA and all the ‘small stuff’ that makes or breaks smooth operations at an installation.”

Since he moved to Killeen 13 months ago, Rowland has seen the installation through some major improvements, building and renovating relatively small — but important — projects for soldiers here.

“My first year here was exciting. We had a pretty good pot of money that General Schwarz had designated in a ‘Campaign Spending Plan’ for installation improvements. That year, we put up three warehouses, renovated nine gyms, improved dining halls, ball fields and other soldier facilities. Our tools have been a combination of Corps, contract, and installation talents,” he said.

“I am here to facilitate a quicker response, to help direct things to Corps, in house or *No* design, whichever is most effective. We use IDIQs for construction. We move from 35 percent

design straight to building, getting the contractors faster off the starting block.

“Now, we have come to the end of that money, but we still have prioritized projects ready for execution whenever

funds become available. What’s my job today? I am supporting the DPW in his Capital Venture Initiative for housing and also in an upcoming Commercial Activities/A-76 study.

“My most important function is to get out of the stovepipe mentality in both the Corps and on the installation.”

“My most important function is to get out of the stovepipe mentality in both the Corps and on the installation.”

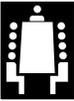
—Ron Rowland

Control

You want to reach out and touch your engineer support activity — not just the DPW, but all your support engineers? Now you can e-mail your Corps support on your own LAN, ask them to step next door and talk to you, or have those engineer faces sitting in your staff meetings working to solve your problems — as part of your staff.

LTG Joe N. Ballard kicked off his tour as Chief of Engineers by pushing for more collocation of Corps of Engineers assets with installation DPWs. From U.S. installations to Europe, the Corps castle is moving in under the castle flag that flies over your Directorate of Public Works. Computer systems are being spliced and shared to perform everything from design to engineer resources management.

To cut the costs of serving you, LTG Ballard has also set aside a number of top-quality, Corps-funded engineer personnel to work in direct support of major installations. These three brief profiles sketch what we can accomplish when our engineers become part of your staff.



Sometimes we in the Corps have been known to head in the wrong direction for the right reason, because we are not close enough to the customer. I am able to overcome that. If money needs to be reprogrammed to another project, I can help make that happen faster. If we are off on the wrong foot, I can turn it around."

COL Richard Craig, DPW at Fort Hood, agreed. "His response to me is instantaneous," he said. "If I identify a problem, we can solve it together a lot quicker. He attends all my staff meetings. That means he can see all I'm dealing with, not just the Corps of Engineers part of it. Now the Corps response is in terms of the total DPW picture.

"I don't see in detail, but I know — Ron is involved in the day-to-day, minute-by-minute reprogramming of dollars. If bids come in well and we have more funding left than we

thought, he knows exactly where else we can put that money to meet our needs. We are able to cut through old bureaucratic obstacles to the movement of money. We have more flexibility.

"Now that we are shifting our focus to this massive Capital Venture Initiative and a CA study, I really appreciate having the perspective of a person who is an insider on my staff, yet can see and evaluate the situation like an outsider. It makes us a stronger and better team than average!"

Fort Bragg and Savannah District — One Team

In 1997, the Savannah District and the Fort Bragg Public Works Business Center (PWBC) recognized the need to improve the quality of the engineering services on the installation. They developed positions for an on-site Instal-



lation Support manager and a technical review cell.

As an interim measure, COL Grant Smith, Savannah District Commander, assigned MAJ Scott Weliver to Fort Bragg in a TDY status. His mission was to provide coordination and implementation guidance to the engineer community. Weliver — maybe he should be called "*We Deliver*" — made such a positive impact that his assignment at Fort Bragg soon became permanent.

MAJ Weliver is the "go-to guy" when there is a question about Corps activities on Fort Bragg. He is their one door to the Corps. He has been serving for 14 months as the trouble shooter and problem solver at the beck and call of MG Tom Needham, DCG, XVIII Airborne Corps, COL Robert Shirron and LTC John O'Dowd, PWBC Fort Bragg.

Now another asset is becoming available to the Fort Bragg Engineer community — the Onsite Project Manager and Technical Review Cell. This group will provide independent review of O&M projects, MCA projects, solve problems during construction, submit reviews and minor design.

They reported for duty in January 1998 and have already made a difference. They work in the PWBC and have direct ties with its Construction Management Division. A recent success? The resolved hot water supply problems affecting more than 900 soldiers in newly renovated barracks. Their presence, coupled with innovative IDIQ contracting and the assistance of the local engineer community got results: hot showers within a week. **PWD**

Penelope Schmitt is the Chief of the DPW Liaison office at CPW.

CPW offers assistance with A-76 CA PROGRAM and services contracts

CPW has dedicated engineers and administrative professionals committed to helping you meet your installation's outsourcing requirements. Our organization offers a wide range of engineering expertise in areas such as:

- DPW Management
- Systems Development & Maintenance
- Planning & Real Property
- Sanitary & Chemical
- Mechanical & Energy
- Pavements & Railroads
- Buildings & Structures
- Electrical
- Professional Development & Training
- Business Improvement

On a cost reimbursement basis, CPW can provide engineering and technical support for your contract implementation efforts.

Some examples of contracting services support we offer include conducting job analyses, collecting workload data, and developing performance work statements. We can also develop total base maintenance acquisition packages, and/or specific RPMA function(s) acquisition package(s), or assist in improving your existing service contracts.

Upon request, CPW can provide performance-based services for the development of quality assurance surveillance plans, independent government cost estimates, source selection evaluation plan formats, and management plans for your installation. Call on us—we can help!

For more information, please contact Bob Hohenberg CECPW-FM, (703) 428-6227 DSN 328, FAX: (703) 428-7590, or e-mail: bob.e.hohenberg@cpw01.usace.army.mil





Can I do that IDIQ thing?

by Nancy Gould

LTC John O'Dowd serves as Special Assistant to MG Tom Needham, the Deputy Commanding General (DCG), XVIII Airborne Corps. O'Dowd's job? To coordinate with the installation's Engineer team on the Command's facilities needs. MG Needham wants results, and like most Commanders, sees the Engineers as a single entity. At Fort Bragg, that's how the Engineers work. Whether they are from Fort Bragg's Public Works Business Center, the U.S. Army Corps of Engineers Savannah District or an engineer contractor, they're a seamless team. Here's what LTC O'Dowd told us when we asked him about an Indefinite Delivery, Indefinite Quantity (IDIQ) contract the Savannah District created to meet construction and other needs:

"It's helped us out a lot! How? A lot of the high priority jobs we need to get done quickly. Every single job we've awarded to it so far has been finished on time and at the cost we were told when they bid it. The product that they've given us — the work that we're getting — is high quality work. We've used it to do a lot of stuff that the Command Group is interested in, things that come up where the installation needs to get things done in a hurry.

"We've also used it on Faith Barracks. When we opened it up, we had a problem with the hot water. We didn't have enough. We had a brand new barracks complex and realized that there was a problem with the system. We were able to have it fixed in about six days with the IDIQ. It was a \$40 thousand job. Faith Barracks was an MCA project, and it was actually project dollars that ended up paying the IDIQ costs.

"A couple of days were involved figuring out what we had to do to correct it, and then it was awarded in a couple of days, and they did the work in three days. It's incredible. There was nothing we had in all the tools of contracting that could have fixed that problem. In the past, we would have been waiting at best two or three weeks.

"Everyone was amazed. MG Needham had been gone from the installation. When the problem arose, he went away. When he came back he started

asking, "What are we going to do about the hot water at Faith?"

"We were able to say, 'It's done, sir.'"

"We used the IDIQ in another instance in 82nd Division. We had a contractor, and we had to terminate his contract. There were a whole bunch of deficiencies in his work. We had the Command Group's offices, including the Division Sergeant Major and secretary, general staff, and the area right outside the Commanding General's office all torn up by this contractor we had thrown off the job. We went in there with the IDIQ and in three weeks time, we disassembled what this guy had done and put it all back together correctly. The original contractor had been working in there for two and a half months.

"When we threw the original contractor off the job, we brought in Glenn Gunner and Gil White from Russ Constructors, Inc. Within a couple of days, we had a bid. A couple of days after that, they awarded and they were at work the next day. They worked seven days a week, sometimes 12 to 14 hours a day. They finished the job the exact day that we told the Command Group we were going to. We had told them we would be out of there by the 10th, and on the morning of the 10th, they vacuumed the carpets and left.

"The IDIQ contract's really done a lot. We had problems with the Faith Barracks Central Energy Plant. We used the contract to bring in a consultant to trouble shoot what needs to be done, and now we are looking at potentially using the contract again, if needed, to make some of those corrections.

"If we want something done in a hurry, this contract is the way to go. In fact, the biggest thing that's been slowing us down up to this point has just been the volume of work that we want to put against it. We're getting a little 'with it,' we're going through some of the growing pains of learning how to

use it and what we need to do. We've about got any backlog that we had here. But if the situation comes up today that I need to get fixed in the next couple of days, we can do it with this. If we drop everything else, we can get anything pretty much done.

