



E&S

UPDATE

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September, 1990

Southwest Asia:

HQ AFESC RESPONDS TO CRISIS IN THE PERSIAN GULF

by Perry Sullivan

The Air Force Engineering and Services Center is fully engaged with more than 60 people working fulltime to support Operation DESERT SHIELD. Support includes:

- Dispatching Center personnel on temporary duty;
- Coordinating requirements for deploying Engineering and Services (E&S) units;
- Reallocating both active and reserve forces to backfill critical jobs at airbases which have launched their forces for overseas;
- Designing and conducting special training classes for deploying teams at Det. 2, AFESC, Eglin AFB, Fla.; and
- Satisfying technical and logistical requirements being experienced in the theater.

Coordinating all activities is the Engineering and Services Readiness Center, now manned around the clock. According to Col. Don Blanchard, Director of Readiness, the Center is providing direct mission support to the Air Force contingency support staff and the Tactical Air Command battle staff for Air Force civil engineering and base services deployment. In addition, using the military personnel "man-day" programs, the Center is utilizing Air National Guard and Air Force Reserve personnel for bases which have deployed their support forces.

"We have worked to fill every critical vacancy," he said. "To date, we have been remarkably successful in finding people with proper skills

who are volunteering to take these assignments."

"One of our main initiatives being worked is the planning involving airbase support for weapon systems," he revealed. "Planning principles for airbase performance have been developed and systematically are being applied to possible long-term bed-down of forces. Lt. Col. John Mogge and Maj. Barbara Moock are leading this massive effort, supported by many of our directorates, and planners and consultants from other commands and headquarters staff.

"Another critical area of support being provided to the TAC staff is the development of a mobility deployment plan for the current and future forces needed in the theater," he said. "Lt. Col. Dick Woodworth is leading a team that has developed the sourcing philosophy for the E&S units and is working the backfill policy for CONUS commands."

"Of particular note," he said, "is the acquisition cell created by Col. Charles B. Harvin of the Engineering and Services Program Office. Working with all Center directorates, CMSgt. Billy R. Scruggs is identifying commercially available 'off-the-shelf' solutions to existing and anticipated Southwest Asia needs. Rapid contracting procedures are being put in place to deliver needed resources."

The Acquisition Cell is exploring and procuring innovative ways to solve problems, including a way to reshape straight metal structural

elements into arcs for use in constructing aircraft and equipment shelters. Recommended by the Structural Branch, Engineering and Services Laboratory, the process makes best use of existing transportation means to provide a larger volume of sheltered space quicker and more economically than other methods.

The Operations and Maintenance directorate has supplied numerous answers to issues involving potable water, waste water treatment, pavements and soils, and information on pest control methods and materials. The most direct needs are for electrical and air-conditioning system maintenance support, and for rapid construction of power distribution centers, all assigned to the Civil Engineering Maintenance, Inspection and Training (CEMIRT) organization.

The Fire Protection division has helped the readiness center identify qualified "back-fills" to help sustain fire, crash and rescue capability at CONUS bases that had been provided by personnel who left with deploying units. Additionally, they have helped HQ TAC find equipment and vehicle sources to sustain air operations.

Housing and Services was tasked directly to send a Services team to the area to develop the numerous base beddown strategies. In addition, the staff remaining at HQ AFESC has responded

See page 3.

Around-the-clock, 6 Weeks:

OPERATION DESERT SHIELD

by Perry Sullivan

Air Force Engineering and Services Center is approaching 6 weeks of around-the-clock multifunctional support of the USCENTAF and HQ TAC Battle Staffs.

At the request of HQ USAF/LEE, HQ AFESC started 24-hour-a-day augmentation of AFESC's Engineering and Services Readiness Center (ESRC), with specialists representing fire, services, CEMIRT, pavements, mortuary, and equipment.

Col. Marshall W. Nay Jr., AFESC commander, said, "We have been charged with coordinating and providing Air Force-level engineering and services sustainment for Operation DESERT SHIELD." He continued, "This tasking is our number one priority."

He said, "the command relationships are simple and straightforward. USAFCENTAF/DE 'FORWARD,' an element of USCINCCENT, places the requirements on TACOPS/DE, which is today a Langley AFB-based operation involving a combined HQ TAC/DED and USCENTAF/DE staff. Their leadership comes from Col. (Brig. Gen.-selectee) Michael A. McAuliffe and Col. Wayne McDermott."

Colonel Nay established a new multifunctional division in the Readiness directorate, with seven teams, each utilizing functional support from other organizations. "We must posture ourselves internally for the long haul," said Colonel Nay. Team chiefs are volunteers chosen because of their experience and track records. He said team chiefs should be given full support.

The Center's top priority, he said, means assisting TACOPS/DE ensure that "all operational units have the support they need through clear lines of authority, advanced planning, potential problem analysis, and problem resolution," said Colonel Nay.

AFESC is now sending regular representation to USCENTAF and TAC battle staff briefings.

Transition Performance Planning

"Sustainment over a distance of 6,500 miles is not easy, especially when one considers that many of the units are operating under harsh

desert conditions from bare bases," said Lt. Col. John W. Mogge Jr., who heads the new division.

"It's our job to provide as much depth and support for HQ TAC/DE as possible. Colonel McAuliffe's team is doing a superb job, and DESERT SHIELD gives us an opportunity to show HQ Air Force the teamwork that exists between the Center and the MAJCOMs. We are planning sustained operations if our forces must stay for an extended period." Using proven methods, the multifunctional transition performance plans now being prepared will be ready for execution if the need arises. The plans provide facility acquisition requirements and layouts, and characterize how the base will operate in support of its weapon systems.

Two of the seven teams formed deal with transition performance planning. One has 10 assigned, representing HQ AFESC and the Air Staff, augmented with temporary duty and contractor personnel. It is headed by Maj. Kenneth Schnell, HQ AFESC/DEO. It is developing transition plans for bare base deployments. The other, also 10-strong, deals with performance planning for main operating bases. It is headed by Lt. Col. David Brady, HQ AFESC/YE.

A 12-person logistics team responds to immediate, short-term, near-term, and long-term requirements in vehicles, equipment and supply. The task is to find resources and acquire logistics support within established need times. The team is functionally matrixed with TAC Logistics, the Air Force Logistics Command's air logistics centers, and supply points throughout the country. The team chief is Capt. Tom Quasney, and the NCOIC is SMSgt. Mike Doris, both HQ AFESC/DEO.

The mobility planning team is establishing team rotations among deployed units, in support of TACOPS/DE. Four force planning specialists are under Lt. Col. Richard Woodworth, HQ AFESC/DEO-2.

The 15-person acquisition team develops solution sets for all facilities, systems, equipment and supply requirements. Headed by Lt. Col. James Evans, HQ AFESC/YE, the team establishes a strategy that

considers cost, quality, and the required time. More than 46 project sheets have been developed.

An eight-member consulting team of readiness operations and training specialists is available to assist all other teams, and all other task agencies in conceptual bare base planning, system requirements, water resources, logistics, mobility, heavy repair, beddown, and recovery. Headed by Joseph Smith, HQ AFESC/DEO, the team recently completed development of a 2-day team training refresher curriculum for predeployment, and upgraded all Harvest Bare training courses in conjunction with HQ Air Training Command.

A three-person finance team works in conjunction with HQ USAF/LEEP to obtain, manage and distribute sustainment funding. Headed by Zane Spitzer, HQ AFESC/ACB, it is working the acquisition of the K-span structural system, and of raw materials needed for shipment to the theater.

Numerous significant functional problems have been anticipated, avoided, or resolved as a result of the strong teamwork developed between USCENTAF/DE, TAC Battle Staff/DE, and the ESRC.

Many valuable contributions in readiness, technical support, and manpower have been realized. As the operation unfolds, USCENTAF/DE planning will be shared to determine what resources, authority, manpower, and equipment should be available if forces remain in the area of responsibility (AOR) for an extended period.

Food Service

As the operation unfolded, some specific problems involving support to the "line of the Air Force" were resolved because of a well-planned system.

Initial deployments had to depend upon ready-to-eat meals. Before the first week was up, hot meal service began, using contractor services. According to the food service experts on the TAC battle staff, almost 90 percent of Air Force deployed personnel now have two hot meals available daily.

Tactical field laundries are in place

From page 1.

to numerous inquiries regarding subsistence, shelter, laundries and quality-of-life issues. Six reservists have assisted the DEH staff.

Familiarity with the region is an asset. Air Force civil engineers have long been associated with the Air Force Logistics Command's detachment in Saudi Arabia, building the air-base infrastructure as part of the Saudi acquisition of weapons systems through foreign military sales.

Planning Benefit

Colonel Blanchard noted that much airlift to Southwest Asia was saved by extensive preconflict planning and allocation of equipment that had been pre-positioned for use in an emergency, including fire and construction assets. This includes many supplies needed to sustain deploying Air Force units.

As a result, he said, the Engineering and Services tasks are easier because of the extensive preparation for a potential conflict in the region, and because of the high degree of readiness training which E&S personnel undergo, both at home station and at the team training sites.

"Prime RIBS, Prime BEEF, and RED HORSE — deployable teams covering food service, base emergency engineering, and heavy engineering — are invaluable in supporting DESERT SHIELD," said Colonel Blanchard.

From page 2.

and operational for nearly 60 percent of personnel.

In addition, TAC battle staff helped the Army to set up support for their forces.

Tactical Field Exchange OPLAN

Lt. Col. Patrick Eagan, HQ AFESC/DEHF, and Maj. Barbara Moock, HQ AFESC/DEOX, visited U.S. Central Command/Air Force, Tactical Air Command (USCENTAF-TAC) on Aug. 21-24 to develop a TFE OPlan-DESERT SHIELD for USCEN-TAF (executive agent for TFE operations in the AOR. Meetings were conducted with representatives from Marine and Army Central Commands (MARCENT and ARCENT), Army/Air Force Exchange Service, and Air Force Commissary Service.

This resulted in a coordinated OPlan to provide essential personal hygiene, health, and comfort items to

General Ahearn Comments On DESERT SHIELD

At press time...the President has directed that military forces of the United States join in a significant, U.N.-sanctioned response in behalf of a valued ally. Air Force civil engineers and base services personnel are deeply involved in the beddown, sustenance, and operational support of the forces deployed to the Saudi Arabian area, as are their counterparts from the Army, Navy and Marine Corps.

In our peacetime roles, we are developers, operators, maintainers and firefighters; food providers; billeting specialists and innkeepers; family housing landlords; morticians; and protectors of the environment. Today, we are warriors. In the Air Force, this has particular significance because many of our people contribute to the day-to-day success of their home station organizations, and deploy overseas as teams or individually.

Their success in this endeavor is a test of the training we have provided, both at home station, and at the readiness centers. It tests our foresight and planning; and measures the effectiveness of our preparation, building a basing network which is technically and physically capable of supporting the deploying forces. Also, when our forces are placed at risk in a foreign land, the entire research, development, test, evaluation, and acquisition (RDTE&A) process is on the line, because our forces must use what is on hand at the time of deployment. One of my predecessors, Maj. Gen. William D. Gilbert, USAF (Ret.), said this kind of action is "come as you are."

Our field forces, the line of the Air Force, deserve every opportunity for success. If history repeats itself, they will excel.

Maj. Gen. Joseph A. Ahearn
Director,
Engineering and Services
HQ U.S. Air Force

From The Military Engineer, August, 1990, issue.

deployed forces.

A decision paper was prepared, and a plan was presented to the TAC senior battle staff representatives.

Follow-on action by AFESC, MARCENT, ARCENT, AAFES, and USCENTAF is required to ensure that the plan is executed. Additionally, we are reviewing the feasibility of using Det 2 AFESC to train approximately 200 Army and Marine personnel in TFE operations.

