



Air Force
Civil Engineer

Almanac 2016



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By Engineers. For Engineers.



Air Force

Civil Engineer Almanac

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Civil Engineer

By Engineers. For Engineers.

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Civil engineers collaborate across boundaries



As we enter into a new year, it is often helpful to reflect on the challenges and achievements of the past 12 months. In 2016, the Air Force continued to evolve in many ways. A new Chief of Staff, Gen. David Goldfein, was sworn in and has since communicated his areas of focus for the next four years.

The Civil Engineering Community has matured in the new organizational structure, as AFIMSC declared Full Operational Capability and AFCEC continues to define what it means to successfully support execution on behalf of Airmen wherever they serve. Our new construct allows civil engineers across the enterprise the opportunity to collaborate across organizational and geographical boundaries in new and exciting ways as we build and operate resilient installations around the globe.

Over the past year we published CE Magazine articles that outline Air Force Future Concepts, our Pivot to the Pacific and Overseas Posture, and Total Force Development. We read about Airmen who embody our core values out in the field ensuring we can execute the mission. Articles highlighted our dedication to innovation: techni-

cal advances with NexGen IT, energy and environmental initiatives through sustainment and warfighter capabilities through expeditionary operations.

Publishing quarterly CE Magazine editions that bring value to the workforce require input from engineers across the enterprise. Your ideas and thoughtful leadership are necessary now, more than ever. As civil engineers, it is imperative that we share experiences, lessons learned, innovations and challenges in order to be successful. Your insight and support are what allow us to continue publishing timely and relevant material to the field. Thank you for your hard work and dedication each and every day. I look forward to a prosperous and successful 2017.

As always, our focus will be to develop and provide agile, innovative Airmen engineers operating resilient and right-sized installations.

Engineers...Lead the Way!

Timothy S. Green
Major General, USAF
Director of Civil Engineers

Where we were, where we are, where we are headed



Engineers, from a human capital management perspective, much of my time this past year was shared between enlisted force development policy and manpower studies. Regarding force development, last year's creation of the chief master sergeant and senior master sergeant Enlisted Development Team, or DT, vector programs successfully targeted our senior NCO corps into either an experience gap or a position that capitalizes on future potential. Heading into the future, with explosive ordnance disposal and emergency management vectoring their master sergeants, the fire career field manager and I are researching the effects of vectoring master sergeants.

A Total Force Development page on the CE portal was created to capture education and training products specific to each AFSC, mentorship options and expectations, and to illustrate professional career growth in each career field. This site will enhance the MyVECTOR site, and will eventually be

the product that the CE Chiefs' Council will use to execute our vector program. As for our manpower studies, I anticipate an approved Operations and Readiness and Emergency Management manpower standards this year, and we plan to finalize EOD optimization initiatives. Additionally, manpower studies will begin for both the engineering and installation management flights.

I am also researching how our career fields can exploit the Enlisted to Air Force Institute of Technology graduate degree program. Currently we have no enlisted positions that would capitalize on an AFIT master's degree. However, I feel an NCO armed with an advanced degree would be valued-added to our research and development section at the Air Force Civil Engineer Center. In order to accomplish this I have to negotiate with the major commands to transfer one or two positions to AFCEC. Expect to see our career field added to the 2018 AFIT education call letter.

Lastly, about one-third of our Airmen are assigned to nontraditional CE units: RED HORSE, BEAR base, combat communications and air support operating squadron organizations. I value these positions because they broaden our understanding of our vast missions, but not at the expense of our Airmen going eight-plus years with no civil engineer squadron experience. Through coordination with HAF/A1, other Career Field Managers and AFPC, my goal is to set assignment limitation codes for assignments to these small nontraditional CE units so personnel will move after three years to a CES or RHS (not another ASOS or CC unit). Likewise, for our RH personnel, we are determining the optimum number of consecutive years for Airmen to be in The HORSE. The desire is to have our personnel experience the in-garrison support that a CE unit provides, and the expeditionary mission of RH and BEAR throughout a career, versus stove-piped in CE or RH for an entire career.

It's going to be another great year. Please stay safe, have fun and continue to take care of each other personally and professionally.

Chief Master Sgt. John A. Wilde

Directorate of Civil Engineers, Chief of Enlisted Matters

Air Force Civil Engineers

The duty titles for the individuals listed reflect their changing responsibilities, the development of the career field and the transformation of the Air Force since 1944.

1944-1949	Director of Air Installations	1957-1959	Director of Installations	1991 to 2014	The Civil Engineer
1949-1954	Director of Installations	1959-1975	Director of Civil Engineering	2014 to Present	Director of Civil Engineers
1954-1957	Assistant Chief of Staff, Installations	1975-1991	Director of Engineering and Services		

Brig Gen Robert Kauch Sep 1944 – Jun 1948	Maj Gen Augustus M. Minton Jul 1957 – Jul 1963	Maj Gen Clifton D. Wright, Jr. Aug 1982–Feb 1986	Maj Gen L. Dean Fox 16 May 2003–23 Jun 2006
Maj Gen Colby M. Myers Jun–Sep 1948, May–Dec 1950, Jan–Jun 1952	Maj Gen Robert H. Curtin Jul 1963 – May 1968	Maj Gen George E. Ellis Mar 1986–Feb 1989	Maj Gen Del Eulberg 23 Jun 2006–5 Jun 2009
Maj Gen Grandison Gardner Sep 1948 – Mar 1949	Maj Gen Guy H. Goddard May 1968 – Dec 1971	Maj Gen Joseph A. Ahearn 1 Mar 1989–31 Jan 1992	Maj Gen Timothy A. Byers 5 Jun 2009–22 Jun 2013
Maj Gen James B. Newman Mar 1949 – May 1950	Maj Gen Maurice R. Reilly Jan 1972 – Mar 1974	Mr. Gary S. Flora 1 Feb 1992–27 Oct 1992	Maj Gen Theresa C. Carter 23 Jun 2013–6 Mar 2014
Lt Gen Patrick W. Timberlake Dec 1950 – Jan 1952	Maj Gen Billy J. McGarvey Mar 1974 – Apr 1975	Maj Gen James E. McCarthy 28 Oct 1992–21 Jul 1995	Maj Gen Timothy S. Green 6 Mar 2014–present
Maj Gen Lee B. Washbourne Jun 1952 – Jul 1957	Maj Gen Robert C. Thompson Apr 1975 – Jun 1978	Maj Gen Eugene A. Lupia 22 Jul 1995–23 Jul 1999	
	Maj Gen William D. Gilbert Jul 1978 – Aug 1982	Maj Gen Earnest O. Robbins II 23 Jul 1999–16 May 2003	

Deputy Air Force Civil Engineers

TITLES: 1963-1969 Associate Deputy Director for Construction	1969-1975 Associate Director of Civil Engineering	1975-1991 Associate Director of Engineering and Services	1991-1999 Associate Air Force Civil Engineer	1999-Present Deputy Air Force Civil Engineer
Mr. John R. Gibbens 1963–1969	Mr. Gary S. Flora 1985–1994	Ms. Kathleen I. Ferguson 2002–2007	Mr. Edwin H. Oshiba Feb 2015–Present	
Mr. Rufus "Davy" L. Crocket 1969–1972	Dr. Robert D. Wolff 1994–1997	Mr. Paul A. Parker 2007–2010		
Mr. Harry P. Rietman 1973–1985	Mr. Michael A. Aimone 1999–2002	Mr. Mark A. Correll Nov 2010–Jun 2014		

CE Chiefs for Enlisted Matters

CMSgt Larry R. Daniels Sep 1989–Jun 1992	CMSgt Kenneth E. Miller Aug 1995–Jul 1998	CMSgt Michael Doris Jun 2000–Jun 2005	CMSgt Patrick D. Abbott Feb 2008–Aug 2011
CMSgt Larry R. Ward Mar 1994–Jul 1995	CMSgt Richard D. Park Aug 1998–Jun 2000	CMSgt Wayne Quattrone II Jun 2005–Feb 2008	CMSgt Jerry W. Lewis Aug 2011–Jun 2015
			CMSgt John A. Wilde Jun 2015–Present



LEADERS



Maj Gen Timothy S. Green is the Air Force director of civil engineers, deputy chief of staff for logistics, engineering and force protection, headquarters, U.S. Air Force, Washington, D.C. He is responsible for installation support functions at 182 Air Force bases worldwide with an annual budget over \$11 billion. He also is responsible for organizing, training and equipping the 51,000-person engineering force along with providing policy and oversight for the planning, development, construction, maintenance, utilities and environmental quality of Air Force bases worldwide valued at more than \$297B. This responsibility includes housing, fire emergency services, explosive ordnance disposal and emergency management services.

General Green entered the Air Force in 1987 as a graduate of the ROTC program at Texas A&M University. He has commanded a civil engineer squadron and mission support group and served as special assistant to two commanders of U.S. European Command/supreme allied commander of Europe. Before assuming his current position, he served as the director of installations and mission support for Air Mobility Command and then at Air Combat Command.



Edwin H. Oshiba, a member of the Senior Executive Service, is the deputy director of civil engineers, deputy chief of staff for logistics, engineering and force protection, headquarters, U.S. Air Force, Washington, D.C. He is responsible for supporting the director of civil engineers by providing executive leadership, direction and technical knowledge to organize, train and equip the 51,000-person engineering force. He provides policy and oversight for the planning, development, construction, maintenance, utilities and environmental quality of Air Force bases worldwide valued at more than \$297B. This responsibility includes housing, fire emergency services, explosive ordnance disposal and emergency management services.

Mr. Oshiba was commissioned in the Air Force in 1989 upon graduation from Santa Clara University. He commanded three civil engineer squadrons and an expeditionary Prime Base Engineer Emergency Force, or Prime BEEF, group and served in a variety of positions at garrison, major command and headquarters, U.S. Air Force levels. He retired in 2015 at the rank of colonel, last serving as the chief, installations strategy and plans division, Headquarters, U.S. Air Force, Washington, D.C.



Chief Master Sgt John A. Wilde is the chief, enlisted matters and civil engineer career field manager, headquarters, U.S. Air Force, Air Force Civil Engineers, Pentagon, Washington, D.C. He represents the highest enlisted level of leadership within the civil engineer enterprise. He advises the director of civil engineers on matters affecting the civil engineering workforce with specific emphasis on readiness, morale, retention, training and work force utilization. He serves as the functional manager for all enlisted and wage grade civilians in civil engineering. He also chairs the Air Force Civil Engineer Chiefs' and Airmen's councils to review issues affecting the workforce, communicate ideas and develop recommendations for senior leadership consideration.

Chief Wilde enlisted in the Air Force in August 1988 as a structural specialist and has served in numerous leadership positions within the civil engineer career field. He has been stationed at locations in Japan, Texas, Alaska, Hawaii, Washington, D.C., New Mexico, Virginia, Belize, Honduras, Kyrgyzstan, Kuwait and Iraq. He has deployed in support of Operations Southern Watch, Enduring Freedom, Iraqi Freedom, New Dawn and U.S. Southern Command's New Horizons mission.

Headquarters Air Force A4C Divisions

Agile, innovative Airmen engineers
operating resilient and right-sized installations



Integration Division, A4CI

In 2016, A4C reorganized its divisions and their responsibilities creating the integration division. A4CI is responsible for providing strategic enterprise analysis, enabling CE force development, supporting CE governance and managing A4C contracts and staff budget.

Enterprise analysis: The enterprise analysis team examines enterprisewide information to provide strategic insights for senior leadership in the realm of budget and manpower. FY2016 was an important year for the CE community with AFIMSC reaching full operational capability on Oct. 1, 2016. As part of the paradigm shift, A4CI has transitioned out of direct budget execution and pivoted to focus on analysis in support of resource advocacy, strategy and policy across the CE enterprise. Once again, the fiscal year started with a series of continuing resolutions that lasted until Dec. 22, 2015. A Bipartisan Budget Act was passed, providing some relief from the Budget Control Act and ensuring stability for FY2016 and FY2017 baseline budgets. Once FY2016 appropriation was approved, the Air Force O&M baseline enactment was 0.6 percent higher than in FY2015 (FY2015 \$34.4B versus FY2016 \$34.6B).

Secretary of the Air Force financial management continued its funding strategy to push as much funding as possible as early as possible, distributing 98 percent of O&M funding at initial distribution. By year end, active CE O&M (Appropriation 3400) obligated \$6B, which included major programs such as facilities sustainment, restoration and modernization facility operations, environmental quality and environmental restoration account. Two of CE's largest programs, facilities sustainment, restoration and modernization and facility operations, ended the year obligating nearly 10 percent more than enacted levels.