"MG Needham even lost dinner on this deal. We had a parking lot where he bet we wouldn't get done until May. We turned that parking lot over to him next week (at the beginning of April). They've finished every job we've given them on schedule. We have not had them be late with any of the 15 or 16 task orders that we've finished so far.

"Now we're getting to where a lot of our customers have projects that they want to fund, and they ask, "Can I do that IDIQ thing?" The word is out on the street that if you 'do that IDIQ thing,' it will get done when they say it will.

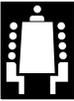
"It's been a real good cooperative effort between the Command Group, our people in the field and the contractor. It's been a good partnering effort from the public works [Ft. Bragg PWBC] to the Area Office [U.S. Army Corps of Engineers, Savannah District] to the contractor on site. Down here, it seems to get pushed through. When you look at it, we've got task orders in there from relatively small dollar amounts — \$20 to \$30 thousand range — to Forester Hall, and that's a half-a-million-dollar project. So we've awarded somewhere around \$2.6 million.

"One of the first projects we had at year end was initiated by MG Needham. It was Friday, and he called me up from a briefing and said, "The Artillery wants a parking lot. Can we get it awarded with year end money?"

"At the time I said, 'Sir, you're crazy. Four days from the end of the year? We can't get a parking lot designed and awarded by the 30th!'

"Then, Sunday, we were looking at the list of the projects that we had on IDIQ and we had just about wrapped up all of them and I said, 'Could we look at doing this?'

"Monday morning, they went out to the site. That was the 28th. ➤



Fort Dix targets training to pay for projects

by David Moore

Fort Dix planners and soldiers of Army Reserve engineer units are building the post's newest range asset — a Logistics Support Area where the target is training opportunity.

Fort Dix is able to make these projects happen as a result of the installation's successful Troop Construction Program. Under this program, Reserve and National Guard engineer units train on post by doing these projects. The installation only has to pay for the materials. The Troop Construction Program is planned out three years, so engineer units have time to project their annual training requirements or weekend training requirements.

In the former Sheridanville and Nelson Court housing areas at Fort Dix, a new training area is nearing first phase completion. Sam Fuoco, Force Projection Directorate's concept planner for the project, explained that once the project is complete, the 280-acre area will accommodate units from a division support command through group level support command. That means, from 3,000 to 4,000 soldiers could train in the area if every piece of training opportunity is occupied.

"This Logistics Support Area con-

Junior Ridgway (left) of the Regional Directorate of Public Works and Sam Fuoco of Force Projection Directorate at Fort Dix review plans for the training area.



cept was envisioned by Paul Legrice, Force Projection Directorate director," said Fuoco. "From concept through construction of Phase I, it's taken six months to make the Logistics Support Area a reality."

So far, 21 60-by-30 foot concrete pads have been completed and boxes with electrical and telephone hookups have been installed. Units will be housed in GP medium tents. Over 300 white pine trees have been planted, and a new fence has been erected on Saylor's Pond Road. Roadwork is also being completed in the area with units from the 411th En-

gineer Brigade doing some of the work.

Units that will use the site range from military police and medical personnel to quartermaster specialties.

"This whole project is being done in the spirit of Team Dix, using Force Projection Directorate for project coordination," said Fuoco. "The Directorate of Information Management installed the telephone lines, while the Regional Directorate of Public Works does the construction." He added that once the concept was proposed, the 78th Division Battle Projection Group did the proposed design and provided some of the specifications for the project.

Fort Dix leadership reports that while there has already been some training use in the area, several more units have expressed an interest in their annual training requirements.

The new training area will include:

- Petroleum Berm Training site with a 50,000-gallon fabric fuel tank and two sets of earthen berms for secondary containment.
- Vehicle Recovery site required for the reserve component Track and Wheeled Vehicle Recovery Course.
- Motor Pool/Maintenance site.
- Loading area with a short railhead

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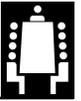
Glenn Gunner, contractor Gil White, MAJ Scott Weliver of Savannah District, and somebody from the Artillery looked at the site and came up with the scope of work that needed to be done, gave it to Russ for proposal. They got the proposal from Russ the next day. He came down here and was awarded that afternoon. The construction on the parking lot started seven days later, and it was done

about 30 days after that. It turned out nice.

"Some projects get a full set of prints. Others, we're out there on the site saying, 'Hey, I kind of want this here. . . I'd like some walls there.' You're drawing things on the back of a piece of paper and Gunner turns it into a scope of work, and we go from there!" **PWD**

Nancy Gould is a public affairs specialist with the Savannah District.





system of 400 feet of gravel railroad base and track to hold two to three flatbed cars.

- Engineer training area — This area could be used for most of the engineer training requirements from combat to combat support, as well as combat service support skills.

The Troop Construction Program for FY99 is designed to complete 28 projects. A major program already being planned for Fort Dix next year is the engineer exercise known as Ultimate Warrior '99, where much of the work is focused on the Logistics Support Area. This exercise will provide the necessary modifications to the installation as the first step in making the post the largest Reserve training center in the eastern United States.

The engineer design missions have already started, but additional Reserve and Guard units are being recruited to participate in Ultimate Warrior '99. They are needed for vertical construction, paving support, haul missions and working on utilities.

Some of the mission essential tasks that engineer commanders can meet for their collective task training under the Troop Construction Program are:

- Real estate and real property maintenance training.
- Technical engineer support.
- Administrative support.
- Supervisory site selection and layout.
- Interpretation of plans and specifications.
- Site surveys.
- Major horizontal site preparations.

"This program has saved Fort Dix money and has trained soldiers to do their engineer jobs," according to Junior Ridgway, Regional Directorate of Public Works. "The soldier wins and the post wins doing business this way."

Any Reserve or Guard engineer units interested in taking part in Ultimate Warrior '99 or the Troop Construction Program can call Junior Ridgway at (609) 562-2923/6949, DSN 944-2638. **PWD**

David Moore is on the Public Affairs Staff at Fort Dix, New Jersey.

Prime Vendor MRO initiative falls short of expectations

by Karl Thompson

The Defense Logistics Agency (DLA) is reorganizing and eliminating or greatly reducing depot stocks for common commercial items. The Defense Industrial Supply Center (DISC), a major component of DLA, plans to accomplish this through the Prime Vendor Maintenance, Repair & Operations (MRO) Initiative.

DLA has broken up their service areas into the Southeast, Southwest, South Central, North Central, Europe, Hawaii, Northeast, Northwest, Pacific and Alaska regions. DISC has solicited bids for the Southeast region and placed the first contract for MRO Supplies with Strategic Procurement Services Inc. (SPS). A supply integrator, SPS will be using basic suppliers such as Home Depot, Noland Company, WESCO Distribution, and other local suppliers to provide any requested MRO materials.

The MRO initiative is tailored to the Directorate of Public Works (DPW) and supplies items associated with facilities maintenance which include but are not limited to plumbing, heating, ventilation, air conditioning, refrigeration, lumber, electrical, small tools, paint, hardware and associated fixtures. The objectives of this initiative are to reduce the total cost of MRO procurement through electronic online access, advanced distribution, material management, and total asset in-transit visibility. It reportedly will also reduce inventories, warehouse space, and contract administration burden, while economizing personnel and improving operational costs.

The U.S. Army Center for Public Works has been monitoring the MRO initiative for potential Armywide imple-

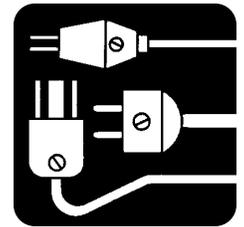
mentation for the Chief of Engineers and the TRADOC Engineer. CPW has evaluated the program, making many enhancing recommendations.

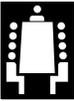
Since April of 1997, Fort Jackson has been the Army's lead site to test this initiative. After one year, the program continues to fall short of expectations in the areas of electronic payments, seventy-two hour deliveries for standard items, and reducing overall operating costs. It has also created extra work in duplicate data entry, coordination, deliveries, and files maintenance.

We continue to have reservations about this program. To date there have been no **confirmed** dollar or work force reductions that can be attributed to the MRO implementation. The MRO has increased Fort Jackson's costs 10 to 20 percent above normal IMPAC credit card purchases and the delivery time from less than 3 days to more than 5.

Also, claims that the MRO Initiative will reduce the DPW total operational cost cannot be proved, since most DPW managers have already reduced inventories and warehouses through various just-in-time procedures, credit card purchases, and requirement contracts, and have long been setting up procedures to streamline DPW operations and trim non-value-added processes. However, it is important to note that what may be a dismal performance in one region may be a big success in another. Each region will have its day.