Det. 2 PRIME BEEF Training

Maj. Rodney R. Staponski and the Detachment 2 team trained Prime BEEF teams tasked to deploy in support of DESERT SHIELD.

Eglin AFB and Hurlburt Field civil engineering squadrons were given specialized training on TEMPER tents; Harvest Falcon air-conditioning systems; refrigeration units; decontamination apparatus; the reverse osmosis water purification unit; the

field shower; the Harvest Falcon latrine; the mobile aircraft arresting system; generators; crushed stone RRR methods using AM-2 matting and folded fiberglass mats; and entomology.

The 823rd RHCS, Hurlburt Field, also received specialized training. The special training was provided in addition to teaching regularly scheduled classes in base recovery after attack, and hosting officer field education.

A Special Challenge

"Now is the time that many of us prepared for throughout our careers," said Colonel Nay. "Let's collectively meet the challenge we face as professionally as we can to ensure Air Force Engineering and Services delivers what is needed today and is postured correctly for the future."

When the Chips Are Down

E&S IS THERE

by Col. Marshall W. Nay Jr.

August was supposed to be the month of dog days, baseball pennant races, last-minute vacations, anticipation of school and the football season.

This was a summer to remember; a time when we made a major commitment to a valued ally; a time when we were called on to do that for which we were trained and prepared. We share the profession of arms; all of us — military and civilian; active and reserve. For the many in our profession not yet in Southwest Asia, we live in two worlds today, culturally tied to the seasonal changes that affect our society, while we concentrate on events nearly a third of a world away, where thousands of American and allied personnel are on temporary duty in a foreign land.

For the people who run Air Force Engineering and Services operations of U.S. Central Command and Tactical Air Command, entire wings had been deployed; and contingency plans were being tested in the real world.

As the momentum built up, the airlift level reached one aircraft each 10 minutes, sealift forces deployed, and the balance of forces began to shift more in our favor.

The people in our Engineering and Services Readiness Center have maintained around-the-clock operations, including participation by the Operations and Maintenance and Housing and Service directorates, the Engineering and Services Laboratory, and the Program Office.

As we responded to the situation, those of us in the business of readiness planning, training, logistics and infrastructure development looked over our shoulders to measure the merit of what we have done to advance the abilities of our field forces to defend themselves. Every critical decision we and our logistics partners have made — deployable firetrucks, construction equipment, sheltering, tools, survival gear — is now being tested.

For the people of Air Force Logistics Command's deputy chief of staff, Engineering and Services, and the construction agents who developed the infrastructure in Saudi Arabia, the measure is clearly how well these completed projects stand the test.

A New Context

After the President's commitment to stabilize the situation in the region, as remaining airbase people reported to work throughout the Continental U.S., there was a vacant desk in one building; a craft team had fewer people; or — at another base — there were fewer aircraft on the flightline. It gave new impetus to the need for airbase continuity planning, and reinforced another value of the Total Force doctrine.

For the Center's Readiness directorate, August was when civil engineering and services personnel — both from the active and reserve forces — began moving to backfill at the bases being vacated by deploying units; when units in movement were brought to full strength as required; when we realized the importance of all those hours spent in home station training and at the readiness center.

As the incredible momentum of force buildup continues, there is a discontinuity in the pattern of life in the free world. People outside the profession of arms look anxiously at the media accounts, looking for good news. So do we. August television news ratings were up; some nearly doubled; this continued into September.

This is a natural and expected reaction. Each member of the U.S. armed forces represents family ties to virtually every county in the nation, to families and friends. The "line of the Air Force" represents America. The people working with the Tactical Air Command battle staff at Langley AFB daily demonstrate excellence, attention to detail, and concern for quality of life in supporting the line of the Air Force in food service and beddown quality. I am proud that our team has been able to assist USCENTCOM and TAC in setting up our people for success.

Life goes on overseas. Let me assure you that the people there and still deploying remain interested in baseball pennant races and rock and roll; and they'll be watching what movies and television they can get. Those with school-age youngsters may have missed the last days of vacation and spouses had to take over getting the kids to school back home. Those living in temporary shelter in the deserts of Saudi Arabia still think of the lake or the ocean.

As you read this, we are working with CENTAF and TACOPS on plans, programs and options for long-term presence in Saudi Arabia.

Engineering and Services teams are challenged to use their ingenuity and perseverance to provide airbase services in one of the most formidable climates in the world. Throughout our community, we can be proud of the E&S people deployed. They are meeting the daily challenges with professionalism, dedication, and responsiveness. Their customers are those who fly and fight, and all others who share in mission generation.

When the chips are down, only the highest demonstrated capacity to conduct warfighting operations will suffice. E&S people throughout the world will support our deployed forces in every way possible.

UPDATE

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FEEDBACK ESSENTIAL TO QUALITY

by Maj. Gen. Joseph A. Ahearn
Director of Engineering & Services
HQ U.S. Air Force

As we in Engineering and Services strive to make improvement in the living and working conditions of Air Force members and push for excellence in the products and services we provide, we need to stay constantly in touch with the lessons of the past to help us focus on doing the job right the first time. History has shown that facility decisions we make today may stand well beyond 100 years.

Accurate, timely feedback therefore becomes an essential element of any equation for excellence. In today's fast changing, high technology environment, cross-feed of information on lessons learned; both problems and success stories, becomes critical. We must capitalize and exploit our experience in the programming, design and construction of facilities. The Engineering and Services Feedback System is a key element of putting our experience to work for us.

This automated feedback system can act as a type of force multiplier for quality, by allowing physically separated professionals to benefit from each other's experience. A problem with environmental controls in an avionics facility in Georgia and the solution can be

readily reference by a mechanical engineer in Missouri as he designs modifications to their avionics shop. A particular successful food service line layout at a new dining hall in Texas can be referenced by an architect in Florida. The feedback can give us the capacity to build on each other's successes.

The use of this system will allow us to better focus our resources on a successful pursuit of excellence. It's a user-friendly tool to better allow us to actively search for new solutions, increase productivity, and improve the quality of our work.

The Engineering and Services community is committed to excellence in delivery of products and services. The E&S Feedback System provides a key tool for the delivery of operable, maintainable facilities reflecting the understated excellence we seek as a measure of quality. I expect all our Engineering and Services professionals to be committed to using all the tools at their disposal, including the E&S Feedback System, in the delivery of quality products to our customers. Promise nothing less than excellence and then deliver.

Engineering and Services Feedback System:

ELECTRONIC SYSTEM COMMUNICATES LESSONS LEARNED, LINKING FIELD, MAJCOMs, AND AIR STAFF

by Refugio S. Fernandez
Engineering Branch

Installation Development Division (DSN 297-4083)

The new electronic Engineering & Services Feedback System (EFBS) will improve the delivery process by fostering better communications within the Engineering and Services community and providing an avenue for quick responses to complex, interdisciplinary problems. The system provides solutions, applicable technologies, and new approaches to addressing old problems (a better way to skin the cat).

The EFBS is not just another data automation system. This system will electronically cross-feed lessons learned by action officers from base level to this at MAJCOM, Construction Management Office, and Air Staff. The system can address comments on MILCON, MFH, Medical, P341, NAF, O&M, and Defense Environmental Restoration Account (DERA) programs. Action officers in the planning, programming, design, construction, operations, privatization, and environmental business will be able to use the system. The EFBS is accessed through the Non-Project Information Screen of ODC in the Work Information Management System (WIMS).

One of our goals expressed by the Director of Engineering and Services, Maj. Gen. Joseph A. Ahearn, is to build on the successes experienced in projects which

win. To facilitate this goal, we built the EFBS to institutionalize a method to identify not only repetitive problems, but success stories and innovative concepts to provide a better way to do business. By providing a means for cross-feeding lessons learned throughout the Air Force E&S community, we can all benefit from the lessons of both mistakes and victories in pursuit of quality facilities on time and within budget. The operation and theory behind this system is explained in a handbook which will be issued to the field shortly.

Letters to the Editor:

Update welcomes letters to the editor. We do request full names and organizational addresses with an AUTOVON or DSN telephone number, in case we have questions. If you do not wish to have your name printed, please indicate this in the letter.

Our goal is to print letters in the next issue after we receive the letter.

Make sure that your mail is addressed to:

Letters to the Editor, Update

HQ AFESC/RDXI, Tyndall AFB FL 32403-6001.

Zonal Maintenance:

OLD IDEA; NEW PROMISE

by Major Michael D. Cooley,
Base Civil Engineer,
Shemya AFB, Alaska

(Editor's Note: Major Cooley was previously assigned to HQ AFESC's Operations and Management Division.) "Today we are engaged in a major evaluation of a proposed reorganization which would revise AFR 23-33. The organizational alignment prescribed by this regulation has served us well since May, 1961. However, over the years, the maturing of the work force, the introduction of new techniques, and the change in operational demands have accumulated to a point requiring a major organizational revision."

These words are not intended to mark the introduction of ROOM or CORE as the new Air Force Civil Engineering organizational structure. They were written by John Ward, Jr. in the November, 1966, *Civil Engineer* to mark the test of a new centralized BCE organization structure. That structure, with a few minor revisions, remains the BCE standard of today.

By the mid-1960s, much of private industry had already endorsed some form of centralized management. According to the author, the test of this new structure was directed toward "centralizing and strengthening programming and facility inspection activities, greater emphasis on industrial engineering, work force consolidation, and improved career progression opportunities." It was another step in replacing an old system called geographic maintenance. Geographic

maintenance subdivided the base into geographical areas and gave teams responsibility to maintain them. In essence, it was an early form of decentralized maintenance.

Since 1966, many changes have taken place in the science of management theory. The value of individual initiative has been formally recognized, and decentralization has become a common Air Force theme. Civil engineering has not been stagnant throughout those years, but the centralized maintenance approach was never seriously assaulted until 1986 when SAC introduced the

Readiness and Ownership Oriented Management (ROOM) concept. In 1987 TAC followed suit with Combat Oriented Results Engineering (CORE).

A common foundation of both ROOM and CORE is a return to the geographic maintenance approach of years past. Teams are dedicated to maintain certain areas or facilities on the base. SAC completed command-wide implementation of ROOM in 1988, and TAC has committed to command implementation of CORE in 1990. Thus by the end of 1990, decentralized management will return to approximately 30 percent of Air Force Civil Engineering.

The ultimate impact of ROOM and CORE does not end at the boundaries of their parent MAJCOMs. The constant flow of visitors to the SAC and TAC lead bases is witness to the interest of outside bases and MAJCOMs in these concepts. Here at the Air Staff, policy adjustments are being made to accommodate their development and allow for the existence of two distinct maintenance approaches.

To assist new bases and MAJCOMs in evaluating the utility of a decentralized approach and implementing features that meet their particular mission requirements, the commander, HQ Air Force Engineering and Services Center, committed to take a hard look at ROOM and CORE, measure their impact on the BCE organization and product, and develop a generic execution guide that incorporates the positive aspects

of the programs and reduces or eliminates problem areas. The name "Zonal Maintenance" (ZM) was adopted for the generic AFESC product. ZM is not a new approach. It is simply a combination of the major elements of ROOM and CORE with recommended enhancements.