Force development: The A4C Force Development Team continues to build innovative solutions that engage base-level personnel through career development opportunities. The team directly supports AF/A4's strategic focus initiatives by creating valuable virtual offerings and career progression resources for officer, enlisted, civilian, Guard and Reserve workforces. In 2016, the A4C Force Development team's virtual engagements reached over 23,000 Airmen across the CE enterprise and even found its way to personnel in other military branches.

Boasting a 99-percent technical delivery satisfaction rate, the engagements successfully reached Airmen across the globe through both live views on DOD platforms and post-event playbacks housed on YouTube. Furthermore, 98 percent of post-offering respondents rated the content of the engagements as "valuable" or "very valuable" to their career development. Offering a mix of virtual content, such as the "Utilities Privatization Five-Year Plan Virtual Training," to niche audiences; and "iLEAD: Virtual Leadership Event," to broader audiences worldwide, the A4C Force Development Team used feedback and ideas from base-level personnel to select topics specifically tailored to the field's needs. Past engagements include a virtual briefing on Microsoft 2013 Excel Business Intelligence Tools, a "CE Compass" video showcasing CE and AFIMSC's partnership and "FAC Focus" webinars catering to civilian vectoring and supervisory guidance.

CE governance: The governance and oversight function is the key policy and decision engine of the CE enterprise. It handles logistics, programs and guidance for the Installation Governance Structure; helps drive policy through publications management and MICT; acts as the primary MICT liaison; and fosters recurring CE leadership engagements at several key forums. CE governance is a multi-tiered decision-making team responsible for providing strategic guidance and oversight for the majority of AF/A4C and SAF/IE programs. In 2016, A4CIG was created under the updated A4C organization and took over responsibility for handling the administrative efforts of the IGS framework. Throughout the year, A4CIG oversaw 21 CE board meetings, an in-person CE board and an Installation Executive Council. A4CIG is currently involved in transformation efforts to a shared tables governance framework that will kick off in 2017. A4CIG will be responsible for the continued administration and oversight of this transformed governance framework.

A4CIG also took over responsibility for the tracking and engagement of 262 total publication products, including AFIs, AFMANs, Forms, AFPAMs and AFH. In 2016, A4CIG worked to align the RASCI charts to all existing A4C publications to ensure necessary updates are implemented to reflect new responsibilities of organizations across the enterprise. This effort will continue into 2017 and A4CIG will work with HAF-level publication

change managers to ensure all RASCI charts are integrated into publications.

Asset Management, A4CA

Energy Management, A4CAN

During fiscal 2016, the energy program supported the Air Force energy priorities of improving resiliency, optimizing demand and assuring supply. These priorities support the Air Force vision of "mission assurance through energy assurance," which moves the Air Force toward facility energy that is resilient, cost-effective and cleaner. With constrained budgets, we maintain the emphasis on third-party programs, such as Energy Savings Performance Contracts, Utility Energy Service Contracts, Power Purchase Agreements and Enhanced Use Leases to meet Air Force energy goals and objectives and to support energy conservation targets in legislation and executive orders.

The Air Force created the Office of Energy Assurance to develop, implement and oversee an integrated facility energy portfolio focused on large-scale renewable and alternative energy projects. OEA leverages the experience of the Army's Office of Energy Initiatives and the Navy's Renewable Energy Program Office while operating out of Crystal City, Virginia. Another new energy initiative in FY2016 is the Resilient Energy Demonstration Initiative. REDI will develop a sustainable and scalable energy resilience project development model to support the OEA model. REDI was implemented at Beale Air Force Base, California, for energy resilience and Hawaii Air National Guard for microgrid integration.

Air Force awarded two ESPCs and three UESCs in 2016 as part of the Presidential Performance Contracting Challenge. A \$10.7M ESPC at Los Angeles AFB, California, will improve energy efficiencies in 11 base facilities. A \$39.5M ESPC at Hanscom AFB, Massachusetts, will improve efficiencies in 57 facilities. Awarded UESCs included an \$8.8M project at Nellis AFB, Nevada; a \$4.8M project at Maxwell AFB, Alabama; and a \$500,000 project at Offutt AFB, Nebraska.

The Air Force continued its progress toward renewable energy goals by issuing a Notice of Intent to Award for a 10 megawatt capped-landfill solar project at Otis Air National Guard Base at JB Cape Cod, Massachusetts. An NOITA also was issued for a 28.2 MW solar project at Vandenberg AFB, California. A 6.5 MW solar project at Holloman AFB, New Mexico, was in final negotiations during 2016.

During 2016, Air Force signed EULs for a 30 MW solar project at Eglin AFB, Florida, and a 17 MW solar project at Joint Base McGuire-Dix-Lakehurst, New Jersey. These EUL solar projects are expected to be operational in 2017.

Air Force is also planning to release three PPA solicitations, including: a 100 MW renewable power project for up to four Texas bases, a 10 MW solar project at JB McGuire-Dix-Lakehurst, and a 10 MW solar project at Hanscom AFB.

To mitigate energy vulnerabilities, increase energy resiliency and reliability, and ensure mission assurance through energy assurance, the Air Force privatized four utility systems in FY2016 at a cost of over \$86.5M within the first five contract

years. This is estimated to save the Air Force more than \$187M over 50 years while restoring and maintaining these systems at industry standard. In total, the Air Force has privatized 72 utility systems, with a cost avoidance of \$707M and contract value of \$4.9B since 1998 under the OSD-mandated utilities privatization program.

Lastly, the Air Force won six of the 15 Department of Energy's 2016 Federal Energy Management Program awards. The awards highlight how individuals and teams within the Air Force are implementing more energy efficiency operations, conserving water resources and generating significant cost savings.

Housing Management, A4CAH

The housing program ensures Air Force families and unaccompanied members are provided quality homes and support services worldwide. The Air Force managed a \$331M operations and maintenance program that provided management services, leasing, utilities, maintenance and furnishings for more than 70,000 government-owned and privatized family housing units in FY2016. Within this program, the Air Force planned and executed 90 housing maintenance and repair projects and programmed for more than \$93M to sustain and modernize the overseas government-owned family housing inventory in the Pacific Air Forces and U.S. Air Forces in Europe/Air Forces Africa major commands.

For family housing in Japan and Germany, \$151M worth of construction was planned and prepared for future award. To support unaccompanied members and meet the Department of Defense's goal to maintain 90 percent of the Air Force dormitory inventory at an adequate rating, the Air Force is preparing four FY2016 projects for bid totaling \$133M. Projects include replacing three permanent party dormitories at Offutt AFB, Nebraska; Ellsworth AFB, South Dakota; and Altus AFB, Oklahoma; and one basic military training dormitory at JB San Antonio, Texas. Additionally, two projects (to replace one basic military training dormitory at JB San Antonio and one pipeline dormitory at Fairchild AFB, Washington) worth \$94M were planned and prepared for future award.

The Air Force is continuing to assess the future disposition of the remaining 100 government-owned homes at Wright-Patterson AFB, Ohio. Within the family housing privatization program, 26 of the 32 projects have completed the initial development period. During this year, project owners completed construction of over 800 new homes and renovation of over 500 homes. The program now has completed over 97 percent of the total development with almost 52,000 of the 53,240 end-state privatized homes complete.

The Air Force continued with deployment of the Enterprise Military Housing Privatization Evaluation Report module. Enterprise Military Housing is a DOD-mandated system for operations and inventory management of family and unaccompanied housing and furnishings assets. Air Force has completed deployment of family and unaccompanied housing modules for all locations in the continental United States and overseas. To date, the Air Force has deployed modules to manage and report leasing requirements, general officer cost reports and

inventory and utilization of family and unaccompanied housing assets, which allows the office of the secretary of defense to extract data to support data calls and inquiries from higher echelon. Air Force is preparing the last two privatized housing modules for deployment in FY2017.

Environmental Management, A4CAE

In FY2016, the Air Force environmental program continued to invest in natural infrastructure to maintain regulatory compliance, reduce risk and continuously improve the mission and the environment, in alignment with SECAF and CSAF priorities. With 182 installations and 40 range complexes covering 9 million acres, the environmental program manages habitats for 115 threatened and endangered species, 598,000 acres of managed commercial forest, 21,069 archaeological sites and 6,924 historic structures.

In addition, the environmental program provides compliance services for infrastructure and industrial operations that included maintaining 416 Clean Water Act permits and 167 Clean Air Act permits, disposing of approximately 7,000 tons of hazardous waste and diverting 792,000 tons of nonhazardous solid waste annually. Also, the environmental restoration program continued to show great progress in cleaning up contaminated land and returning it to mission use.

Real Property Management, A4CAR

The major areas of focus for the asset management division is real property accountability. Throughout FY2016, the real property program continued real property asset accountability and financial reporting preparation for Air Force and DOD Financial Improvement and Audit Readiness assertion readiness. FIAR is a top priority for the DOD and the Air Force. Under DOD FIAR guidance, real property is considered one of five mission-critical assets and a key assessable unit. The DOD FIAR audit assertion date started in January 2017, and the Air Force Real Property assertion date is Oct. 1, 2017.

Key achievements in FY2016 include: work structure of the Real Property Financial Improvement Plan; continued work on the five initial corrective actions plans; and added 13 institutional corrective action plans. The division is completing the final stages of the rewrite of Real Property Accountability Instruction, AFI 32-9005. A new system of record, NexGen IT, TRIRIGA, fielding a more accurate, complete and timely real property inventory, was expected to go live at 24 installations by Jan. 1. Real Property Management also represented the Air Force at various Office of the Undersecretary of Defense for Acquisition, Technology and Logistics working groups advocating, defending or shaping DOD real property policies and directives to achieve goals FIAR compliance.

In August, A4CA hosted the CE FIAR and NexGen IT Summit/Workshop, with representatives from the Air Force Civil Engineer Center, the Air Force Installation and Mission Support Center, the Air Force Materiel Command, Air National Guard, A4C, the Secretary of the Air Force Office and others. The workshop's objective was to define and develop a step-by-step manual process to support RP FIAR assertion. The process captured real property asset capitalization requirements during



The Air Force Life Cycle Management Center spearheaded an effort to generate alternative energy for the Southern California market and generate revenue for Air Force Plant 42 in Palmdale, California, through a unique Enhanced Use Lease agreement with NRG Solar Oasis LLC. The solar array project was completed in early 2016. (Courtesy photo/NRG Communications)

the transition period between an installation's or site's deactivation of its legacy system and the deployment of NexGen IT. Auditable processes were mapped for operations flight projects that resulted in work-arounds that require real property capitalization along with key supporting documentation.

Facilities Division, A4CF

The Facilities Division mission is to provide policy, resource advocacy and program oversight for military construction, or MILCON, programs, including specified MILCON and unspecified minor military construction, or UMMC; facility sustainment, restoration, modernization and demolition programs; operations management; cybersecurity of industrial control systems; nonappropriated funds, or NAF, construction; strategic communications and congressional engagement.

After seeing the FY2015 MILCON program decrease \$366M from FY2014, the total force FY2016 MILCON program returned to near historic levels. The total force FY2016 MILCON increased \$636M (67 percent) over FY2015 but remains significantly short of Air Force needs. The Air Force requested \$1.59B for Active, Guard and Reserve MILCON programs, funding the minimum essential amount in order to free resources to support higher priority Air Force warfighting capabilities. The 73-project program affects 34 states and territories, and five foreign countries; and \$608M (38 percent) of the FY2016 MILCON directly supports combatant command requirements. The FY2016 MILCON budget submission developed by the division reached the highest levels in more than a decade at \$6.6B and begins to revitalize deferred infrastructure recapitalization. The FY2016 MILCON programs support the Air Force's strategic priorities of ensuring we remain ready, capable and viable to execute the Defense Strategic Guidance over the near and mid-term. The FY2016 UMMC program funding increased to \$37M, 13 percent more than FY2015 levels.

In FY2016, the division continued to oversee facility policy in working more than 82 repair and unspecified minor construction project packages, securing approval for 45 repair projects worth \$628M and one laboratory revitalization unspecified minor construction project valued at \$3.3M.

Civil engineer operations management policy is captured in 21 Air Force Instructions, along with five Air Force Manuals, 200+ forms and various other guidance. The division worked through the fiscal year to sundown the longstanding Engineer Technical Letter program by incorporating policy guidance into AFIs, AFMANs and Unified Facilities Criteria, with a goal of eliminating the program by December 2018. The division also was responsible for revising the civil engineer annual awards program, as codified in AFI 36-2817, and overseeing execution of the program by the Air Force Installation and Mission Support Center.

The division worked to align industrial control systems policy under the guidelines of the Air Force Chief of Staff's Task Force Cyber Secure by publishing an interim guidance memorandum intended to permanently codify the direction in an

AFI and AFMAN in FY2017. Additionally, the division secured a dedicated program element for control system cybersecurity, created an overarching plan of actions and milestones, and worked to clarify the delineation of real property and equipment within ICS.

