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tribute to the
men and women
of the 38th
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Wing.

Cover by Janet Moreiko-Gagen



EI History

By Dr. Cecil Trice
38th EIW/HO
Tinker AFB, Okla.

Although the 38th Engineering Installation Wing at Tinker AFB, Okla., traces its origins to the late 1940s, its most direct antecedent was the Ground Electronics Engineering Installation Agency. Formed in June 1958 as a subordinate agency under Air Materiel Command, GEEIA was the Air Force's first unified engineering and installation organization.

The agency's purpose was to provide the Air Force with centralized management of worldwide engineering and installation resources. GEEIA was divided into five geographic regions, three in the United States, one in Europe, and the other in the Pacific. Each region had its own headquarters and several subordinate installation squadrons. This EI arrangement carried the Air Force into the Vietnam conflict before the Air Force reorganized engineering functions in 1970.

Air Staff merged GEEIA into the Air Force Communications Service—later Air Force Communications Command—as the Air Force entered the post-Vietnam era. During the mid-1970s, the communications service tried a short-lived and basically unsuccessful experiment by merging most of its EI squadrons into existing O&M units. The hybrid organizations created by this experiment—the so-called communications installation groups—proved unworkable.

In 1979, AFCC embarked on extensive reorganization plans that would not only break up the CIGs into their component EI and O&M segments but also reestablish centralized management of the command's EI resources. It took two years for the reorganization to become a reality. On June 1, 1981, AFCC established the Engineering Installation Center at Tinker AFB as the single manager for the worldwide engineering and installation mission. Consolidation of project materials into one warehouse at Tinker was effected the next year. On March 1, 1985, the Air Force authorized

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38th Engineering Installation Group

Rich in tradition and pride ... firmly focused on the future

By Dan Callahan

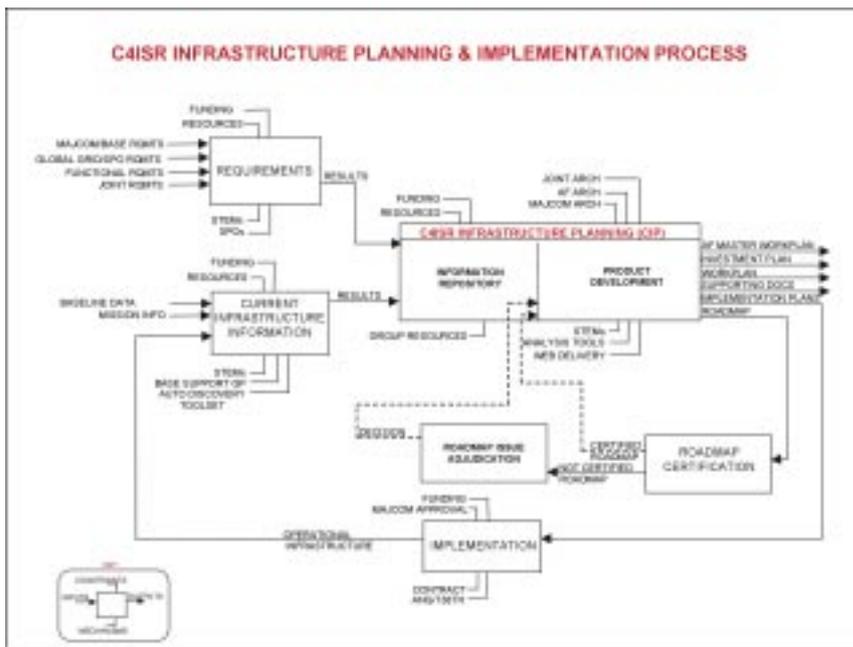
Tinker Air Force Base, Okla.

Editor's Note: Dan Callahan, Chief, Programs Control Division for the reengineered 38th EI Group, was one of 11 members in the Wing Cadre. Made up of senior leaders and staff members, the cadre was selected to design a dramatically different approach in offering EI services to customers. Other members included Col. Tom Mayberry, Larry Epple, Jerry Eyerman, Ray Olivas, Howard Hughes, John Davis, Karen Nobles, Bob Newbern, Gary Guild and Will Edgerton.

Feb. 10, 1998, the Air Force announced a major reengineering of the 38th Engineering Installation Wing, which included significant personnel cuts and a dramatic change in the way the Air Force will accomplish its engineering and installation of C4 systems. The culmination of that reengineering effort took place Feb. 4, 2000, with the inactivation ceremony of the wing and the launching of the reengineered organization that replaced the wing, the 38th Engineering Installation Group.

For nearly half a century, the words "engineering and installation" or "EI" have brought an instant vision to the minds of many people in the communications community, as well as countless customers who have benefited from "EI" services. Traditionally, the most visible members of the "EI" community have been team chiefs and their installers. For many people, say "EI" and the vision may be of an EI troop high atop a gigantic tower on a cliff in southern England. Someone else may think of a blue-suiter inside a bomb crater in Kuwait, attempting a complicated cable splice, or perhaps an installer digging a trench in the frozen tundra of Kosovo. For others, say "EI" and they'll think of young men and women working long hours in all kinds of weather to get the job done, whether in a dark, damp manhole, atop a telephone pole, in an air traffic control facility, operating backhoes or "cherry pickers", or perched precariously above the ground on an antenna tower.

Behind the team chiefs and installers have been some less visible supporting functions: program managers, electrical engineers, civil engineers, logisticians,



contracting officers, financial accountants, workload controllers, supply warehousemen, and legal experts. Additionally, support functions were necessary, such as training, safety, security, administration and others. This genuinely unique capability eventually became a "luxury" as defense budgets declined and strategic application of limited military resources changed. With the advent of the Aerospace Expeditionary Force, the dramatically reduced overseas requirement for in-theater EI, and the concern for reducing high personnel tempo, the Air Force was forced to re-evaluate the need for such a large, self-sustaining EI function.

In evaluating the EI mission, Air Force officials noted that the Air National Guard stood ready, willing and able to fulfill wartime EI requirements. Studies also indicated a wide range of large and small businesses were already postured to accommodate a wide array of EI needs. Studies also indicated that contract EI services could be less expensive in the long run, when all costs are considered. The Air Force also determined that long-term savings resulting from a decrease in organic EI could be passed on to Air Force major commands to offset any increases in EI costs. An additional factor in deciding to reengineer the wing was the extremely high personnel tempo. Installers made up nearly one-third of the total workforce of 2,400 and more than 50 percent of them were on the road at any given time.

The combined weight of these issues led to the Feb. 10, 1998, reengineering announcement and the intense effort to create a new approach to EI for the 21st century. Col. Michael A. Coursey, who assumed command of the wing May 27, 1998, set out to brief every major command senior communicator on these impending changes. To help him with the monumental task of creating a new organization, he created a group comprised of senior leaders and experienced staff members, known as the cadre.

Col. Tom Mayberry, then vice wing commander, was selected to lead the cadre in its effort to create a dramatically different vision for providing EI services. The cadre came together and placed their focus on designing the optimal business approach for a new way of doing business, and several months later a reengineered organization emerged.

The reengineered 38th EIG, commanded by Col. Sue Ann A. Olsavicky, is now authorized 399 manpower positions. One subordinate unit, the 738th Engineering Installation Squadron, Keesler Air Force Base, Miss., reports to the group. The 738th is authorized 192 positions.

The 38th EI Group will develop communications and information modernization plans for Air Force bases, major commands and joint service agencies worldwide, and will manage the implementation of funded upgrades. The group will also manage centralized contract execution of operations, and maintenance service and communications services authorization contracts for telecommunications systems at selected locations.

The 738th will provide a deployable, rapid response capability to engineer and install communications and information systems during wartime and contingencies. The unit will also provide a specialized engineering capability to conduct studies and resolve problems associated with radio frequency interference and electromagnetic radiation hazards. However, the majority of the wartime/contingency mission will go to 19 Air National Guard EI units and the majority of the peacetime EI work will be awarded to contractors.

Designing and developing this new organization was no small task for key members in the wing who spent months refining and streamlining an organization that the Department of Defense could no longer afford. Thinking "out of the box" was crucial.

After developing a sound concept of operations with a solid business approach, cadre members had to look at a variety of key processes to decide which to keep, which to adjust, and which to eliminate. They worked with teams of people from various functional areas to develop detailed plans for the execution of redesigned key processes.

The next, and most painful, step was determining the specific manpower skills that would be needed in the significantly scaled-back organization. After this long and arduous task, the cadre created detailed briefings describing the new organization structure, the concept of operations, the manpower and skills required, and the business strategy for the future of the reengineered unit. Cadre members then took this brief-

ing to wing personnel, who had been waiting patiently for firm news regarding the future organization.

The reengineered unit is comprised mainly of engineers and contracting specialists. The self-sustaining supply and logistics capability is gone, along with most mission support type functions. The Systems Telecommunications Engineering Management function will continue, and even expand. Instead of assembling project installation packages and providing engineering assistance support, commodity engineers will now combine elements of engineering and program management with a clear focus on contract implementation.

The key process for the reborn 38th EIG is the C4ISR Infrastructure Planning and Implementation Process, or CIP. It includes the following key functions:

- **Collection of infrastructure requirements from SPOs, major commands, bases, functionals, etc.**

- **Application of current baseline information, such as major command/base blueprints, base communications drawings, and target architectures**

- **Identification of infrastructure shortfalls**

- **Development of planning/implementation products**

- **Implementation of C4ISR infrastructure requirements**

- **Update of current infrastructure baseline information**

This is a cyclic, iterative process. Each infrastructure requirement will generally go through this process in one form or another. The various internal processes are rapidly evolving into an automated system which will not only simplify and expedite the process, but will create a state-of-the-art method for displaying and analyzing base and major command communication infrastructures. The target is a *geo-special* based system that can visually display the various elements of the process, in addition to automating the requirements assessment and product development processes.

Geo-special relates to PC-based programs that visually display a variety of information. The civil engineering community is leading this effort focused on laying out base infrastructure to include roads, buildings, etc. The Air Force is attempting to add a communications layer that will illustrate information currently contained in base blueprints and other communications data elements. Although in its early stages, the anticipated rapid developments in this area may bring radical changes to the way wing commanders and communicators overview, assess and design the base communications infrastructure.

Some have called the reengineering of the 38th EIW an "end of an era." Certainly, providing EI services worldwide with "blue suit" resources is a process rich in tradition and pride. However, members of the reengineered 38th EI Group are firmly focused on the future. They are poised and ready to create a new tradition as they strive to meet the needs of the Air Force in the 21st century.

38th EIG continues tradition of warfighter support through rapid response force aligned to AEF

By Col. Sue Ann A. Olsavicky
Commander, 38th Engineering
Installation Group
Tinker Air Force Base, Okla.

A new focus and a key role in Air Force infrastructure planning will launch the restructured 38th Engineering Installation Group into the new millennium. The reengineered 38th EIG will continue to make its mark on the Air Force's information highways by providing critical infrastructure planning and implementation for all Air Force major commands, joint commands and other DOD customers.

The 38th EIG will continue a proud tradition of supporting the warfighters in peacetime and war through a rapid response force aligned to the air expeditionary forces. The rapid response force is capable of battle assessment, reconstitution, repair, relocation, engineering and installation of all command and control systems anytime and anywhere in the world. We can also provide specialized testing and evaluation for electromagnetic compatibility and electromagnetic pulse protection.

A totally integrated workforce designed around base, MAJCOM, Electronic Systems Center, and

A totally integrated workforce designed around base, MAJCOM, Electronic Systems Center, and Air Force mission goals will be the dominant factor in our success.

Air Force mission goals will be the dominant factor in our success. Our primary focus is to increase our ability to provide our customers with the planning information necessary for decision-makers at all levels to

meet short and long-term goals.

We must be able to project, integrate and deconflict base and MAJCOM requirements into overall Air Force plans. This means knowing the current infrastructure and being capable of integrating base, MAJCOM and downward directed requirements into future plans while meeting Defense Information Infrastructure Common Operating Environment objectives.

Our focus throughout the reengineering was to develop a continuous process that could meet and exceed expectations of all our customers. This

“ We are ready for the challenges of the new millennium and bring a can-do spirit and dedication to our customers. ”



Colonel Olsavicky

process is centered on our System Telecommunications Engineering Managers (STEMs) role to support customer planning and a new automated system used to house all planning associated data.

It also meant establishing a team of experts to work specifically with program offices and functionals on Air Force planned and developed systems. We are developing automated modules to store a myriad of infrastructure planning information to support a variety of output products to all of our customers. The automated system will allow STEMs and customers to see snapshots or full views of current and projected information infrastructure plans and requirements over the entire planning and budgeting process. Through our new processes, a fully integrated workforce, and a new automated information system we can provide a level of planning information never before achieved.

We have maintained a limited organic capability to implement selected customer requirements and train our rapid response force. We have virtually unlimited access to a variety of contract alternatives that can implement any communications and information system requirement. We continue to provide valuable program management expertise and an expert engineering and support staff for a variety of planning, engineering and installation services.

Endurance and adapting to change are characteristics of our past and the legacy for our future. We are ready for the challenges of the new millennium and bring a can-do spirit and dedication to our customers. We look forward to continuing a proud tradition of service in the communications and information community.



738th is rapid response EI force

Story and photos
by Tech. Sgt Rick Parker
738th EIS

The 738th has enjoyed a proud past and is ready to embark on an exciting future. Leaner, mobility equipped, and deployment ready, the 738th is prepared to send its resources anywhere in the world to engineer, install, re-constitute and repair C4 systems supporting DOD operations.

Primed to react within 48 hours, the unit's installation skills are assigned unit type codes for contingency tasking. The 738th plays an important role in the Air Force's Expeditionary Air Force concept—its UTCs are directly linked to the two Air Expeditionary Wings. The “pop-up” contingency nature of the AEW is an ideal match for the Rapid Response Force of the 738th. Partnered with the Air National Guard EI units, the 738th is the active duty piece of the Total Force concept approach to EI. With the Guard assigned to the Air Expeditionary Force and the 738th assigned to the AEW, collectively they make an unbeatable EI team.