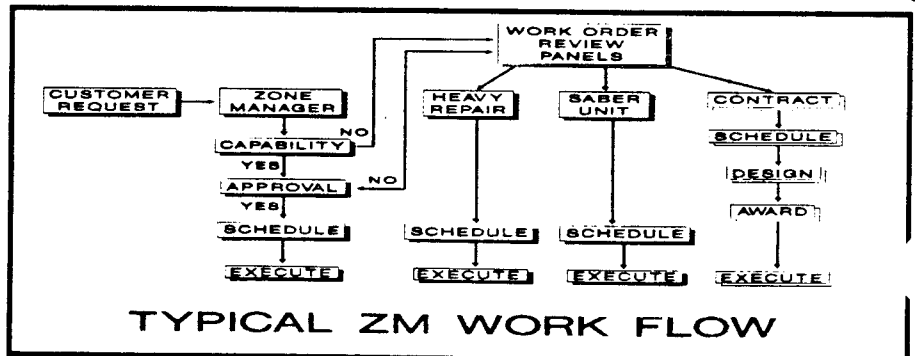
In February-March, a team of functional experts did an in-depth survey of two ROOM and two CORE bases to develop the ZM guide. Their findings follow.

Zonal Maintenance Approach

ZM reorganizes the Operations and Maintenance Branch into three major components: (1) the zones, (2) heavy repair, and (3) utilities. The base is divided into anywhere from one to six zones. Within each zone, civil engineering acts as a large SMART team by visiting each of the facilities every 30 to 90 days and accomplishing recurring work, minor maintenance and repair actions. Most craftsmen are assigned to the zones. The typical zone ranges from 25 to 35 craftsmen and has a mixture of skills including carpentry, interior electric, plumbing, sheet metal, heating, and refrigeration.

Heavy repair functions as a dedicated work order team. It is comprised of a vertical section and a horizontal section. Craft skills assigned to vertical contains structures, protective coatings, plumbing, interior electric, heating, refrigeration, metal, and locksmith. Horizontal has pavements, equipment, and grounds.

Utilities, responsible for O&M of base utilities, has branches including



water and waste, heat plant, exterior electric, power production, liquid fuels, pest management, cathodic protection, controls, and refuse collection. On large installations that treat their own water and sewage, it may be advantageous to break out water and waste into a separate sanitation branch working directly for the chief of operations.

The figure shows the work flow of a fully decentralized ZM organization. The zone manager meets with the facility manager during periodic visits and records minor maintenance and repair requests on an Air Force Form 1219 or job orders. Since the zone manager controls the people and resources within the zone, he/she can commit to the customer and execute. Work beyond zone capability or approval level is passed up the chain. If approval level is the problem, it may be approved or disapproved by the DEM or BCE and returned. If its scope is too large, it goes to a work order review panel which determines whether it will be accomplished by heavy repair, SABER, or the contract program and the priority of execution.

Results

Under the centralized concept, the customer goes to the customer service unit and submits a job order. In many cases, it must be passed on for approval/scheduling. Multidiscipline work requirements must be coordinated between shops, which can leave gaps in execution and customer inconveniences such as having a large hole in the wall for several days. Different customer service representatives may handle status and follow-up actions. Functionally, it is an efficient arrangement. The plumber goes from one plumbing job to another and does plumbing work. From the customer's perspective, it can be less than optimal.

Under ZM, the zone manager establishes a face-to-face rapport with the customer, can commit and execute the work, and will be returning to correct problems and address new requirements. Zone craftsmen are often multicrafted or work as multicraft teams, thereby greatly reducing the "look-and-leave" syndrome. Wing commanders like the defined

and dedicated work order capability provided by heavy repair. Results of random customer service surveys given to ten facility managers at each base show generally favorable responses.

Readiness is enhanced by ZM, but it is not a panacea. ZM brings from one to three junior officers into the DEM line structure, fosters multicrafting between craftsmen, and promotes the leadership experience and skills of officer, enlisted, and civilian supervisors. Unfortunately, the ideal of having the peacetime structure and manning mirroring the wartime structure and manning is complicated by peacetime manpower policy, production goals, union issues, etc.

The impact of ZM on BCE productivity is extremely difficult to measure due to the use of the Form 1219 in lieu of job orders, reduction in manpower and dollars, and interactive relationship of work orders, job orders, and the recurring work program. It appeared to be at least as productive as centralized maintenance. The ratio of material consumption per craftsman had increased at the ZM bases and was one indicator of higher production. Other operational enhancements such as multicrafting, accountability, and greater emphasis on the completed job requirements were also evident.

Junior officers enjoy the challenges and professional broadening afforded by ZM. Civilian and enlisted response is about evenly split between positive and negative. A survey of the officer, enlisted, and civilian feedback on ZM reflected early inequities in establishing new supervisory positions under ZM, which favored civilians at the cost of mid/senior-level enlisted and was the strongest concern voiced by enlisted members.

Training is a serious problem at all bases but is exacerbated by ZM. Since most of the O&M work force is in the zones, and they are limited to the RWP and minor maintenance and repair, training opportunities are limited. This is further aggravated by the fact that there are few qualified trainers in the zones. Bases have tried rotating personnel and designating senior trainers as two

solutions with little success. A recommended long-term fix is to extend the zone charter to include some work orders. In addition to improving training, it also helps prevent grade reductions because zone personnel are installing systems in addition to maintaining them—a key distinction in the civilian personnel classification system.

Implementing ZM can cost as little as \$100,000 for bases that stay in existing central facilities to over \$1 million at a large base that reequips and builds new dispersed zone facilities. It is an excellent opportunity to focus wing attention and resources on the BCE work force. Vehicles and major shop equipment items were generally adequate to meet the new system, assuming they were adequate before the change and that redistribution was done equitably.

Beyond the resource requirement, implementation requires a considerable investment in time and effort at all levels of the organization. It represents a substantial change to the "culture" of an organization. That change does not come about without strong leadership and commitment by the whole team.

One final note — without the means of production, there is little value in decentralization. Effective ZM requires extending approval authority and resources to the zone managers, heavy repair chief, and utility chief. Without them, each is constantly slowed and ultimately demoralized by the manager that thrives on control.

In summary, another quote from Mr. Ward's article is as true today as it was in 1966: "There is no question but that the future holds great challenge for Air Force Civil Engineers. We must organize and reorganize our forces as the challenges arise, and we must direct our organization to meet and overcome each and every challenge as we have in the past." Perhaps it's time to take a hard look at the way your organization does business and consider an old idea with new promise. *The AFESC Zonal Maintenance Guide should be in the field this month.*

SUMMER FACULTY PROGRAM:

AFOSR Program Succeeds at AFESC

by Mary Elaine Reynolds

The Air Force Engineering and Services Center is just concluding its most successful summer, using four special programs to employ faculty, graduate students, and scientifically gifted high school students.

The four programs involved are in addition to the stay-in-school program.

Three of the programs are funded by Air Force Office of Scientific Research (AFOSR), Bolling AFB, D.C., through Universal Energy Systems, a contractor in Dayton, Ohio, with research conducted at the Engineering and Services Laboratory (ESL):

- Summer Faculty Research Program — Annually, approximately 150 college and university faculty members conduct a 10-week summer research program at 23 Air Force Laboratories, including the 13 laboratories funded through the Air Force Systems Command. Some of these scientists come to Tyndall AFB, where they specialize in structural mechanics, pavements, environmental chemistry, or computers.

- Graduate Student Research Program — Five summer faculty members each designated a graduate assistant to help them carry out their research programs.

- High School Apprentice Program — Fifteen high school students, gifted in science and mathematics, worked 8 weeks in computers or in a laboratory environment.

- The Intergovernmental Personnel Act — Used to contract with colleges and universities for specific research professionals, it primarily involves summer researchers from prior years.

The Summer Faculty Research Program and Graduate Student Research Program lets applicants choose those laboratories at which they want most to work. ESL, chartered for advancing civil engineering and environmental quality science and technology, was first or second choice for more than 50 applicants.

This year's faculty and graduate research program participants included:

- Dr. William Bannister, Lowell



Dr. Paul Kromann, Ft. Valley State College, using gas chromatography for pattern recognition of jet fuels.

University, Lowell, Mass., studied several commercial high oxygen/carbon ratio esters and ethers in small pit fires for relative levels of smoke prediction in field conditions. Those with lowest levels will then be considered for fire pit training.

- Dr. Mark Brusseau and his graduate student, Mary Reid, University of Arizona, Tucson, Ariz., conducted research on the role of mass transfer limitations on organic contaminant transport in saturated groundwater systems. This research is important in design of effective remediation for groundwater contamination at hazardous waste sites.

- Dr. Wayne Charlie and his graduate student, Andrew Walsh, Colorado State University, Fort Collins, Colo., studied the influence of moisture content on explosively induced stress wave propagation in compacted sand. Stress wave velocity and peak stress increased from 0 to 20 percent saturation, following trends obtained from Split-Hopkinson pressure bar tests.

- Dr. Joseph Dreisbach and Joseph Bernardo, Scranton University, Scranton, Penn., studied characterization and biodegradation of paranitrophenol. Additional work characterizes a chemically induced mutant of one of the organisms being examined. This mutant appears to accumulate as an intermediate of the biodegradation pathway. Isolation and purification of the compounds will be a major factor in final determination of the pathway and accelerated biodegradation of this toxic substance.

- Dr. David Kirkner, University of Notre Dame, South Bend, Ind., developed a model of permanent

deformation of granular layers for flexible pavements. After reviewing results of the completed ESC accelerated traffic test, Dr. Kirkner proceeded to explain why granular layers rutted twice as much as the overlying asphalt layers under the F-15 C/D fighter aircraft.

- Dr. Paul Kromann, Fort Valley State College, Fort Valley, Georgia, participated in development of methods for identifying spilled fuel. He collected a database of chromatographic profiles of various DoD and civilian jet fuels which can be used to classify the fuels. This makes it possible to reduce sampling time and get results six times faster.

- Dr. Kyung Kwon, Tuskegee University, Tuskegee, Ala., studied a series of experiments on the regeneration of exhausted ion exchange resins for the purification of plating baths using ammonium hydroxide aqueous solutions as regeneration reagents. Two mathematical models were developed using experimental data. The first model is applicable to resin regeneration in a low-concentration solution, while the second model applies to regeneration of resin in high-concentration solutions. The data may be used to extend the useful life of plating baths before disposal becomes necessary.

- Dr. Michael McFarland, Utah State University, Logan, Utah, conducted abiotic control studies with trichloroethylene in two-stage bioreactors and continued to develop methanotrophic cultures for trichloroethylene degradation.

- Dr. George Veyera and his graduate student, Blaise Fitzpatrick, University of Rhode Island, Kingston,

R.I., studied the influence of compaction-induced microstructures on stress transmission in unsaturated soil. This research is important to the Air Force since compacted soil back-fill material and earthen berms are commonly used in protective construction. Research was conducted by using the Split-Hopkinson pressure bar to measure dynamic properties of different sands at different degrees of saturation. Analyzing the microstructural data obtained will aid in understanding differences in soil properties and behavior (e.g., stress transmission, wave speed, compressibility) with variations in moisture content during compaction.

The Intergovernmental Personnel Act: AFESC employs individual faculty members from colleges and universities for varying percentages of their available year up to fulltime.

- Dr. Michael McVay, University of Florida, Gainesville, Fla., studied the physics of concrete pavement damage under jet blast. He also developed an analytical model and supported it with laboratory tests.

- Dr. C.A. Ross, also University of Florida, conducted tests on splitting tension, smooth-notch direct tension and square-notch direct tension concrete specimens at various strain rates in a low-speed material test machine and in a 50.8 mm (2-inch) diameter Split-Hopkinson pressure bar (SHPB). Results of tensile strength verses strain-rates were compared with compressive strength at similar strain-rates. These same tensile data were also compared with strength data obtained using a fracture mechanics model.