Finally, the NAF program rewrote and published AFI 32-1022, Planning and Programming Nonappropriated Fund Facility Construction Projects. The FY2016 total NAF investment is \$59.7M for major construction projects. Three morale, welfare and recreation projects account for \$21.8M, and three lodging projects account for the remaining \$37.9M. The six project program affects five states and one foreign country.

In addition to the traditional facilities branches, strategic communication and legislative affairs support for the Directorate of Civil Engineers reports directly to the facilities division chief.

Planning Division, A4CP

The strategy and future concepts team published the first CE Flight Plan in June 2016, which established two end states for the CE enterprise supported by 18 strategic objectives aligned to the Air Force's Strategic Master Plan and Air Force Future Operating Concept, as well as core mission needs. In addition, the team is collaborating on emerging efforts such as the installation of the future working group, adaptive basing and airbase resiliency.

The team also participated in various wargames including Global Engagement 16, AFMC's Long Duration Logistics Wargame, the Future Games series, Air University's Blue Horizon's Wargame series and OSD's Persistent Hobgoblin Wargame series. In addition to wargames, the team also participated in various symposiums, including PACAF's Adaptive Basing Combat Support Symposium, and studies, including Rand's Adaptive Basing to Agile Combat Support, in order to



Updates to explosive ordnance disposal training are expected to produce more EOD Airmen. (U.S. Air Force photo/Senior Airman Bobby Cummings)

develop future capability requirements and operating concepts. This focus-positioned engineer installation support to empower Air Force and joint combat power as an integral part of future defense strategy.

The installation planning and resilience team published the Air Force Noise Program AFI, which for the first time formally assigned responsibilities related to maintaining/updating noise models, training on noise models, analyzing noise impacts and communication of noise issues, identifying needed research on noise issues and installation responsibilities related to noise. Prior to the AFI, responsibilities were based on informal agreements, and there was no formal guidance to the field for supporting organizations such as the Air Force Civil Engineer Center.



The Facilities Division provides oversight for military construction programs. (U.S. Air Force photo/Airman 1st Class Michaela R. Slanchik)

The availability of water in the future has been the one gap in the Air Force's water portfolio. The AFCEC Water Program Panel covers a huge range of water-related issues from infrastructure to water quality, consumption, conservation and security, but the one aspect that hasn't been included is the long-term availability of drinking water. In the last year, the availability of water has become a hot topic across the country: consider the six-year drought in California, the recently ended five-year drought in parts of Oklahoma, declining water tables and the infrastructure issues in Flint, Michigan. A4CP has taken on the lead in A4C for water availability issues working in concert with the AFCEC Water Program Panel, OSD's water resource management lead.

Air Force Common Output Level Standards, or AF COLS, underwent a significant restructuring plan in 2016. Leadership convened for the first installation of the future and AF COLS General Officer Steering Group/Executive Steering Group. This group collaborated on the path to present senior leaders with choices of installation and mission support services. A newly devised Installation Health Assessment was proposed to bridge desired installation capabilities with levels of service. The end result will allow senior leaders to plan and program installations through a risk-focused resource strategy. AF COLS execution moved to the newly full operational capacity AFIMSC. AFIMSC executed an annual change process on 31 of 43 COLS to better refine our measurement metrics.

There is currently a global access problem for AF Installation Geospatial Information and Services, or IGI&S. Since the 1990s, AF IGI&S systems have been created and maintained across a wide spectrum of stand-alone and loosely networked AF and GIG systems. Today, AF IGI&S is hosted on 12 disparate systems on more than 250 servers distributed across MAJCOMs and installations throughout the world. The Geospatial Service Development and Delivery Process project, co-chaired by AF/A4C and AFCEC, was initiated in July 2015 and resulted in a finalized Bounded User Requirements package. The package outlines a plan to consolidate an existing GeoBase instance into a DISA Enterprise Computing Center to serve as the enterprise system, named the Air Force Geospatial Information Management System. The consolidated platform will provide a globally accessible AF IGI&S system available to integrate with other Air Force systems of record to achieve clear contextual and accurate geospatial situational awareness in support of the mission and enabling enterprise decisions and greater efficiency. Consolidation efforts will begin this fiscal year.

NexGen TRIRIGA is a new AF CE Enterprise IT Defense Business System; however, it is not only a new IT system that was identified as a requirement back in 2006, but also, it captures many new business-process changes to help the CE Enterprise offset manpower reduction mandates driven by PBR 720 and meet Financial Improvement and Audit Readiness, or FIAR, mandates. NexGen TRIRIGA started rolling out Nov. 2, 2015, at JB Andrews, Maryland. As of December 2016, 24 installations throughout the Air Force received TRIRIGA, completing Wave 1 of 5. Wave 2 of the rollout is to finish Feb. 27, 2017, adding another seven installations. Waves 3-5 will cover the remaining installations during the ANG and AFR installations.

As a result of PAD 14-04, the change of program groups to policy groups better aligned the appropriate Air Force documents. The new governance process replaced program groups with policy groups aligned to the appropriate Air Force policy documents. As a result, the planning policy group was created to:

- revise or establish regulations, directives, instructions, policies or other exercises of authority within the assigned portfolio;
- facilitate high-level decision-making to include the development and review of planning policies, CE strategy and resource advocacy informed by analysis regarding assets, requirements and program execution feedback in partnership with others;
- ensure the strategy is consistent with and achieves overall Air Force strategic direction, policy and guidance and provides recommendations to AF senior Leaders through the CE Board and Installations Executive Council.

The PPG is co-chaired by HAF/A4CP and SAF/IEIP. Immediately upon standing up, the PPG was tasked with drafting a new Integrated Planning AFPD. To support the new PPG, two panels were created: the Enterprise Installation Planning Panel, or EIPP, and the Strategy and Future Concepts Panel, or SFCP.

The EIPP kicked off in May 2016 to provide policy, guidance and advice to key mission partners and stakeholders to enhance installation complex planning readiness, support and levels of service promoting mission assurance and sustainability and installation resilience across the civil engineer enterprise.

The SFCP panel kicked off in November 2016 to synthesize DOD/Joint/AF strategic intent and back casts end-state requirements to develop enterprise planning guidance; develop and assess future engineer employment concepts and integrate concepts into OSD/ AF force planning scenarios; formulate AF-wide installation investment strategies in support of DOD directives, SAF program goals and HAF mission priorities; and facilitate senior staff inputs, decisions and interactions, in collaboration with the ISP, in support of AF Corporate Structure, OSD, congressional and SP3 processes.

The EIPP stood up a Climate Adaptation Working Group to address evolving OSD policy and SAF/IE interest in climate change as the effects from a changing climate are likely to impact every element in the CE portfolio. Be it damage from sea-level rise, increase in storm intensity, increased flooding, drought, increased wildfires and natural disaster response, or simply increased temperatures that drive greater air conditioning requirements and therefore greater energy consumption, it is important to plan for how these could impact us. To ensure people across the CE enterprise are aware and prepared for these potential changes, A4CP in its planning role, stood up an A4C Climate Change working group. Representatives to this group include AFCEC, HAF and SAF, and members of the Air Force operational community and HAF Weather. Currently, the primary function of this group is to ensure all organizations understand how the effects of climate change affect all aspects of the CE portfolio, dissemination of information on OSD activities, policies and cross-feeding information on AFIMSC/

AFCEC/HAF/SAF climate-related activities. The monthly conference calls of this group ensure representatives from across the CE enterprise have an opportunity to be aware of the latest information, tools and proposed policies and guidance, and understand how it may affect their areas of responsibility.

To properly execute required oversight of Air Force Environmental Impact Statement and/or Environmental Assessment activity, SAF/IEI tasked lead MAJCOM proponents to provide an update on the status of current and upcoming high visibility National Environmental Policy Act mitigation actions. These quarterly updates inform Air Force leadership on the status of EIS/EA development, public involvement and congressional interest. The first update took place Oct. 12-13, 2016.

Readiness, A4CX

The Air Force Exercise Science Unit is leading focus groups with explosive ordnance disposal Airmen from across the Air Force to delineate the critical physical tasks of EOD operations. In the coming months, the unit will observe EOD Airmen during full mission profiles as they perform those critical physical tasks in order to build representative physical-task simulations that the unit will link to a predictive physical fitness test battery. The outcome of the study, which we anticipate to be completed in 2018, will be occupationally specific and operationally relevant performance tests and standards for EOD Airmen at the recruiting, technical training and operational levels.

The Louis F. Garland Fire Academy finalized the initial beta-test of the Fire Officer IV Blackboard distance learning platform. The feedback and lessons learned from the initial three courses allowed LFGFA to further develop the curriculum to bring this career field capstone course to a level that meets the needs and requirements of the Department of Defense Fire Emergency Services community for years to come.

National Preparedness campaigns focused on action to increase community preparedness and resilience involving different hazards (earthquakes, floods, hurricanes, tornadoes, wildfires and winter storms). USAF installation preparedness programs reached more than 300,000 military members and 400,000 family members by using outreach opportunities including news articles, exercises and emergency management booths and briefings. Fourteen USAF installations received National Preparedness Month Letters of Recognition.

A4CX continued to advocate for Air Force priorities in the DOD Chemical and Biological Defense Program's planning, programming, budgeting and strategic planning activities. A4CX laid the foundation for the annual Air Force CBRN defense prioritization process by hosting the CBRN Modernization Working Group Threat Event to inform stakeholders and establish a common baseline for understanding CBRN threats and risks to Air Force missions. Over 40 personnel from a dozen Air Force organizations — including the Joint Staff, the Office of the Secretary of Defense and sister services — attended the event.



AFIMSC

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 Commercial: 210-395-1900
 DSN 969-1900



Maj Gen Bradley D. Spacy
 Commander



Col Gregory J. Reese
 Vice Commander



Terry Edwards
 Executive Director



CMSgt Jose A. LugoSantiago
 Command Chief Master Sergeant

MISSION

Deliver globally integrated combat support and shape the foundation of America's air, space and cyberspace power.

VISION

One team revolutionizing combat support ... agile, innovative and networked ... warfighters supporting warfighters!

Air Force Installation and Mission Support Center activated April 6, 2015, as the single intermediate-level headquarters staff supporting Air Force-wide installation and expeditionary support activities. The establishment of AFIMSC transpired after years of centralization efforts within the U.S. Air Force during extraordinary periods of budgetary constraints and fiscal uncertainties. These developments paved the way toward the eventual consolidation of installation and mission support functions within a single, intermediate-level headquarters organization with worldwide responsibilities — AFIMSC.

On Oct. 1, 2015, AFIMSC reached initial operational capability with a headquarters at Joint Base San Antonio-Lackland, Texas, consisting of 350 personnel spread out among the special staff (personnel, chaplain and judge advocate; public affairs; inspector general; information protection; and safety) and the directorates: Expeditionary Support, or XZ; Installation Support, or IZ; and Resources, or RM.

At the same time, six primary subordinate units were incorporated within AFIMSC: Air Force Civil Engineer Center, Air Force Financial Management Center of Expertise, Air Force Financial Services Center, Air Force Installation Contracting Agency, Air Force Security Forces Center and Air Force Services Activity. In addition, AFIMSC detachments stood up separately over the course of April and May 2015 at each major command: Air Force Space Command (Detachment 1); Pacific Air Forces (Detachment 2); Air Force Special Operations Command (Detachment 3); U.S. Air Forces in Europe-Air Forces (Detachment 4); Air Force District of Washington (Detachment 5); Air Force Materiel Command (Detachment 6); Air Education and Training Command (Detachment 7); Air Combat Command (Detachment 8); Air Mobility Command (Detachment 9); and Air Force Global Strike Command (Detachment 10).

The three-tiered organization of AFIMSC, consisting of the headquarters, PSUs and detachments, accomplished what many thought impossible in just 18 months — full operational capability. Maj. Gen. Bradley Spacy, AFIMSC commander, announced the center had reached full operational capability on Oct. 27, 2016. After more than a year-and-a-half of effort from headquarters staff, primary subordinate unit personnel and major command detachments, the Air Force reached a milestone in centralizing the management of installation and mission support activities throughout the Air Force. Across the enterprise, AFIMSC provides the Air Force with an opportunity to leverage best practices, institute efficiencies and standardize mission support activities for 77 installations, nine MAJCOMs and two direct reporting units.

CE RESPONSIBILITIES

The Air Force Civil Engineer Center, an AFIMSC PSU, is responsible for providing responsive, flexible full-spectrum installation engineering services and stands as the focal point for military construction and the sustainment, restoration and modernization of Air Force installations worldwide. AFCEC works closely with the Air Force civil engineer, air staff, AFIMSC directorates and detachments to provide effective, efficient engineering support to all Air Force and assigned joint installations.