The unit's EI expertise is alive and vibrant in every commodity—antenna, cable, secure communications, air traffic and landing systems, and radio. With an inherent flexibility to matrix various skills to form tailor made teams, virtually any EI requirement can be satisfied. Whether erecting a permanent antenna tower, repairing a damaged radar, installing thousands of feet of fiber, installing extensive SIPRNET drops to support a JTF, or installing a radio system to control flight operations, the 738th is postured to respond when called.

The unit also boasts a military engineering section available to deploy to perform network performance analysis (NPA) on deployed networks, or engineer the installation of a deployable local area network. NPA is already proving to be an invaluable asset. Engineers can analyze deployed networks and make precise recommendations to improve network performance



Members of a cable team from the 738th EIS, Keesler AFB, Miss., the 130th EIS (ANG), Salt Lake City, Utah, and the 219th EIS (ANG), Tulsa, Okla., pose in front of a demolished Kuwaiti aircraft shelter at Al Jaber Air Base.

intrasite, as the network interfaces the world through Defense Information Systems Network gateways.

The specialized engineering section of the squadron, although not UTC tasked, supports DOD operations by performing testing, troubleshooting and evaluating critical C4 systems.

The specialized engineering function is equipped to perform a variety of unique services such as radio frequency interference studies, determine radiation hazards, and evaluations of high altitude electromagnetic pulse protection. Their customers are high profile users with critical command and control requirements that include satellite systems, intelligence systems and special operations.

As the only remaining, active duty engineering installation squadron in the Air Force, the 738th carries its proud heritage into the 21st century. From peacetime humanitarian relief operations to wartime contingencies and every requirement in between, call upon the 738th – they'll deliver the professional, first-class product that has characterized EI for decades.

CMSgt pays tribute to EI tradition of excellence

By Chief Master Sgt. Paul R. Karch
*Communications-Electronics
Air Force Career Field Manager
HQ USAF/ILMM*

In spring 1998 the Air Force Association honored nine active duty and Air National Guard Engineering and Installation members in Washington, D.C., as the "Air Force Team of the Year." These individuals represented the dedication and professionalism of the entire EI community.

Two years later, Oct. 1, we will see one of the largest drops in active duty Communications-Electronics (2EXXX) maintenance authorizations in the past 30 years. This decline is attributed to the divestiture of EI's workload. We will still have a contingent of people on active duty with the 738th Engineering Installation Squadron at Keesler AFB, Miss., but the lion's share of the EI workload will be done by our very capable team members in the Air National Guard.

I have to be honest and say I have mixed emotions about this Y2K milestone. The left side of my brain tells me this is a good business decision for the Air Force while the right side of my brain triggers emotions about this invaluable wartime asset and a process which provided



hidden benefits to the Communication and Information mission.

Over the past three decades these installation and equipment experts filtered through EI assignments and made their way back to Communications and Information, Combat Comm, GTACs, ASOC squadrons and other units. In those units they put their EI skills to work by building communications centers and upgrading old technical control facilities around the world. This benefit alone saved the Air Force and the comm and info community millions of dollars.

We also benefited as these ex-EI troops became the quality assurance inspectors who oversaw civilian contractor installations and 2EXXX maintainers as we installed countless self-help projects. The "can-do" spirit they developed and nurtured in EI squadrons infuses every unit they touch with an immeasurable dose of confidence and ingenuity. Even though the active duty units officially disband this fall and EI personnel PCS



to fortunate comm and info units across the Air Force, the EI tradition of quality and excellence will be carried on by the ANG and the 738th EIS.

As I write this article I can't help but think about the individual sacrifices of maintainers traveling around the globe, work-



ing in austere conditions and enduring lengthy stays away from home. Some of my most vivid memories of EI team members involve those who were left to improvise, engineer, and make it happen thousands of miles from any logistics support.

I could go on for another 5,000 words and barely scratch the surface of the accomplishments of the women and men of these EI units. Instead I'll close with a few words and heartfelt thanks for your outstanding workmanship and professional EI legacy.

STEM engineers develop solutions to meet mission needs

By Howard H. Hughes
*Chief, PACAF/AMC/AFRES
Planning and Implementation
Division in 38th EIG*

The mission of the 38th EIG focuses on planning and implementation of communications infrastructure supporting the Air Force Global Grid vision. Communications infrastructure on an Air Force base is primarily the distribution systems, switching systems, and networks that facilitate the flow of information between 'end' users of communications and computer systems.

The reengineered 38th EIG emphasizes 'organic' planning, and contract implementation of communications infrastructure to meet the current and projected mission of the base or command. Long-range planning documents for bases, and MAJCOM-oriented planning products support the budgeting process for major programs by identifying the communications infrastructure requirements, solutions and associated costs to provide the 'connectivity' between users and systems.

The 38th EIG mission will be accomplished through C4ISR Planning and Implementation of Air Force infrastructure and integration with the DII and Global Grid. The

38th EIG is a valued information resource providing base blueprints, base infrastructure drawings, and a variety of C4ISR program information. We are organized to support MAJCOMs to ensure an integrated MAJCOM centric business approach. We are involved with ESC's Global Grid PAD and in the DII/COE to assist in integration of standards-based architectures such as the JTA-AF. Our process spans from identifying infrastructure requirements, providing cost estimates, managing the process, implementing the requirement, and finally to documenting the new capability. It is an iterative process--a complete continuous cycle.

Infrastructure requirements are derived from customer needs for a capability or information related to the communications infrastructure at a given base, MAJCOM, or installation. Requirements come from users, downward directed programs, technology enhancements, etc. The 38th EIG engineers develop proposed solutions to meet the requirements, whether it is for a high-speed fiber connection to an operations center, a MAJCOM requirement for a SIPRNET connection to pass classified information, or to install an entire basewide communications backbone.

Although we continue to support non-infrastructure communications requirements like radio, ATCALs, etc., we rely primarily on contract support for assistance and implementation. Also, we



Nichole Barr, the STEM-J engineer for U.S. Strategic Command.

have a Joint Services Systems Telecommunications Engineering Management (STEM) office which will continue to serve the needs of the Joint community. Our implementation support primarily is that of referring the implementation of these requirements to potential contract sources.

Systems Telecommunications Engineering Managers, referred to as STEMs, provide long-range planning support to all Air Force bases, major commands and joint agencies. STEMs are seasoned, degreed engineers who baseline existing communications infrastructure, document requirements, and propose a target infrastructure. Upon agreement on the target by base and MAJCOM officials, the STEM then develops solutions, associated costs and a transition strategy to meet mission needs and move the base toward the target infrastructure.

The STEM-B maintains an in-



Michael Smith, STEM-C engineer for the U.S. Air Forces in Europe.

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38th EIW Academy closure creates new beginning

By **Stephanie A. Carter**
*38th Engineering Installation
Wing Public Affairs*

TINKER AIR FORCE BASE, Okla. — An era of excellence where thousands of students were trained in a classroom environment at the 38th Engineering Installation Wing “Academy” came to an end with the academy’s closure. The closing is part of a re-engineering effort under way in the wing that resulted



Master Sgt. Ardouin (E.Z.) Ezell, a 219th EIS team chief, rolls cable off a reel at Eielson AFB, Alaska. A 1987 graduate of the academy’s team chief class, Ezell led the team who expanded and improved Eielson phone service.

in the wing’s inactivation on Feb. 4. The end of the academy, while poignant for many “old-timers” in the communications engineering and installation world, has also created a new beginning with the transfer of the training to the Air National Guard.

The 211th Engineering Installation Squadron in Annville, Pa., was selected to train installation team chiefs and project engineers, a function handled by the academy for more than 20 years. Master Sgt. Wayne Raphael, who taught the final team chief class at the 38th’s academy, traveled to the 211th to teach the first team chief classes there. Tech. Sgt. Kevin Markel, an Air National Guard instructor with the 211th’s “Lightning Force Academy”, participated in the class as an “instructor in training” to help him prepare to teach the class on his own in November.

Distinguished guests, instructors, and students were on hand for the graduation ceremony that took place at the end of this rigorous course. The historic moment was described by Maj. Gen. William B. Lynch, Pennsylvania Air National Guard Adjutant General.

“This is a very important milestone illustrating the way the Air Force must do business in the future,” he said. The general also complimented the active duty Air Force for “administering an outstanding academic program, a program the Pennsylvania Air National Guard is looking forward to running into the next millennium.”

The history of the 38th EIW academy can be traced back to 1972 with the launching of the engineering and installation academy at Northern Communications Area, Griffiss AFB, N.Y.

That academy was called the “NCA Team Chief Academy” and its role was to provide formal classroom

training on the administrative, managerial, and supervisory responsibilities of EI team chiefs for active duty and ANG units in the northern half of the continental United States.

Team chiefs led the teams of installers who travel worldwide to install communications systems for the Air Force and other governmental agencies. Team chief training provides the foundation to help skilled technicians develop their managerial and people skills. Students learn how to manage every step of an installation, from reviewing the engineer’s project package to properly completing the paperwork when the job is done. Most of all, they begin to learn how to manage and support their team members, the installers. Bad weather, technical glitches, compressed schedules and logistics shortfalls are a few of the challenges installers face. Team chiefs must take care of their people at the same time they make sure the customer’s mission requirements are met.

In 1973 a second academy was chartered and located at Southern Communications Area in Oklahoma City. At that time the location, which is a half-mile east of Tinker and the location for the 38th EIW, was called Oklahoma City Air Force Station. This second academy was named “SCA EI Team Chief Academy” and trained active duty and ANG personnel for the southern half of the United States. Together, the two facilities trained 500 students each year.

In 1978 planners met at SCA and created a training program that formed the cornerstone of EI training for the past 20 years. The plan called for a single consolidated facility to handle a much broader scope of training. The new academy offered team chief courses for all students based in the United States,



Master Sgt. Wayne Raphael (standing left) and Tech. Sgt. Kevin Markel (standing right) explain proper procedures for completing project paperwork to team chief students Staff Sgts. Dana Black (left), 130 EIS, Salt Lake City, Utah, and Paul Bombaro, 243rd EIS, Portland, Maine.

field training teams to teach students based overseas, a new two-week course to train engineers, and a training seminar for EI program managers.

Aug. 31, 1979, the NCA EI Team Chief Academy closed and on Oct. 1, 1979, the Air Force Communications Command EI Academy opened at SCA. The new academy had training responsibility for 10 active duty and 19 ANG units worldwide. The first pilot class for engineers took place in November 1980 and by March 1981 the course was endorsed for all project engineers. That same year an EI Management Seminar began and was as well received as the engineering course. Eventually, 400 team chief candidates, 144 project engineers, and 160 program managers a year received training from the academy.

July 1, 1986, the academy staff moved into a new building constructed solely for the needs of the academy. In August 1988 the academy received Community College of the Air Force accreditation, which allowed the academy to grant junior college credit hours for the successful completion of its courses.

In 1995 the academy began to offer Quality Air Force training with courses on teaming, process improvement, unit self assessment, and metrics. For the first time, the academy offered so many courses it had to publish a small catalog to list and explain the courses.

The academy picked up responsibility for training wing personnel on the enlisted evaluation system, the officer evaluation system, and even developed a seminar on the civilian appraisal system in 1996. By 1997 Computer Aided Design and Drafting classes, as well as a host of desktop computer software classes, were added to the curriculum. The academy course catalog published in June 1997 offered 39 courses.

Throughout its history, from the early years at NCA to the most recent years of expansion in the wing, the academy's mainstay has been training people to perform and manage the installer mission. Raphael and Markel are former installers and team chiefs as well as instructors. Raphael served as an installer and then team chief for 11 years, and he taught team chief classes from June 1995 to September 1999. "The most important thing to me as a team chief instructor was knowing I was part of providing the knowledge, confidence, and integrity for an individual to take on any task in the world under any given condition, to support that commander's mission, and then to return all team members home safely," he said.

Markel has been in the Air National Guard and the 211th since 1982. He worked as an installer from 1982 to 1989 and was named AFCC Air National Guard Installer of the Year in 1988. He completed the team chief course at the academy in 1991 and has served as a team chief and instructor since then. Like many individuals from the "EI" community, he takes great pride in his career field. "My best experiences as an installer and team chief came from working on 'crunch' situations. We amazed our customers, both with our work ethic and our end product," he stated.

Much to his great surprise, Raphael received the Commonwealth of Pennsylvania Commendation Medal on the last day of the team chief class he taught at the 211th.

Although the existence of the 38th EIW academy has come to an end, its tradition of excellence continues to prevail. "Taking on this training is an awesome responsibility. The folks at the 38th EIW have done such outstanding work, and for so long, that we have quite a tradition to maintain," Markel said. "It is now the Air National Guard's responsibility to uphold the academy's ethics, traditions, and quality. On these issues, we will not waiver. There is too much at stake."



A team of installers from the 219th Engineering Installation Squadron, Tulsa, Okla., installs cable at Eielson AFB, Alaska, to improve phone service to the munitions storage area, Arctic Survival School and marksmanship range.

38th EIW finds its niche while supporting Kosovo operations

By Lt. Col. John C. Roelofs III
38th EIS Commander

In April 1999, men and women from the 38th Engineering Installation Wing and subordinate units began deploying to bases throughout Europe to support Operation Allied Force. Our initial support of the Kosovo operations began with the diversion of two Systems Telecommunications Engineering Managers already in Europe to support the USAFE/SC staff and kept growing until the air campaign ended in July 1999. In total, the 38th EIW deployed 55 personnel, more than \$600,000 in equipment, and were about to activate more than 300 Air National Guard personnel when the operation ended.