High school students included:

- Jennifer Brewer, Port St. Joe (Port St. Joe HS), worked with research chemist Dr. Daniel Stone, Panama City in the Envirionics Laboratory. Her duties and responsibilities consisted of using Fourier transform infrared spectroscopy to determine the evaporation rate of the individual components of a mixed hydrazine fuel.

- Philip Dorsch, Panama City (Bay HS), worked with Maj. Keith Howell, Panama City, in the Housing and Services Branch. He learned to use the Wang computer in documenting the Services Billeting Program.

- David Eshleman, Panama City (Rutherford HS), and Tracy Lamb, Lynn Haven (Mosley HS), worked

with Pat Suggs, Panama City, in the Air Base Operating Surfaces Branch. Their project consisted of assisting in the MTS lab research on rapid-setting cements for postattack spall repair in extremely cold environmental temperatures. Their duties also involved computer-generated graphs and text for the documenting technical report.

- Richard Hartzer, Lynn Haven (Mosley HS), and Michael Stone, Panama City (Rutherford HS), worked with Rick Baker, Panama City in the Privatization Strategies Branch. They estimated preliminary costs for projects using the WANG computer spreadsheet software and organized several private sector development contractual documents and files.

- Thor Johnson, Lynn Haven (Mosley HS), worked with Doug Schwartz, Panama City in the Fire Protection Branch. He used a neural network edge enhancement system, feeding a simulated two-dimensional image to a neural network to bring out or enhance the edges of objects within the image. This work ties into an effort to develop a fire detector using machine vision to "see" and evaluate a fire much like a human would. He also assisted in configuring RDCF computers and communications programs.

- Brent Miller, Panama City (Bay HS), worked with Mary Marks in the Housing and Services Branch. His project consisted of creating a 20/20 spreadsheet to rotate excess war reserve materials.

- Debra Piechowiak, Lynn Haven (Mosley HS), worked with Walt Buchholtz in the Air Base Structural Materials Branch. She learned to use the Materials Test System, to calculate the Lecant Modulus, and to plot the graphs from the data that had to be recorded.

- Jonathan Protz, Lynn Haven (Mosley HS), Technical Documentation Branch. His project was to design an in-house electronic publishing system that would produce typeset or near-typeset copy for two documents aimed at multiple and high-level worldwide audiences. He experimented with the Aldus Pagemaker system on a PC to produce final typeset copy for a Technology Area Plan worth over \$17 Million in research and development. He also learned to use a Compugraphic Integrator to typeset files from Wang

copy and transfer them to the final typesetting process, a procedure that enabled production of typeset copy and photographic plates for the Technology Transfer edition of the *Military Engineer*.

- Julie Scruggs, Lynn Haven (Mosley), worked with Rita Gregory, Panama City in the Construction Cost Management Branch. Her project included updating the preliminary Air Force facility category code descriptive listing, updating the Automated Air Force Pricing Guide (AAFPG) Help Narrative, updating the Historical Air Force Facility Cost Book, and assisting in updating various data tables in the Construction Cost Management Analysis System (CCMAS).

- Michael Thompson, Panama City (Bay HS), worked with Dr. Ross, Panama City in the Air Base Structural Materials Branch. His project was learning test concepts and use of the Split-Hopkinson Pressure Bar (SHPB) and its components. He did several tests with the SHPB and successfully interpreted test data. He learned how to prepare specimens for study under the image analyzer. He also learned to use the MTS (Materials Testing System) device for slow strain-rate soils tests and do basic tests on the Ottawa and beach sands used by the materials testing branch. He used the computer to generate a stress-strain curve test.

- Jeffrey Ward, Lynn Haven (Mosley HS), worked with Buchholtz in the Air Base Structural Materials Branch, running structural material tests, and measuring shock wave speed between two resistors in the soil, with each test being done at different saturation levels.

- Amy Thomas, Lynn Haven (Mosley HS), worked with Jim Murfee, Panama City, in the Air Base Operating Surfaces Branch. Her project was to help ARA process and summarize data for the recently completed accelerated traffic study.

- Robin Woodworth, Panama City (Rutherford HS), worked with Andrew Poulis, Panama City, in the Technical Information Center library. She prepared a user's guide to search TIC'S CD-ROM databases and help the users conduct their own literature searches in a cost-effective manner. She also supported TIC's database manager in the organization and maintenance of the E&S database.

AICUZ Links with Community Action:

JOINT-USE LAND STUDIES PREVENT ENCROACHMENT

by John Bale, Planning Branch

Installation Development Division (DSN 297-6242)

Joint land use study (JLUS) is a relatively new (1985) program designed to improve cooperative planning between the Air Force and the communities adjacent to Air Force bases which are responsible for implementing AICUZ.

Until recently, the Air Force simply developed, then released AICUZ studies to the local communities with little or no involvement or input from those communities. JLUS changed all that.

Now there's a method for bridging the gap between the published AICUZ studies and community action to help prevent encroachment. OSD/Office of Economic Adjustment now sponsors a program of financial and technical assistance to local governments around Air Force bases. The Joint Land Use Study program enables communities to work jointly with the Air Force in developing compatible land use recommendations. In this fashion, the communities themselves become partners in the process.

The completed JLUS studies, usually undertaken by umbrella community organizations such as Councils of Governments, spell out planning and control methods for protecting Air Force bases from encroachment.

So far, communities around 17 Air Force installations have participated in the JLUS program. Four JLUSs in California and two in Arizona have been completed to date. They are already paying dividends in increased

community awareness and incorporation of Air Force Base considerations into local comprehensive plans as well as zoning and other enforcement tools.

Dividends

The completed JLUSs have been superior products. This is because input to these studies including AICUZ data, have been of high quality.

This is a crucial point. A successful JLUS must be based on accurate, current AICUZ data. Because of the importance of AICUZ input to the JLUS process, a February message from HQ USAF/LEE asked MAJCOMs to provide written commitment of support from commanders at bases participating in new JLUS initiatives. Commanders must commit base personnel and resources to the development of accurate, current AICUZ studies for input JLUS.

You should seriously consider nominating a base for JLUS consideration when LEED requests candidates each summer. When encroachment is a growing concern; where there is a base-community relationship to build upon; when the community has potential for handling a program like JLUS; and where base support is assured; JLUS can provide a new level of cooperation in resolving AICUZ issues.

Installation Development Guide:

IMPROVES QUALITY OF THE USAF BUILT ENVIRONMENT

by Dale O. Jackson, Facilities Branch, Installation Development Division (DSN 297-6248)

The Facilities Branch is preparing a guide to help commanders build and strengthen the Air Force institution through the development of excellent installations.

Team planning is the goal for commanders, using planning, design and construction professionals to improve the quality of the Air Force built environment. The guide focuses on decision-making aspects in development and highlight important considerations for planning, designing, construction, and maintaining Air Force installations.

The guide's philosophy conveyed is that the quality of life for Air Force members is a prime influence on their performance level and success in accomplishing their missions. The places where they live and work, including functional locations and arrangements are factors directly contributing to efficiency, safety, productivity, and convenience. So, the built environment on Air Force installations can be instrumental in setting people up for success to conduct the mission.

The guide will contain written explanations and photographic examples of Air Force E&S success in developing installations. Understated excellence will be designated as our corporate standard for quality — simplicity of design, durability, facility compatibility, project completeness, attention to detail, attractive interior design, and effective use of technology will be the principle traits.

Base comprehensive plans (BCPs) are the roadmaps providing a blueprint for developing efficient land uses in

military communities. BCPs are decision-making tools for commanders, and must kept up to date and formulated around current and projected missions.

Urban design, together with the BCP, can shape the installation into a cohesive system of activity, with efficient circulation patterns and a coherent visual character. This macro design approach is a means for putting the built environment into perspective and reinforcing the physical nature of the entire installation.

Design standards constitute a means for achieving quality and focusing resources toward common objectives.

The importance of a close relationship between commanders and base civil engineers in formulating investment strategies to maximize available resources is also stressed to achieve basewide problem solutions, and develop alternative development strategies to achieve high-impact improvement in the character of the installation.

A summary will recap the principle ideas contained in the guide. The use of leadership aimed at fostering teamwork to achieve high standards will be the underlying theme.

Publication of the *Commander's Installation Development Guide* is scheduled for early next year, with distribution to MAJCOMs, AFRCs, and commands worldwide to facilitate achieving excellent installations in the '90s.

Wartime Guide Sent to MAJCOMS

A comprehensive guide explaining the wartime missions of Prime BEEF, Prime RIBS and RED HORSE is being mailed to base-level Public Affairs offices worldwide.

The guide, developed by HQ AFESC/PA at the request of TAC/DE, explains in easy-to-understand terms the wartime roles of these organizations as well as some of the various types of equipment used in a wartime environment. Included in the book are sections on Mortuary Affairs and an explanation of the types of rations used by field feeding facilities.

Along with the guide, a videotape showing Base Recovery After Attack training at Detachment 2, Air Base Combat Support Training Complex, Eglin, has also been produced.

Readiness Challenge Nov 4—10 Cancelled

Readiness Challenge '90, the combat readiness test of Air Force Engineering and Services forces, has been cancelled by Maj. Gen. Joseph A. Ahearn, director, Engineering and Services, HQ USAF.

The event was originally scheduled at Det. 2, Air Force Engineering and Services Center, Eglin AFB, Fla. The last Challenge was held in May, 1989. It is held approximately every 18 months.

Like many exercises, the cancellation was due to Operation DESERT SHIELD. Other notable cancellations include William Tell, Peacekeeper Challenge, Giant Sword, and Strategic Air Command's worldwide

Copies of the guide and the videotape will be provided to each MAJCOM/DE. A letter that accompanies the book to base-level PA offices will tell them how to obtain a copy of the tape, if needed.

"Base-level Engineering and Services organizations should work with their Public Affairs offices to develop stories on wartime responsibilities," stated Capt. Randy E. Sipe, Director of Public Affairs for HQ AFESC. "Base newspapers are looking for wartime mission stories, and local newspapers and television stations are also hungry for this type of information. Engineering and Services organizations at base-level should take advantage of this opportunity to tell their story."

bombing competition.

"Our number one priority is support to CENTAF and TACOPS," said Col. Don Blanchard, director, Readiness, HQ AFESC. "The time allocated to Readiness Challenge at the detachment will be utilized. We have proposed continuing training of deploying forces." Some commands had already conducted preliminary competitions, giving their teams the advantage of a competitive event. There were some MAJCOM cancellations.

He said, "We had no alternative but to cancel this year's event. We will make every effort to schedule it at an appropriate time."

Military Family Housing:

Whole Neighborhood Revitalization through Housing Community Plans

by Roberto Castellanos, Housing Division

The Whole Neighborhood Program is a comprehensive revitalization program which considers all community-related issues in addition to the housing units in order to cover all the necessary work for the entire housing community at each base.

The actual development of the concept is in progress now through the development of our housing community plans (HCPs). These plans will evaluate existing conditions of our MFH, validate the total housing and neighborhood requirements, and provide a comprehensive programming and implementation plan for all future MFH revitalization projects.

Once completed, the HCPs will provide for the orderly economical implementation of all proposed improvements through the use of a phasing plan that recognizes the priorities of the Air Force, the variable nature of funding for improvement projects, and the logical "sequence of construction" that must be followed in any project.

The goal of the HCPs is to provide military families with homes and communities that are comparable in design and amenities to current private-sector housing, thereby creating a sense of "pride of place" for each resident in the community.

As part of the FY89 program we contracted and are in the process of completing 31 HCPs. An additional 25 plans are under contract in FY90 and 21 more are projected for the FY91 program.

HCPs are being developed by nationally known AE firms centrally contracted through the Corps of Engineers, Savannah District, Savannah, Ga. The AE contracts are being managed through a matrix management team consisting of project managers from the base, MAJCOMs, and Air Staff to assure that the final product is the best quality product for our Air Force communities.