Following are some planning tips and some actions that can streamline





the process of implementing the MRO program:

- 1** Scrub your IFS-M Supply Catalog so the local vendor has accurate information on the items used by your DPW and what the demand level may be.
- 2** Review inventory levels to decide what still needs to be maintained, assuming deliveries are normally within 72 hours.
- 3** Review the number of credit card purchases and dollar amounts versus other procurement transactions.
- 4** Review any existing supply contracts to determine if they would still be needed after implementing MRO.
- 5** Review processing requirements with the integrator ordering system, and determine how billing and financial transactions will be passed.
- 6** Review any impact the MRO initiative will have on local procedures and regulations.
- 7** Determine what training, staffing, billing, and equipment requirements may be necessary.
- 8** Define your requisition procedures and clearly understand your current workload. Identify system users and what level of authority they would need (issue, receive, release).
- 9** Identify Internet access requirements.

While there are some execution problems remaining in the Southeast region, with time, the MRO contract can become another source of supply to the DPWs. However, the MRO program should be looked at as another available tool in the DPW arsenal for MRO procurement. To ensure competitiveness, you must continue to shop around and get the best value for your scarce MRO dollars.

 POC is Karl Thompson, CECPW-FM, (703) 428-6301 DSN 328. 

Karl Thompson is a logistics management specialist in CPW's Directorate of Facilities Management.

Army takes "grassroots" approach to affirmative procurement

by Jack Shipley

One of the key elements in properly managing our natural environment and our quality of life is pollution prevention. Gone are the days when we can simply build larger treatment plants and landfills. Much of the contents of the trash we discard is actually a valuable and economically recoverable resource. The Army is making substantial efforts to take advantage of this, both by collecting recyclable materials for sale, and also by purchasing products made from these materials. The latter is referred to as Affirmative Procurement.

The Army is committed to spreading the word about its Affirmative Procurement Program through grassroots education. "Buying Green" promotes the purchase of products made with recycled and recovered materials that will not harm the environment. They also consume less energy during production.

The program has its beginnings in the 1976 Resource Conservation and Recovery Act, which requires all federal agencies to give preference in purchasing to products and practices that conserve and protect natural resources and

the environment.

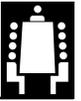
Education is key to the success of the program, according to Bob Schroeder, the program manager for affirmative procurement at the Office of the Director of Environmental Programs for the Army. His approach is one of grassroots communication: trying to reach as many people as possible through various media, with the plan of effecting change from "the bottom, up."

The "top side" of the chain of command did its part when President Clinton signed Executive Order 12873, Federal Acquisition, Recycling, and Waste Prevention, on October 20, 1993. It directs federal agencies to purchase recycled and environmentally preferable products. The executive order is also codified in the Federal Acquisition Regulation.

According to Curtis Stevenson in the Office of the Assistant Secretary of the Army for Research, Development and Acquisition (SARDA), three Army major commands have expressed a need for HQDA guidance to the field in affirmative procurement. He is working

Comprehensive Procurement Guideline Items (as of November 1997)

Paper & Paper Products	Retread tires	Hydraulic mulch products
Non-Paper Products	Transportation	Compost made from yard trimmings
Office recycling containers	Traffic barricades	Construction
Office waste receptacles	Channelizers	Laminated paperboard products
Plastic desktop accessories	Parking stops	Cement & concrete containing fly ash
Toner cartridges	Traffic cones	Cement & concrete containing ground-granulated blast furnace slag (GGBF)
Binders	Delineators	Shower & restroom dividers
Plastic trash bags	Flexible delineators	Building insulation products
Printer ribbons	Parks & Recreation	Structural fiberboard
Plastic envelopes	Playground surfaces	Carpet
Vehicular	Running tracks	Latex paints
Re-refined lube oil	Landscaping	Floor tiles
Reclaimed engine coolants	Patio blocks	Pallets
	Fencing	
	Garden & soaker hoses	
	Lawn & garden edging	



on a Best Practices Guide and new section in the SARDA web site that will help requirements and procurement personnel share the responsibility. The U.S. Army Environmental Center's (USAEC) affirmative procurement web site will tie in with SARDA's, completing the link from field agency to Secretariat level of the Army.

There are 36 products in the Environmental Protection Agency's (EPA) Comprehensive Procurement Guideline, as of November 1997. The EPA guideline's Recovered Materials Advisory Notices contain recommended minimum content standards for recovered material, as well as recommendations for specifications and purchase methods.

Once EPA designates a procurement item or product category, procuring agencies are required to comply within one year by purchasing the item with the highest recovered materials content level that is practicable.

"We hope people will see how easy it is to buy these products," Schroeder said. "For example, there is no reason why requirement generators can't specify refined motor oil. It's cheaper [compared to new oil] and it meets the mil specs and the warranty requirements of all major automobile manufacturers."

The DoD policy on procurement of EPA designated items, dated July 1995, states that 100 percent of such purchases will meet or exceed the guideline standards unless written justification is made.

The 36 products run the gamut from office and maintenance supplies to vehicle fluids and construction materials (see sidebar for complete list).

"Our plan is to enhance the market for these materials and, in the process, divert valuable resource from the waste stream," Schroeder said. "At some point, the affirmative procurement process will become transparent to the user."

Program Manager Doenee Moscato of USAEC heads the awareness effort. The marketing strategy has included speaking at a variety of conferences and training workshops.

"Through this, we reach a wide audience of buyers, vendors and manufacturers, and trainers," Moscato said.

The USAEC web site is structured to tie together all facets of the affirmative procurement program.

The largest piece of the project involved developing a web page with a downloadable electronic briefing. This section of the USAEC web site is structured to tie together all facets of the affirmative procurement program: ordering and purchasing information, vendor and manufacturer sources, the latest information on EPA designated items, and related web links.

"The web page demonstrates the shared responsibilities across the board," said Moscato. "One of the key ingredients to the awareness program's success is consolidating information through one site."

An affirmative procurement guide is in production, and plans are also under way to create an educational video spot to reach a wide audience through Soldiers Radio and TV.

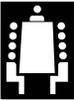
"Since DoD's regions closely match those of the EPA, the program can ben-

efit from a regional approach," Moscato said.

Affirmative procurement makes good economic sense. Purchasing products made from recovered materials conserves natural resources by maximizing recycling and preventing waste. This process also creates a healthier and safer workplace. At the same time, these products can spur private sector development and enhance the local and national economy.

For more information on the Army's Affirmative Procurement program, call the Army Environmental Hotline at 1-800-USA-3845, visit the web site: <http://aec-www.apgea.army.mil>, or e-mail: t2hotline@aec.apgea.army.mil **PWD**

Jack Shipley is a public Affairs specialist at the U.S. Army Environmental Center.



Imagining life after CA— an Engineer Virtual Team Approach

by Penelope Schmitt

Does the new round of A-76 Commercial Activities studies just mean “**Out-source Everything?**” According to a team of Engineers taking an imaginative look at the future, CA need not be a mindless, lockstep march to orders nor an endgame that leaves Army installations doing less with less. In presentations given at the ENFORCE conference held at Fort Leonard Wood in late April, COL Grant Smith of Savannah District, COL Robert Shirron, Director of the Public Works Business Center at Fort Bragg, and Steve Love of the CPW Military Programs Liaison Office aired a thoughtful approach that could lead to revolutionized effectiveness in Engineer service to the Army.

Fort Bragg Faces a New Horizon

Fort Bragg announces its forward-looking attitude with its organization name—COL Robert Shirron isn't the “DPW,” he's the director of the Public Works Business Center. Together with Savannah District, the PWBC has undertaken three business-oriented initiatives over the past year: the Corps has added an On-Site Project Manager to

the PWBC staff, established a Construction Design Review Cell, and let a Construction IDIQ contract.

On-Site Project Manager: Collocated with the PWBC staff, the District's Project Manager can more easily bridge the gap between the Installation and the District office. He also makes it easier for the Corps' Area Office and the post to stay closely linked. (See related article “Results for Garrison Commanders” on pp.1-4.)

Construction Design Review Cell: As an installation with a population of about 65,000 military and civilians on any given workday, Fort Bragg carries on the activities you'd expect in a small city. There's enough work here to keep a four-person cell of engineers from Savannah District more than busy. Their primary mission is construction design review. They augment the efforts of already overloaded installation project managers and design staff.

How successful is the cell? They went to work on the first of January this year, and estimates show that they will be worth about five times their cost in

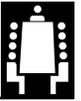
avoided expenditures this year.

Construction IDIQ: The Area Office staff has also proved its worth by administering a dramatically effective IDIQ contract (see related article, “Can I Do That IDIQ Thing?” on p.5). Task orders against the contract are awarded based on a project package that is prepared by the contractor from a detailed scope of work provided by the Public Works Business Center.

What's the track record? Of 21 task orders worth \$2.7 million already awarded, 11 have been completed—with zero design error modifications and zero late completions. On average, it takes just ten days to award a task order.