The 38th EIW carried out three primary missions while supporting the USAFE/SC: provided advice on 38th EIW capabilities and proper use of our resources, identified C2 system improvements that would be of immediate use to operations, and installed/upgraded C2 systems. Our first two missions were started without deploying a single person. We were fortunate to have two STEMs in theater when the air campaign kicked off. We diverted them to Ramstein AB to start working with the USAFE/SC staff. We also put all of our USAFE STEMs to work gathering data, contacting their base customers, and scrubbing blueprints. Within a few days, all USAFE STEMs were in theater providing support.

Shortly after the arrival of the STEMs, it became readily apparent that our involvement in upgrading and expanding C2 systems at bases supporting air operations could become massive. The networks at many of the bases were never designed to support such large increases in mission and population that operations in Kosovo now placed upon them. The STEMs helped base personnel and the USAFE Special Maintenance Team plan and structure their expansion efforts. Base personnel did an outstanding job in meeting the increased demands while performing their normal jobs. However, new requirements being identified by the STEMs would soon exceed the bases' most heroic efforts.

To prepare to support a large Engineering and In-

stallation effort in Europe, the 38th EIW sent a Small Management Team to Ramstein AB. This three-person team worked with the USAFE/SC staff to help identify and prioritize C2 requirements supporting operations, identify and task EI resources, and manage the use of EI assets in theater. Even while the SMT was defining requirements with the USAFE/SC staff, folks back at Tinker AFB were putting together Deployable Local Area Network suites. Each suite would provide SIPRNET and NIPRNET connectivity for more than 100 people using commercial, off-the-shelf equipment. It was none too soon since requirements and taskings for two DLAN teams flowed a week after the SMT arrived.

The arrival of the first two DLAN teams in theater signaled the beginning of the installation mission. The teams barely had time enough to process in at Ramstein before they were redeployed to other locations. The first team was sent to Moron AB to help beef up their LAN to support AMC tankers while their equipment was sent to Incirlik AB to support a planned beddown there. The team made significant improvements at Moron AB using ingenuity and some equipment borrowed from the Ramstein CITS project. The team, in turn, reconfigured the core LAN from a 10MB shared network to a 100MB switched network, set up Dynamic Host Configuration Protocol to resolve IP address problems, expanded the physical network to additional buildings, and trained NCC personnel on their new capabilities.

The second DLAN team deployed to Souda Bay NAS in Crete. Their equipment was also deployed and eventually caught up with the team after a round-about trip through the Mediterranean. This team also worked miracles. Within three days after the equipment arrived, they established a completely new SIPRNET and NIPRNET, starting only with a point of presence, supporting AMC tanker personnel just in time for their first mission into the AOR.

We eventually brought over two additional DLAN



KOSOVO

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teams with equipment and two engineering teams. Members of these teams did a variety of tasks throughout Europe. They ended up expanding SIPRNET and NIPRNET at Incirlik AB, Izmir AB, and Rhein Main AB. Also, they surveyed two contingency beddown locations to support expanded operations, and conducted an initial radio frequency survey and siting to improve radio connectivity between the AOR and CAOC. Finally, these teams installed a fiber optic LAN for the

USAFE/IN community and a LAN at the Warrior Preparation Center for the Studies and Analysis team documenting the Kosovo operation.

While the teams were doing a lot of good work for the bases in Europe, the SMT was preparing to support an influx of ANG personnel. However, before this was required, the air campaign ended. Despite this, we did make a positive impact on C2 supporting operations and, even more importantly, demonstrated what we believe is the future of EI support.

During the entire air campaign and support provided, the 38th EIW

was in the process of reengineering which results in a much smaller active duty installation force and no change to the ANG installation force. What this change means to contingency support is that rapid response will be provided by the small active duty presence remaining while the ANG will provide long term or larger scale support. This is exactly how we supported USAFE—a few small teams handling immediate requirements/installations and setting the stage for long term ANG support. The future of EI contingency support was demonstrated in Europe last summer.



Dan Allred, the STEM-B engineer for Yokota AB, Japan.

STEM

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infrastructure baseline for each base to include information detailing the current communications infrastructure at a given base, MAJCOM or installation. This includes but is not limited to a base blueprint, configuration data, and mission information. Some of this 'planning' information is currently stored in an Integrated STEM Data Base (ISDB).

A new process called CIPS (C4ISR Infrastructure Planning and Implementation System) is under development and will replace the ISDB and current base blueprint. CIPS consist of a new repository and associated automation tools to include the total process of 'planning and implementation'. This will enhance the 38th EIG's ability to provide several new products and tools in the future to include a Roadmap, MAJCOM Investment Plan, MAJCOM Workplan, Air Force Master Workplan, Implementation Plan, and miscellaneous re-

ports and supporting documents.

The Roadmap consists of a graphical view of the current infrastructure, the near term as well as future or long-term upgrades. These are compared to the Target Architecture to further indicate the infrastructure shortfalls. The Roadmap will include the current C4ISR information and a strategy to reach the target architecture. It will be created for each MAJCOM and should be an interactive product enabling customers to select information needed for specific tasks and planning efforts.

The MAJCOM Investment Plan translates the shortfalls identified in the Roadmap into funding requirements. The primary purpose of the Investment Plan is to act as a tool to assist MAJCOMs in their budgeting process. The Investment Plan will translate the roadmap into required dollars by providing a funding strategy for each MAJCOM to implement their Roadmap. Like the roadmap, the Investment Plan will be an interactive tool, customized to meet specific customer needs.

The MAJCOM Workplan represents work to be done for the upcoming fiscal year. It is an "execution plan" which identifies work listed in the first year of the Investment Plan that is expected to be funded. A MAJCOM's Workplan will be prioritized based on operational needs and availability of funding and provides an implementation strategy for the next fiscal year.

The AF Workplan is a compilation of all AF MAJCOM Workplans. This product will provide overall C4ISR infrastructure funding strategy for the Air Force.

The Implementation Plan will detail the plans for implementation of MAJCOM requirements through the 38th contract implementation support capability. The Implementation Plan includes the description of work to be accomplished, funding information, schedule information, required documents, and implementation methods.



38th EIW Top 10 Accomplishments



Editor's note: The 38th EI Wing, inactivated Feb. 4, had eight active-duty subordinate units; five were located with the wing at Tinker AFB, Okla., and three are geographically separated:

38th EI Group, Tinker: has been reengineered and remains at Tinker

38th EI Squadron, Tinker: will be inactivated in June '00

38th Logistics Squadron, Tinker: inactivated Feb. 4 with the Wing

38th Mission Support Squadron, Tinker: inactivated Feb. 4 with the Wing

38th Comptroller Flight, Tinker: closed when the Wing was inactivated; flights don't formally inactivate

738th EI Squadron, Keesler AFB, Miss: reengineered and remains at Keesler

838th EI Squadron, Kelly AFB, Texas: inactivates in October '00

938th EI Squadron, McClellan AFB, Calif: inactivates in October '00

Each unit has provided a list of the "Top 10" achievements they are most proud of since they became a part of the 38th EI Wing.

1. 1997 Quality Air Force Assessment. Received an overall **Excellent** rating.

2. Joint ANG and Active Duty EI Exercises: Salt Crystal VI Exercise in the spring at Boise, Idaho, and Southern Challenge IV exercise at Fort Hood, Texas, in late summer. Exercises created to provide mission support and wartime training for active duty and Air National Guard resources in order to provide better support to warfighters and the wartime mission.

3. Lightning Force '96: In late fall a total force installation of a Combat Infrastructure Transportation System was orchestrated. Also, a full-scale employment phase exercise called **Lightning Force '96** took place. Since then wing members were identified as "**Lightning Force Warriors.**" Between April and July '96, 386 installers and 75 supervisory and support personnel from 24 units honed their combat skills during a range of realistic wartime scenarios. They cut installation time for the CITS job by five months saving \$6 million.

4. Support to Kosovo: Established Unit Control Center within the Ops Center to support Kosovo air campaign, which increased EI support effectiveness and created a "one stop shop" for all information and decision-making. At the end of the campaign, the wing had deployed 19 UTCs and nearly 100 short tons of deployable LAN equipment, tools and test equipment.

5. STEM Blueprints for Worldwide Bases. System Telecommunications Engineering Manager was established for each MAJCOM and each base in that MAJCOM for comprehensive planning of the communications infrastructure into the next century. Services Systems Telecommunications Engineering Management is a blueprint of what each base and command has, needs, cost info, and implementation guidelines for what the warfighters will need in the future. This blueprint was a major milestone in providing a shared resource both the planners and implementers could use to fund and install the latest technological support for each unique mission.

6. Automated Planning Developed for Air Force-wide Implementation. The STEM directorate developed the Blueprint Phase Implementation Directive as an automated tool to identify requirements by commodity (i.e. networks, distribution, switching), then further define the commodity into elements by scope of work required, necessary construction support required, funding, and the identity of all supporting projects or phases. As an example, this system allowed the STEM-Bs to generate more than 300 directives while deployed to various USAFE locations, identifying funding requirements in excess of \$71M to the support command and allowed many of the requirements to be implemented well before their expected schedules.

7. EI Contracts Close the Gap on Dwindling Resources. As bases and manpower were reduced, the need for EI type work actually increased. Numerous infrastructure realignments and removals placed a high demand on organic resources. A major undertaking was implemented to provide contract sources for those services. The \$6.57 million Command, Control, Communications, and Computer Services contract was one of



the first comprehensive EI contract endeavors. In 1996, the 38th awarded the C4 Services - Pacific contract to provide EI services to Hawaii, Alaska, Guam, Korea and Japan. The Command and Control Engineering and Installation Contract for the Americas was awarded in September 1997 to meet the EI requirements in the 48 continental states, Central and South America, and Caribbean. A new C4 contract was then awarded at a value of nearly \$30 million to expand services even further. These contracts ensured bases continued to receive communications upgrades and support even as organic resources were reduced.

8. SCOPE Command Support Provides Overdue HF Upgrade. The 38th also set the stage for a \$350 million acquisition for the SCOPE Command program. This was an Air Force-wide HF modernization program to upgrade 15 locations worldwide and provide the Air Force with a modern HF radio system for the future to include full life-cycle support. The system will provide critical C2 for all military aircraft over water and provides direct communications support through Mystic Star for the presidential fleet aircraft supporting the White House and a variety of VIPs. The 38th EIG's innovative acquisition strategy supported successful contract award for an aggressive implementation schedule of modern HF installations at bases worldwide.

9. Warfighter Support to Saudi Arabia. In the wake of Operation Desert Storm and the bombing of Khobar Towers in Saudi Arabia, the 38th EIG provided direct on-site engineering support for relocation of personnel to safe operating locations. Engineers and installers completed the extensive construction of communications support for the Friendly Forces Housing Complex and facilities at Prince Sultan Air Base. This work was critical to move U.S. Forces supporting Saudi Arabia to a location where terrorist threats could be minimized. It also assured modern information services and security were up and running when people began to arrive.

10. Combat Information Transport System. 38th EIG engineers provided the mainstay for engineer-



Photo by Master Sgt. Ron Mullan

A cable installation team from the 130th EI Squadron (ANG), Salt Lake City, Utah, prepares to conduct a test using a M-256 Chemical Detection Kit to determine if chemical agents are present during exercise SALT CRYSTAL IV. The exercise, developed by the 38th EI Group and held at Gowen Field, Boise, Idaho in 1995, provided wartime training for active duty and ANG personnel.

ing surveys and development of the biggest Air Force infrastructure upgrade in the 20th century. Nearly every base required an extensive review to ensure warfighters will be able to deploy with the necessary equipment and information that future conflicts and wars will demand.



1. 1997 AFMC Quality Air Force Assessment: Received an overall outstanding rating.

2. Operation Southern Watch--Provided a continuous in-theater program management presence from 1996 through 1999. Installed more than 197 projects throughout the AOR to turn tactical communications into permanent infrastructure.

3. Combat Information Transport System--Provided program management from the first total force installation at Mountain Home AFB, Idaho, in 1995 to present. Significant backbone infrastructure improvements at bases worldwide.

4. Operations Noble Anvil/ Allied Force--A total Wing effort which deployed all Europe STEMs, a small management team, four Deployable Local Area Network teams, and two engineering teams. Identified more than 300 projects necessary to improve systems supporting the air campaign. Made significant improvements to networks at Moron Air Base, Spain; Izmir AB, Turkey; Ramstein AB, Germany; and Rhein Main AB, Germany. Installed DLAN suite at Souda Bay NAS and prepared to install a DLAN suite at Tazsar. Conducted surveys of new bed-down sites in case operations expanded. Demonstrated concepts to be used after reengineering of EI.

5. Defense Messaging System--The 38th EIW was requested by DMS-AF to provide engineering and installation support for this program to meet an accelerated operation date. The Wing quickly formed a team (of engineers and one program manager) to meet the need. This team attended specialized DMS training provided by the PMO, determined tools required to install hardware and established a schedule of services for optimum support. The 38th EIW met all DMS-



Staff Sgt. Laslo P. Nyerges (front) and Tech. Sgt. Stephen A. Coker, members of the 272nd EIS (ANG), La Porte, Texas, were among a large group of active duty and ANG installers who upgraded Mountain Home AFB's communications infrastructure in 1995.

AF PMO requirements on time even though there were delays and changes from the basic requirement. Every delay and change was reviewed by the 38th EIW and effective and efficient course changes were made. The DMS-AF PMO said the 38th EIW saved the program \$22 million.

6. Global Command and Control System--The 38th EIW was requested by the GCCS AF Program Office (ESC) to provide program support for this warfighter support requirement. The 38th EIW quickly established a support team of engineers and one PM to provide pro-



gram support. The team attended specialized GCCS training and moved out quickly to meet program needs. This program has also suffered delays, changes in the requirement and technological upgrades. The 38th EIW quickly adapted and avoided program delays. Much of the installation and operational effort has been developed on site by the engineer. Bringing the system on line, testing and troubleshooting is all done by the engineer in conjunction with the GCCS Help Desk before departure. Quick reaction engineering changes are required at some sites due to building/requirement changes. These have been easily accomplished and the systems have been efficiently placed in operational status.