History:

OLD QUARTERLIES WANTED

Old issues of the *Air Force Civil Engineer* and the *Air Force Engineering and Services Quarterly* are needed to complete previously unbound sets.

Begun in 1960, the "journal" for civil engineers became the *Quarterly* when the services career field was merged into the headquarters staff. It was eliminated as part of the publications reductions of 1986.

A major repository of articles on engineering and services excellence, the publications are valuable because they had numerous articles on air combat doctrine as it relates to the airbase weapons platform.

People wishing to donate their old issues should send them to HQ AFESC/HO, Tyndall AFB, Fla., 32403-6001.

The Editors

COMMANDERS

Civil Engineering Construction Operations Group (CECOG)

Col. William T. Meredith
Col. Truman O'Keefe

1966—1967
1967—1968

Civil Engineering Center (CEC)

Col. Robert G. Gardner
Col. William D. Gilbert

1968—1971
1971—1972

Air Force Civil Engineering Center (AFCEC)

Col. Paul Hartung
Col. William E. Rains
Col. Robert M. Iten

1972—1973
1973—1975
1975—1978

Air Force Engineering and Services Agency (AFESA)

Maj. Gen. Robert C. Thompson

1977—1978

Air Force Engineering Technology Office (AFETO)

Col. George E. Ellis

1978—1978

Civil and Environmental Engineering Development Office (CEEDO)

Lt. Col. Donald G. Silva
Col. Joseph S. Pizzuto

1977—1977
1977—1978

Air Force Engineering and Services Center (AFESC)

Brig. Gen. Clifton D. Wright Jr.
Col. Hisao (Kelly) Yamada
Col. Ernest D. Strait
Col. Joseph T. Callahan Jr.
Col. Jerry A. Smith
Col. Robert G. Gilbert
Col. Roy G. Kennington
Col. Marshall W. Nay Jr.

December 1978—January 1980
January 1980—June 1981
June 1981—June 1983
July 1983—March 1984
March 1984—June 1985
July 1985—June 1986
June 1986—June 1990
June 1990—Present

Compiled by Dr. Ronald B. Hartzler, HQ AFESC Historian.

INSTALLATION DIVISION UPDATE

DEFECTIVE STAINLESS STEEL PIPE

Pipeline failures in POL hydrant systems at several bases revealed a common problem with the fabrication of the welded stainless steel pipe. Investigation by the Construction Engineering Research Lab (CERL) of the Corps of Engineers (COE) revealed defective welds along the longitudinal seam. The CERL study also found the welded pipe specified (ASTM A-312) inappropriate for use in cyclically loaded applications, such as our hydrant systems. Yet, only A-312 seamless was allowed. A more reliable welded pipe specification was needed. Last Sept. 15, we sent a message (P141920ZSEP89) to the field revising the specification to allow only ASTM A-312, seamless, or ASTM A-358 welded with 100 percent radiography.

The COE has made the prime contractors responsible for repairing the known defective pipe systems at four bases (Ellsworth AFB, N.D., Kelly AFB, Tex., McGuire AFB, N.J., and Westover AFB, Mass.). Three bases (March AFB, Calif., Altus AFB, Okla., and Loring AFB, Me.) have ongoing projects where A-312 welded pipe has been specified. SAC is replacing the A-312 at March and Loring while MAC is still reviewing options for Altus.

We support COE efforts to place responsibility with prime contractors at the four bases with known defective pipe. The new pipe specification will provide the Air Force with more reliable hydrant fuel systems and MAJCOMs should deviate from this spec only as a last resort.

Sidney A. McCard, HQ USAF/LEEDE, DSN 297-4082

AICUZ DATA NEEDED FOR CLOSURES

With the prospect of further base closures and realignments, possibly after the Southwest Asia crisis, there will be a critical need for environmental impact analyses for these actions. An important part of the Environmental Impact Analysis Program (EIAP) is noise impact analysis. Consequently, the AF's Air Installation Compatible Use Zone (AICUZ) program has a significant role in the EIAP process. Current, accurate AICUZ noise data and contours will be needed early in the EIAP process for bases impacted by base closure/realignment actions.

In February and April, messages, HQ USAF/LEED asked MAJCOMs with affected bases to review the accuracy of AICUZ studies at those bases. If the AICUZ studies need updating, MAJCOMs must ensure timely action coincides with EIAP completion schedules.

Accurate and current noise data baselines are needed for EIAP documentation and the public must be made aware of existing and future noise impacts.

John W. Bale, HQ USAF/LEEDX, DSN 297-6242

ESCCMP UPDATE

GRADUATING HOUSING, REALTY, AND SERVICES INTERNS

The Air Force Civilian Personnel Management Center has announced that six Housing, Realty, and Services civilian interns are within 6 months of scheduled permanent placement.

The interns are:

CAREER SERIES	NAME	LOCATION	GRADUATION
Housing	Cathy Clark	Malmstrom AFB	August 1990
	Donna Jones	Randolph AFB	January 1991
Realty	William Allison	Tinker AFB	November 1990
	Lori Martin	Andrews AFB	January 1991
Services	Shannon Wallace	Barksdale AFB	November 1990
	Ann Marie Sarnese	Travis AFB	January 1991

Each has completed a full 4-year course of study at an accredited college or university, and received a bachelor's degree. In addition, each has completed a carefully designed 2- or 3-year formal training program that combines the aspects of both on-the-job and formal training.

At the completion of their internships, their experience will cover a broad spectrum of Air Force tasks within their chosen specialty.

There is a constant flow of interns graduating from this program. If you are interested in hiring one of these, or a future GS-9 intern, for a permanent position at your base or MAJCOM headquarters, please contact the Engineering and Services Career Management Program.

Deloris Addison, AFCPMC/DPCME, Randolph AFB, Tex., 78150-6521, DSN 487-6388/6843

DEPUTY ASSISTANT SECRETARY VISITS AFESC

Jack D. Davis, Dep. Assistant Secretary of the Air Force for Readiness Support, visited AFESC on July 9 and received briefings on AFESC's mission, including readiness, operations and maintenance, operational rations, and research and development. He also toured the R&D test facility and the Det. 2 relocation site at Tyndall AFB. The following day he visited Det. 2, Eglin AFB, Fla., and the 823rd RHCS, Hurlburt AFB. During his stay, he sampled operational foods used by deploying forces, provided by HQ AFESC/DEHF. He was extremely pleased to learn of our play in E&S readiness and was most complimentary. The visit went well, and it was obvious that Mr. Davis supports our readiness business.

Col. Don Blanchard, DSN 523-6124

READINESS TRAINING ROAD MAP

HQ AFESC/DEO representatives briefed the new Road Map to HQ AAC/DE and staff on July 12-13. Many of the same concerns presented by other MAJCOMs were discussed. As AAC transfers to PACAF and assumes a numbered Air Force position, their ability to execute readiness training is intended to remain largely intact. Recommendations to begin transitioning the AAC "Mad Bull" training site to a special training site were accepted in principle. Team training will continue to be accomplished at Det. 2 AFESC; however, the potential to channel AAC E&S readiness teams to the Kadena site could provide an immediate improved frequency, provided TDY funds were made available.

Lt. Col. John W. Mogge Jr., DSC 523-6121

E&S SPACE PLANNING AND REQUIREMENTS INTEGRATION TEAM

HQ AFESC/DEO representatives presented the readiness improvement portion of the E&S Master Plan and reviewed the proposed scenario for demonstrating the global positioning satellite system to potentially assist in meeting E&S requirements. The current near-term objective of the ESSPRIT is to produce an E&S space master plan. The group developed an outline of the plan for the areas of acquisition, O&M, environmental, services, readiness, and technology transfer.

HQ AFESC/DEH is the focal point for a subgroup dealing with human services issues. Follow-on action will be to facilitate a technology demonstration/exchange visit with key NASA and Air Force personnel regarding mortuary affairs and food service systems for space operations. This will be accomplished in mid-October at Johnson Space Center.

Target milestones for development of the overall plan are: complete a draft plan by the end of this month for the next ESSPRIT meeting at Vandenberg AFB; work review comments October to December; and present the plan in mid-December to a "Captains of Industry" meeting chaired by HQ USAF/LEE at Patrick AFB.

Lt. Col. Patrick Eagan, DSN 523-6223/Capt Juan Ibanez, DSN 523-6131

SAC WARRIOR TRAINING CENTER

HQ AFESC/DEO representatives met with members of HQ SAC/DER/LGT to define requirements for the Warrior Training Center (WTC) at Barksdale AFB, La. Focus was toward the WTC becoming a full team training site in support of the Readiness Training Road Map. It was agreed to grow to over 200 vehicles plus support equipment to provide for integrated E&S wartime training. Initial cadre at the WTC will also grow to 32 personnel this fiscal year. Actions remain for HQ SAC to develop a POM submittal and forward to the Air Staff as a PDP item. HQ AFESC/DEO will assist in establishing appropriate allowances and authorizations and advocate support for the SAC funding initiative.

SMSgt. Michael F. Doris Jr., DSN 523-6147

RED HORSE SERVICES CONFERENCE

The first RED HORSE Services conference was June 6-8 at Tyndall AFB. Representatives from eight units attended. Results of the conference are an improved draft of AFR 93-9, review of TA 429 Part F, better definition of RED HORSE mortuary requirements, establishment of a special duty application, and improved crossfeed/communication.*

PRIME RIBS ORIENTATION VIDEO

We recently completed a Prime RIBS Orientation Video which will be distributed to the field in October. If you do not receive a copy, the number to order is PIN 609971.*

NEW DIRECTOR

Col. Don Blanchard is now Director of Readiness, replacing Col. Scotty Andrews, who departed to be the BCE at Edwards AFB, Calif. Lt. Col. Dick Woodworth is the new deputy director. Other changes in DEO include creation of a new division, Readiness Operations and Training Division (DEOX), which I now head. This division is the combination of two former divisions, Readiness Training (DEOT) and Readiness Plans (DEOX). Streamlining our readiness forces begins at home!