AFIMSC directorates and core capabilities

Expeditionary Support Directorate, XZ

The AFIMSC Expeditionary Support Directorate fulfills its mission to train, equip and deliver agile combat support to warfighting commands ... faster, smarter, better. The plans and analysis division provides planning and analysis, as well as combat support lessons learned for joint and Air Force installa-

tion and mission support leaders to assist in decision-making. The training and support division provides support for Air Force Air Expeditionary Forces deployed worldwide. The readiness division manages the operational requirements for more than 900 core unit type codes.

Installation Support Directorate, IZ

The AFIMSC Installation Support Directorate consists of three divisions: installation engineering, protection services and operations support. Installation engineering works closely with AFCEC and AFIMSC detachments to provide installation commanders with effective engineering support. Protection services conducts physical infrastructure support and coordinates logistics operations activities at over 77 bases across the entire Air Force. The directorate serves as the Air Force's lead integrator for the first-responder community, including: fire services, explosive ordnance disposal, emergency management and security forces. The operations support division facilitates

2016 statistics

Headquarters AFIMSC

Primary Subordinate Units

- Air Force Civil Engineer Center
- Air Force Financial Management Center of Expertise
- Air Force Financial Services Center
- Air Force Installation Contracting Agency
- Air Force Security Forces Center
- Air Force Services Activity

Detachments

- Detachment 1
- Detachment 2
- Detachment 3
- Detachment 4
- Detachment 5
- Detachment 6
- Detachment 7
- Detachment 8
- Detachment 9
- Detachment 10

MAJCOM Supported

- Air Force Space Command
- Pacific Air Forces
- Air Force Special Operations Command
- United States Air Forces Europe
- Air Force District of Washington
- Air Force Materiel Command
- Air Education and Training Command
- Air Combat Command
- Air Mobility Command
- Air Force Global Strike Command

enterprisewide logistics management, cyberspace systems support and information access capabilities in support of 77 installations.

Resources Directorate, RM

Three separate divisions constitute the AFIMSC Resources Directorate: financial management, operations research and contracting. Financial management provides multifunctional financial management, analysis and services exploiting global reach to support Air Force installations worldwide. Operations research develops mathematical models, performs data analytics, designs experiments, codes simulations, communicates uncertainty and develops data visualization in order to understand, optimize, assess, forecast, influence and inform AFIMSC decision-makers. Contracting works closely with Air Force Installation Contracting Agency to provide the most efficient, centralized contracting support available to MAJCOMs and installations.

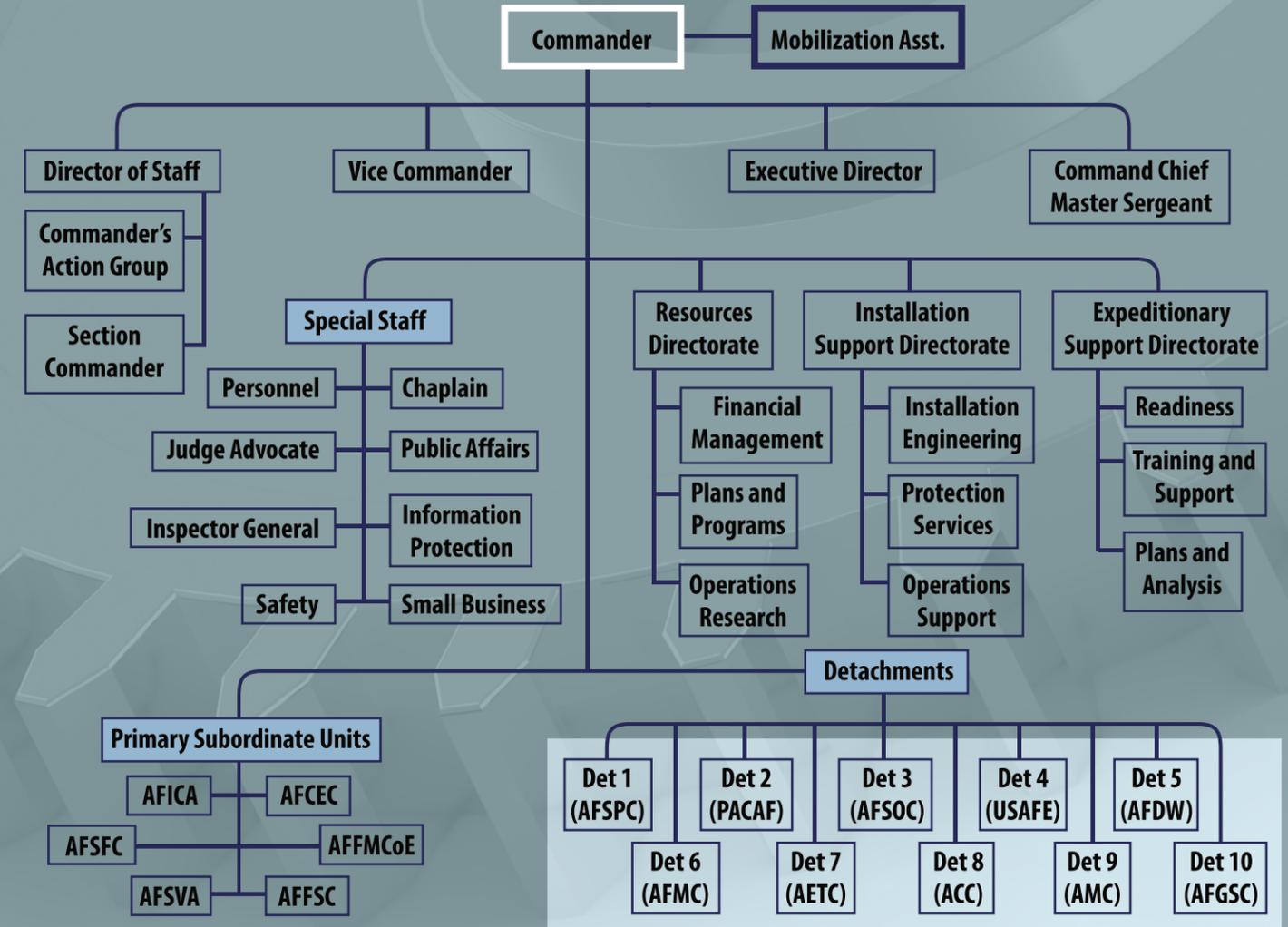
JBSA-Lackland, Texas

- JBSA-Lackland, Texas
- Buckley AFB, Colorado
- Ellsworth AFB, South Dakota
- Wright-Patterson AFB, Ohio
- JBSA-Lackland, Texas
- JBSA-Lackland, Texas

Location

- Peterson AFB, Colorado
- JB Pearl Harbor-Hickam, Hawaii
- Hurlburt Field, Florida
- Ramstein Air Base, Germany
- JB Andrews, Maryland
- Wright-Patterson AFB, Ohio
- JBSA-Randolph, Texas
- JB Langley-Eustis, Virginia
- Scott AFB, Illinois
- Barksdale AFB, Louisiana

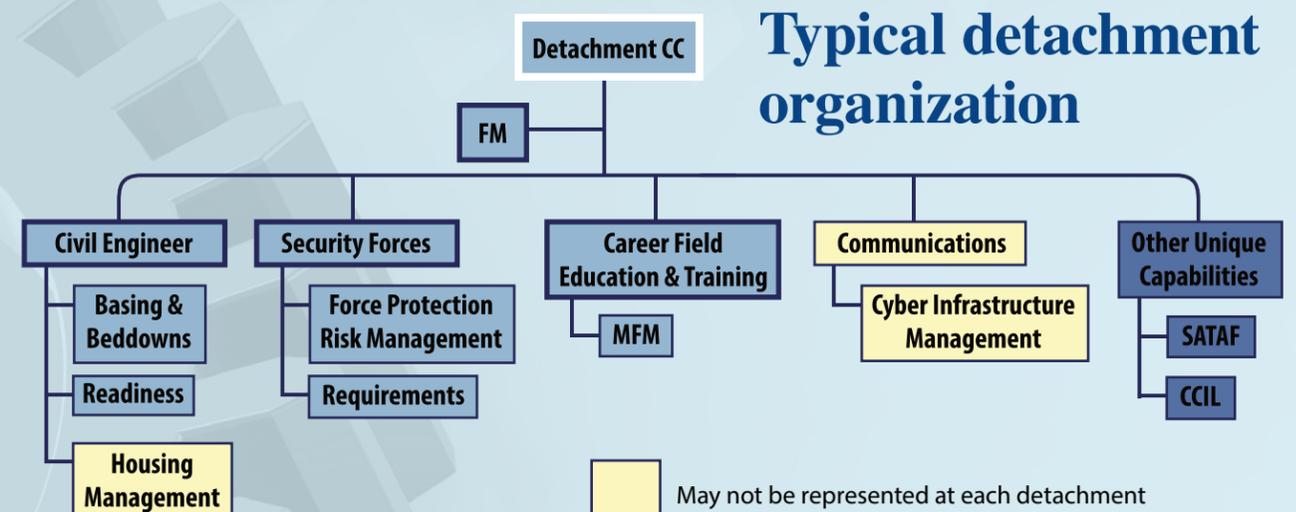
AFIMSC organization



Personnel

	OFFICERS	ENLISTED	CIVILIANS	CME	Total
HQ AFIMSC	159	250	371		780
AIR FORCE CIVIL ENGINEER CENTER	54	67	1223	182	1526
AIR FORCE FINANCIAL MANAGEMENT CENTER OF EXPERTISE	3	4	23		30
AIR FORCE FINANCIAL SERVICES CENTER			117		117
AIR FORCE INSTALLATION CONTRACTING AGENCY	70	142	533		745
AIR FORCE SECURITY FORCES CENTER	18	212	52		282
AIR FORCE SERVICES ACTIVITY	21	50	251		322
Grand Total	325	725	2570	182	3820

Typical detachment organization



Detachment 1

Location: Peterson AFB, Colorado
Commander: Col. Patricia Pettine
Commercial: (719) 554-7900 / DSN: 692-7900
Lead engineer: Charles Williams
Commercial: (719) 554-5201 / DSN: 692-5201
AFIMSCDet1.DETA FSPC.Workflow.1@us.af.mil



Col Patricia Pettine
Acting Commander, Det 1



Charles Williams
Lead Engineer, Det 1

Personnel as of Sept. 30, 2016:

Active Duty: 11
 Reserve: 4 (not in Det 1 total)
 Guard: 0
 Civilian: 13
 AFCEC contractors: 2 (not in Det 1 total)

ANNUAL ACCOMPLISHMENTS

- Provided engineering support and oversight to the \$144M Joint Space Operations Center consolidation initiative at Vandenberg AFB, California. Successfully and on-time transferred western range systems out of Building 7000.
- Facilitated \$882K in funding in support of DOD-directed establishment of the Joint Interagency Combined Space Operations Center at Schriever AFB, Colorado, in conjunction with U.S. Strategic Command, Air Force Space Command and the intelligence community. Projects included security improvements, heating, ventilation and air conditioning/power upgrades and renovations for displaced units.
- Continued engineering support and oversight of \$72.9M FY2014-FY2019 program to base Cyber Mission Forces at JB San Antonio; Scott AFB, Illinois; and Fort Meade, Maryland. Collectively, the renovation and numerous swing-space projects support the beddown of 12 CMF squadrons.
- Detachment 1's Readiness Directorate hosted two AFCEC-sponsored integrated process teams at Peterson AFB in

July. The teams made progress solving two of seven critical concerns in the emergency management career field. The multi-MAJCOM working groups developed charters for competing requirements and enterprise communication efforts clarifying concerns and developing corrective action plans for AFCEC staffing, approval and future implementation.

- From Sept. 17-26, five wildland fires occurred on Vandenberg AFB. A total of 12,742 acres were scorched with direct fire costs totaling \$17.5M, all of which were reimbursed by HQ AFIMSC. In addition to 30th Space Wing firefighters, more than 1,200 others responded from neighboring communities and states. Soon afterward Miranda Ballentine, assistant secretary of the Air Force for Installations, Environment and Energy recognized the "phenomenal Airmen who heroically managed the base's worst wildfire," stating, "What these Airmen accomplished was truly 'phenomenal.' The rampant fire literally surrounded several mission-critical facilities and radar sites, and came perilously close to the launch pad where a fuel-loaded rocket sat with a multi-billion dollar satellite on top." Although there was significant damage to supporting power and communications infrastructure, no facilities were lost. Recovery and redevelopment efforts will continue through 2017.

Detachment 2

Location: JB Pearl Harbor-Hickam, Hawaii
Commander: Col. Michael A. Addison Jr.
Commercial: (808) 449-3810
DSN: (315) 449-3810
AFIMSCDet2.DETPACAF.WORKFLOW@us.af.mil



Col Michael A. Addison Jr.
Commander, Det 2

Personnel as of Sept. 30, 2016:

Active Duty: 29
 Civilian: 32

ANNUAL ACCOMPLISHMENTS

- Divested surplus military family housing: 280 units at Yokota AB, Japan, and 248 at Misawa AB, Japan; converted one housing tower to a temporary lodging facility, and five

towers and 56 multiplexes to unaccompanied contingency quarters to support both installations' changing missions.