Staff Sgt. Michael Guillory (standing), 273rd EIS (ANG) Beaumont, Texas, works on the massive communications infrastructure upgrade at Mountain Home AFB, Idaho.

7. Instrument Landing System—The 38th EIW provided support for a critical and complex need. A need was identified in early 1995 to upgrade several Air Force Base runways from Precision Approach Radar to ILS (Instrument Landing System) technology. To do this would be difficult—11 runways required the upgrade and only seven ILSs were available at depot for transport. Tower sections were also required to complete the system and there was an inadequate supply. After considerable negotiation between the Air Force, Navy and FAA, enough resources were identified and sent to the sites. Specialized engineering teams did site surveys and received approval from the FAA to continue. Within a short time each Air Force Base had its ILS installed and commissioned by the FAA. This provided the pilot, the base, and surrounding areas with optimum flight safety. The 38th EIW saved each base about \$1.5 million in equipment and material cost.

8. Global Command and Control System — Expeditionary Air Force (HQ ACC) - The 38th EIW was approached in early February 1999 to provide engineering and installation support for ACC's GCCS requirement. This was an expansion of GCCS-AF. The 38th EIW reviewed the requirement which consisted of 22 sites and an accelerated mission need date of Dec. 30, 1999. The requirement was accepted and work began immediately. Site surveys began March 1999 and material procurement began in May. All accelerated options were used to ensure installation tasking began by

June 14. Material shortages during the Kosovo action caused a slight delay. Twenty sites were installed and operational by Dec. 30. The remaining two sites were completed and operational Feb. 25, 2000.

9. Instrument Landing System—Presidential Promise to the Japanese Government--The 38th EIW was directed to support a promise made by President Clinton to the Japanese government wherein the flight landing pattern would be adjusted to reduce noise surrounding Yokota Air Base, Japan. This was an accelerated effort--it had to be done in one year. Several issues had to be resolved before the ILS could be installed. The runway had to be sited and accepted by the FAA. An ILS and some tower sections had to be moved and approved as acceptable for the runway. Equipment and installation materials had to be identified and readied for shipment to the site. Various approvals and certifications had to be done—all in quick time. With considerable discussions and negotiations, all issues were resolved. The ILS was installed and certified in less than one year with not only a significant cost savings to the U.S. government, but to the satisfaction of the Japanese government.

10. C-17 Beddown at McChord AFB, Wash.—This beddown was considered a mini CITS project. It expanded over a period of four years at a cost of \$25.5 million. It was a total RDS contract effort.



38th Logistics Squadron

1. Outstanding “Specialized” Contracting Unit: Won award at Electronic Systems Center level in fiscal years 1996, 1998, and 1999, and from Air Force Materiel Command for FY ‘96, ‘98 and ‘99.

2. U.S. Customs Service: Christmas week of 1998 received an urgent request from the U.S. Customs Department. A storm in California damaged an antenna that provided communications to the Command Center, leaving customs agents without access, and leaving them in a possibly dangerous situation. The squadron received a list of materials for the required items, and worked them as an emergency, including air shipment. Within 72 hours, they were back in service.

3. The unit is a DOD benchmark for competing local phone service. After passage of the Telephone Deregulation Act of 1996, this unit set the pace for implementation within DOD and provided assistance to the Army for their implementation. Their efforts saved more than \$45 million for the Air Force (fiscal year ‘98 and ‘99)

4. The squadron has an Outstanding Quality Assurance Evaluator program. It developed interactive web pages and a first-rate training course. They trained more than 120 quality assurance evaluators across the Air Force (FY ‘98 and ‘99)

5. When Homestead Air Force Base was virtually destroyed during Hurricane Andrew, all major equipment on site was bulldozed and/or buried. When they were to reopen as an Air Force Reserve Center, they had to start from square one. The Logistics Squadron took 15 projects installing cable and equipment during a four-year period to complete work to get Homestead fully operational. They diverted equipment from base closures, requisitioned materiel from Sacramento Air Logistics Center, and ordered needed cable and hardware through its 38th Supply Flight to ensure Homestead’s operational status.

6. Improved on-time delivery and competition/small business rates—The squadron improved its on-time delivery rate for commodities to 85 percent (77 percent AFMC standard)

(FY ‘99). Competition rate as high as 98.5 percent (FY ‘99). The squadron exceeded small business goals for FY ‘98, 18 percent vs. a goal of 15 percent.

7. Reduced contracting lead times—members of the squadron significantly reduced contracting lead time for commodities and services buying. They reduced lead time from 180 days to 147 days for services, from 17.7 days to 6.1 days for commodities, and from 91.9 days to 46.2 days for local exchange service — providing products and services faster and better to the customer (FY ‘98 and FY ‘99)

8. Met challenges of paperless contracting—squadron members set a record by awarding 91 percent of eligible requirements using Electronic Commerce/Electronic Data Interchange and issued all solicitations paperless. All distribution for O&M contracts was done paperless. (FY ‘99).

9. Provided extensive training—They reached 100 percent Acquisition Professional Development Program certification. In accordance with the Defense Acquisition Workforce Improvement Act, all contracting personnel obtained APDP certification at or above their required level. (FY ‘98 and FY ‘99). Implemented Acquisition Reform. They sponsored events and training in support of the DOD-directed Acquisition Reform Week and trained more than 1,100 wing personnel (FY ‘96/97/98/99). The squadron conducted a Communications Service Workshop (developed at the request of MAJCOMs) and trained more than 400 communicators across the Air Force (FY ‘97/98/99). They established 1,102 training positions so lower grade personnel could bridge to the professional contracting series (FY ‘95/96/97/98/99).

10. HQ PACAF Video Teleconferencing Systems—In 1994 the unit had a priority one requirement for HQ PACAF, Video Teleconferencing Systems, which consisted of providing this capability to five bases. The normal time to procure this installation materiel would be 60 to 90 days. Due to the customer’s compressed timeframe, materiel was diverted from other projects, expedited, and substituted to get materiel on site within two weeks.



1. Reimbursement funding: Conversion from a level of effort funding to reimbursement method that required customer funding of all EI projects. The flight devised a user-friendly system that was easy to learn and provided a service to the customer, but without costing the Wing funds that were no longer available. Wing members, units and customers quickly adapted to the change and the reimbursement method became a common practice.



38th Comptroller Flight

2. Reimbursement training and teamwork: 38th EIS flight personnel and program managers formed money manager teams for all their customer requirements. Prior to this method, program managers did not manage money. With reimbursement and training and tools they received from flight personnel, program managers managed customer project funds. The flight provided program managers/customers with spreadsheets that showed actual dollars spent rather than estimates. The flight sponsored workshops for active duty and ANG units to provide actual cost data, which was a huge task, but it bought more comm for the customer.

3. Oklahoma City Bombing: Members of the flight worked many hours to aid victims of the Oklahoma City terrorist bombing in April '95. In addition to hours helping strangers, flight members also came together to take care of one of their own, a member of the flight whose husband was killed in the bombing.

4. Reimbursement Improvement Working Group: Originally established to support the reimbursement initiative but evolved into a working group supporting all financial issues and all 38th geographically separated units. Group changed its name to FOCIS for Financial Operation for Communications Information Support, but working as a team for the improvement of all financial issues remains their goal.

5. Contingency/Real World Conflict support: Flight members financially supported exercises and real world conflicts such as Desert Shield/ Desert Storm, and during events in Bosnia and Kosovo. The Wing installed a comm system in Atlanta for the '96 Summer Olympic Games allowing law enforcement agencies to communicate with each other.

6. Tornado '99: In May '99, after a devastating tornado left thousands homeless in the greater Oklahoma City area, flight personnel donated their time and countless materials to help external and internal families affected by the disaster.

7. 1997 AFMC QAFA Inspection: The 38th Comptroller Flight received an overall "Excellent" rating during a command QAFA inspection in August '97.

8. CITS: The unit successfully managed more than \$211 million in support of the massive Combat Information Transport System program to upgrade base telecommunication systems at 39 bases.

9. Contingency Funding: Responsible for providing EI travel funds to its geographically separated active-duty units and ANG for exercises and real world conflicts funding more than \$1 million with its O&M funds. Through foresight, flexibility, and proper planning, the flight was able to process and obtain funds for travel, at the end of the fiscal year when money is usually scarce. Despite the complexity FM was able to execute the unit's planned spending for FY '99.

10. Preparing for the Future: Our financial managers are working together searching for ways to provide the reengineered 38th EIG the best financial support possible with limited resources. They developed training packages to their customers' needs. They have developed a standard training plan for their analysts and are continually researching new training available. All financial analysts successfully completed acquisition training.

38th Comptroller Flight

Ceremony honors 38th EIW, commander



TINKER AIR FORCE BASE, Okla.— Feb. 4, the 38th Engineering Installation Wing was officially inactivated and Col. Michael A. Coursey, wing commander, retired after 31 years of service. The wing inactivation, a poignant moment for wing personnel, is the result of an Air Force announcement made

Feb. 10, 1998 on the need to significantly reengineer and downsize the engineering and installation mission.

The ceremony began at 10 a.m. with a welcome and introduction of guests. Military and civilian members, representing the wing and its eight active duty units and all 19 Air National Guard units, stood in formation to honor an organization and an individual: the 38th EI Wing and Coursey. Col. Sue Ann A. Olsavicky, 38th EI Group Commander, served as Commander of Troops.

Following the arrival of the official party, the posting of the colors and the national anthem, Lt. Gen. Leslie F. Kenne came forward to present the Air Force Outstanding Unit Award to the wing. This is the wing's third AFOUA since its inception in November 1994. Kenne is Commander of Electronic Systems Center at Hanscom AFB, Mass., the wing's headquarters. The general spoke of the wing's proud tradition in serving its customers and the achievements that led to this unprecedented third AFOUA.

The wing was cited for exceptionally meritorious service from Dec. 11, 1998 to Feb. 3, 2000 for supplying

America and its allies with the most reliable, modern, and technologically superior command and control systems available. "Lightning Force Warriors", the nickname for men and women in the wing, were deployed to more than 130 locations in 30 countries directly supporting the operational mis-

sion requirements of the warfighter. Wing personnel installed critical communications infrastructure supporting air operations in Kosovo; provided command and control systems that allowed commanders in Southwest Asia to control regional forces; and installed crucial radar and air traffic control equipment for Joint Task Force-Six.

After the award presentation, the inactivation ceremony began. The emcee, Lt. Col. George Bettis, traced the wing's heritage, beginning with the 38th Bombardment Wing activated Aug. 18, 1948, through direct links with the Ground Electronics Engineering Installation Agency formed in June 1958, and all organizational changes from the time of GEEIA up to the establishment of the 38th EI Wing Nov. 8, 1994. Following this, the flags for the 38th Mission Support Squadron, 38th Logistics Squadron, and 38th Engineering Installation Wing were each furled and cased, signifying the inactivation of these units and the end of an era.

After the inactivation ceremony, Bettis read a proclamation signed by Oklahoma Governor Frank Keating declaring Feb. 4, 2000 as "**38th Engineering Installation Wing Day in the State of Oklahoma.**" In the proclamation, the wing was cited for faithful and loyal service to the United States despite extended family separations and other hardships, and for invaluable community support given after the Alfred P. Murrah Federal Building bombing in April 1995 and the March 3, 1999 tornado in central Oklahoma.

Kenne then began the retirement ceremony by sharing highlights from Coursey's distinguished 31-year career before she presented him with the Legion of Merit medal. The colonel received the medal for his outstanding service as vice commander and then commander



Lt. Gen. Kenne, Chas. Johnson (center), and Master Sergeant, and wing flag signifying the 38th EIW.



Lt. Gen. Leslie F. Kenne, Electronic Systems Center commander, pins the Legion of Merit medal on Col. Michael A. Coursey. The colonel received the LOM for his service as 38th EIW vice commander and then commander.



(Left front) Maj. Kenneth McDowell, 938th Engineering Installation Squadron commander, McClellan AFB, Calif.; (front center) Lt. Col. John C. Roelofs, 38th Engineering Installation Squadron commander, Tinker AFB, Okla., and (front right) Maj. Lawrence M. Miller, 38th Mission Support Squadron commander, Tinker AFB, Okla., along with wing members, salute as the National Anthem starts the ceremony.

Chief Master Sgt. Tommy J. 38th EIW Command Chief and Col. Coursey case the formal inactivation of

the wing from July 24, 1995 to Feb. 29, 2000. He was recognized for leading the implementation of the Air Force's new Combat Information Transport System at Mountain Home AFB, Idaho, while he was wing vice commander. He refocused engineering and support efforts into command product teams saving nearly \$6 million in programmed installation costs. His efforts cut implementation timelines by 40 percent.

As Wing Commander, Coursey was cited for spearheading the complete redesign of the Air Force's engineering and installation community. He streamlined the wing from more than 2,400 personnel to nearly 600, thus producing a one time savings of \$33 million and an annual savings of more than \$27 million. At the same time he guided this major reorganization, he also led the wing through a sustained high operations tempo to support the warfighters' mission worldwide.

Following the medal presentation and his retirement orders, the colonel and his wife both received certificates of appreciation signed by President Bill Clinton for their dedicated service and contributions to their country. Coursey then gave his wife, Linda, a bouquet of red and white flowers.

The next portion of the ceremony was the folding of a U.S. flag that flew over our nation's capital, the Okla-

homa state capital, at the wing's three geographically separated units: the 738th EIS, Keesler AFB, Miss.; 838th EIS, Kelly AFB, Texas; and the 938th EIS, McClellan AFB; Tinker AFB and over the wing compound. Bettis explained the significance of each of the 12 folds as members of the honor guard folded the flag and then presented it to Colonel Coursey.