Maj. Barbara Moock, DSN 523-6323

E&S PROGRAM OFFICE UPDATE

FOLDED FIBERGLASS MAT INITIAL OPERATIONAL TEST AND EVALUATION

Analysis of the results from the IOT&E of the folded fiberglass mat (FFGM) runway repair system, conducted at Wendover, Utah, from May 14 to June 19, continue to provide impressive data. The FFGM system met requirements for supporting aircraft operations. Total repair and maintenance for three craters only involved leveling ruts in the crushed stone on Crater 1 at about 100 passes and Crater 2 at about 309 passes and tightening of 10 bolts, which loosened sporadically throughout the testing. Actual aircraft operations were conducted June 4 - 15. Three craters were explosively formed in the runway, repaired, and trafficked by F-4, RF-4, and F-16 aircraft, and over 509 passes (takeoff, full-stop landing, and touch and go) were performed. In addition, 77 back-taxi passes were made over the craters.*

QUICK-SET MATERIAL EVALUATION

Two British quick-set concretes, ASRI and FEB Set, are part of the ongoing quick-set material study which will provide a new material for spall repair. HQ AFESC/RDCP will test these materials to validate their ability to meet USAF working environmental limitations. We feel confident both materials may meet USAF needs.*

ADVANCED CRATER CAPPING

Work continues on our trade study of foreign alternatives for crater capping. We met with LaFarge Fondu International, the manufacturer of Dallexpress, the French fast-setting cement used in their crater capping. Our office is also looking at a new mixer the Israelis have just purchased to use with their gypsum spall repair material. HQ AFESC/YER feels the primary alternative is still the British flood grout capping system.*

**Maj. Bill Brinkley, DSN 523-6240*

MINIMUM OPERATING STRIP (MOS) MARKING

The MOS edge marker and distance-to-go marker concept demonstration, conducted in conjunction with the folded fiberglass system IOT&E, showed both systems have merit. The edge markers proved visible to pilots at more than 4 nautical miles when the sun was behind the approaching aircraft. With the sun facing the approaching aircraft, pilots reported difficulty in visual acquisition of the system, less than 1/2 nautical mile in the worst case. Marker visibility was also reported as extremely limited when one pilot used a high sensitivity light filter visor. These limitations will have to be addressed during edge marker full-scale development (FSD). The distance-to-go (DTG) markers were operationally effective, but, due to manufacturing defects, were not suitable as tested. The basic design and presentation to pilots landing and taking off from the test site operating strip were acceptable. Minor changes were recommended to enhance readability. All the DTG markers used in this assessment showed signs of fatigue and weld failure at the junction of the marker at panel upright, with three of the six markers completely separating during the test. The cause of this defect has been identified by the manufacturer as improper welding technique and materials. DTG markers constructed of stronger materials have been shipped to HQ AFESC for reevaluation.*

PRODUCTION MAT CONTRACT

A 5-year contract will deliver 800 folded fiberglass mats, with first delivery expected in December. The \$25-million contract was awarded to Tankinetics of Harrison, Ark., in late June. The contract will produce folded fiberglass mat systems for worldwide prepositioning at main operating bases.*

TRAINING MAT CONTRACT

The HQ AFESC lead team performed a first-article inspection of the folded fiberglass training mat contract at Starflight Boat facilities in Bastrop, La., and gave acceptance. After first-article acceptance, the contractor was directed to proceed with full production.*

**Perry Dukes, DSN 523-6203*

REPAIR QUALITY CRITERIA (RQC) SYSTEM

A prepublication review on the rapid runway repair technical order was held at TESCO Inc., Mobile, Ala., for RQC TO 35E2-4-1. The review is the final event before delivery of the TO to Warner Robins Air Logistics Center, Robins AFB, Ga. RQC development for KC-135 aircraft will begin in the first quarter, FY 91. This program will be a 3-year effort at a cost of \$1.6M. RQC development remains the TAF's #1 RRR R&D priority.

Robert McGill, DSN 523-6241

PROTECTIVE CLOTHING—ELBOW AND KNEE PATCH WEAR TEST

A 30-day wear test at AFESC Det. 2, Eglin AFB, evaluated both elbow and knee patches on crash protective clothing for firefighters to determine the overall acceptability of a new replaceable knee and elbow patch. Of particular concern is whether or not the knee and elbow patches can remain intact within the framework assembly. If the test is successful, this patch design will extend the safe-use life of crash protective clothing.

Wade Grimm, DSN 523-6303

RAPID UTILITY REPAIR KITS (RURK) FOR POL LINES

The HQ AFESC E&S Program Office will conduct a Critical Design Review (CDR) for the RURK POL at the Idaho National Engineering Laboratory (INEL) facilities at Idaho Falls, Idaho, Sept. 10-14. The CDR will include a full-scale demonstration, under simulated field conditions, of an in-crater and by-pass repair copy of an 8-inch jet fuel line. The proposed kit component will be on display for all to operate. For further information contact HQ AFESC RURK program manager.

Lt. Col. David F. Brady, DSN 523-6244

HOUSING AND SERVICES UPDATE

Unaccompanied Personnel Housing

PROJECT PRIME KNIGHT MIDTEST REVIEW

A midtest review of the program was conducted July 17-19. Attendees were Prime Knight managers from the MAJCOMs, many test base managers, and representatives from HQ AFESC/DEH, HQ USAF/LEEL/XOOTA, and HQ USAF/LEYTV. Base-level managers briefed the status of their individual programs. Overall, the program has been well received by the aircrews, and has had a positive effect on the support agencies involved. In addition, attendees reviewed the implementation plan and suggested several changes regarding aircraft commander responsibilities, advance reservations, and transportation requirements. A draft revision of the plan will be forwarded to all MAJCOMs for review before final publication. A discussion was also conducted regarding the various costs (personnel, supplies, equipment, etc.) associated with this program. HQ USAF/LE was briefed Aug. 13 on the status of the program to date. This briefing also included a discussion of the costs incurred by the test bases. HQ USAF/LE approved beginning Air Force-wide implementation of Prime Knight Oct. 1 with completion by next February, coinciding with the next publication cycle of the inflight planning documents which will contain billeting, reservations, telephone and telefax numbers.

Capt. Deborah Dumont, DSN 523-6199

FINANCIAL MANAGEMENT BRANCH

The Services Division's Billeting Financial Management Branch became operational July 23. Dave Sands has been assigned as chief, Billeting Financial Management Branch, and Joan Michalski is assigned as an accounting systems analyst, with duty location at OL-W, HQ AFESC/DEHS, c/o HQ AFMPC/DPMSC, Randolph AFB TX 78150-6001, DSN 487-6671. This function will provide broad financial oversight, recommend financial policy, provide assistance visits, and financial analyses of the AF billeting function.

Mike Wilson, DSN 523-6173

Food Service

MRE ASSEMBLY SPECIFICATIONS

A meeting was held with representatives of other services, the Defense Personnel Support Center, Natick Laboratories, and the U.S. Army Health Services Command to improve assembly specifications for MREs.

Ed Hoffman, DSN 523-6221

Mortuary Affairs

HONOR GUARD TRAINING VIDEOTAPE

The initial videotaping of ceremonies with the Air Force honor guard has been established and estimated distribution date to the field is before the end of the calendar year. When completed, the tape will be used to standardize ceremonial honors other than funerals within the Air Force.

Bonnie St. Clair, DSN 523-6757

AFP 143-10, MORTUARY SERVICES BENEFITS

This publication, covering benefits for members who die while on active duty, has been completed and released by Air Force printing for publication. The pamphlet explains mortuary entitlements for the active duty members. It includes a mortuary planning sheet for the member to complete that gives the next of kin funeral instructions and covers other arrangement wishes.

Leonard Nester, DSN 523-6757

POW/MIA NATIONAL LEAGUE OF FAMILIES ANNUAL MEETING

At the meeting, held in Washington, the keynote speaker, Vice President Dan Quayle, reaffirmed the administration's commitment to obtain the fullest possible accounting of our POW/MIAs. This meeting permits interaction with Air Force next of kin, and allows us to show active Air Force support for repatriation efforts.

Cam Beauchemin, DSN 523-6757

Force Management

LAUNDRY PLANT, CROTONE AB

A concept floor plan and equipment layout for the new facility has been developed. The design incorporates the latest equipment technology which saves both space and energy. If adopted by USAFE and NATO, the facility scope of 41,000 sq ft will be reduced to approximately 32,000 sq ft. Based on the current unit cost in the AF Construction Pricing Guide, the projected cost avoidance would be \$900,000.

Tom Ove, DSN 523-6201

ESCCMP MINITRAINING AND DEVELOPMENT PANEL

An ESCCMP minitraining and development panel meeting was held July 24 at Randolph AFB. Attendees discussed the allocation of Engineering and Services civilian personnel training authorizations for FY 91, reductions in Palace Acquire Intern (PAQ) authorizations, and changes in intern selection procedures. The FY 91 preliminary intern employment goal for services has been reduced to three, in conjunction with the overall reductions in PAQ authorizations. In addition, unless prospective interns have overall grade point averages of 3.5 or higher, they must take the Professional and Administrative Career Examination (PACE) to compete for a position.*

HENNESSY AND INNKEEPER PROFESSIONAL CONTINUING EDUCATION

A total of 13 students representing the 1989 Hennessy winners and MAJCOM-nominated bases July 15-27 attended a 2-week course in "Culinary Skills-II and Nutritional Cuisine" at Johnson and Wales University. At the same time, 16 students representing the 1989 Innkeeper winners and MAJCOM-nominated bases completed the "Innkeeper Awards Management Program" course at Johnson and Wales.*

DEH WORLDWIDE CONFERENCE

The 1990 DEH Worldwide Conference was held June 25-29. Briefings were provided to the MAJCOM DEHs on every major services program, as well as military family housing and various other related initiatives. A total of 17 action items resulted from discussions that followed the briefings. At the annual services awards banquet, the winners of the 1989 services management awards were honored, and the Col. Roy G. Kennington Outstanding Services Unit Awards were presented for the first time. The five members of the Air Force Association services Team of the Year were also recognized and honored during the banquet.*

**Maj. Keith Howell, DSN 523-6185*

COMPUTER A&D UPDATE

SI NOW SC

In keeping with Air Force organizational guidelines, the initials used to designate the directorate are now SC instead of SI. The title remains the same.*

WIMS/SIMS COBOL WORKSHOP

The workshop, the first, was conducted at AFIT/DE June 18-29, with AFIT providing the administrative and classroom support, billeting and transportation arrangements and HQ AFESC/SCW providing the instruction. The purpose of the workshop was for students with a working knowledge of COBOL to learn advanced COBOL programming and WIMS standards and to apply the following model programs: Data Conversion Program, Report Change Subprogram, Model Updater (Source Generator), and Generic User Rights Program. Students developed one common application and one base- or MAJCOM-unique application using the WIMS model software. According to the feedback from the 26 students, the class was a success. The second test class is tentatively scheduled for Nov. 26 - Dec. 7. We will send a message to MAJCOMs and bases when the dates are firmly established. Individual organizations must fund the TDY costs for their students to attend the workshop.*

WIMS BULLETIN BOARD

We are concerned that too many bases are developing software without coordinating the development through both the respective functional channels and through the MAJCOM SSAs. This has caused duplication of effort. We've established a WIMS Bulletin Board on the AMMUSNET Network Control Center (NCC) at HQ AFESC/SCT. Two subcategories of this bulletin board are intended for software exchange. Please contact Capt. Greg Kincaid (DSN 523-6116) or Gary Sheirer (DSN 523-6112) if you do not already know how to log on to the NCC. We ask that people developing software conform to WIMS standards and conventions as explained in the following documents:

Document Number	Title
5021z	Model Updater Generator
0008z	WIMS Programmer's Guide
0009z	WIMS Guide to Menu Design

We've also added a new subcategory to the WIMS bulletin board called "Personnel Notices" to assist WIMS personnel with relocation.*

MFH WORKSHOP

USAF/LEEHO sponsored a Military Family Housing WIMS software requirements workshop at AFIT/DE, Wright-Patterson AFB, Ohio, from July 31 through Aug. 3. The purpose of the workshop was to identify and prioritize enhancements, applications, and corrections to the software. HQ TAC has been identified as the OPR for accomplishment of the software and will work closely with USAF/LEEHO and AFESC/SCW to ensure that functional requirements are met while conforming to established WIMS standards and conventions.*

MAJCOM PRERELEASE WORKSHOP

As a result of recommendations made by attendees at the MAJCOM SSA Conference at Tyndall AFB Apr. 24-27, we held a workshop hosted by AFIT/DE, Aug. 12-18, incorporating MAJCOM modifications into the Air Force WIMS Model software. The workshop focused on incorporating existing modifications and applications rather than beginning new modifications and developing new applications. Workshop attendees reviewed all MAJCOM-modified programs, reports not included in the Air Force WIMS Model software, and report corrections for adherence to WIMS standards and Air Force-wide applicability. Job Order modifications were not discussed, since the existing Job Order system is being included in the Work Request system. This effort should keep MAJCOMs from continually reaccomplishing their modifications each release, thus, expediting and improving the release process.*