- Managed MILCON planning and programming efforts for major weapon system beddowns, including new partner locations via intergovernmental agreements with Northern Mariana Islands, Australian Defense Forces and other governments to provide USAF and Pacific Command with capabilities at distant operating locations for tanker, fighter and bomber aircraft.

- Facilities and infrastructure lead for PACAF's F-35 beddown at Eielson AFB; managed validation and programming of 37 operations and maintenance, and MILCON projects totaling \$557M. Program changes will save 12 manpower positions and \$159M in life cycle costs.
- Assisted Andersen AFB, Guam, in expanding capability and increasing resiliency as a platform for power projection,

regional cooperation and multinational training; projects include hardening existing capabilities and accommodating new missions and increased aircraft rotations.

- Choreographed largest Defense Logistics Agency MILCON program; 19 projects totaling \$367M approved and funded to modernized fuel infrastructure in the Pacific region.

Detachment 3

Location: Hurlburt Field, Florida
Commander: Col. Travis Harsha
Commercial: (850) 884-3040 / DSN: 579-3040
Lead engineer: Lt. Col. Mark Donnithorne
Commercial: (850) 884-4974 / DSN: 579-4974
AFIMSCDet3.AFSOC.Workflow.1@us.af.mil



Col Travis Harsha
Commander, Det 3



Lt Col Mark Donnithorne
Lead Engineer, Det 3

Personnel as of Sept. 30, 2016:

Active Duty: 4
 Civilian: 8

ANNUAL ACCOMPLISHMENTS

- Led facilities work group to beddown CV-22s at Yokota AB. Validated \$125M+ in facility requirements for U.S. Southern Command funding in FY17 MILCON program.
- Led facility planning efforts in support of the transition from the MC-130H to MC-130J at Kadena AB. Worked with AFCEC's Facility Engineering Directorate-Pacific, 18th Civil Engineer Group and the U.S. Army Corps of Engineers to mitigate unexploded ordnance hazards and preserve cul-

tural artifacts during the design phase of the \$120M+ U.S. Special Operations Command recapitalization effort.

- Chaired installation and mission support work groups for SATAFs to support the beddown of AC-130J Ghost Rider at Hurlburt Field, relocation of MC-130H Talon II Formal Training Unit to Hurlburt Field and consolidation of C-146 operations under Air Force Special Operations Air Warfare Center at Duke Field.
- Supported Headquarters U.S. Air Forces in Europe-led Site Activation Task Force to relocate 352nd Special Operations Wing from RAF Mildenhall, England, to Spangdahlem AB, Germany, as part of the European Infrastructure Consolidation. Validated \$225M+ in facility requirements to accomplish AFSOC missions for execution in FY2018+ MILCON program.

Detachment 4

Location: Ramstein Air Base, Germany
Commander: Col. Steven Sweeney
DSN: 314-480-6331
Lead engineer: Lt. Col. Marcia Quigley
DSN: 314-480-3063
AFIMSCDET4.DETUSAFE.WORKFLOW@us.af.mil



Col Steven Sweeney
Commander, Det 4



Lt Col Marcia Quigley
Lead Engineer, Det 4

Personnel as of Sept. 30, 2016:

Active Duty: 39
 Civilian: 38

ANNUAL ACCOMPLISHMENTS

- Provided engineering, planning and programming expertise to multiple SATAFs in support of the European Infrastructure Consolidation and the Air Force's initial F-35 Joint Strike Fighter basing in Europe. Initiatives realign several USAF missions in order to reduce excess infrastructure and effectively posture forces within the theater.

- Developed an outside the Continental U.S. Housing Management Air Force Manpower Standard that quantifies manpower required to accomplish tasks. The changes include separate equations for the major functions within a housing management flight (assistance, facilities, referrals, furnishings management and unaccompanied housing), and developing 49 individual military family housing process maps.
- Emergency services organized, trained and equipped 1,287 personnel across 13 bases in five countries; providing support across three COCOMs. Enabled 4,700 emergency

responses and protected 36,000 military personnel and 51.5 million square feet of infrastructure. Led the USAFE and Defense Logistics Agency disposal services and facilitated the turn-in of 86 tons of halon firefighting agent, a reportable hazardous substance. Spearheaded USAFE's inaugural participation in a coalition Chemical Biological Radiological Nuclear exercise with Serbian Armed Forces, procuring training slots and building partnership capacity.

- Delivered airfield planning expertise in support of the U.S. European Reassurance Initiative. Applied North Atlantic Treaty Organization and host nation design criteria into basing and beddown plans. Efforts support U.S. European Command's desire to provide persistent air presence within the region as a show of support for our allies.

Detachment 5

Location: JB Andrews, Maryland
Commander: Col. Don Layne
DSN: 240-612-6225
Lead engineer: Andrei Froicu
DSN: 240-612-1942
AFIMSCDet5.AFIMSC.Workflow@us.af.mil



Col Don Layne
 Commander, Det 5



Andrei Froicu
 Lead Engineer, Det 5

Personnel as of Sept. 30, 2016:

Active Duty: 4
 Civilian: 5

ANNUAL ACCOMPLISHMENTS

- Orchestrated for future recapitalization of JB Andrews' critical airfield infrastructure. Led MILCON planning and programming efforts in support of the \$331M beddown of the Presidential Aircraft Recapitalization program. Awarded \$3.3M design for Taxiway Whiskey pavements recapitalization; received SAF/IEI concept approval, posturing JBA for future \$132M phased investment.

- Coordinated/gained STRATCOM and NORTHCOM support for a \$50M consolidated communications center project.
- Safeguarded \$13M for FY2017 21-Point Firing Range MILCON project. New firing range will provide a facility to train DOD and interagency personnel across the National Capital Region.
- Continued construction of major projects for the ambulatory care center, helicopter operations facility, base exchange and high voltage substation.
- Supported the Presidential Airlift Group-funded \$4.4M for facility repairs.

Detachment 6

Location: Wright Patterson AFB, Ohio
Commander: Col. Shawn D. Moore
DSN: 787-3732
Lead engineer: Randy Parker
DSN: 674-2264
AFIMSCDet6.CCA.CommandSection@us.af.mil



Col Shawn D. Moore
 Commander, Det 6



Randy Parker
 Lead Engineer, Det 6

Personnel as of Sept. 30, 2016:

Active Duty: 13
 Reserve: 1
 Guard: 0
 Civilian: 26
 Contractor: 0

ANNUAL ACCOMPLISHMENTS

- Responded to 129 explosive ordnance disposal-related emergency responses, including 31 for defense support to civilian agencies, for more than 2,400 man-hours. Responded to 6,078 fire emergency services-related emer-

- gencies, including 244 off-base responses under mutual aid agreement.
- Sanitized 59,678 bombing range acres in support of 64 missions for range/area clearances and disposal of unserviceable munitions. Over 18,647 man-hours were expended and 23,301 ordnance items destroyed, including 29 large missile motors in support of the START II treaty.
- Supported 126 U.S. Secret Service VIP Protection Agency missions, expending 25,997 man-hours protecting the president, vice president, first lady, foreign dignitaries, heads of state and 2016 presidential candidates.

- Provided 15,577 man-hours in support of 353 research and development, and weapons verification missions.
- Tinker Air Force Base became the first Air Force fire department to switch to new, environmentally friendly firefighting foam. Also first in DOD to successfully utilize new agent; the department extinguished a large tire warehouse fire in fewer than 20 minutes.
- The Utilities Privatization program funded a combined total of about \$16.7M to cover connection fees and

capacity expansion charges, a 50-year water/wastewater contract worth approximately \$510M, and a 50-year electricity contract worth approximately \$360.4M. This effort removes the responsibility and liability for wastewater treatment, water provision and electricity service from the Air Force at Eglin AFB.

Detachment 7

Location: JB San Antonio, Texas
Commander: Col. Brian C. Murphy
Commercial: (210) 652-9418/DSN 487-9418
Lead engineer: Michael F. Redfern
Commercial: (210) 652-1778 / DSN 487-1778
AFIMSCDet7.Workflow.AETC@us.af.mil



Col Brian C. Murphy
 Commander, Det 7



Michael F. Redfern
 Lead Engineer, Det 7

Personnel as of Sept. 30, 2016:

Active Duty: 20
 Reserve: 7
 Guard: 0
 Civilian: 15
 Contractor: 0

ANNUAL ACCOMPLISHMENTS

- Advocated for the AF Basic Military Training program, justified restoration of the Airman Training Complex Dorm 7 and Dining and Classroom Facility 4 from FY2018 to FY2020. Ensured critical accession end strength increases could be met. Ensured ATC 8 included in five-year defense plan, with \$589M program safeguarded.
- Championed AETC Construction Tasking Order execution: 138 projects, totaling \$196M. Highlights include \$17M for JBASA-Lackland projects to repair and revitalize technical training dorms, \$16M to repair 13 roofs across JBASA, \$1.5M at Maxwell AFB, Alabama, for AFROTC field training at Vigilant Warrior training site, \$4.3M at Altus AFB, Oklahoma, to replace overhead electrical lines, \$16.4M at Sheppard AFB, Texas, for repairs and upgrades to a 39-year old dorm, \$36.6M at Vance AFB, Oklahoma, to repair failing runways, and \$836K at Kirtland AFB, New Mexico, in support 351st Battlefield Airmen Training Squadron requirements.
- Provided CE program management for eight active strategic basing efforts; site activation task forces of new formal training units for the F-35A, KC-46A and Combat Rescue Helicopter; and five additional basing and beddowns; actions total over \$425M in active construction and a potential \$895M in new facilities and infrastructure.
- Partnered with the Air Force Civil Engineer Center to complete the conceptual design of a 30-facility, \$753M consolidated campus for battlefield Airmen training; results fed strategic basing process to determine best 1-to-3 base option among a full continental U.S., enterprisewide look

- of 170 bases. Site surveys of eight candidate installations began in October.
- Coordinated, assisted and provided oversight for AETC EOD teams that conducted 183 EOD operational missions that included clearing 7,364 ordnance items from ranges; resolving two explosive incidents at area scrap metal recycling yards; and performing 9,956 hours of U.S. Secret Service VIP support on 31 missions to include the 71st United Nations General Assembly, the Republican National Convention in Cleveland, the Democratic National Convention in Philadelphia and candidate nominee operational support (Democratic and Republican presidential nominees) in various areas throughout the United States.



Detachment 5 led planning and programming efforts to support the \$331M beddown of the Presidential Aircraft Recapitalization Program. (U.S. Air Force photo/Senior Master Sgt. Kevin Wallace)

Detachment 8

Location: JB Langley-Eustis, Virginia
Commander: Col. Russell R. Hula
Commercial: (757) 764-2003 / DSN: 574-2003
Lead engineer: John G. Sabochick
Commercial: (757) 764-2003 / DSN: 574-2003
AFIMSCDet8.Workflow.ACC@us.af.mil



Col Russell R. Hula
 Commander, Det 8



John G. Sabochick
 Lead Engineer, Det 8

Personnel as of Sept. 30, 2016:

Active Duty: 26
 Reserve: 10 (not in Det 8 total)
 Guard: 0
 Civilian: 24
 AFCEC Contractors: 1 (not in Det 8 total)

ANNUAL ACCOMPLISHMENTS

- Provided facility and logistics basing and beddown support to ACC, tracking 87 projects valued at \$445M for F-35, RC-135 EIC, RQ-4, KC-135, CMCC, MQ-1/9 FTU, 363 ISRW, Combat Rescue Helicopter (HH-60W), Guardian Angel Air-deployable Rescue Vehicle (GAARV) and the Close Air Support Integration Group.
- Spearheaded command interests in clear zones, water use management, installation deployment plans, installation complex encroachment management action plans and

air installation compatible use zones, proactively filled gaps due to divestiture of the MAJCOM planning capability to ensure optimal/effective use of command natural resources as new work flows developed.

- Detachment 8 and HQ AFIMSC/IZP led the fire emergency services community in the development of a new budget tool. The tool is a data-driven, enterprisewide model aligned with the way the Air Force delivers installation and mission support. It standardizes FES funding across the enterprise and develops baseline requirements.
- Detachment 8 reimplemented the use of the emergency response capability tool for emergency services at installations. The tool provides leadership with an in-garrison understanding of EOD, FES and EM flights' response capabilities based on manpower, training/certifications, operations, vehicles, facilities and equipment.