The next horizon: Fort Bragg and Savannah District have established an innovative and effective partnership. Collocation and better business instruments are making the two Engineer staffs a seamless team that's speeding up execution and saving money. The District's expertise has become a key part of the installation's staff assets. ➤





But here comes CA. What will happen to this creative working partnership when it slides under the CA microscope? Will Corps costs for services compare favorably with costs for like services offered by a competing contractor? Will the Corps be hamstrung by inherently governmental contractual requirements that won't affect a competing contractor? Those are the issues that concern COL Shirron as he looks toward the next incarnation of his PWBC.

A District Looks at CA

COL Grant Smith, Commander of Savannah District, wants to know—*can my folks help Fort Bragg make a success of CA?* The question acknowledges what LTG Ballard, the Chief of Engineers, often emphasizes—the Engineers are all in this together.

The CA question is an emotional issue for installations, Smith says. He points out that the Corps willingness to participate is perceived as a threat to installation jobs. That's why Districts don't get involved in the CA arena unless they're asked to be part of the solution.

Moreover, each installation is unique. To create a most efficient organization (MEO) the post may rely on in-house staff, contract services, Corps District personnel, or combinations of the three. The strategies the installation has used in the past will almost certainly shape its decisions about the MEO. So will the installation's size and mission.

There is no settled Army policy that governs District/DPW relationships in the CA process. As COL Smith sees it, now is an ideal time to explore new ideas—while the forum is still open. "It's important to see what already works," he said, referring to the highly successful partnership between Savannah and Fort Bragg.

"What Savannah is doing now could well be posturing our supported installations for CA success," he said. "Right now, we already have a Senior Project Manager assigned for each installation. We have on-site area or resident offices at all our major installations, and we have collocated them with the DPWs wherever possible. We have a collocated military officer at Fort Bragg to

Commercial Activities—the basics

Commercial Activities and A-76 studies are surging. Since 1983, when the Office of Management and Budget published its revised OMB Circular A-76, installations have been using A-76 rules to examine the merits of going to commercial providers. Over the next five years, the Army expects to study double the number of positions it has examined since 1979.

As the circular states, "Whenever commercial sector performance of a Government operated commercial activity is permissible . . . comparison of the cost of contracting and the cost of in-house performance shall be performed to determine who will do the work."

The bottom line? Pressure to be more cost effective in executing requirements is growing steadily. The definition of what is "permissible" under A-76 is becoming broader. We are all being asked to re-examine the CA question.

DoD has required all the services to develop most efficient organizations (MEOs) and to implement CA studies. The program objective memorandum for the years 2001-2003 shows a budget reduction equivalent to the savings expected from CA conversions or movement to MEOs. The Army alone is scheduled to study 48,000 civilian positions and 8,412 military positions to see if commercial activities could better perform those jobs. Compared to 25,000 positions studied since 1979,

that's a huge new wave of studies.

In the past, 240 government MEOs have won in a total of 468 competitions. But the rules are changing. "Government in nature" positions, those activities so intimately related to the exercise of the public interest as to mandate performance by Federal Employees, are being more narrowly defined. This opens more positions for study, and shrinks the number of jobs defined as "requiring exercise of discretion in applying government authority or the use of value judgments in making decisions for the Government."

Who are the major players in this process?

ASA (IL&E)— The Army's CA/A-76 Program Manager

ACSIM—Executes the program. Holds \$66 million to fund CA studies between FY 1997 and FY 2003.

USACEAC—(the Army Cost and Economic Analysis Center) performs the CA studies under a memorandum of agreement with the ACSIM, using contracts to accomplish the work.

MACOMs— Give guidance to installations and validates the positions studied

Installations/DPWs— Determine which positions to study. Manage study execution; build competition and acquisition structures.

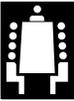
USACE— Districts provide contractual services and may partner with installations. Directorate of Military Programs and CPW support studies. **PWD**

meet that installation's unique needs. We have a four-person technical cell supporting design and construction work at Fort Bragg. The IDIQ construction contract that is so successful at Fort Bragg will be coming soon to our other installations. Finally, we have put onsite installation support managers at four installations.

Such a 'one team' approach, involving the entire engineer community, offers many advantages. But guidance

from the Department of the Army and Corps Headquarters will be needed before installations can confidently enter into District/DPW constituted MEOs.

COL Smith said, "As a District Engineer, I see that we could make an excellent team working together for efficiencies. Currently, the Fort Bragg PWBC has the expertise to carry out installation maintenance and repair. To that, we can add engineering and con-



struction expertise to create one team that will serve the installations needs." At Fort McPherson, the picture differs. "That's a smaller installation just beginning to address the issue," Smith said. "It's a different scenario."

Smith admitted that many questions remain unanswered. "We have unknowns, and we face challenges. How do we count? What are the rules? How do we deal with different financial management systems? How do we integrate our two cultures?"

Some of those questions have already been successfully addressed in Europe, where the District and installation cultures are rapidly becoming one, and at Fort Sill, where a CEFMS (Corps of Engineers Financial Management System) terminal linked to the Corps through Tulsa District sits on the DPW resource manager's desk. Other questions—especially "What are the rules?" have yet to be answered.

Corps & CA— the Big "What if?" Drill

There's no avoiding it. CA and A-76 studies are active in every Major Command. Your DPW will certainly change its processes over the coming five years. Where does the Corps fit in this picture?

In a detailed briefing, Steve Love of the CPW Military Programs Liaison Office explored the potential benefits and challenges of Corps partnerships with installations in the Commercial Activities/A-76 process. Seen as an "Engineer Family Target of Opportunity," the District/DPW partnership could turn into a fully integrated organization capable of supporting a full range of installation support needs.

Such a collaboration could enhance both organizations . . . **IF . . .**

- There's no loss of the installations' control over their Public Works Programs.
- Installation customers are satisfied with the price, quality and timeliness of Corps partners' work.
- Both DPWs and the Corps increase their efficiencies.
- Together, we see a quantifiable savings of 20 percent or better (an A-76 requirement).

Currently, a Process Action Team is being formed to scrutinize the Corps' potential for cooperative CA support to the Army. This isn't designed as a long-term study. Results should be out in May/June this year—just weeks from now. The team represents all players—DPWs, Districts, Major Commands, the ACSIM, the Installation Support Reinvention Center, Corps Directorate of Military Programs and the USACE PARC.

The team's charter is to report out on the impact of CA on DPWs, MACOMs, and the Corps. They will be looking at the installations' needs and requirements under CA, and developing a strategy for implementing potential Corps support in partnership with DPWs.

The focus is not all on one type of organization. The team will evaluate the merits of several structures:

- Expanded ISSAs (Installation Service Support Agreements)
- Joint DPW/District MEOs
- Function Transfer of DPW responsibilities to USACE activity
- Public Works Service Center

These are initiatives that have been at work for up to a year or more at some installations. Now is a critical time to assess the effectiveness of these process models. The team will also consider impacts of potential internal CA/A-76 of Corps functions and the redefinition of government-in-nature functions to be published in May.

What questions will the team be looking to answer?

They need to learn what effect Commercial Activities studies and shifts will have on existing business-as-usual operations. A big part of their job will be to think through the unintended consequences of going to contract as well as the expected benefits. The team will also have to assess whether current efficiencies can be sustained or even enhanced under the CA process.

- What will happen to existing DPW-held contracts in a contracting out situation?
- Are Districts allowed to compete to provide services?
- Can Districts effectively compete to provide services?
- Can Districts or the Corps provide local, regional, or national services to offer volume-based resource savings?
- Can Districts expand the support they give to installations now? Should they?
- What are potential impacts on the Corps' workload—and ability to sustain existing services?
- What impact would CA have on current cooperative agreements and partnerships?
- Can we create joint DPW/District MEOs?
- What effect will CA have on positions that Districts have assigned for installation support?

With 48,000 civilian and 8,412 military spaces on the line to be studied, this is an enormously important issue. The anticipated 20 percent savings from implementation of CA or MEOs have already been cut from future budgets. Functions that were once exempt because they were defined as "government in nature" are newly returning to the block. The definitions will become more narrow, and positions will be restudied.

This massive effort deserves more than a salute and an order to march. The evaluation under way by the process action team could result in better service to the Army, more effective MEOs, and a more competitive position for both DPW staffs and the Corps Districts that support them. Stay tuned! **PWVD**

Are you on the *Digest* distribution list?

If not, give Linda Holbert a call at (703) 428-7931 DSN 328.





CPW conducts Public Works Customer Focus training

At the request of the Fort Campbell DPW, Public Works Customer Focus training was provided to 190 of their employees from 9-13 March 1998. A follow-on session for the remaining 190 employees is scheduled for 5-8 May.

Four specific training lessons were presented to all three levels of the organization—executives, managers and front-line employees in both shops and offices.

- **One** two-hour session to 10 division chiefs/quality council
- **One** four-hour session to 20 front-line supervisors and managers
- **Six** four-hour sessions to 170 front-line employees

- **Two** 4-hour sessions to 40 telephone contact personnel (they also attended the above session)

The executive training focused on developing a customer first service strategy and explaining the training that the rest of the workforce was going to receive. A DA-produced video tape "Army Civilian Talk Leadership," was also presented and a leadership audit was administered.