WIMS FIRE PROTECTION SOFTWARE

We have hired Robin Babcock, a WIMS software programmer with a fire protection background. Some of you may remember Robin as an airman with the WIMS Implementation Team and later as an Air Force Fire Protection Reservist working as a civilian SSA in the Tyndall AFB, Fla., WIMS office. Robin will be working closely with AFESC/DEMF to identify, develop, and field WIMS Fire Protection software enhancements. Be expecting a message from AFESC/DEMF requesting your recommendations.*

WIMS/WANG SOFTWARE CONFIGURATION PROGRAM — IVERCOMP

After many months of development, we are nearing completion of a program that should significantly assist the bases and MAJCOMs in managing both their WIMS and Wang software configurations. This is done by comparing the local software version numbers to a baseline provided by AFESC/SCW. With a press of a key, you can identify WIMS and Wang software items on your system that do not match the baseline. As the name implies, this program compares Version Numbers, and for WIMS application software it's based upon WIMS Model standards and conventions. If you wish to take full advantage of this software when it's fielded, you should read more of the details of this program in Document 5011z, provided on an earlier release.*

**Gary L. Sheirer, DSN 523-611.*

PRIVATIZATION UPDATE

ENERGY PRODUCTION FACILITIES PROJECT AT EIELSON AFB

A meeting was held with Craig Valentine, HQ AAC/DEM, and Capt. Jere High, 343 CES/DEEM, on a private sector development (PSD) energy plant project. Plans are to analyze the potential for better energy efficiency and reduce fuel costs at the base. Ancillary benefits for new plant construction or expansion of the existing plant include elimination of ice fog, sulfur dioxide and particulate emissions. These factors will improve the overall energy efficiency of the base, reduce acid rain, improve regional habitability, and improve readiness. Plans are to initiate a contract with coal funds by late 1990. This project is our fifth project under the coal program.*

PSD CONSOLIDATED CONTAINERIZATION COMPLEX AT ROBINS

Technical assistance was provided to the 2853 ABG/CES, Robins AFB, Ga., in scoping documentation requirements to use PSD to finance, construct, own, operate, and maintain a consolidated containerization complex on base.*

PDC IMPLEMENTATION

Met with Lee Stanford and Capt. Craig Harvey, SSC/SMLE, at Gunter AFB, Ala., to review development of new screens and computer-generated DD Forms 1391 for private sector development projects, including family housing projects, (2667, 801, and 802). Data fields in the PDC will not change. We expect to go on-line and release information and instructions to the field this month.*

ENERGY PRODUCTION FACILITIES PROJECTS

Developed statements of work for private sector development of energy projects at Dover AFB, Del., and Scott AFB, Ill. Scope of projects is to reduce energy costs and improve energy efficiency at the bases. These projects are supported through DEQ's new indefinite quantity contract. Expect project development work to begin in late 1990.*

NIXON TO WORK IN PRIVATE SECTOR

After 14 years service to the Air Force and HQ AFESC, Al Nixon left to join the team of Automated Sciences Group, Inc. in Oak Ridge, Tenn.*

ASD TOMORROW REQUEST FOR LEASE PROPOSAL (RFLP)

Technical support on ASD Tomorrow was provided to ASD/DE at Wright-Patterson AFB, Ohio, Aug. 23-24. The RFLP was revised, proposal evaluation teams were identified, and milestones were established. RFLP is scheduled for AF/LEE review early this month, with a proposed RFLP release date of mid-to-late month.*

REQUEST FOR STRATEGIC ENVIRONMENTAL RESEARCH PROGRAM (SERP) FUNDS

AFESC/RD was given inputs supporting three DEQ proposals for SERP funds. Proposals included Privatization of Waste Management, USAF Conservation Technology Plan, and Analysis for Total Quality Management of Hazardous Material.*

**J. Rick Baker, DSN 523-6238*

CONSTRUCTION COST UPDATE

TRI-SERVICE AUTOMATED CONSTRUCTION COST ENGINEERING SYSTEM

The tri-service steering committee, made up of five senior executive service members — two USA, two USN, and one USAF — were briefed on results of the economic analysis to determine the direction of tri-service development of a common Automated Construction Cost Engineering System. A list of desired system components was developed. Responsibilities were assigned, and time lines developed for each component.*

ADVANCED MEDIUM RANGE AIR-TO-AIR MISSILE ICA

The senior review group (SRG) met June 14 and the Air Force Cost Analysis Improvement Group (AF CAIG) June 20 for briefings on military construction required to support AMRAAM deployment. Unresolved issues include the uncertain disposition of the AIM 7 missile replaced by AMRAAM, and the unknown net explosive weight of the missile which could require additional facilities to meet the quantity distance criteria. HQ TAC/DR was tasked to resolve the issues. A date has not been set for the OSD CAIG meeting.*

**Wes Hammond, DSN 523-6261*

COMBAT AIRBASE PERFORMANCE PLANNING SYMPOSIUM

The CABPP symposium was hosted by HQ USAFA, June 18-21 to determine interface requirements between CABPP and parametric cost models for facilities. The existing parametric cost models cover permanent construction, not the several short-range construction options used by the CABPP process, i.e., rapid runway repair, fuel bladders, etc. We will work with HQ USAFA/DFCE personnel to assist in the development of an Air Base Operability Investment Strategy.

Tom Burns, DSN 523-6263

COST ENGINEERING SUPPORT TO HQ AAC/DE

Specialized support was provided to HQ AAC/DE staff on unique cost engineering problems not adequately addressed by the DoD cost rules; e.g., area cost factors over 3.0 cannot be used to offset the minor construction limit of \$200K, and the need for recreational space within family housing cannot be covered by square-foot limitations even if funds are available.

Rita Gregory, DSN 523-6263

MAC COMMAND AND CONTROL INFORMATION PROCESSING SYSTEM

SAF/FMC requested a sufficiency review of the facilities estimate for the MAC C2 IPS project. We have requested DEs provide their facility requirements to support this project.

Carl Giadrosich, DSN 523-617

NATIONAL AIRSPACE SYSTEM (NAS) SINGLE BEST ESTIMATE (SBE)

SAF/FMC requested a review of the SBE prior to the Defense Acquisition Board (DAB) Milestone I decision in August. The review incorporates FAA feedback to the DoD system. We are reevaluating the construction estimates for the radar approach control (RAPCON) buildings due to potential reduction in size and the elimination of tower modifications. The 44 RAPCONs presently total over \$200 million in MILCON construction. A 2-year delay in NAS is possible due to changes in the parallel FAA system.

Chris Krance, DSN 523-6266

ATLAS II, DELTA II, TITAN II, AND TITAN IV LAUNCH SYSTEM SBE

Atlas, Delta, and Titan II system SBEs are complete with no new construction proposed. The Titan IV SBE contains two major launch sites. Initial modification of the existing Launch Complex 40 at Cape Canaveral AFS has been started. Space Launch Complex 6 at Vandenberg AFB (old Shuttle site) will begin modification in FY 92. Both sites contain 3300 and 3600 appropriations with the extent of facilities dependent on the number of launch requirements through the end of the decade.

Chris Krance, DSN 523-6266

TASK ORDER CONTRACTS AWARDED

Three new task order contracts for HQ AFESC/DEC support were awarded June 30. Each contract covers a basic period of 3 years with a 2-year optional period. The contracts provide specialized expertise to estimate, analyze, and model the cost of facility acquisition, operation, and support. Each contract covers a different construction area. The contract for aeronautical and electronic facilities and the contract for space and missile facilities were both won by Delta Research Corporation; U.S. Cost won the contract for the specialized facilities.

Ed Page, DSN 523-6265

HIDDEN UTILITIES, HIDDEN COSTS

One state mandates the electric utilities to determine the cost effectiveness of placing electric lines underground. One utility company found that an overhead system lasts about 35 years, whereas failure was usually experienced on underground lines after 12 to 15 years. This is fairly common knowledge, but what was surprising is that it costs from two to 10 times as much to replace an underground system as it does to build it in the first place. This of course varies according to the original installation method. Since most underground lines were installed in residential subdivisions, this installation cost was passed along to the home buyer, therefore the differential cost between overhead and underground was not reflected in the rates charged for service. The Air Force cannot pass along the original installation costs and must pay now and later. This study is still underway. More information will be passed along as it becomes available. In the interim, BCE personnel are urged to watch those hidden costs.

Norman L. Fowler, DSN 523-6358

HYDRANT FUELING SYSTEMS

HQ SAC has developed a 50-minute color videotape explaining the operation of Type III hydrant fueling systems. It starts with features of storage tank operation and moves through system operation. Each MAJCOM fuels engineer has been provided a copy of this worthwhile training aid. If you are interested, contact your MAJCOM fuels engineer.

Alvin L. Day, DSN 523-6357

ZONAL MAINTENANCE

Two zonal maintenance organizational concepts, Readiness and Ownership Oriented Management (ROOM) and Combat-Oriented Results Engineering (CORE), have received much attention over the past few years. At the Worldwide Engineering and Services Conference held last November, we committed to evaluate ROOM and CORE, measure their impact on the base civil engineering organization, and develop and produce a generic execution guide to assist those commands and bases interested in implementing such a program. The goal of the effort was to develop a guide which would describe the program and show how to reduce or eliminate any problem areas. Recently, we distributed the Zonal Maintenance Guide to the MAJCOMs. The guide is the result of a team effort by functionalists from HQ AFESC and advisors from HQ SAC and HQ TAC. The guide intentionally omits any positive or negative endorsements of zonal maintenance; however, its use should help bases avoid many pitfalls encountered by test bases and minimize the time required for full implementation. For those bases that have already implemented zonal maintenance, the guide serves as a good checklist for areas that may need restudy. Your comments on the guide are solicited. (See related article, pages 6-7.)

Ray Hatch, DSN 523-6401

E&S LABORATORY UPDATE**Technical Information Center****ENVIRONMENTAL QUALITY INFORMATION ANALYSIS CENTER (EQIAC)**

Local approval to establish an Environmental Quality Information Analysis Center was granted Aug. 23. Andrew Poulis, chief of the Technical Information Center, has been selected to be the director. He has a master's degree in Library Science from the University of Pittsburgh and is a specialist in information management. He spent 6 years with the Coast Guard as a librarian before moving to the Center in 1980. He left the Center to work for the Air Force Institute of Technology. He has been with the Center continuously since January 1986 and has 10 years experience as an Air Force technical librarian.

The EQIAC will be a requirement for environmental data gathering and analysis, one of the three categories of concern in the new Strategic Environmental Research Program. The EQIAC will gather, validate, evaluate, and analyze data related to environmental quality. It will also identify and/or fill voids in existing data or information bases in an economical, efficient, and unbiased manner. The objective will be to eventually provide services to the entire DoD community, other federal agencies, the academic community, and others, upon request. For the Air Force, the EQIAC will rapidly locate engineering solutions in the available literature, facilitate technology transfer, prevent duplication of laboratory research efforts and provide handbooks/models/technical reports on the state of the art in specific topics.

Requests for assistance and information may be forwarded to the director at DSN 523-6285.

Col. Frank P. Gallagher III, DSN 523-6309

Engineering Research Division

OSD SCIENCE AND TECHNOLOGY REVIEW

Members of the Engineering Research Division (HQ AFESC/RDC) attended a 2-day review of civil engineering research programs held at Fort Belvoir, Va., Aug. 21-22. Dr. Leo Young was briefed on survivability and protective structures, airfields and pavements, firefighting, and utilities. Dr. Young's office is the directorate of Engineering Technology, under the office of the director, Research and Advance Technology (R&AT/ET), Department of Defense. The annual tri-service review is conducted to ensure that:

- Technology goals, if achieved, have adequate payoff;
- Transition paths are timely and effective;
- Technical approaches, schedules, costs, and risks are acceptable;
- Program coordination and integration are appropriate; and
- Technology goals include highest priority needs.