The ceremony concluded after the colonel spoke to the audience and expressed his deep appreciation for the support, good work and accomplishments of the men and women in the 38th Engineering Installation Wing. A native of Tulsa, Okla., Coursey enlisted in the Air Force in 1968 and received his commission through Officer Training School in 1970. He and his wife, Linda, have two children: Kimberlie and Christopher.



An EI memorabilia display was set up for guests in a pre-ceremony reception.



1. The Security Flight received an “Outstanding” rating from the Air Force Materiel Command inspection team during the August 1998 Information Protection Assessment & Assistance Program. This was the first Outstanding rating issued by AFMC during an IPAP inspection.

2. The Training Flight transferred the responsibility for the Engineering and Installation Team Chief and Project Engineering courses to the Air National Guard at the 211th EIS at Fort Indiantown Gap, Pa. These Community College of the Air Force accredited courses are the only ones that train our active duty and ANG project engineers and installation team chiefs how to do their jobs. HQ USAF Program Action Directive 98-1, Air Force Engineering and Installation 2000, directed this first-of-its-kind transfer of CCAF-accredited courses from an active duty unit to the ANG. Through extensive hands-on involvement, the leadership and instructors of the Training Flight trained ANG instructors, revised curriculum where necessary, developed the extensive student and administrative support structure needed, and coordinated the required CCAF accreditation. These actions occurred both at Tinker AFB, Okla., and Fort Indiantown Gap. The transfer was such a success that the Adjutant General of the Pennsylvania Air National

Guard attended the graduation ceremonies of the first ANG-taught class and presented the Team Chief course supervisor Master Sgt. Wayne Raphael, 38th MSS/TA, the Pennsylvania Commendation Medal. This effort ensures our total force engineering and installation team chiefs and project engineers will have the right tools to do their jobs in support of the Expeditionary Air Force.

3. The Security and Civil Engineering Flights were key players in standing up and accrediting the Joint Services Division’s Secure Internet Protocol Router Network operation. The civil engineers worked extensively with joint services personnel, Tinker AFB civil engineers, and GSA contractors to reduce the original construction estimate of more than \$500,000 to \$320,000. Additionally, they kept the project on track despite numerous contractual, funding, and operational roadblocks and ensured our System Telecommunications Engineering Managers – Joint had the required classified networking environment to support their warfighting CINC customers. The Security Flight personnel worked closely with local certification and accreditation officials, as well as Tinker AFB officials to ensure the facility and operations could securely support the classified network. These efforts established a benchmark accreditation process and document that will



Ron Stanberry, 38th Mission Support Squadron.



serve as the basis for future SIPRNET installation and accreditation efforts.

4. The Communications and Information Flight provided quantum improvements in the management of \$11 million of Automated Data Processing Equipment. During 1999, the 38th EIW was the only organization on Tinker AFB to train 100 percent of ADPE custodians, update all appointment letters, and finish all inventories on time. All of this was done during significant restructuring and internal movement within the wing as well as the loss of numerous experienced custodians due to reengineering efforts. These outstanding efforts resulted in the Tinker AFB ADPE Management Tiger Team requesting 38th EIW assistance in reviewing ADPE management throughout Tinker AFB. Several of our processes were adopted for use base-wide.

5. The Engineering Data Services Center of the Engineering Data Management Flight instituted delivery of installation communications infrastructure blueprints via CD-ROM. Previously, the blueprints had to be hardcopy documents that were put into a binder and mailed. This was expensive and untimely. Using CD-ROM copies decreased turnaround time significantly.

6. The EDSC also instituted on-line access for our worldwide customers to base blueprints, Communications Systems Installations Records, engineering project drawings and the engineering illustrated catalog. This provided our customers instant access to their communications drawings and associated engineering data via the web.

7. The Civil Engineering Flight designed a prototype for mounting a tactical radar system onto a permanent structural tower. This successful design was implemented at Eglin AFB, Fla., and Mountain Home AFB, Idaho.

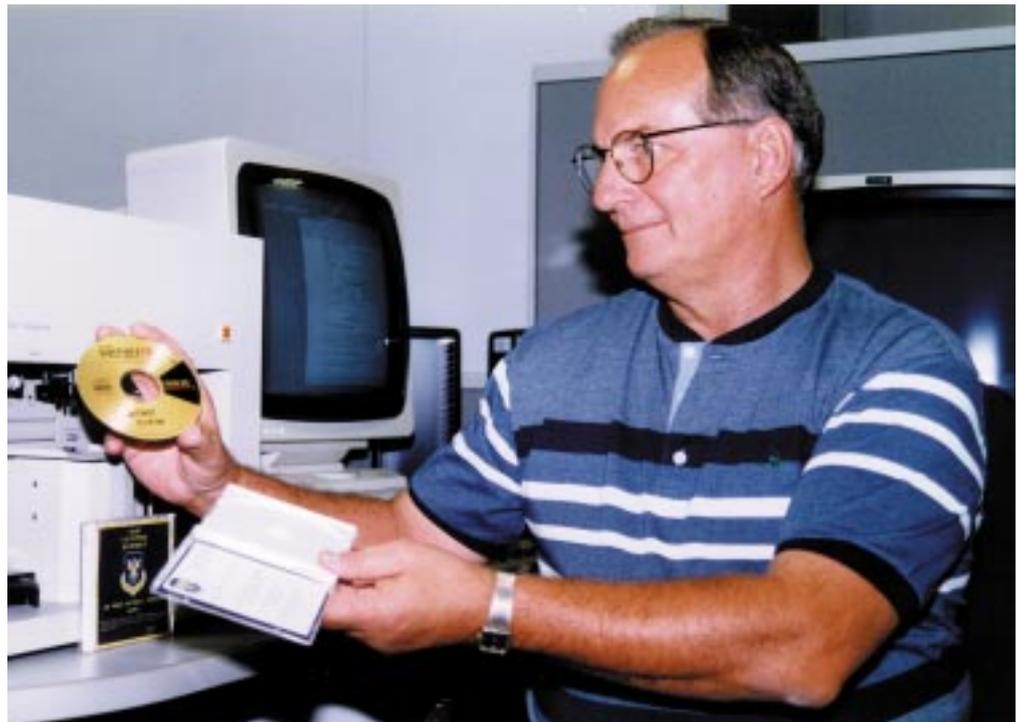


Photo by Staff Sgt. Ben Gonzales

Leroy Bowden, 39th MSS, prepares to “write” information onto a compact disc. The 38th EIW saved Air Force base telecommunications needs onto CDs.

8. The Civil Engineering Flight also planned and managed a \$275,000 addition to the EI Training Flight facility. This addition added two large classrooms and provided the space necessary to add a host of computer software training courses to the Training Flight curriculum.

9. The Civil Engineering Flight planned and managed several other facility improvements at the 38th EIW “Hill” complex. Among these were: a 60-car parking lot which was done self-help, saving \$40,000; a \$120,000 renovation of the wing headquarters building which was done in less than 120 days; conversion of four major facilities from steam heat to natural gas heat which facilitates the future closure of the Hill Steam Plant; a complete HVAC renovation costing \$280,000; and the construction of a new \$323,000 Civil Engineering facility.

10. The Personnel Flight completely reengineered their performance report and decoration processes. These revamped procedures resulted in a near 100 percent on-time rate, including the three geographically separated units.



1. Installation of Network Encryption Devices in support of White House Communications Agency: This project consisted of installing cryptographic devices to provide secure communications connectivity at four classified sites. The project was completed Aug. 9, 1996.

2. Combat Information Transport System network installation: This project will implement the Combat Information Transport System at Aviano AB, Italy, and will provide base-wide fiber optic network backbone connectivity supporting the Air Force C4I Combat Information Transport System implementation, which will enhance global communications for CITS.

3. Installation of Wing Command and Control System—This project directed the installation of a secure Wing-level network at Langley AFB, Va. The team installed WCCS secure voice

and data equipment in 26 buildings and connected the equipment to the base's high-speed encryption Wide Area Network. This network improved the security of the network communications traffic for the base's computer and communications systems.

4. Installation of Control Tower equipment at Homestead AFB, Fla.—The purpose of this project was to install equipment in the new Air Traffic Control Tower. The equipment includes OJ-314 Central Equipment, GSH-57 recorders, single and multi-channel backup radios, ATIS recorder, multi-channel Safety of Flight radios, and FDIO Cabinet housing the Z-248 computer and peripherals. This system replaced the old system destroyed by hurricane Andrew and made it possible to resume air operations at the base. In a separate project, the installation of GATR site at Homestead ARS, Fla., will provide UHF and VHF radio communications necessary to support flying operations.

5. Installation of AN/TRC-194(V)2 MILSTAR EHF Transportable Ground Command Post Terminal at Kapaun AS, Germany--This project provided the first transportable MILSTAR terminal in Europe. Phase I of the project was completed on Aug. 17, 1995. MILSTAR phase II--This project consisted of a six-member team that installed remote I/O equipment in the communications room and in building 693. This equipment remotes the operation of user I/O devices from the MILSTAR EHF Ground Terminal to users in building 693. This system provided secure voice joint service satellite communications for worldwide connectivity for high-priority military strategic and tactical



1st Lt. Johnny Mah tests and inspects fiber optic modems in the 738th EIS engineering lab in 1997.



Senior Airman Dave Houtz, a 211th EIS installer, works with cable during an installation at Otis Air National Guard Base, Mass., to upgrade base communications. The 738th worked with the 211th team members at Aviano Air Base, Italy and Ramstein AB, Germany on fiber optic jobs.

forces. Installation and testing are complete. This was a six-month project.

6. Satellite Communications, Fiber Optic Cable Installation—The 738th EIS was requested by the Lajes Field, Azores, to install fiber optic cables in support of the Lajes Field MILSTAR project connectivity for a hub used by National Command Authorities in managing theater operations. The team removed 3,762 feet of old cable and installed 9,000 meters of inner duct, 2,500 meters of 48 strand single mode cable, and peripheral equipment.

7. Up-link filter modification project at tracking stations worldwide—The 738th EIS Specialized Engineering Flight supported Air Force civilian contractors by developing software and test procedures reducing RF emissions and using specialized equipment (the mobile shielded laboratory) and personnel to test radio frequency band-pass filters. These filters were installed to prevent interference between commercial and DOD systems. This eliminated the possibility of the commercial company halting operations of the DOD satellite communications if there was interference of signals to the commercial bands. The savings were estimated at \$1 million. The project lasted about two years.

8. Vandenberg tracking station radome evaluation—The project consisted of deploying two engineers because contractors were unable to meet their obligations. The 738th EIS engineers developed measurement techniques to make comparisons between the existing radome and the new radome. This short-notice job was integrated into existing commitments at nearby locations. This saved the AFMC customer an estimated \$250,000 in commercial costs.

9. Digital Patch and Access System—This program is to upgrade and modernize the Defense Communications System technical control functions. Engineers were tasked by the 485th EIG, Griffiss AFB, N.Y., to perform system acceptance tests on the DPAS to ensure smooth integration into established DCS communication circuits at each of the 29 DPAS sites. This project ran from 1989 to 1992.

10. Peace Shield, Saudi Arabia—Peace Shield is a Royal Saudi Air Force project which encompassed the air defense tracking of the entire Arabian Kingdom. The 738th EIS engineers performed test and activation of communication circuits for five Command and Control Centers. The circuit activation was completed in August 1996.



Airman 1st Class Joshua Purcell and Airman 1st Class Jeffrey Rivers, 738th EIS antenna section, install a new high frequency antenna and rotor.



1. Tuzla Air Base, Bosnia-Herzegovina, Air Traffic Control System Upgrade – When the Balkans were declared too dangerous by the Air Force's primary contractor, the 838th EIS, Kelly Air Force Base, Texas, formed a highly specialized team and deployed to Tuzla and engineered a \$450,000 Air Traffic Control system. The team removed exposed wiring and repaired 95 percent of the on-site transmitter/receiver equipment, installed 14 VHF and UHF radios, two high-powered backup radios, 600 feet of cable, and two multi-use antennas. The radios improved operational capability for the base and eliminated the maintenance backlog. They also installed two Land Mobile Radio base stations with antennas for the critical Crash Net and Ramp Net, replacing several hand-held radios, while eliminating blind spots caused by trees and other obstructions.

2. Minot AFB, N.D., BISS– May 1998, 838th teams installed a \$2.5 million Base and Installation Security Systems for the 5th Bomb Wing, protecting the B-52 Bomber and Minuteman II Weapons System Storage Areas. The unit deployed a 27-person team with \$1 million of equipment/materials. They installed 5,000 feet of fiber optic and copper cable from 24 sensor protected structures to the WSSA Entry Control Facility. They transferred existing interior intrusion detection systems to the new advanced entry control system, integrating the old with the new. The team used innovative ways to cut 30 days off the projected completion schedule saving



An 838th member tests the RAY-CON equipment for the Base and Installation Security System at Whiteman AFB, Mo.

\$40,000. The installed system provides single point alarming for 20 WSSA structures and increases hotline reporting capability 50 percent.

3. Minot AFB, N.D., Perimeter Intrusion Detector System – May 1999, an 838th team deployed for 179 days and installed a \$750,000 fiber optic and Infrared Perimeter Intrusion Detection System at Minot AFB for the second phase of the Weapons System Storage Area protection system. They installed 5,600 feet of fiber optic cable replacing wiring and faulty parts in 33 camera pedestals. They drilled 21 holes through 18-inch concrete walls to accommodate a customer change request, enabling installation of system status panels to reduce preventive maintenance checks each year. They installed 1,700 feet of underground interconnect cable to link 21 storage facilities forming an impenetrable grid of 106 separate sensors, greatly enhancing security measures over the previous system. Their work plan minimized munitions movements, and eliminated a need for extra munitions, personnel, and security guards during the installation. The team's efforts ensured the system passed all initial operational tests 21 days early, saving \$15,000, and providing the 91st Space Wing and 5th Bomb Wing state-of-the-art protection for nuclear assets.