The manager/supervisor training centered on how to manage customer focused systems and sharing numerous good ideas on facilities related customer services.

The front-line training was based on an employee climate survey, lectures,

video tapes, public works related scenarios, and in the case of the telephone training, pre- and post-tests/exercises.

An in-house facilities instructor conducted the training on a reimbursable basis, which was more cost effective and public works related than other sources. Based on participant feedback, the Public Works Customer Focus training was well received.

☛ If you have any questions about this training, please contact Johann Grieco, CECPW-FT, (703) 428-7589 DSN 325, e-mail: johann.a.grieco@cpw01.usace.army, or Debra Lawson, Fort Campbell, (502) 798-9704. **PWD**

CPW's 4th Quarter training schedule

Please submit your organization's training requests to CPW 30 days prior to the start of the class. All courses are entered in the Army's Training Requirements and Resources System (ATRRS), and registration for these resident classes can only be through ATRRS. For more information on tuition and registration, please contact our registrar at (703) 428-7593 DSN 328, or e-mail: macus.s.seisay@cpw01.usace.army.mil

☛ For additional information on the course descriptions, please visit our home page at: www.usacpw.belvoir.army.mil/pubs/graybook/graybook.htm or call Johann Grieco at (703) 428-7589.

	DATE	COURSE	ATRRS NO.	LOCATION
June	08-12 Jun 98	Engr Performance Standards	503-002	Alexandria, VA
	15-18 Jun 98	DPW Work Estimating (Pilot)* (Formerly IFS-M Work Estimating)	510-002	Alexandria, VA
	15-18 Jun 98	Job Order Contracting Basic	450-706	On-Site Available
	22-26 Jun 98	DPW Functional	340-003	Springfield, VA
July	06-09 Jul 98	Job Order Contracting Basic	450-004	Springfield, VA
	13-15 Jul 98	Job Order Contracting Adv	451-003	Springfield, VA
	13-17 Jul 98	Advanced SQL For IFS*	501-002	Alexandria, VA
	13-24 Jul 98	Public Works Mgt Orientation	310-003	Springfield, VA
	27-31 Jul 98	DPW Supply (Informix) SQL(Pilot)*	Tbd	Alexandria, VA
August	04-06 Aug 98	Job Order Contracting Adv	451-703	On-Site Available
	10-13 Aug 98	Job Order Contracting Basic	450-707	On-Site Available
	25-27 Aug 98	DPW Planner/Scheduler (Pilot)*	Tbd	Alexandria, VA

* Courses will be conducted using IFS SCP 11. Pilot courses will be offered AT NO TUITION COST! **PWD**



Should U.S. dollars for contracts dictate the business ethics and practices of a host nation?

by Mike Organek

East Asia is the world's most dynamic economic region, one that is gaining increasing global importance at the turn of the century. It shows an urgent, and emerging, need for and growing interest in business ethics.

International business brings together people and countries with different cultures, values, and ethical standards. The international business person must not only understand the values, culture, and ethical standards of his or her own country, but he/she must also be sensitive to those of other countries.

Culture is defined as everything in our surroundings made by people, including language, law religion, politics, technology, education, social organization, and general values and ethical standards. Each nation has a different culture, and hence different beliefs about what business activities are unacceptable or unethical. Cultural differences that create ethical issues in international business include differences in language, body language, time perception, and religion.

Webster's Dictionary defines "ethics" as (1) the rules or standards governing the conduct of the members of a profession and (2) in accordance with the accepted principles of right and wrong that govern the conduct of a profession. Within government service, civilian and military, are **laws and regulations** that guide our conduct into ethical channels. The most important of these is the "**Joint Ethics Regulation,**" **Department of Defense (DoD) 5500.7-R.** You must read, or attend class on this regulation **annually** and **sign a statement** attesting to that.

There is **no** room for poor ethical standards or "the appearance of" poor ethical standards. The only way to perform your work is to **maintain sound ethical practices and integrity.**

Our vocational roles contain cus-

tomary, legal, and moral elements. A role is more or less a determinate, depending upon the kind of rules that govern behavior. The legal elements are explicit formal rules and regulations that serve as the unofficial job description or the job responsibilities that one must follow if one is to keep his job. To put it another way, **failure to live up to the legal rules is legitimate grounds for dismissal.**

Department of Defense employees, regardless of nationality, are expected to adhere to the same ethical standards. The average (DoD) employee, regardless of nationality, should have a pretty good common-sense understanding of what an ethical act or decision is: **It is something judged as proper or acceptable, based on some standard of right and wrong, and shared by most members of the DoD workforce.**

At times, it may be difficult to judge what is right or wrong in a specific situation. At a minimum, of course, an activity should be legal; most authorities on ethics agree that the law generally defines the minimum level of conduct that is acceptable in a given situation.

In many cultures, giving bribes, or **facilitating payments**, is an acceptable business practice. In Mexico, a bribe is called *la mordida*. South Africans call it *dash*. In the Middle East, India, and Pakistan, *baksheesh*, a tip or gratuity given by a superior, is widely used. The Germans call it *schimengeld*, grease money; and, the Italians call it *bustarella*, a little envelope. In Korea, a bribe is called *noi-mool*.

We must first consider where the funds come from when a contractor makes a bribe. How will the funds be reconciled on the contractor's own internal accounts? How will the contractor pay for the bribe without reporting the bribe on his taxes? It seems that a contractor when making a bribe breaks

additional laws, by trying to conceal the initial act of making the bribe. This action may have after effects. If the contractor's actions are found out, he will be held liable, and the recipient of the bribe may lose his job and have criminal charges brought against him.

Consider next the government official involved in the contracting action. He is spending U.S. dollars. If he is not buying the best equipment at the best price he can get, then he is misusing U.S. funds, and hence harming the U.S. government. If the items he contracted for were the ones he would have probably purchased anyway, then what was the point of the bribe? But even if he would have issued the contract with that firm without the bribe, again, the money he received has to come from somewhere. Either it was added to the price of the contract and thereby required additional U.S. dollars, or it came from the contractor's profits.

The bribe also has an effect on the general system of bidding, on the practice of competition, and on the integrity of those engaged in these practices. Once bribery is an accepted way of doing business, then the government will no longer get the best for its money. Does the good done to the person who receives the bribe and to the person who gives it outweigh the harm possibly done to them if they are caught and the harm certainly done to those who have to pay more or receive less in the way of profit and to the system as a whole?

In 1977, the U.S. **Foreign Corrupt Practices Act (FCPA)** was passed, prohibiting American corporations from offering or providing payments to officials of foreign governments for the purpose of obtaining or retaining business abroad. Violators of the FCPA may face corporate fines of as much as \$1 million, while the company executives





SPS heralds beginning of paperless contracting

by Jim Caldwell

Training and Doctrine Command will become the first large command in the Department of Defense to transition to a paperless contracting system.

That transition begins this summer when all directorates of contracting (DOCs) within the command convert to the Standard Procurement System (SPS). Installation of SPS is scheduled to be completed by July 31 and paperless contracting will begin by Dec. 31, 1998.

"SPS is considered the centerpiece for the Department of Defense initiative called paperless contracting," said LTC Cleo Mackey, chief, requirements and acquisition management division in TRADOC's acquisition directorate.

All of the Army will be converted to paperless contracting by September 30, 1999. The change in the rest of DoD is scheduled to be done by 2000. Every step of the contracting process, from requirement development to award of a contract and close-out actions, will be done electronically.

"If you take it all the way from the conception of the idea to the payment of the contractor ... not only

ers. State and local business development centers, Chambers of Commerce, public libraries, community colleges and even many high schools offer online access to businesses.

Additionally, installation DOCs will continue to have information available on current solicitations in their offices.

Selected individuals from TRADOC installations will receive training on SPS beginning this month at Fort Monroe. Teams will visit each TRADOC installation directorate of contracting to install the software and train the rest of the staffs.

The target date for completing the changeover to SPS is July 31.

Installation DOCs will have to educate the customers they serve, plus the local business communities about the new way of doing business.

"It's really important for our customers and our leaders to understand it is their responsibility to develop their requirements and provide it to the DOC electronically," Mackey said.

Software that enables customers to write their requirements in the proper format is part of base operations information management systems currently being fielded throughout the Army.

Three service centers will help TRADOC DOCs who have technical problems after changeover. They will be at Fort Gordon, Georgia, Fort Eustis, Virginia, and Fort Sill, Oklahoma.

"Their only mission is to provide technical help, and will not become involved in contract operations at any installation," Mackey said.

"This is just the first step toward performing government-wide functions electronically," Clagett said. "Contracting was probably the best place for the Department of Defense to start if they wanted make a significant difference and save tremendous amounts of money." **PWD**

Jim Caldwell is a public affairs specialist at Fort Monroe, VA.