Lt. Col. Felix T. Uhlik, DSN 523-6314

PROGRAM REVIEW

The Air Base Operating Surfaces Branch held a review on current and upcoming programs. The review was a chance to discuss research initiatives with experts both inside and outside HQ AFESC to ensure the program is focused on meeting Air Force needs into the 1990's. One highlight was the interest the MAJCOMs expressed in learning more about the Logistics Need (LN) process for establishing valid research requirements, and gaining science and technology funding. Plans are to hold a session on writing the LN at the November MAJCOM Pavements Conference to be held at Tyndall AFB, Fla. Representatives from the following commands, organizations, and universities were in attendance: University of Florida; Virginia Polytechnic Institute & State University; GeoServices Consulting Engineers; BDM Management Services Co.; Carnegie Mellon University; Applied Research Associates, Inc; HQ ATC; and HQ AFESC/YE/YE-UK/RDXR/RDCP/DEMP.

Capt. Charles W. Manzione, DSN 523-3709

JET BLAST EFFECTS ON PAVEMENTS

A proposal is being prepared by HQ AFESC at the request of the Naval Air Propulsion Center to participate in ongoing HQ AFESC work. The Navy, like the Air Force, wants to know when special surfaces are required for fighter aircraft and seems willing to share the cost of research to develop a model of damage to ordinary Portland cement pavements from jet blast. Imminent replacement of Harrier engines with the hotter -408 is driving this request.

James G. Murfee, DSN 523-3714

AIRBASE UTILITY/ENERGY ASSESSMENT PROJECT

Representatives of HQ AFESC/RDCE and a contractor visited HQ MAC and HQ AFCC to discuss their current and future energy/utility requirements and research and development efforts that could assist in meeting those needs. This is the fourth in a series of visits to all MAJCOMs. HQ MAC/DEMU would like emphasis in cogeneration with coal utilization, reliable and efficient heating, ventilating, air-conditioning systems, more efficient generators, and peak shaving technologies. HQ AFCC/DEM indicated interest in highly reliable generators, optimum uninterrupted power supply equipment, gas turbine cogeneration, and energy storage application areas.

Reza Salavani, DSN 523-6304

COMBAT ALERT CELL FIRE PROTECTION

The 11th Air Force DE, formerly AAC/DE, was provided with design information and drawings for installation of a fast-acting, aqueous film-forming foam, under-wing deluge system. The system features infrared/ultraviolet detection coupled with fixed-fan spray, under-wing nozzles and surge-agent discharge capability. Surge discharge capability allows the piping to remain dry for freeze protection. Fixed nozzles provide foam coverage four times faster than existing monitor nozzles. Assistance was a HQ AFESC/RDCF/DEMF and USAF/LEED coordinated effort.

Richard N. Vickers, DSN 523-3734

FIREFIGHTER TRAINING EFFECTIVENESS ANALYSIS

We are assessing USAF live fire training standards, frequencies, facilities, and environmental compliance issues and requirements. Data collection is complete with on-site visits to seven USAF bases, three foreign countries, the FAA, New York/New Jersey Port Authority, two major civilian airports, and consultations with aircraft simulator special project offices and manufacturers. Initial findings and supporting data were briefed to Brig. Gen. James E. McCarthy, deputy director, Engineering and Services. The study validated that live fire training is required and shows that there are alternatives to present method for conducting live fire training, as well as alternatives to hydrocarbon fuel fires.

Charles W. Risinger, DSN 523-373

HALON REPLACEMENT PROGRAM

A product nearing completion at the National Institute of Standards and Technology (NIST) will allow researchers to quickly look up or store information on halon alternatives, using a PC-type computer. This user-friendly, stand-alone, computer data base will soon be available through an AFESC project being accomplished at NIST. Called the "Halon Alternatives Data Base," it contains information on all chemicals which were reviewed in our search for halon alternatives. A technology transfer tool, this data base will provide scientists with access to important research information.*

ALTERNATIVE TRAINING AGENT

Representatives of AFESC traveled to Beaufort, S.C., and reviewed USMC firefighter training. Based on this and on Air Force training experience, a concept has been developed for a three-dimensional mock-up which will provide both adequate and realistic training for Air Force firefighters using halon-type agents. The final large-scale validation tests for the new alternative training agent will be done using this mock-up. These tests will assure that the replacement agent performs adequately against severe, but realistic, criteria.*

**Capt. John R. Floden, DSN 523-3734*

Environics

DISPOSAL OF SOLID ROCKET PROPELLANTS

General McCarthy has been briefed on the Solid Rocket Propellant Disposal Program. The briefing focused on the customer base, requirements, deliverables, cost and schedule performance, technical program, and risks. Also covered were the status of FY 90/91 funding and efforts to obtain FY 92-94 funding. The selection of a HQ AFESC/RDV proposal for funding by the USAF Office of Scientific Research (AFOSR) for \$465,000 of FY 91/92/93 money was also briefed. Kenneth L. Reinertson, program manager for Conventional Forces Europe and the Strategic Arms Reduction Talks (USAF/LEEPR), was briefed on the status of the Legislative Environmental Impact Statement (LEIS). The review of the draft LEIS is near completion and should be finished by the end of the month. Maj. George Auten, USAF/LEEPR, briefed on the status of facilities required for the implementation of the START Treaty.

Capt. Mark D. Smith, DSN 523-4234

EMISSIONS ESTIMATION ASSISTANCE

We were contacted by personnel from the 6500 ABW/DEV, Edwards AFB, Calif., regarding pollutant emissions from low altitude aircraft. They are performing an environmental assessment for upgrading an old low-level training route, to include F-15E, F-16C/D, and EF-111 aircraft. They were provided a copy of the Engineering and Services Laboratory's Aircraft Engine Emissions Estimator technical report, and advice on its use. Also provided an evaluation copy of the Multiple Aircraft Instantaneous Line Source Model. The 6500 ABW/DEV will exercise the model and provide feedback from a user perspective.

Capt. Michael T. Moss, DSN 523-4234

Energy Week

ANNUAL FACILITY ENERGY WORKING GROUP MEETING SET FOR MAY

The Federal Energy Working Group (FEWG) meeting will now be held in May instead of October.

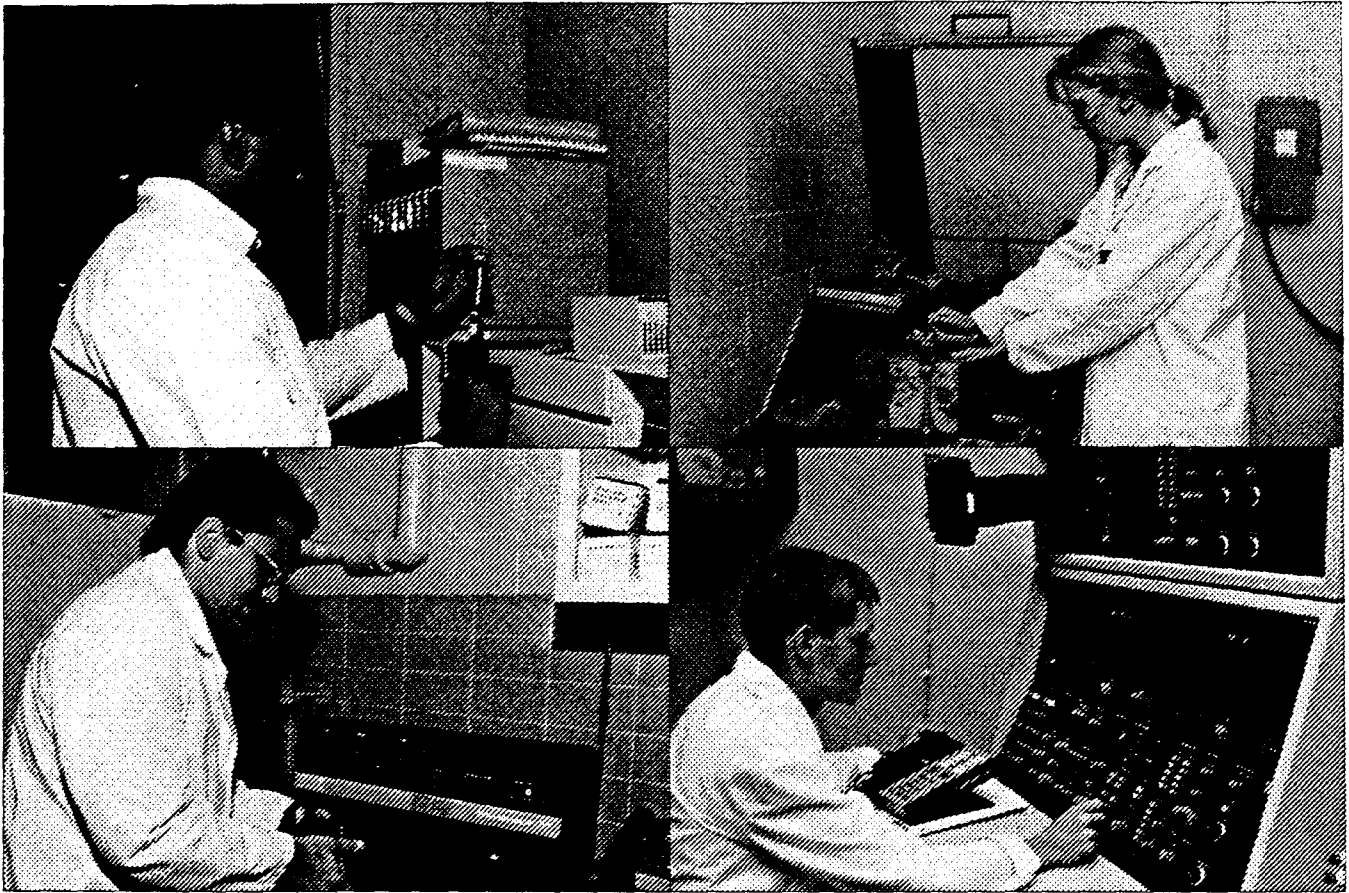
The original meeting schedule coincided with national Energy Week. The new schedule aligns the comprehensive Air Force program review with the annual DoD Energy Program Management Review which takes place in the June-July period.

As required by AFR 18-1, *Air Force Energy Management*, HQ AFESC/DEMM will again host the 3-day meeting. Location will be announced later.

The FEWG is comprised of MAJCOM/HQ and staff facility energy program managers. The annual meeting is a comprehensive review of the facility portion of the Air Force Energy Program. It identifies base and MAJCOM progress in pursuing mandated energy goals and complying with national, DoD, and Air Force energy policy.

The meeting will focus on energy conservation and management, acquisition, and security and will provide maximum time for open discussion of key issues by all participants. In the past, the meeting was held in October.

Stephen A. Hathaway, HQ AFESC/DEMM, DSN 523-6343



Summer faculty visiting professor, Dr. Michael McFarland, Utah State University, uses gas chromatography for analysis of trichloroethylene, top, left; high school apprentice Amy Thomas, top, right, using concrete saw; Joseph Bernardo, lower left, graduate student summer research program, Scranton University, develops strains of bacteria for biodegradation of mixed solvent wastes in groundwater; and high school apprentice David Eshleman, lower right, uses a scanning electron microscope to clarify the image of a binder particle ACB. All worked in the Engineering and Services Laboratory for the summer. (See related story, pages 8 and 9.)

Update
HQ AFESC/RDXI
Tyndall AFB FL 32403-6001

THIRD
CLASS
MAIL