4. Prince Sultan Air Base Technical Control Facility– An 838th team deployed to Prince Sultan Air Base, Saudi Arabia, and installed \$220,000 Technical Control Facility into the Network Control Center. Their work provided satellite connectivity previously acquired from civilian contractor in Riyadh and paved the way for Joint Task Force SW Asia Headquarters to move from Eskan Village to Prince Sultan. The team worked continuous 12-hour days installing 27,000 feet of telephone and coaxial cable. The job saved \$36 million in contractor costs. It enabled the 4404th Communications Squadron to assume the role of strategic communications hub for the theater, and reduced theater manpower needs by eliminating the need for five maintenance personnel.

5. Yokota AB, Japan, and Elmendorf AFB, Alaska (Scope Signal III) - January 1997, members of the 838th EIS began removing \$3 million worth of Scope Signal III HF, air-to-ground, communications equipment from Elk Horn AFS and Offutt AFB, Neb. The 838th began the first upgrade at Yokota with two 10-kilowatt systems. The team overcame equip-



A trenching crew from the 838th EIS works at Prince Sultan AB, Saudi Arabia.

ment problems and saved the project from failure. After replacing major parts, the team delivered a fully operational system, remotely controllable from the Pentagon. Yokota's Scope Signal III now provides worldwide, air-to-ground communications for aircraft within the Pacific Air Force's theater of operations. With the standard set, the unit deployed a team to Elmendorf AFB to install one 10-kilowatt system with similar challenges in faulty equipment. The troubleshooting expertise gained from the Yokota job kept this project on track. The team completed the installation in 61 days providing the 3rd Fighter Wing modern comm capabilities, saving an estimated \$100,000 in maintenance and repair costs per year.

6. Support of Drug Interdiction Operations—

In 1998, the 838th helped fight the drug war by installing secure radio comm systems at various FAA sites across the United States. These systems provided secure comm from each site to the U.S. Air Defense Sector's Operations Control Center as a key element in monitoring the airspace at the U.S. borders for both border defense and support of the U.S. Drug Enforcement Agency's anti-drug trafficking campaign. Teams also installed Remote Control Rekeying systems at four Western Air Defense Sector radar sites effectively creating a wide-area, secure, communications network for the FAA. In doing so, they provided initial training to on-site personnel, created equipment-unique task instructions, and built the prototype system for all FAA sites throughout the U.S. These systems enhanced drug interdiction operations for the DEA and eliminated the need for FAA personnel to perform manual daily key loading on the equipment saving 360 manhours per year at each site.

7. Desert Storm, Desert Focus, Southern Watch –

Before 1993, 838th teams started installing

phone and data network systems, air-to-ground comm, and cable TV for the JTFSWA in support of Desert Storm, Desert Focus, Desert Thunder, Joint Forge, Southern Watch, Provide Promise and Decisive Endeavor. Personnel from the 838th installed several thousand feet of copper cable and multi-strand fiber-optic cable on Prince Sultan AB. The 838th also installed 6,500 feet of copper and 2,700 feet of fiber optic cable to five separate locations in the Heavy Maintenance Communication area with limited equipment. These and similar projects at other critical locations throughout JTF Southwest Asia contributed significantly to the upgrade of the comm infrastructure and overall effectiveness of U.S. and allied forces combat sorties.

8. Combat Information Transport System—Randolph AFB, Texas –

838th teams embarked on a long-term CITS installation project and installed five equipment racks with \$800,000 worth of network equipment, and more than 20,000 feet of fiber optic cable. They provided 3,000 base network customers with a modern, fiber optic network, more than doubling the network speed and overall bandwidth. The AF Personnel Center now has a greatly improved data transfer speed, supporting personnel requirements worldwide.

9. CITS—Davis Monthan AFB, Ariz. –

838th members and 202nd EIS members from Macon, Ga., ANG deployed to install CITS fiber optic backbone. A team milestone was the installation of a 27.5-mile section of fiber optic cable, finished five weeks ahead of schedule. They supervised the fiber optic interconnection of 35 core facilities and installed 4,800 feet of cable and a new hub for the base's medical facility. Attention to detail and innovative ideas saved \$25,000 in material costs and \$32,000 in per diem.

10. Whiteman AFB, Mo., Support for the Beddown of the First B-2 Wing –

This 3-year project helped realign the base from a long-range missile complex to a home base for the first B-2 Bomber Wing. The task seemed impossible when viewed from any other but an EI standpoint. To comply with FAA Safety of Flight regulations, the team installed new control tower equipment to handle the expected traffic load; a solid-state Instrument Landing System for zero visibility landing in night flight and emergencies; and a full Base and Installation Security System to improve security on maintenance docks and munitions storage areas. This equipment had to be installed before any Search and Precision Landing Systems for positive control of aircraft. The 838th established weekly meetings at Whiteman to start the coordination process. During the inventory portion of the installation, the team identified and resolved numerous potential work stoppages.



1. Combat Information Transport Systems (CITS, 1994-present) – 938th EIS members from McClellan AFB, Calif., installed and activated \$20 million state-of-the-art, metropolitan area network equipment at 10 AF bases. More than 200 active-duty and Air National Guard technicians installed 88 miles of fiber optic cable, 400 network routers and switches into 500 different buildings. This provided the bases speed-of-light computer access and the most modern voice/data network communications infrastructure available.



Staff Sgt. Michael Nelson (on antenna) and Airman 1st Class Humberto Llanes install wind speed and direction measuring equipment at Scott AFB, Ill.

including a 57-mile fiber-optic cable ring providing end-to-end connectivity to five critical flight test facilities, enabling their mission of flight test and development of next generation aircraft and spacecraft. The project saved more than \$2.2 million.

3. Military Strategic Tactical Relay (MILSTAR, 1994-present) – 938th EIS members installed the first MILSTAR modern ground comm node for DOD to help provide survivable secure comm in a post nuclear war environment. MILSTAR is the next-generation satellite comm system providing command authorities with jam-resistant, secure comm for aircraft, ships, submarines and mobile ground stations. The 938th has installed nine MILSTAR terminals at eight locations in Elmendorf, Alaska, encompassing \$22.5 million in resources.

2. Base Information Digital Distribution System, Edwards AFB, Calif., 1996 - 938th installers completed a \$17.5 million installation of the Base Information Digital Distribution System for Edwards AFB

4. Meteorological and Navigation Aids (1994-present) – In DOD, the 938th EIS is the sole active duty installation activity for METNAV equipment worldwide. This unique function significantly enhances flight safety and mission capability for warfighters. The 938th EIS completed major flightline upgrades at 30 bases by installing instrument landing systems, Tactical Air Navigation, Very High Frequency Omnidirectional Range, meteorological systems, and Digital Ionospheric Sounding Systems valued at more than \$10 million. Four ILSs were removed from bases closed under BRAC and refurbished on-site by the installation team, saving more than \$180,000 in depot overhaul costs. The 938th EIS METNAV shop evaluated the feasibility of navigational equipment installations at more than 20 sites using three one-of-a-kind deployable site test vans in conjunction with FAA flight inspection aircraft.

5. Assistance to Federal Aviation Administration (Sacramento, Calif., 1996) – At Sacramento International Airport, FAA officials urgently needed to activate the Instrument Landing System for a runway before the winter. The 938th EIS volunteered time and resources to help the FAA. The team trenched and installed more than 20,000 feet of cable and conduit from the air traffic control tower to the field monitors. The project saved the FAA more than \$1 million in contract fees and potential loss of revenue due to interrupted flights. The 938th received the 1997 Airways Facilities National Honorary Award for Excellence in the Outstanding Contribution to the Airways Facilities Mission category.

6. Armed Forces Radio & Television Service Relocation (March AFB, Calif., 1997) – From January-April 1997, the 938th EIS provided multiple specialties for the Armed Forces Radio and Television Service facility in Southern California. Team chiefs and technicians installed a Satellite Receive Antenna and security lighting around the perimeter of the antenna site, allowing the broadcast center to secure the site using minimal security forces. The team engineered, excavated and formed concrete foundations, installed 5,000 feet of electrical and RF wiring, and ran conduit for the lighting system. The team's determination to finish the project on-time, with a high quality product, saved AFRTS more than \$11 million in relocation costs, boosted the capability of AFRTS to broadcast six television and 30 radio channels to State Department and DOD instal-



38th EIW Top 10 Accomplishments



lations in 58 countries worldwide improving the morale of servicemembers worldwide.

7. Contingency Support (1994-1999) –938th EIS installers supported contingencies worldwide from Tuzla, Bosnia, to Equito, Ecuador. In addition to the normal deployment rate of 50 percent, “niners” contributed more than 13,400 man-days in support of Operations Desert Focus, Desert Thunder, Joint Forge, Joint Guard, and Allied Force. In May 1999, the 938th EIS deployed a one-of-a-kind ILS test van on short notice in Kosovo. This provided the warfighters in Tuzla with the capability to land aircraft in poor weather conditions. This ultimately provided the warfighter with improved flight operations and safety for the busiest runway in Europe.

From March-June 1999, the 938th deployed 24 cable techs in support of Operation Southern Watch. They upgraded the infrastructure at Eskan Village, Riyadh, Saudi Arabia. The team laid more than 144 miles of fiber optic cables, and providing 7,000 Local Area Network connections and finished more than 40 days ahead of schedule.

8. Presidential Interest Items—Presidential promise to modernize Seismic Research Station -

- In response to a promise made by President Clinton, the 938th assembled a 12-person team composed of wideband, secure systems, and antenna personnel to modernize the capabilities of the Belbasi Seismic Research Station. This station ensures accurate, timely, and reliable seismic data is transmitted to the Turkish Earthquake Research Department and the Atomic Energy Detection Center, at Patrick AFB, Fla. The project provided two-way comm between the Central Recording Building and seven Long Period Array sites around the city of Ankara and seven Short Period Array sites



Staff Sgt. Paul Akiona, 938th backhoe operator, installs Combat Information Transport System equipment at Elmendorf AFB, Alaska.

near Keskin, Turkey. Work began in December 1999 and is scheduled to be completed soon.

The 938th responded to a short notice tasking to install an ILS at Yokota AB, Japan, in response to President Clinton’s promise to change air traffic patterns over populated areas surrounding Yokota AB. The team completed the installation in 40 days, meeting the deadline set by the President. They saved more than \$10,000 in materials and more than \$100,000 in depot overhaul costs by completing a major overhaul on the equipment. The system was removed from a closure base and shipped directly to Yokota. Their efforts significantly enhanced flight safety by providing an additional instrument approach as well as allowing the air patterns to be changed in and around the base.

9. Intercontinental Ballistic Missile Training Laboratory (1995) –

938th EIS personnel installed a \$60 million missile training laboratory at Vandenberg AFB, Calif., and provided crucial hands-on training capability to the Air Force’s missile maintainers. They completed the installation two weeks ahead of schedule and saved the Air Force \$300,000 in contract costs.

10. Transfer of Wartime Taskings to Air National Guard (1999-present) –

In June 1998, the 938th EIS transferred its wartime tasking in accordance with Headquarters USAF Program Action Directive (PAD) 98-1. After months of planning and coordination with the gaining units, the 938th EIS transferred all 48 UTCs smoothly and on-time. No mission degradation was experienced by any of the affected units. This provided a seamless transition of the 938th’s wartime commitment to the Air National Guard.



Joe Curran, left, supervises cable installation during a Base Information Digital Distribution System job at Edwards AFB, Calif., while Maj. Kenneth McDowell talks to Airman 1st Class Jarret Crain.

Engineering Installation history within the Air Force

The organizations and commanders listed below represent most of the history of engineering installation within the Air Force. This document lists the commanders of the Ground Electronics-Engineering Installation Agency (GEEIA), Southern Communications Area (SCA), Engineering Installation Center (EIC), Engineering Installation Division (EID), Communications Systems Center (CSC), and Engineering Installation Wing (38th EIW).

GEEIA Commanders

Col. John W. Hope, June 15, 1958- Aug. 10, 1958
 Col. Charles U. Brombach, Aug. 10, 1958-March 10, 1959
 Brig. Gen. Haskell E. Neal, March 10, 1959-May 31, 1964
 Col. George G. Getz (interim), June 1-6, 1964
 Brig. Gen. Stephen D. McElroy, June 10 1964-Nov. 20, 1967
 Maj. Gen. Franklin A. Nichols, Nov. 20, 1967-March 31, 1970



SCA Commanders

Col. Wallace J. Jarman, May 1, 1970-April 9, 1972
 Brig. Gen. Rupert H. Burris, April 9-July 14, 1972
 Brig. Gen. William C. Branam, July 15, 1974-Aug. 29, 1976
 Brig. Gen. Donald J. Bowen, Aug. 29, 1976-Oct. 20, 1977
 Col. Merton J. Fankie, Oct. 20, 1977-Jan. 24, 1978
 Col. Richard W. Pryor, Jan. 24, 1978-June 17, 1979
 Col. John M. Sedano, June 17, 1979-June 19, 1980
 Col. David B. Bartholomew, June 19, 1980-May 31, 1981



EIC/EID/CSC Commanders

EIC

Col. David B. Bartholomew, June 1, 1981-July 10, 1981
 Col. James S. Cassity, Jr., July 10, 1981-July 29, 1983
 Col. William R. Taylor, July 29, 1983-March 1, 1985

EID

Col. William R. Taylor, March 1, 1985-March 15, 1985
 Col. Robert A. Reinman, March 15, 1985-May 12, 1989
 Col. Robert L. Hayes, May 12, 1989-Aug. 20, 1991
 Col. William E. Einspahr, Aug. 20, 1991-Oct. 1, 1991



CSC

Col. William E. Einspahr, Oct. 1, 1991-May 10, 1994
 Col. Gary L. Salisbury, May 10, 1994-Nov. 8, 1994