"The need for a highly trained and experienced force of contracting professionals won't change."

—LTC Cleo Mackey

TRADOC, but the Army will be saving millions of dollars," said COL David Clagett Jr., TRADOC principle assistant responsible for contracting.

"This is just the first step toward performing government-wide functions electronically. Contracting was probably the best place for the Department of Defense to start if they wanted to make a significant difference and save tremendous amounts of money," he said.

Savings will be gained by streamlining the contracting process and eliminating untold pounds of paper, not employees, Mackey said.

"The need for a highly trained and experienced force of contracting professionals won't change," he said.

Web sites, or contract information repositories, will exist at major command level, at military department level and at DoD. Contractors can access the repositories for information on business opportunities and to compete with other companies to provide needed supplies and services. Each of the web sites will list each solicitation with a brief description of services or work to be provided. E-mail addresses of the offices responsible for the solicitations will be listed for interested contractors to get more detailed information.

The web sites will also include directions to tell contractors how to prepare and submit bids electronically.

"The system should enhance opportunities for businesses of all sizes around the country in seeking Army, not just TRADOC, contracts," Mackey said.

He pointed out that businesses can be competitive without buying comput-

(continued from previous page)

face a maximum of five years in prison or \$10,000 in fines, or both.

Those of us involved in DoD contracting must always consider how others perceive our actions. Though an act such as having a personal acquaintance with a contractor or socializing with a contractor may not be technically illegal, it **creates a perception of impropriety and should be avoided. If you have any questions or doubts concerning an act, please contact your ethics counselor, who is located in the Staff Judge Advocate's Office.** **PWD**

Mike Organek is a procurement analyst in CPW's Engineering Directorate.



Accurate workload critical for RPMA service contracts

Workload— everyone talks about how much work they have to do. What do you say when the boss says, “Tell me what you’re working on and how much time you’ve spent on it.” The U.S. Army Audit Agency (AAA) could be asking you the same question regarding your service contract(s).

One of the main reasons contract costs increase is inadequate workload data. This happens much too often, better than 50 percent of the time, based on an AAA Report, No. 90-096. Nine out of 14 Army contracts resulted in inadequate performance work statements (PWS) based on inadequate workload data.

Even old workload data can be costly, as found at one installation with a \$20 million increase during the first year. The sad thing is the workload data was only four years old at the time the contractor started work.

DA Pam 420-6, paragraph 3-3, Workload Data, states, “DPWs must have a mechanism for collecting and manipulating the data.” They should be using IFS-M, an in-house program, commercial off-the-shelf software, or a manual system made up of record logs.

Regardless, of the method(s) used, the government must be able to provide the contractor an estimate of the workload to be performed and the items and services that the government will fur-

nish. To make a workload estimate, a determination of the historical workload (common practice is to collect the last three years) by the major performance categories must be made. In addition, the government must clearly identify the amount and types of items and services that it will provide to the contractor.

The historical workload data gathered (past three years averaged) may be used in cost estimating and analysis, and should be used as a baseline to estimate the future work requirements to be covered in the contract. This is especially important so that the offerors as well as the incumbent can gain sufficient familiarity with the work in order to com-

Business Practices Committee meets



The Contracts Subcommittee, ACSIM Business Practices Committee, met 2-6 March 1998 at Fort Monroe, Virginia.

One of the primary goals of the subcommittee is to provide installations an informal pipeline for conveying acquisition issues to policy makers for resolution. The subcommittee briefed COL Dunn (TRADOC Engineer) and COL Claggett (TRADOC PARC) on the challenges, achievements, and current issues faced by the committee. COL Dunn emphasized that the MACOMs need to be a part of the process in forwarding recommendations from the subcommittee and was assured that the MACOMs will be included. The com-

mittee hopes that MACOMs will be able to provide resources to work issues that are critical to the installations.

LTC Mackey, of TRADOC PARC Office, briefed the subcommittee on Paperless Contracting, and discussed several mandates, including Deputy Secretary of Defense John Hamre’s Management Reform Memorandum #2, dated 21 May 1997, for “moving to a paper-free Contracting Process by January 1, 2000.” He also discussed a Vision and provided TRADOC’s implementation schedule for the Standard Procurement System (SPS) (*see story on p.15*). SPS is a key part of the paper-free contracting implementation “campaign” plan. It was noted that there is

no electronic interface between SPS and IFS-M. The subcommittee recommended that the IFS-M Contract Management System Project Manager pursue further coordination with the SPS Program Manager at Fort Lee, Virginia, to complete the interface and eliminate the need for duplicate data entry.

The subcommittee also addressed the following issues:

- Implementation of Ordering Officer Authority for other than JOC contracts (see sidebar).
- Examining alternatives for Construction Contract Labor Management requirements for Davis Bacon Act.
- Evaluating requirement for realistic OMB Circular A-76, Governmental



(Accurate Workload, continued)

pete effectively. Also, the estimate of future work requirements and government-furnished items is critically important as the basis for the offerors to provide realistic cost estimates.

Don Emmerling, at USACPW, DPW Management Division, has developed the A-76 Commercial Activities Study Workload Data Guide, dated April 1998. The Guide contains over 50 queries, 40 from the IFS Database Query Guide (Oct 97), which provide many useful views of the historical DPW workload data. To request a copy of the Guide, please visit the CPW homepage at: <http://www.usacpw.belvoir.army.mil>. For more information about the A-76 Commercial Activities Study Workload Data Query Guide, please contact Don

Emmerling at (703) 428-6085 DSN 328, or e-mail: Don.C.Emmerling@cpw01.usace.army.mil.

If the workload data is not available, or is inaccurate, various techniques can be used to generate it. For example, begin collecting workload data at once for a sufficient period of time to use for projections or to provide your best estimate.

When acquiring workload data for future contracts, some installations are placing a performance requirement in

the PWS for the incumbent contractor to maintain accurate workload data. This information can be used to determine if the contract price needs to be adjusted and to help develop accurate workload data for future contract work estimates.

For more information about workload data, please contact Bob Hohenberg, CECPW-FM, (703) 428-6227 DSN 328, FAX: (703) 428-7590, or e-mail: bob.e.hohenberg@cpw01.usace.army.mil **PWD**

(Business Practices Committee, continued)

in Nature (GIN) Template.

- Reviewing residual staffing levels established for contracted out Public Works functions under A-76.
- Formulating recommendations for JOC Steering Committee regarding Design/build capability for Job Order Contracting, and FAR Part 36 Versus AFARS Part 17 guidance on government estimate for work under \$100,000 using JOC.

Additional issues the subcommittee is pursuing include:

- Developing a quick reference contracting information guide.
- Simplifying acquisition documents.
- Evaluating "contract off-loading."
- Evaluating "multiple award task order contracting."
- Resolving unbalanced funding flow.
- Completing "To Be" contract model/business processes.

At the next meeting, scheduled for 13-17 July 1998 in Alexandria, Virginia, the subcommittee plans to brief HQ AMC, and ASA(RDA).

For additional information, please contact Fred Reid, USACPW, at (703) 428-6358 DSN 328, e-mail: fred.a.reid@cpw01.usace.army.mil **PWD**

Contracts Subcommittee issue: Ordering Officer Authority

At a meeting in March 1998, the contracts subcommittee discussed the merits of pursuing ordering officer authority for any Indefinite Delivery Type Contracts, such as Indefinite Quantity Indefinite Delivery, Requirements, and Definite Quantity Indefinite Delivery.

Increased use of ordering officer authority can reduce the amount of duplication of efforts at the Public Works/Contracting activities and improve efficiency of the acquisition process. It can serve as a contracting workforce multiplier with little impact to the ordering office.

JOC AFARS Part 17 is specific as to how ordering officers may be used. This authority allows the ordering officer to do a wide array of functions to include issuing and modifying orders as well as limited contract administration functions. AFARS, Part 1.602-2-91, allows the use of ordering officers for any indefinite delivery contract, applicable to all contract types (i.e., construction, services, supplies). Examples of these include painting, paving, custodial, grounds maintenance, AE and others.

Currently, Public Works develops requirements, IGE, and acquisition authorization documents, and then hands them off to the contracting activity to prepare the delivery orders and/or modifications. This handoff process often duplicates efforts (information entry and time) and in-

creases the administrative burden for both activities. Issuing orders/modifications normally involves establishing appropriate units to be ordered (technical effort) based on existing pricing structure.

With increased use of the ordering officer authority, the contracting activities would continue to be responsible for the awarding, modification, and contract administration, of the basic contracts. Ordering officers would be responsible for the issuance, contract administration, and modification of orders under the basic contract based on technical requirements. Acquisition training would be required commensurate with the levels of authority. Diverting limited fully-trained acquisition staffing to other requirements may reduce the need for contract offloading.