Detachment 9

Location: Scott Air Force Base, Illinois
Commander: Col. James K. Kossler
DSN: 229-0738
Lead engineer: Martin P. Buncher
DSN: 229-0738
AFIMSC.DetAMC.workflow@us.af.mil



Col James K. Kossler
 Commander, Det 9



Martin P. Buncher
 Lead Engineer, Det 9

Personnel as of Sept. 30, 2016:

Active Duty: 26
 Civilian: 14

ANNUAL ACCOMPLISHMENTS

- Provided planning support for key AMC strategic basing actions such as the beddown of the 60th Aeromedical Evacuation Squadron at Travis AFB, moving the C-17 Weapons Instructor Course to JB Lewis-McChord and the beddown of eight additional KC-135s and the activation of an air refueling squadron at MacDill AFB.
- Teamed with AFSPC, HQ AFIMSC, AMC/A3/A6/FM, 38th ES and the 436th AW team to develop the plan and garner funding to correct safety and communications deficiencies at Dover AFB ground to air transmitter and receiver sites. Solution reduces overall footprint by half, costs one-third

of the original estimate and expedites the installation of new ground to air radio by about four years.

- Executed the AMC 2016 Nuclear Deterrence Forum at McConnell AFB; developed mission support team radiological operations tactics, techniques and procedures for air mobility ops; and developed new mission support team UTC and secured FYDP funding for initial fielding and sustainment.
- Initiated CBRN Mission IPT; enterprisewide look at C-CBRN operations against current and emerging threats.
- Obtained funding for 41 additional authorized positions effective October 2016 from AF FES command leveling initiative and JB Lewis-McChord military to civilian conversion.

Detachment 10

Location: Barksdale AFB, Louisiana
Commander: Col. David W. Lawrence, PMP
DSN: 456-4293
Lead engineer: Robert Aldrich
DSN: 781-5051
AFIMSC.DETAFGSC.WORKFLOW@us.af.mil



Col David W. Lawrence
 Commander, Det 10



Robert Aldrich
 Lead Engineer, Det 10

Personnel as of Sept. 30, 2016:

Total: 28/30 Personnel Assigned
 Officers: 6/7 Assigned
 Enlisted: 10/10 Assigned
 Civilians: 7/8 Assigned
 Contractors: 5/5 Assigned

ANNUAL ACCOMPLISHMENTS

- Responded to numerous command directed initiatives to enhance mission effectiveness, and Airmen/family care for the nuclear enterprise. Participated in several efforts such as the Force Improvement Program, Security Forces Cultural Initiative, combat arms and kennel refresh, Human Weapon System Team efforts and a top-to-bottom examination of on- and off-base housing conditions.
- AFGSC was named the executive agent for Nuclear Command and Control communications and National Leadership Command Capabilities, which brings an additional 250+ personnel to Barksdale AFB. The detachment supported the HQ AFGSC site survey, which develops options and courses of action for the beddown of these

new and expanding missions and supported the development of a phased beddown plan that was approved by AFGSC/CV.

- USSTRATCOM submitted a request for forces for aircrews and aircraft to temporarily support the emergency security response mission at the three missile wings. The detachment continues to develop beddown plans and associated costs for various COAs to provide briefings and answer questions.
- Coordinated and completed an initiative on behalf of AFCEC to revise the AF fire emergency services Nationwide Suspicious Activity Reporting Initiative checklist. The revision added core inspection criteria for AFGSC (ICBM) and USAFE (NATO).
- Supported 20th Air Force initiative for a missile potential hazard network fly-away kit by assisting AFGSC/A4C and A6 during installation and initial training at Vandenberg, Malmstrom, F.E. Warren, Minot and Hill AFBs.
- Supported 8th Air Force with a short-notice site survey at RAAF Tindal, Australia, which included a subject matter expert's support in fire emergency services.



Five wildland fires occurred on Vandenberg AFB, Sept. 17-26, 2016. A total of 12,742 acres were scorched with direct fire costs totaling \$17.5M, all of which were reimbursed by HQ AFIMSC. (U.S. Air Force photo)



ACC

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Col Jennifer L. Kilbourn
 Chief, Civil Engineer Division

COMMAND MISSION

Air Combat Command organizes, trains, equips and provides combat-ready forces to deliver dominant combat airpower in support of national security strategy implementation.

CE RESPONSIBILITIES

ACC/A4C provides global force management for Air Force civil engineers, developing and deploying mission-ready, motivated, trained and resilient RED HORSE, Prime BEEF, explosive ordnance disposal, and fire and emergency managers. ACC/A4C also provides deliberate and adaptive planning, validation, prioritization and advocacy for military construction, or MILCON, and operations and maintenance requirements. It develops policy and implementation strategies supporting 1,300 aircraft, 34 wings, 19 bases and more than 70 operating locations worldwide with 84,000 active-duty and civilian personnel.

SIGNIFICANT ACCOMPLISHMENTS

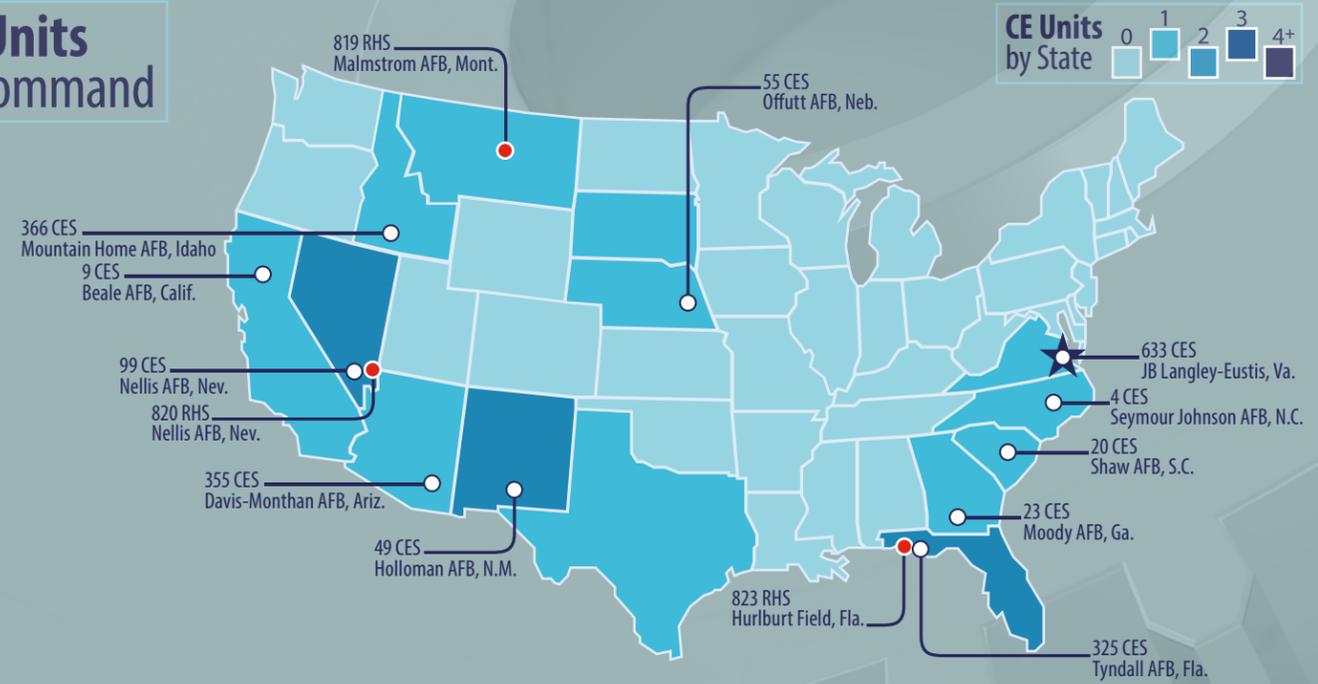
- Managed CE deployments in support of ACC's role as the Air Force provider of conventional forces. Deployed 4,800+ engineers across five combatant commands.
- Developed FY18-22 MILCON investment approach across 20 locations. Advocated for 80 projects at \$1.5B cost to meet the ACC commander's top priorities.
- Fast tracked approval for 798 relocatable buildings at \$12.7M at Al Jaber AB, Kuwait. Met 10-year housing requirement and Operation Inherent Resolve beddown milestone.
- Built FY17/18 facilities investment strategy. Validated 218 projects at \$377M and developed strategy for advocating the command's most critical requirements.
- Led cross-functional review for the FY16/17 MAJCOM Comprehensive Asset Management Plan build: 265 projects at \$662M were reviewed and prioritized, resulting in \$187M, or 16.5 percent of AF funding allocation.
- Drove Silver Flag and Mission Essential Equipment Training program for ACC. Executed \$1.4M budget in order to train 900 engineers in the skills required for deployment.



At left, U.S. Air Force Master Sgt. Reid Burns of the 1st Expeditionary Civil Engineering Group, uses a dynamic cone penetrometer during runway repair operations at Qayyarah West airfield, Iraq, Oct. 9, 2016. The device tests the strength of the soil before concrete can be poured to repair the runway. The Islamic State of Iraq and the Levant destroyed the runway by using heavy machinery and explosives to disrupt coalition forces from gaining control in the area. (U.S. Army photo/Spc. Christopher Brecht)

At right, U.S. Air Force Airmen assigned to the 633rd Civil Engineer Squadron Explosive Ordnance Disposal team disembark a U.S. Army Chinook helicopter at Fort Pickett, Virginia, Aug. 31, 2016. The Chinook picked the team up from JB Langley-Eustis, Virginia, then brought them to their training location. (U.S. Air Force photo/Airman 1st Class Enrique Barcelo)

CE Units in Command



2016 statistics:

Major bases:	11
Plant replacement value	\$27B
Buildings	59.3M sq. ft.
Airfield pavement	40.3M sq. yd.
Housing	10,712 units
Dorms	8,322 rooms

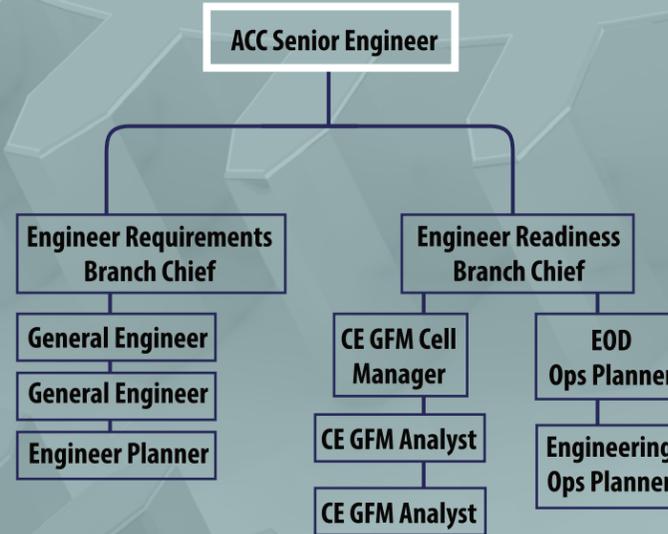
ACC personnel	
Active duty and civilian	84,163
Reserve and Guard	48,213

CE personnel	
Active duty	3,856
Reserve	553
Guard	4,173
Civilian	1,469

MILCON	10 projects/\$153.9M
SRM	268 projects/\$326M
Facilities operations:	\$156M in O&M funding



U.S. Air Force Airmen assigned to the 633rd Civil Engineer Squadron Explosive Ordnance Disposal team disembark a U.S. Army Chinook helicopter at Fort Pickett, Virginia, Aug. 31, 2016. The Chinook picked the team up from JB Langley-Eustis, Virginia, then brought them to their training location. (U.S. Air Force photo/Airman 1st Class Enrique Barcelo)





AETC

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Vacant
 Chief, Engineer Division

COMMAND MISSION

Recruit, Train, and Educate Airmen to deliver airpower for America

CE RESPONSIBILITIES

AETC civil engineering validates, prioritizes and advocates for military construction, unspecified minor military construction and facilities, sustainment, restoration and modernization requirements to integrate direct mission-related requirement priorities across Air Education and Training Command.