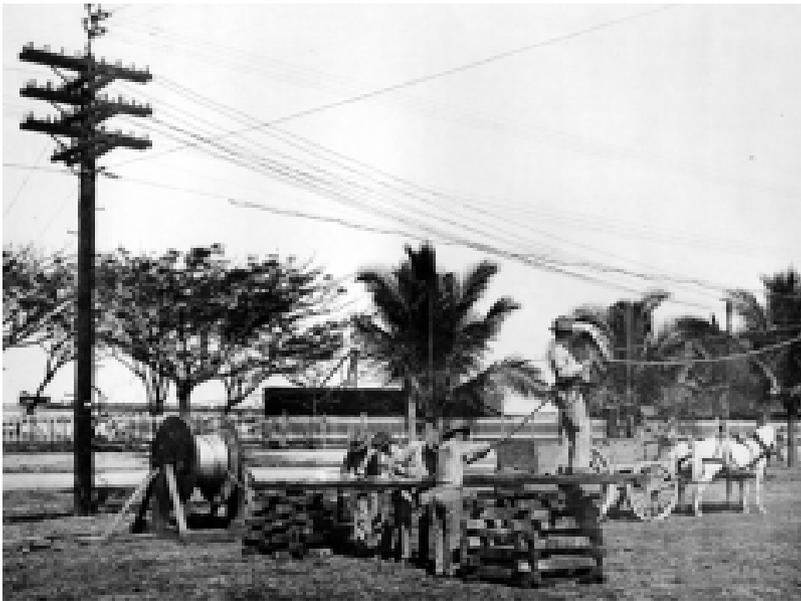
38th EIW Commanders

Col. Gary L. Salisbury, Nov. 8, 1994-June 17, 1996
 Col. Melvin D. Flack, June 17, 1996-May 27, 1998
 Col. Michael A. Coursey, May 27, 1998- Feb. 4, 2000



Commanders at time of 38th EIW inactivation

38th EI Group: Col. Sue Ann A. Olsavicky
38th EI Squadron: Lt. Col. John C. Roelofs
38th Logistics Squadron: Capt. Fiona A. Christianson (*last commander at time of inactivation*)
38th Mission Support Squadron: Maj. Lawrence M. Miller (*last commander at time of inactivation*)
38th Comptroller Flight: Comptroller, Kathy Hall (*flight phased out when wing was inactivated*)
738th EIS, Keesler AFB, Miss.: Lt. Col. Michael Q. Harper
838th EIS, Kelly AFB, Texas: Lt. Col. John Swindoll
938th EIS, McClellan AFB, Calif.: Maj. Kenneth McDowell



Then: Cable work is performed in Manila, the Philippines in 1902.

EI History from Page 3

changing the EIC's name to the Engineering Installation Division, which better reflected its character as a major headquarters with subordinate units.

Prompted by the frenetic pace of change and innovation in the electronics industry, the EI mission underwent another change in 1987. During that year, Air Force headquarters designated AFCC as one of its three acquisition organizations. Concurrently, the EID became one of AFCC's two acquisition divisions. EID enlarged its mission to include procurement of off-the-shelf communications

equipment/services and life-cycle support.

The most recent changes in the EI world came as a result of the end of the Cold War and the clamor to redefine the Air Force mission in a rapidly changing world. On Oct. 1, 1991, the EID reorganized—the major change was the absorption of the software unit, the Command and Control Systems Center—and became the Communications Systems Center. CSC leaders created a new structure which accommodated a more effective business-management approach to satisfying the communications-computer requirements of our Air Force and DOD customers.



Now: An optic fusion splicer is used to clean the edges of the fiber, and join or arc-splice the fiber together.

On Oct. 1, 1993, CSC became part of Air Force Materiel Command, reporting to the Electronic Systems Center. The most recent evolutionary step occurred on Nov. 8, 1994, when the Air Force inactivated CSC and stood up the 38th Engineering Installation Wing.

38th Wing Lineage

Established as 38th Bombardment Wing, Light, on Aug. 10, 1948.

Activated on Aug. 18, 1948.

Inactivated on April 1, 1949.

Activated on Jan. 1, 1953.

Redesignated: 38th Bombardment Wing, Tactical, on Oct. 1, 1955; 38th Tactical Missile Wing on June 18, 1958.

Discontinued and inactivated on Sept. 25, 1966.

Redesignated 38th Flying Training Wing on March 22, 1972.

Activated on Aug. 1, 1972.

Inactivated on Sept. 30, 1973.

Activated on Dec. 1, 1973.

Inactivated on Dec. 1, 1975.

Redesignated 38th Tactical Missile Wing on Dec. 4, 1984.

Activated on April 1, 1985.

Inactivated on Aug. 22, 1990.

Redesignated 38th Engineering Installation Wing on Nov. 1, 1994.

Activated on Nov. 8, 1994.

Inactivated on Feb. 4, 2000.

**Note: The 38th Wing's predecessor unit was the 38th Bombardment Group, Light, which is not part of the 38th Wing's lineage; nonetheless, the Air Force Wing authorizes the 38th Wing to carry on the original Group's honors.*

38th Wing Commanders (at time of inactivation)

38th Bombardment Wing, Light

Col. Robert W. Witte,

Nov. 16, 1948 - April 1, 1949

38th Bomber Tactical Missile Wing

(activated Jan. 1, 1953)

Col. Betram A. Kibler Jr.,

July 5, 1966 - Sept. 25, 1966

38th Flight Training Wing

(activated Aug. 1, 1972)

Col. Frank D. Hardee,

Dec. 1, 1973 - Dec. 1, 1975

38th Tactical Missile Wing

(activated April 1, 1985)

Col. Richard A. Myers,

Aug. 16, 1988 - Aug. 22, 1990

38th Engineering Installation Wing Commanders

Col. Gary L. Salisbury,

Nov. 7, 1994 - June 17, 1996

Col. Melvin D. Flack,

June 17, 1996 - May 27, 1998

Col. Michael A. Coursey,

May 27, 1990- Feb. 4, 2000.



Editor's note: As the years go by, people come and go, but a few make an indelible mark on the Air Force. Their extraordinary service touches many people and leaves a lasting legacy. This is the first of a new series, entitled "comm legends", which spotlights people who have dedicated a long and distinguished career to the comm and info mission area and established a record of achievements that few can match.

Please e-mail your own "comm legends" features to intercom@scott.af.mil.

BOB IMMEL

Ever wonder what it's like to work with a legend? Former co-workers and supervisors are quick to identify Bob Immel as an icon in the business—a pre-eminent EI ambassador.

A veteran of 44 years of federal service, 22 as an enlistee, Immel attained the rank of senior master sergeant. Eleven years of his military service were in the Far East, Europe, and Greenland before arriving at Tinker Air Force Base in 1968 and retiring in 1971.

Immel entered civil service at Tinker in 1971 and held key positions, including plans officer in Central Communications Region and Southern Communications Area, program manager Scope Signal III, chief of electronics and air traffic control division, and deputy director and director of the program management directorate.

In 1988 Immel was selected as the assistant deputy chief of staff for plans and requirements and was promoted to GM-15 in 1992 to be deputy chief of staff, plans and requirements, Engineering Installation Division.

"It is difficult to put into words the significance of Bob's contributions to the Air Force's engineering, installation, and program management efforts," said retired Colonel Allyn Mills, director of plans and requirements for Communications Systems Center from March 1993 to November 1994. "As program manager and leader, he epitomized the ethics of hard work, personal sacrifice, intense dedication, and proud professionalism."

Retired Col. Robert Hayes, commander of Engineer-

ing Installation Division from May 1989 to August 1991, said, "Bob was successful because of his vision, strong commitment to our challenging, worldwide mission and his appreciation for and immense knowledge of how the myriad thousands of EI personnel did their work. He always displayed empathy and concern for our customers, but it took his smart, caring and nurturing leadership to make the tough decisions that allowed the EI community to continue to improve the operational effectiveness of the Air Force in austere times."

Immel has been at the forefront of major changes to the EI structure and major programs impacting the Air Force. He headed the team to transition the 38th EIW from Air Force Communications Command to Air Force Materiel Command. He was a member of the fact-finding team to develop a C4I Center of Excellence for Lt. Gen. Charles Franklin, commander of Electronic Systems Center. He was selected by Maj. Gen. John Fairfield to be an AF representative at the Pentagon on Defense Management Report Decision 918—the goal was to save \$16 billion and transfer 44,000 positions to the Defense Information Systems Agency.

Immel was at the helm of some major programs, including: Automated Weather Distribution System, Base and Installation Security Systems, Combat Ammunition System, Defense Data Network, Defense Satellite Communications Systems, Digital Bright Radar Indicator tower equipment, Digital European Backbone, FAA/AF Radar Replacement Program, Next Generation Weather Radar, North Warning System, Solid State

Instrument Landing System, and the Joint Surveillance System.

“When we were tasked to come up with a new personnel standard for program managers, I picked Bob to chair this critical project,” said Hayes. “He headed a ‘think tank’ that not only designed a new standard but also improved the basic processes of program management for communications-electronics Air Force-wide.” Hayes said Immel’s leadership and contributions were at their best in the continuing refinement and improvement of the process of planning and implementing communications programs and systems.

In the late 1980s, the EID had to look closely at its manpower and spending. Since the GEEIA days of the 1950s, EI was providing ‘free’ support to bases and major commands. Budget realities that followed the end of the Cold War and Desert Storm brought new pressures to change the traditional way of funding projects and programs. “Again, I put Bob Immel to work in charge of prioritizing our workload and developing ways to support our worldwide customers,” said Hayes. “Bob formed a task force to fine-tune day-to-day deployments and commitments for current and future work. I can’t overstate the intense pressure and complexities he dealt with in handling day-to-day crises and in forging a new direction for the EI community. Bob also played a role in developing the STEM concept of providing bases and MAJCOMs with system engineering and architecture support, just as the traditional EI support was being reduced.”

Mills said Immel was the driving force behind development of a fee-for-service initiative for EI activities within the Air Force. “He aggressively pursued approval of a new AF engineering force baseline based on wartime requirements. He developed a strategy restructuring EI units that became the AF position during Defense Management Review of DOD communications activities. Without a doubt, he was the right man in the right job at the right time,” said Mills.

Linda Goings, now a GS-13 telecommunications manager in the joint services division of the reengineered 38th EIG, worked for Immel in 1980 when she was a new communications clerk in the TRACALS division of the program management division. At that time it was Southern Comm Area of Air Force Communications Service. She credits Immel with much of her own success.

“Mr. Immel had a vast understanding of the plans and programs business, and he used that knowledge to help the organization get financial and manpower support while furthering the causes of the Air Force. One



**Private First Class
Robert E. Immel**

such cause was to provide career opportunities for minorities,” Goings said.

“As an extra duty, Immel became the organization’s manpower and personnel expert. A shortage of program managers coming into the career field was affecting the mission. There were women in the workforce who could handle these jobs, but no career path. Earlier, there had been a fledgling upward mobility program established,” she said. So, if you were a “legend,” what would you do? “He cleverly put the two AF needs together to solve both problems. He brought the upward mobility program to full maturity and in the process resolved the manpower shortage.

“I wanted to be one of those program managers, so I paid close attention to what was happening,” said Goings. “Immel spent many hours researching policy, learning to effectively apply it, helping to develop the Comm-Communications Systems Career Program out of Randolph AFB, Texas, developing training programs, and writing position descriptions and standards for every level from GS-5 through 12. He opened doors by providing a well-grounded career path for people who otherwise would have had no opportunity. It was ultimately adopted across the board through the career programs to recruit talent from colleges and universities into government service worldwide.

“Working for a legend isn’t always easy,” Goings will tell you. “He was demanding, intolerant of ‘stupid’ actions, and even less tolerant of no action. His philosophy was ‘Always support the commander’ and ‘Don’t take it personal.’ But if you tried and things still went awry, he offered encouragement.

“The only people who don’t make mistakes are those who aren’t doing anything’ he would say, and then flash a welcomed smile,” she said.

When Immel looks back on his career, he can’t help but think about the massive explosion of technology and EID’s role over such a vast time period. “It has been breathtaking,” he said. “Today’s communications and electronics capabilities are boundless,” he said. “One thing has not changed over the years—the people who field, engineer, and install high-tech equipment and facilities. Several notches above the rest, they were my superiors, peers, and subordinates. They paved the way for the success I achieved. My life was enriched because they passed my way.”

Immel is on the Board of Directors of the Armed Forces Communications-Electronics Association, Oklahoma City chapter—a position he has been elected to for the past 19 years.

He retired from the 38th EIW in January 1995. (*Information for this article contributed by Stephanie Carter, 38th EIW/PA*)



Bob Immel



Tech. Sgt. James C. Griffieth (center), 38th EIW member and part of the wing's "Guardian Angel" volunteer program, work at Lorie Schwab and Tom Jones' demolished home.

38th EIW 'Guardian Angels' help friends, strangers in tornado's wake

By **Stephanie A. Carter**
38th EIW/PA

May 3, 1999, the Oklahoma City area experienced the largest tornado in its history. This massive storm, with wind speeds exceeding 300 mph, took 38 lives and pulverized more than 2,000 homes. Several 38th Engineering Installation Wing employees, including Staff Sgt. Tom Jones and Staff Sgt. Lorie Schwab, either lost their homes completely or experienced significant damage. Fortunately, no lives were lost in the wing.

The tornado hit in several different communities in the greater Oklahoma City area, including a housing area directly across the street from Tinker AFB.

Just as they did in April 1995 when the bomb destroyed the Alfred P. Murrah Federal Building in Oklahoma City, wing personnel came to the aid of friends and strangers in need of help. Members of the 38th Logistics Squadron responded immediately when one of their co-workers lost her home, car and recreational vehicle.

Capt. Ann Christianson, a contracting specialist,

took immediate action to get Terry Herston and her family to a safe location. Then squadron members learned the mother of another co-worker was willing to offer a vacant house for the Herston family.