Benefits can be gained in reducing the amount of duplication of effort required in the current processes. To evaluate the proposed increased use of ordering officer authority, input from Public Works and Contracting communities is critical. The Contracts Subcommittee decided to request input from the field on this proposal as well as on other processes that may be working well that also reduce duplication of effort.

POC is John Brobeck, (253) 967-4020 DSN 357, e-mail: jbrobeck@lewis-deh2.army.mil **PWD**



TRADOC launches MAR system

by Carolyn Lusby



For the past 10 years, TRADOC has successfully managed installation AFH and OMA maintenance and repair projects using an automated program written to run on the Fort Monroe mainframe.

TRADOC recently implemented the automated Maintenance and Repair (MAR) Project Management System. The new MAR system contains valuable project information such as: funding status, execution status, obligations, execution programs, backlogged projects, and much more. In addition, the system incorporates a project validation and scoring process that prioritizes all projects within TRADOC. Each installation accesses the mainframe via the PROFS network and updates its project information on-line, as needed.

With the proposed elimination of mainframes, TRADOC embarked on rewriting the existing system to run in a Windows environment. In addition, our goal was to implement a system that could easily be exported to other MACOMs interested in programming and managing MAR projects. This in-

cluded making the scoring process flexible enough for each MACOM to select scoring criteria based on their needs.

The new system, written in Visual Basic, runs on a 486 or better computer using either Windows '95 or NT as the operating system. Installations access the database, located on a file server at TRADOC, via the Internet.

Some of the outstanding benefits derived from the MAR system include:

- Establishes credibility by providing a real-time database of "valid" projects.
- Enables MACOMs to extract infor-

mation without having to query the field.

- Serves as a basis for developing funding algorithms.
- Gives weighted consideration to areas of command emphasis.
- Establishes command priorities.
- Captures project executability.
- Tracks execution of special funding.
- Assists in justifying requirements.

We're very proud of the MAR system and would like to share it with other MACOMs and installations. We invite anyone interested in project management to visit us at TRADOC to view how the MAR system can help manage your projects and obtain scarce dollars. For further information, please contact Ann Mitchell or Carolyn Lusby at DSN 680-2065/87. **PWD**

Carolyn Lusby is a TRADOC AFH program analyst at Fort Monroe, VA.

IFS-C/S change 11-01

A minor interim change package to the Integrated Facilities System (IFS) was released to the field in early April 1998. This package has three Engineer Change Proposals (ECPs), including:

- A change in support of the Facility Reduction Program (FRP).
- Army Reserve Support Commands add FAC_ID_NO (Facility Identification Number) to the RPI Extract (Real Property Inventory) for HQEIS.
- A change to the AMC Standard Depot System (SDS) interface.

The FRP change is the creation of a query to assist the Real Property personnel report and program disposal actions. The program executes a query and provides an output which can be imported into a spreadsheet like Excell. This query was requested by ACSIM and coordinated with several MACOMS to insure maximum usefulness. If you have any questions regarding this change, please contact Franklin Schwenk at (804) 734-2720 or e-mail: schwenkf@lee-dns2.army.mil **PWD**



IFS—where we stand now

The Integrated Facilities System (IFS) is an automated work management system which aids the Army Director of Public Works (DPW) in managing his/her workforce. Developed and supported by the United States Army Center for Public Works (CPW), IFS records all Army real property data and all work accomplished on the real property, to include labor, materials and equipment costs. The system's Project Manager Leo Oswalt may be reached at (703) 428-7120 DSN 328.

There are three forms of IFS in existence today: IFS-M running on Unisys 5000 and 6000 mini computers, IFS-M running on PC/Servers (IFS Solaris), and IFS Client Server (IFS C/S) running on Servers. The IFS C/S version has been developed in Microsoft Windows and is mouse driven. Although the screens and reports are all new, the functionality remains very similar to the original IFS-M, and users will have no difficulty adapting to the new system.

One hundred and five total sites use IFS today with the following distribution:

- 40 IFS-M sites run on Unisys 5000 mini computers
- 4 IFS-M sites run on Unisys 6000 mini computers
- 52 IFS-M Solaris sites run on PC/servers via local area networks (LANs)
- 9 IFS C/S sites run on servers via LANs

An additional 18 remote sites telecommunicate to IFS-M running at their major installations, and 43 sites use the Real Property Standalone module of IFS on PCs to support their real property management needs.

The remaining Unisys mini computers are spread across all MACOMs, with the exception of USAREUR, which has transitioned 20 of their sites to IFS Solaris and one to IFS C/S.

IFS supports modules that accomplish the following DPW functions: real property, customer service, job cost accounting, work estimating, contract administration, and supply.

IFS interfaces (passes data to/from) 21 systems directly, and an additional 15 indirectly. Financial interfaces such as

The Standard Financial System (STANFINS) are major "customers" of IFS and important drivers in determining its mode of operation. STANFINS will implement a major revision of the Army Management Structure codes starting in FY99, and IFS will be modified to accommodate these changes.

Modification of several baselines (software versions) of IFS is prohibitively expensive. Because of this, the IFS Configuration Control Board has directed that only IFS C/S will be modified to meet the FY99 AMS code changes, which support the Army's Service Based Costing. This decision will force DPWs to transition to IFS C/S by summer 1998, and CPW is offering three- and five-day courses at Fort Lee, Virginia, to assist installation users in learning how to accomplish the upgrade.

The three-day class is offered for those transitioning from IFS-M Solaris to IFS C/S, and the five-day course for those moving from original IFS-M on Unisys mini computers to IFS C/S. Those individuals interested in attending the training should contact Debbie

McEndree at (804) 734-0420 for class reservations. There is no charge for the training; the installation pays only for travel and per diem.

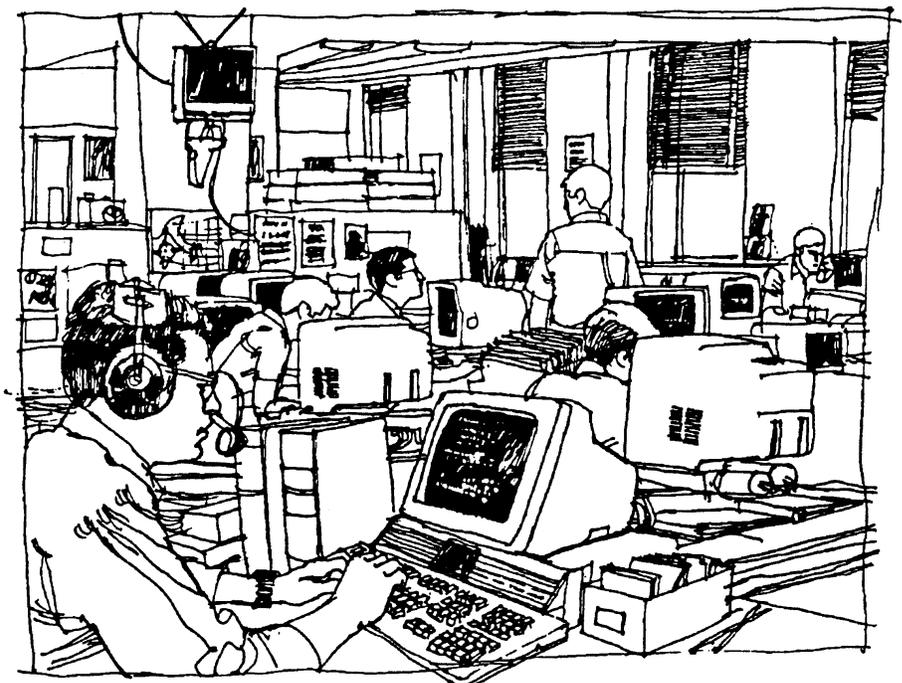
Oracle 7 and Army IFS software will be provided during the training. There is a one-time cost of \$5,280 associated with the Oracle database management system software, which must be loaded on the installation's IFS Server.

Arrangements for procurement of the Oracle database management system must be made in advance of attending the class.

Additional changes programmed for IFS include:

- Provision for IFS link to graphic databases (Summer 98)
- Fielding of new Contract Admin and Credit Card modules (Fall/Winter 98)
- Adoption of Commercial Off The Shelf (COTS) Estimating (Fall/Winter 98)
- Supply modules into IFS C/S
- Move IFS to Microsoft NT (Winter 98)
- Move IFS to World Wide Web (Spring 99)

For more information, please contact Ron Niemi at CPW, (703) 428-7938 DSN 328, e-mail: ron.b.niemi@usace.army.mil **PWD**





Attention! Recall on heating system vent pipes!

The Mechanical & Energy Division of the U.S. Army Center for Public Works (USACPW) wants to make sure all Army DPWs are aware of the safety recall issued by the U.S. Consumer Product Safety Commission on 24 February 1998.

In a landmark action, virtually the entire furnace and boiler industry together with the manufacturers of high-temperature plastic vent (HTPV) pipes joined with the U.S. Consumer Product Safety Commission (CPSC) in a recall program. The program promises to replace, free of charge, an estimated 250,000 HTPV pipe systems attached to gas or propane furnaces or boilers in consumers' homes. The HTPV pipes could crack or separate at the joints and leak carbon monoxide (CO), presenting a deadly threat to consumers.