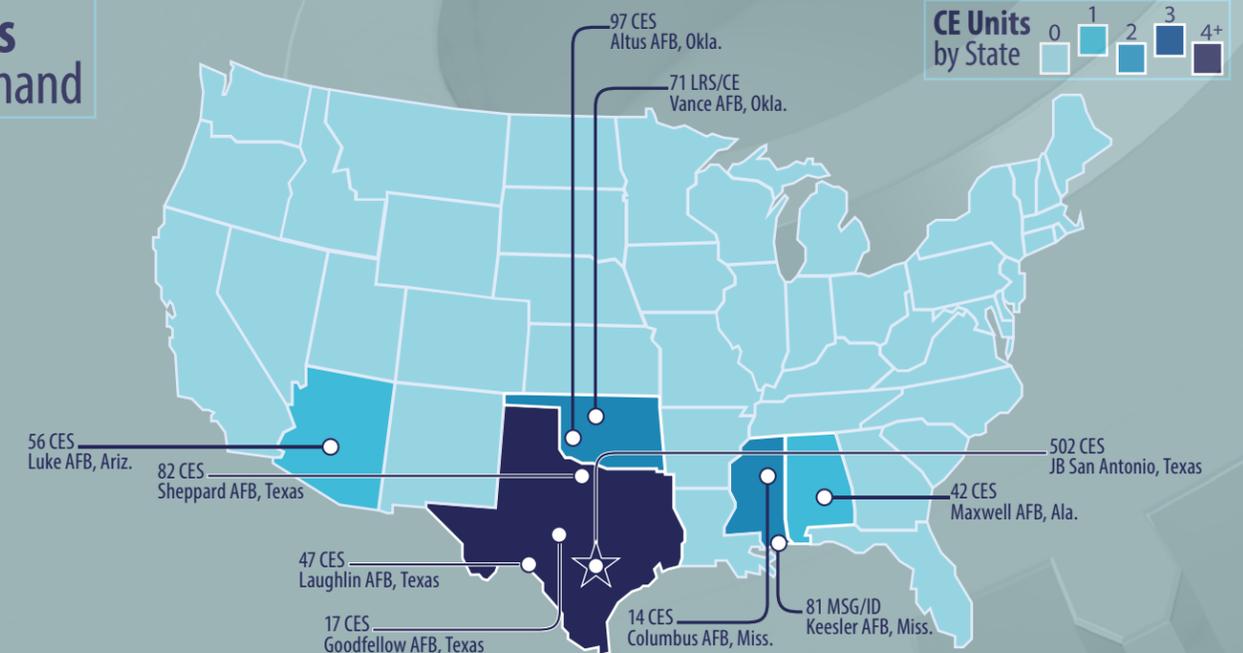
SIGNIFICANT ACCOMPLISHMENTS

- Validated, integrated and obtained corporate approval for AETC's \$135M FY2017 integrated priority list requirements.
- Led comprehensive 20-hour base-to-command to create a collaborative environment for effective communication of direct mission-related requirements and priorities across 10 installations and five major tenant units.

- Successfully advocated for nine mission-critical FSRM emergent requirement requests valued at \$4.7M. Obtained urgent funding for F-16 FTU beddown projects, bolstered energy resilience for Suppression of Enemy Air Defense F-16 training facility and ensured continuous operations for Air University and Battlefield Airman training missions.
- Supported AFCEC Requirements Development and Design Process IPT to provide MAJCOM civil engineer perspective on CE enterprise requirements development process
- Partnered with AFCEC to develop standardized coordination for National Environmental Protection Act required MAJCOM-endorsement documents.
- Teamed with AFCEC to champion the first military service station privatization in the Air Force; replacing antiquated infrastructure with state-of-the-art military service stations at five AETC installations.



CE Units in Command



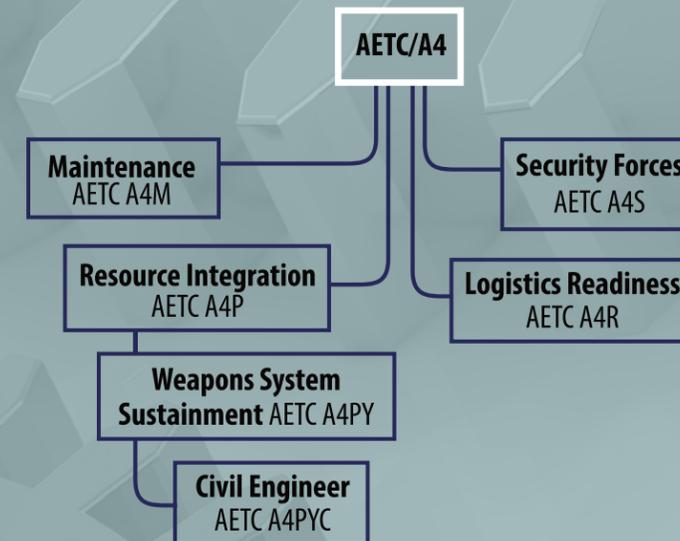
2016 statistics

Major bases	10
Plant replacement value	\$24.2B
Buildings	20M sq. ft.
Airfield pavement	15.6M sq. yd.
Housing	4,777 units
Dorms	15,247 rooms

AETC personnel	
Active Duty	28,453
Reserve	1,805
Guard	4,890
Civilian	14,300
Contractor	10,338

CE personnel	
Active Duty	586
Reserve	19
Civilian	2,087
Contractor	1,853

MILCON	13 projects/\$236M
SRM	143 projects/\$198M
Facilities operations	\$184.4M



Facing page: Air Force firefighters are trained to remove the vehicle from an injured victim rather than remove an accident victim from the vehicle, as these firefighters demonstrate at Columbus Air Force Base, Mississippi. (U.S. Air Force photo/Airman 1st Class John Day)



AFGSC

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Brian C. Lee, P.E.
 Chief, Engineering Division

COMMAND MISSION

Provide strategic deterrence, global strike and combat support anytime, anywhere! AFGSC is responsible for the nation's three intercontinental ballistic missile wings, the Air Force's entire bomber force, the Long Range Strike Bomber program, and operational and maintenance support to organizations within the nuclear enterprise. AFGSC develops and provides safe, secure and effective combat-ready forces for nuclear and conventional global strike — today and tomorrow!

CE RESPONSIBILITIES

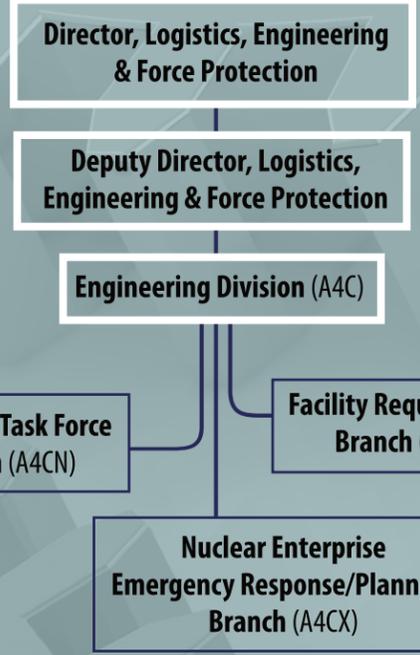
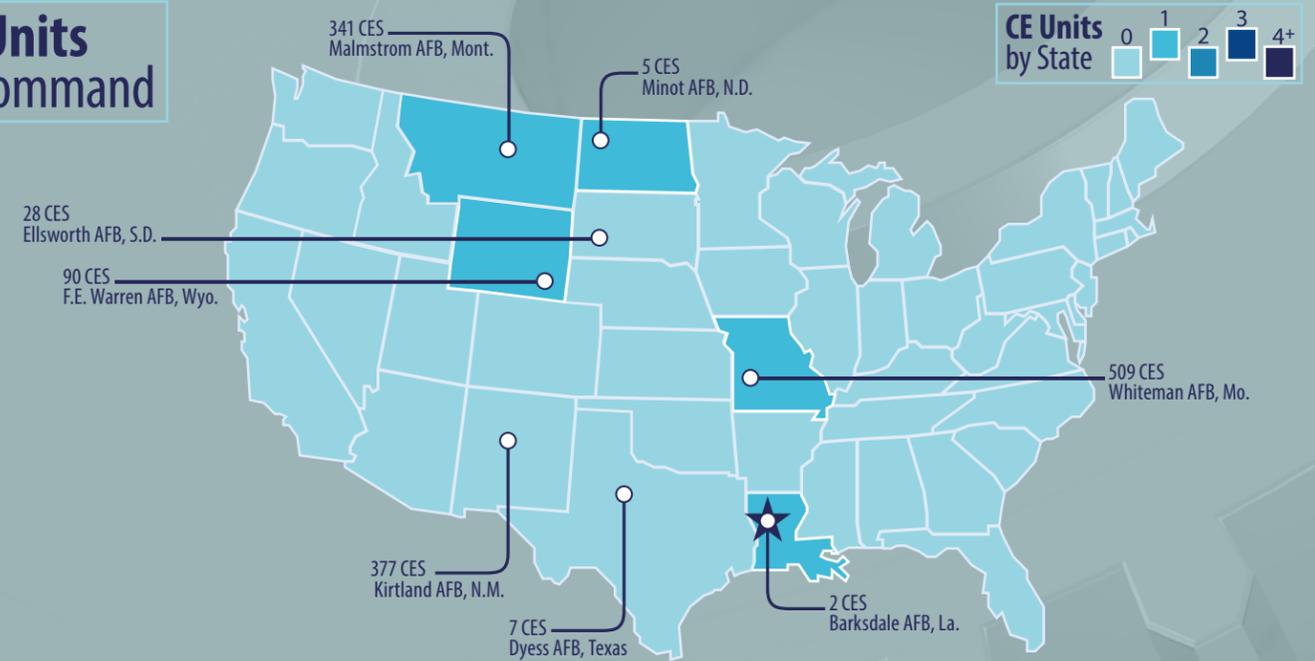
AFGSC's engineers support combat-ready nuclear and conventional forces by maintaining and operating the command's physical plant, providing firefighting, explosive ordnance disposal and emergency management functions for eight installations. AFGSC/A4C identifies, prioritizes and advocates facility and infrastructure requirements for AFGSC missions and in support of U.S. Strategic Command. Additionally, AFGSC/A4C organizes, trains and equips the Air Force's only Nuclear Response Task Force in the continental U.S.

SIGNIFICANT ACCOMPLISHMENTS

- Continued execution of \$1.9B weapons storage facility corporate initiative to replace 1960s-era weapons storage areas to handle all functions under one roof. Completed design for the new facility at F.E. Warren AFB, Wyoming, and commenced design efforts for Barksdale AFB, Louisiana; with Malmstrom AFB, Montana; Whiteman AFB, Missouri; and Minot AFB, North Dakota, to follow.
- Executed eight training events for nuclear weapons incident consequence management for AFGSC responders at base and headquarters levels, enhancing governmental response with key interagency involvement. Developed and provided pinpoint training for more than 300 people, reducing training time from 32 to three hours per individual.
- AFGSC Radiological Incident Response and Recovery Plan 10-1 revised and signed. The personnel changes reduced the Initial Response Force manning requirement 23 percent, from 172 to 132 personnel. Revision also reduced the overall document size by 27 percent and incorporated stand-alone, removable plans for each section.

- First AFGSC participation in Army North Vibrant Response 16, a national-level exercise, providing key insight into the defense support of civil authorities' mission and execution.
- Solely responsible for critical emergency communications assets; spent over \$350K to maintain, sustain and upgrade \$5.4M of equipment that provides remote communications in an austere environment supporting U.S. Northern Command plans.
- Hosted five Defense Nuclear Weapons School Mobile Training Teams to conduct the DOD-required Nuclear Weapons Incident Response Training Basic Course for Initial Response Force and Response Task Force responders. Enabled training of 200 personnel with an estimated savings of over \$350K and a return of more than 3,000 man-hours to AFGSC bases.
- AFGSC engineers supported multiple beddowns, including the 595th Command and Control Group at Offutt AFB, Nebraska, with the transfer of the National Airborne Operation Center from ACC, the Nuclear Command and Control Communications Center at Barksdale AFB, and Global Aircrew Strategic Communication Terminals at over 40 bases around the world.
- Continued development/execution of \$172 in MILCON facility and infrastructure requirements for beddown of UH-1 replacement helicopters at AFGSC's three missile wings and an air base wing. Projects include constructing a consolidated Helicopter Squad Ops/Tactical Response Force Ops and Alert Facility along with aircraft maintenance unit alert/maintenance capabilities for helicopter security operations, and a helicopter training simulator facility that provides coverage to remote ICBM missile alert and launch facilities. Additionally, construction of 13 supporting helicopter refueling stations across the three wings was completed in October, ensuring continued air support/response operations.

CE Units in Command



2016 statistics

Major bases	8
Plant replacement value	\$40.8B
Buildings	23.6M sq. ft.
Airfield pavement	21.6M sq. yd.
Housing	7,871 units, (100 percent privatized)
Dorms	6,340 rooms

AFGSC personnel

31,000+

CE personnel	
Active duty	1,847
Reserve	20
Guard	0
Civilian	177

MILCON	7 projects/\$96M
SRM	261 projects/\$244M
Facilities operation	\$88.2M



AFMCA

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Ronald J. Onderko, P.E.
 AFMC Senior Civil Engineer

COMMAND MISSION

The command manages research, development, acquisition, test and logistics services that keep Air Force weapon systems and warfighters ready for combat.