Logistics Squadron personnel formed a cleaning crew to prepare the house and put out a call for furniture, household goods, clothing and money. In addition to more than \$1000 raised for the family, they put furniture in the house, stocked the kitchen with food, put towels in the bathrooms and linens on the beds so the Herston family could move in quickly.

Overall, the wing created a "Guardian Angel" program to ensure every wing member who needed assistance received it. Each person who suffered damage in the tornado, from mild to severe, was assigned a specific person in the wing to contact for help. This simplified lines of communication between wing personnel in need and wing personnel ready to assist. The assistance ranged from tasks like cutting away fallen trees and picking up debris to searching for some unscathed items in homes completely destroyed by the tornado.

One of the most dramatic stories occurred in the



Photo by Lorie Schwab

On Mother's Day after the tornado, Lorie Schwab and her family visited their demolished home. Here, Lorie's son Carl and his sister Helen, mug the camera for Mom. In the background, Helen's twin sister Carolyn, searches for a favorite blanket lost in the storm.

home of Jones and Schwab. A half mile from Tinker, they huddled inside their home with their six children ranging in age from 4 to 14. Their first thought was to hide in the main bathroom since bathrooms are considered "safe" places during a tornado. However, they quickly realized it wasn't big enough for eight people so they crouched in the hallway just outside the main bathroom. As they waited in the hallway, they heard the thunderous sound of the tornado approaching. Within seconds it had passed and with it went the home they had known. The tornado pulverized their home and destroyed their cars; the bathroom they had tried to fit into initially was completely destroyed.

Although they were covered by debris and quite shaken, they were grateful to be alive. Many "guardian angels" from the Wing soon descended on their property to assist in the massive clean-up and recovery effort. SrA David A. Owens, a member of the 38th EIS, was devastated by what he saw. "When we first drove up to the neighborhood I

had to fight tears. I hugged Lori and Tom and told them I was so thankful they were alive," Owens said. "When I got home that night, I hugged my wife and then the tears came down in bunches. I told her I could not believe what happened."

Tech. Sgt. James C. Griffieth, also a member of the 38th EIS, was equally shocked by what he saw. "Seeing all those shattered lives was one of the most heart wrenching experiences of my life. As I stood in the rubble, I looked over a vast expanse of destruction and I felt humbled by the power of mother nature. It looked more like a war zone than a storm ravaged area," Griffieth explained.

Meanwhile, other members of the Wing spent hours working at the Tinker Base Chapel to sort through and offer donations to victims of the storm. Many employees, both military and civilian, spent hours at the chapel as donations literally poured in from across the state and beyond. Any victim of the storm could come to the chapel to receive donations of clothing, food, furniture, toys, and toiletries—and many did.



Staff Sgt. Angela Mitchell (left), Staff Sgt. Matthew Lally (far right) and Kelly Raper sort toys at the Tinker AFB base chapel assistance site for tornado victims. They, along with many more military and civilian wing personnel, volunteered long hours to aid local families in need of help.



Barbara House leads Sweetbriar Nursing Center residents and fellow 38th Engineering Installation Wing members in Christmas carols. House has organized and directed the wing Christmas choir for the nursing home party for the past three years and sang in the choir for years before directing it.

Wing members help spread a little Christmas cheer for 20 years

In December of '99, 38th Engineering Installation Wing employees celebrated Christmas for the 20th consecutive year with residents of the Sweetbriar Nursing Center in Midwest City, a local community. The tradition began in 1979 during the Southern Communications Area era.

Stephanie Carter, an information specialist in the Information Office, began searching for a Christmas project to benefit the elderly. Her search led her and Capt. Dennis Pierson, Chief of the Information Office, to a local nursing home which at that time was called the Mid-Del Nursing Home.

Their idea was to buy a color TV for the residents. However, after speaking with nursing home caretakers they learned the residents needed simple items such as hand lotion and socks. After a modest fund drive within the organization to buy each resident a gift, the Information Office team and two additional "South Comm" employees visited the home to deliver gifts to more than 120 residents.

From that simple beginning, the nursing home party blossomed into quite an undertaking. Within a few years the party included a Christmas choir of 30 to 40

members of the organization, Santa Claus and elves to pass out the gifts, and several gift items for each person. Donations combined with organization fund-raisers, provided enough money to buy extra items like jewelry for women and ball caps for men.

And many employees brought their children to the nursing home party to the great delight of the residents.

Although the organization changed its name and mission many times since the first "South Comm" party in 1979, the commitment to the nursing home never wavered. Nursing home residents called it the "Tinker party" and looked forward to it each year with childlike anticipation.

A heartfelt expression of their gratitude came a few years ago when the Wing received a poignant Christmas card made by the residents and signed by many of them. The card, made of red and green construction paper, has a gold ribbon and miniature Christmas package attached to the front. Then, written in simple block letters are the words that convey what this party has meant to the nursing home residents over the years: **"God Bless You. Thank You."**



AFA honors team of the year



Wing receives AF Outstanding Unit Award



Force structure changes will affect 38th EIW



AFMC inspection



38th EIW shines during AFMC inspection



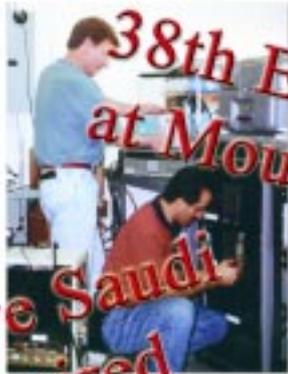
38th EIW shines during AFMC inspection



38th EIW shines during AFMC inspection



Cable Dawgs have Saudi housing complex wired



38th EIW installs CITS at Mountain Home



38th EIW installs CITS at Mountain Home



Airman's Medal presented to 38th EIW staff sergeant



Airman's Medal presented to 38th EIW staff sergeant

Communications and Information Career Program

A Structure Designed with You In Mind

By Zebedee Willie

Communications and Information Career Program
Randolph AFB, Texas

What does Winchester Cathedral have in common with the Empire State Building, or the Eiffel Tower with the Hoover Dam? All are extraordinary and unique achievements, great structures symbolizing human accomplishment. Although exotic and magnanimous, the purpose of a structure is to perform a function. The significance of structure lies in identifying the appropriate structure for the achievement of a specific performance objective. The rules and performance objectives of physical structures apply equally in the structure of organizations within the United States Air Force.

The Communications and Information Career Program is no exception. The CICIP is a sound structure designed and operated by functional management with civilian personnel oversight. The performance objectives of the CICIP are to de-

velop employees with strong professional, technical, managerial, and administrative skills to satisfy current and future Air Force mission needs. The CICIP structure is made up of a Policy Council, Career Management Panels, and a Career Management Team.

The Policy Council is chaired by the Director of Communications and Information and includes senior functional representatives selected by the Policy Council Chair. These members, both military and civilian, establish policies, goals, and objectives for the career program and provide senior management oversight.

There are three Career Management Panels under the Policy Council—Professional Development Panel, Position Management Panel, and Palace Acquire Panel. These panels provide specific policy and guidance for their areas and serve at the request of the Policy Council Chair.

The PDP develops an annual plan for training, tu-

ition assistance and development needs of the CICIP to include the acquisition work force. Along with approving the training budget, they recommend training courses, and manage other professional development opportunities for registrants.

The PMP proposes policy and guidance for all positions that are centrally managed by the CICIP and establishes referral procedures. They review and approve

Promotion Evaluation Patterns, CICIP career broadening candidates, and provide development and application of the CICIP Whole Person Score.

The PAQ Panel oversees the recruitment of college graduates into the PAQ intern program. They provide policy guidance for the allocation of PAQ intern authorizations to MAJCOMs for training, and monitoring of the interns throughout their assignments and final placement at the target grade.

The PALACE Team is made up of CICIP functional managers (on career enhancement assignments) performing personnel administration. These Palace

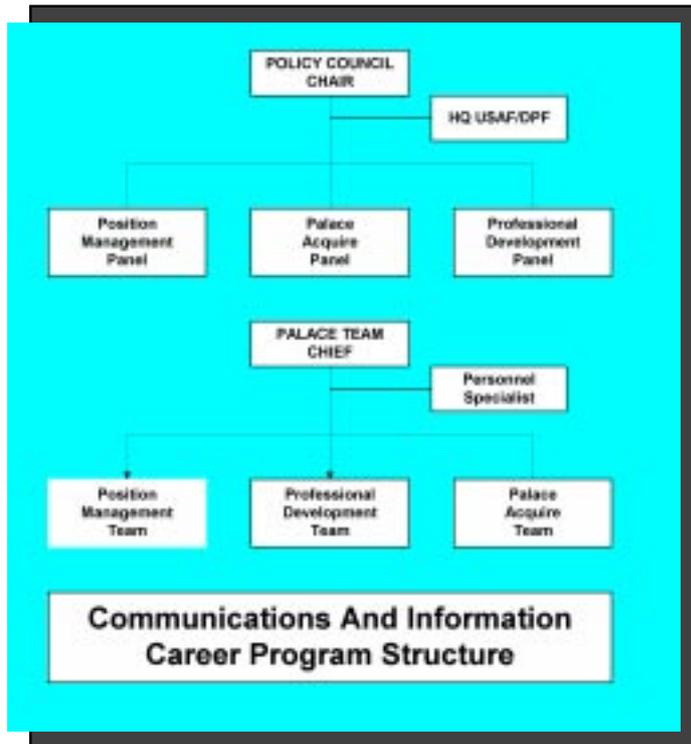
Team members serve as a

communications link with functional managers and are keenly aware of the needs and concerns of the Communications and Information community. The major services that they provide to the registrant population are:

- * Training and tuition assistance
- * Competitive job placement
- * PAQ recruiting and training
- * Career Counseling

The Palace team is augmented with a civilian personnel specialist who functions as an advisor, ensuring that all actions conform to established personnel policies, guidelines, and procedures.

A structure designed to protect a King's ransom? Hardly not! We think our resource is even more precious. The CICIP is structured with you, the registrant, in mind.

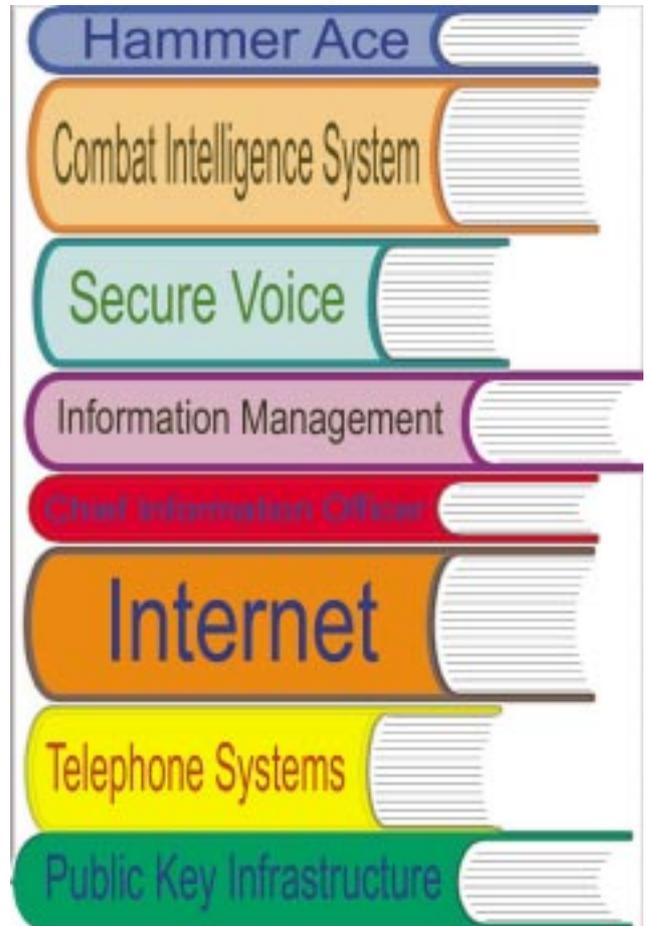


Comm 101 library provides basic information on air/space communications infrastructure

Advancements in information technology are becoming increasingly important to air and space operations. Comm 101 booklets provide basic information on various parts of the air and space communications infrastructure.

The Comm 101 library includes the following 51 titles, and is available on the Web at http://www.afca.scott.af.mil/best_practices/comm101.html.

Airborne Communication Antennas
Asynchronous Transfer Mode
Automated Business Services System
Barrier Reef
Basic Communications Concepts
Chief Information Officer
Combat Intelligence System
Combat Information Transfer System
Collaborative Tools
Contingency Theater Automated Planning System
Data Administration
Defense Information Infrastructure Common Operating Environment
Defense Message System - Air Force
Electronic Mail
Fixed Transport Media
Frequency Management
Global Broadcast Service
Global Command and Control Systems
Global Combat Support System - Air Force
Global Positioning System
Hammer Adaptive Communications Element
High Frequency Communications
Information Management
Information Protection
Information Protection Tools
Internet
Joint Technical Architecture - Air Force
Long-haul Communications
Maintenance Documentation Systems
Military Satellite Systems
Military Strategic & Tactical Relay Satellite
Multimedia Production Services
Navigational Aids
Network Management
Networks
Personal Wireless Communications Systems
Public Key Infrastructure
Secure Voice



SIPRNET and NIPRNET
Software Licensing Management and Anti-Piracy
Synchronous Optical Network
Standard Base Supply System
Telecommunications Deregulation
Telephone Systems
Telephone Systems Security
Trunking Land Mobile Radio
Types of Networks
Video Teleconferencing
Weather Communications (*under construction*)
World Wide Web
Year 2000 Impact on Air Force Systems and Infrastructure

The booklets are intended to provide a basic understanding of the many processes that are performed in the objective communications squadron. (*Courtesy Air Force Communications Agency/XPM*)

"The reengineered 38th EIG will continue to make its mark on the Air Force's information highways by providing critical infrastructure planning and implementation for all Air Force MAJCOMS, Joint Commands and other DOD customers."

***Col. Sue Ann A. Olsavicky
38th Engineering Installation
Group Commander***