CO is a colorless, odorless gas produced by incomplete burning of carbon-based fuel, including natural gas and propane. The initial symptoms of CO poisoning are similar to the flu, and may include dizziness, fatigue, headache, nausea and irregular breathing. High-level exposure to CO can cause death.

To determine whether your installation has any HTPV pipe systems that are subject to this program, check the vent pipes attached to their natural gas or propane furnaces or boilers. Vent pipes subject to this recall program are plastic, colored gray or black, and have the names "Plexvent," "Plexvent II" or "Ultravent" stamped on the vent pipe or printed on stickers placed on pieces used to connect the vent pipes together.

For furnaces, only HTPV systems that have vent pipes that go through the sidewalls of structures with horizontal systems are subject to this program. For boilers, all HTPV systems are sub-

ject to this program. Other plastic vent pipes, such as white PVC or CPVC, are not involved in this program.

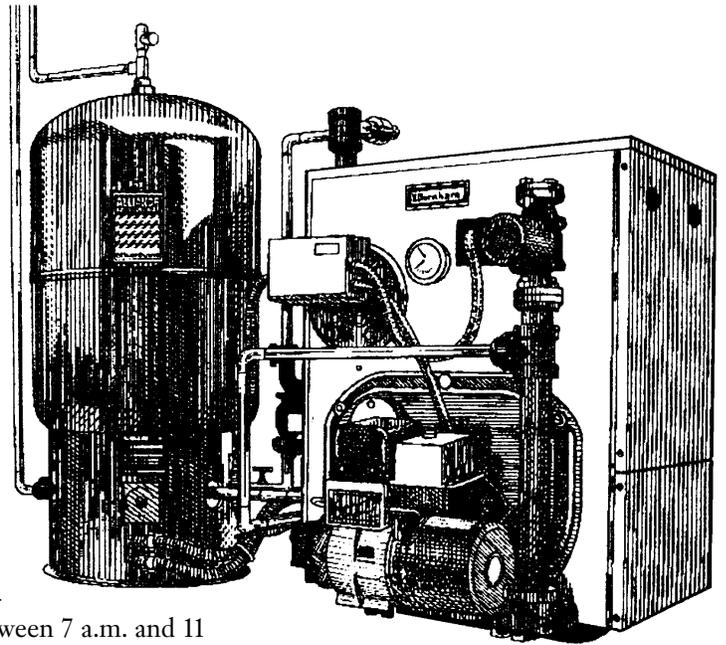
Please call the special toll-free number (800) 758-3688, available between 7 a.m. and 11 p.m. EST, seven days a week, to verify if your HTPV pipe systems are subject to this recall program. Installations with eligible systems will receive new, professionally installed venting systems free of charge.

Additionally, installations which have already replaced their HTPV pipe systems may be eligible for reimbursement for some or all of the replacement costs.

All DPWs should have fuel-burning appliances inspected each year to check for cracks or separations in the vents that could allow CO to leak inside dwellings. CPSC also recommends that every home should have at least one CO detector that meets the requirements of the most recent Underwriters Laboratories 2034 standard or International Approval Services 6-96 standard.

Here's a list of the manufacturers taking part in the recall program:

Armstrong Air Conditioning Inc.
Bard Manufacturing Co.
Burnham Corp.
Consolidated Industries
Crown Boiler Co.
The Ducane Co. Inc.
Dunkirk Radiator Corp.
Evcon Industries Inc.
Hart & Cooley Inc.
Heat Controller Inc.



International Comfort Products Corp. (USA)

Lennox Industries Inc.

Nordyne Inc.

Pennco Inc.

Plexco Inc.

Raypak Inc.

Rheem Manufacturing Co.

Slant/Fin Corp.

Thermo Products Inc.

The Trane Co.

Trianco-Heatmaker Inc.

Utica Boilers Inc.

Vaillant Corp.

Weil-McLain

Westcast Inc.

York International Corp. Peerless Heater Co.

The U.S. Consumer Product Safety Commission protects the public from unreasonable risks of injury or death from 15,000 types of consumer products under the agency's jurisdiction. To report a dangerous product or a product-related injury and for information on CPSC's fax-on-demand service, call CPSC's hotline at (800) 638-2772 or CPSC's teletypewriter at (800) 638-8270.

POC is John Lanzarone, CECPW-EM, at (703) 806-6067 DSN 656 or e-mail: john.r.lanzarone@cpw01.usace.army.mil **PWD**



Filters minimize cooling water problems

by Nelson Labbé

Warmer temperatures are here and many cooling systems will soon be or already have been put back into service. One of the best ways to reduce maintenance problems with cooling towers is to install a filter on the recirculating condenser/cooling tower water.

The filter is sized to filter only 1 to 5 percent of the recirculating cooling water. This minimizes the size and cost of the filter while providing enough filtering capacity to keep the system clean. Even a system sized to filter only 2 percent of the recirculating flow will have filtered over three times the system water capacity over the course of a day.

A short section of sidestream flow is

set up to provide flow to the filters, parallel to the main recirculating flow. The most common type of filter for this application is a sand filter which can be backwashed. The filter is essentially the same as many of the ones used for residential swimming pools.

Consider the many benefits of removing solids suspended in the cooling water:

- **Minimizes microbiological growth.** Suspended solids act as a source of food and housing for bacteria. Not only does this make microbiological control much harder, but high bacteria levels increase tube fouling and create unhealthy work environ-

ments. An example of dangerous bacteria that can grow in a poorly controlled cooling tower is the Legionella bacteria, which can cause Legionnaires Disease or the less severe Pontiac Fever.

- **Reduces chemical treatment costs.** Removing suspended contaminants allows chemical treatments to be significantly more effective at their primary jobs of scale and corrosion prevention and microbiological control. Chemical dosing can often be reduced.
- **Decreases corrosion rates.** High suspended solids provide an environment for greatly increased corrosion. Under deposit pitting is much more likely and can be very costly. Formation of tight corrosion inhibitor films are blocked by contaminant interference and lead to accelerated attack at breaks in the film. Microbiologically induced corrosion further contributes to decreased equipment life.
- **Reduces cleaning frequency.** Strainer plugging, tower sump and fill cleaning, and tube punching frequency all depend on the level of suspended solids in tower water. Film-fill towers are particularly susceptible to fouling.
- **Saves water and minimizes cooling tower blowdown.** Suspended solids fouling limits cycles of concentration in some towers. Maintaining clean heat exchangers with excessive blowdown is a costly waste of resources.
- **Saves energy with cleaner heat transfer surfaces.**

POC is Nelson Labbé, CECPW-ES, (703) 806-5202 DSN 656. **PWD**

Nelson Labbé works on water treatment issues in CPW's Sanitary and Chemical Division of the Engineering Directorate.

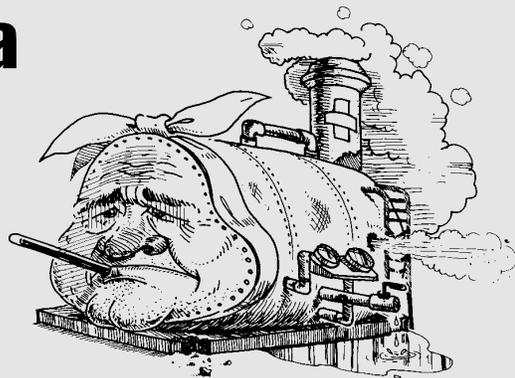
Too much of a good thing

by Cris Sawyer

Attention, boiler plant operators! Did you know that too much of a good thing **can** hurt your boiler system? This is very true when it refers to how often you remove water to minimize the amount of minerals or "blowdown" your boilers.

Yes, occasionally, unscheduled blowdowns may be necessary, such as when you need to bottom blowdown to control suspended solids and sludge in the boilers. However, too often blowdowns are done without allowing the water within the boilers to concentrate (cycle) up to an optimum cycle of concentration (COC).

For optimum efficiency, blowdown should be limited to allow the boiler water to cycle up to the optimum COC. This optimum level is usually achieved at a mineral concentration of 3000-3500ppm total dissolved solids for water tube boilers operating below 300 psi or 3500-



3500ppm for firetube boilers. Occasionally, this level of total dissolved solids cannot be reached because of high silica levels, high causticity levels or excess carryover.

There is an inverse relationship between blowdown and COC—the more blowdown, the less COC and the more COC, the less blowdown. Minimizing blowdown increases the total dissolved solids and the efficiency of the boiler, while decreasing the use of water, energy, and chemicals.

POC is Cris Sawyer, CECPW-ES, (703) 806-5202 DSN 656. **PWD**

Cris Sawyer is a chemical engineer in the Sanitary and Chemical Division of CPW's Engineering Directorate.

Public Works *Digest*

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