CE RESPONSIBILITIES

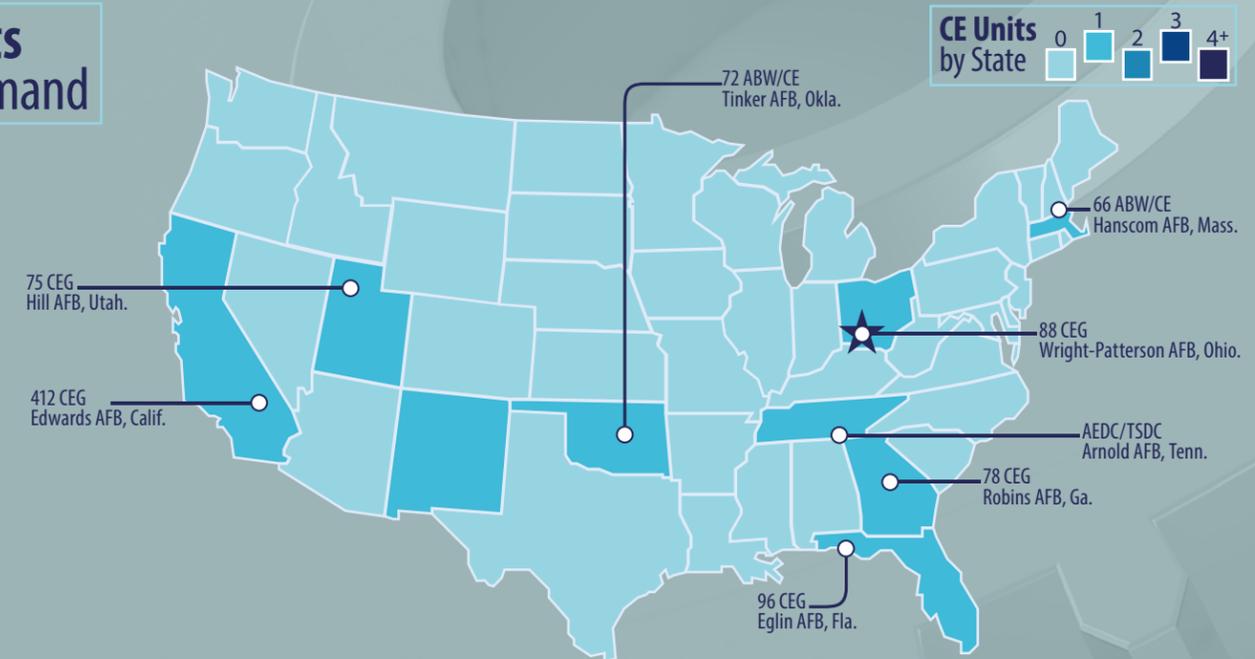
Deliver quality built and natural infrastructure, equipment and human capital assets through effective asset management planning, programming and execution oversight. Oversee AFMC Installations' Emergency Management Exercise Program. Division activities sustain and enhance AFMC's real property assets, ensure installation operational capability and enable AFMC to develop, field, facilitate and sustain war-winning capabilities and provide effective agile combat support.

SIGNIFICANT ACCOMPLISHMENTS

- Ensured delivery of AFMC-prioritized FY2017 Facilities, Sustainment, Restoration and Modernization project list to AFIMSC ahead of schedule. Submittal consisted of 432 FSRM projects totaling \$492M. AFMC installations expected to receive \$188M for 136 FSRM projects. Provides for sustainment and enhancement of AFMC's real property assets and ensure installation operational capability.



CE Units in Command



- Facilitated AFMC FY18 MILCON project prioritization (78 projects) for AFMC and delivered to AFIMSC on schedule. Advocated for adjustments to the MILCON scoring model to allow AT/FP related projects to better compete for scarce MILCON funds. AFMC strives for safe and secure installations for our Airmen.
- Seamlessly integrated civil engineering and force protection functions into the AFMC/A4 organization. No gap in service to AFMC installations in these mission-critical installation support functions.

2016 statistics

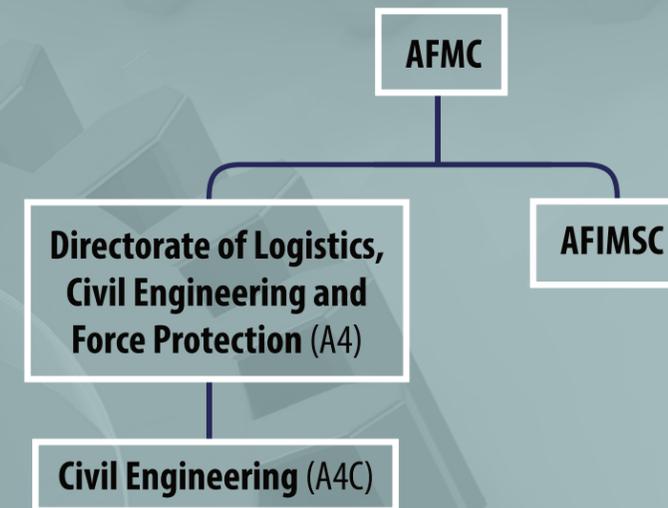
Major bases	8
Plant replacement value	\$55B
Buildings	123M sq. ft.
Airfield pavement	30.3M sq. yd.
Housing	6,435 units (99 percent privatized)
Dorm	3,847 rooms

AFMC personnel*	
Active duty	16,914
Reserve	667
Guard	63
Civilian	64,078
Contractor	16,841

CE personnel	
Active duty	395
Reserve	19
Guard	0
Civilian	3,589
Contractor	1,403

* AFMC Personnel numbers include AFIMSC and PSUs

MILCON	9 projects/\$190M
SRM	346 projects/\$211M



Facing page: An eight-phase major road construction project is underway at Tinker Air Force Base, Oklahoma. (U.S. Air Force photo/Kelly White)



AFSOC

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Thomas E. Wahl
 Acting Deputy Director of Installations
 & Mission Support

COMMAND MISSION

Organize, train and equip Airmen to execute global special operations. We are America's Air Commandos. AFSOC provides Air Force special operations forces for worldwide deployment and assignment to regional unified commands. The command's SOF are composed of highly trained, rapidly deployable Airmen, conducting global special operations missions ranging from precision application of firepower, to infiltration, exfiltration, resupply and refueling of SOF operational elements.

CE RESPONSIBILITIES

Plans, programs, resources and manages civil engineer processes and resources enabling the air component of U.S. Special Operations Command to execute its mission. Executes \$80M in annual appropriations, supports more than 20,000 special operations forces at 35 locations worldwide and advises the AFSOC commander on base development and sustainment, integrated defense, security, force protection and expeditionary combat support. Provides specialized agile combat support by employing installation engineering, expeditionary engineering, readiness and emergency management, fire and emergency services and EOD in garrison and at overseas contingency locations. To further enable U.S. Special Operations Command's elite forces mission, provides expeditionary bed-down support for deployed personnel in contingency locations for up to 30 days using AFSOC-unique Air Rapid Response Kits, or ARRKs.

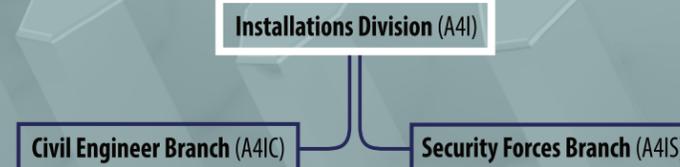
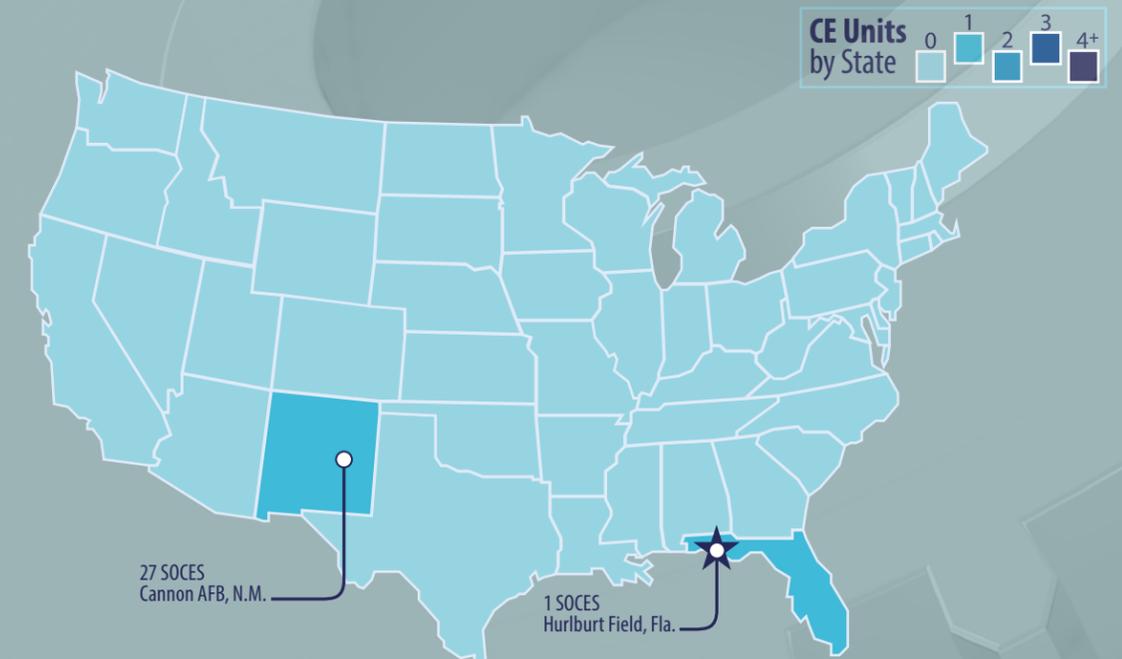
SIGNIFICANT ACCOMPLISHMENTS

- Deployed 249 engineers to 14 locations in Southwest Asia, Africa, Central America and South America in direct support of USSOCOM and Air Force missions.
- Continued supporting the reconfiguration/expansion of Melrose Air Force Range, New Mexico, to accommodate enhanced utilization of 70,000 acres with over \$50M of range improvements in direct support of training for integrated SOF air/ground operations employed worldwide.
- Executed \$24.5M for 87 operations and maintenance facility projects as well as designs, area development plans, comprehensive range plans and environmental studies in support of basing options and SRM of facilities and infrastructure. Executed an additional \$6.2M in MFP-11 O&M projects in direct support of SOF unique mission requirements.

- Completed six MILCON projects at \$62M, providing new facilities and infrastructure supporting Air Force commandos conducting special operations across the globe.
- Awarded two MILCON projects worth \$19.8M at Cannon AFB, New Mexico, to continue the AFSOC mission bed-down.
- Initiated designs on \$208M in SOF MILCON for AFSOC missions in the Pacific theater.
- Validated \$225M+ in MILCON projects supporting the relocation of 352nd Special Operations Wing to Spangdahlem AB, Germany.
- Continued execution of 30 MILCON projects valued at \$571M to provide combat-ready forces.
- Restructured staff and facilitated the standup of the AFIMSC/Detachment 3. AFSOC/A7 Directorate dropped from 35 to 13 positions and merged with AFSOC/A4 as an Installations Division on Oct. 1, 2016.

Facing page: Air Commandos with the 27th Special Operations Contracting Squadron and the 27th Special Operations Comptroller Squadron set up tents June 13, 2016 at Melrose Air Force Range, N.M. The setup was the first event of a week long exercise honing the squadrons' ability to run finance and contracting operations in a deployed environment. (U.S. Air Force photo/Senior Airman Shelby Kay-Fantozzi)

CE Units in Command



2016 statistics

Major bases	2
Plant replacement value	\$8.1B
Buildings	8.1M sq. ft.
Airfield pavement	2.8M sq. yd.
Housing	1,202 units (100 percent privatized)
Dorms	1,791 rooms

AFSOC personnel	
Active duty	14,065
Reserve	1,470
Guard	1,760
Civilian	1,776
Contractor	1,310

CE personnel	
Active duty	519
Reserve	111
Guard	148
Civilian	226
Contractor	75

MILCON	11 projects/\$190.2M
SRM	87 projects/\$24.5M*
Facilities operations	\$12.6M

*Excludes \$6.2M for SOF (MFP-11) funded projects





AFSPC

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Michelle A. Linn
 AFSPC Lead Engineer

COMMAND MISSION

Deliver effective and resilient logistics, engineering and force protection to the joint space and cyberspace missions.

CE RESPONSIBILITIES

Validate, prioritize and advocate for direct mission-related requirements. Provide deliberate and adaptive planning support for civil engineer functions to AFSPC missions worldwide. Interface with air staff A4C, Air Force Civil Engineer Center and Air Force Installation and Mission Support Center on behalf of AFSPC missions worldwide.

SIGNIFICANT ACCOMPLISHMENTS

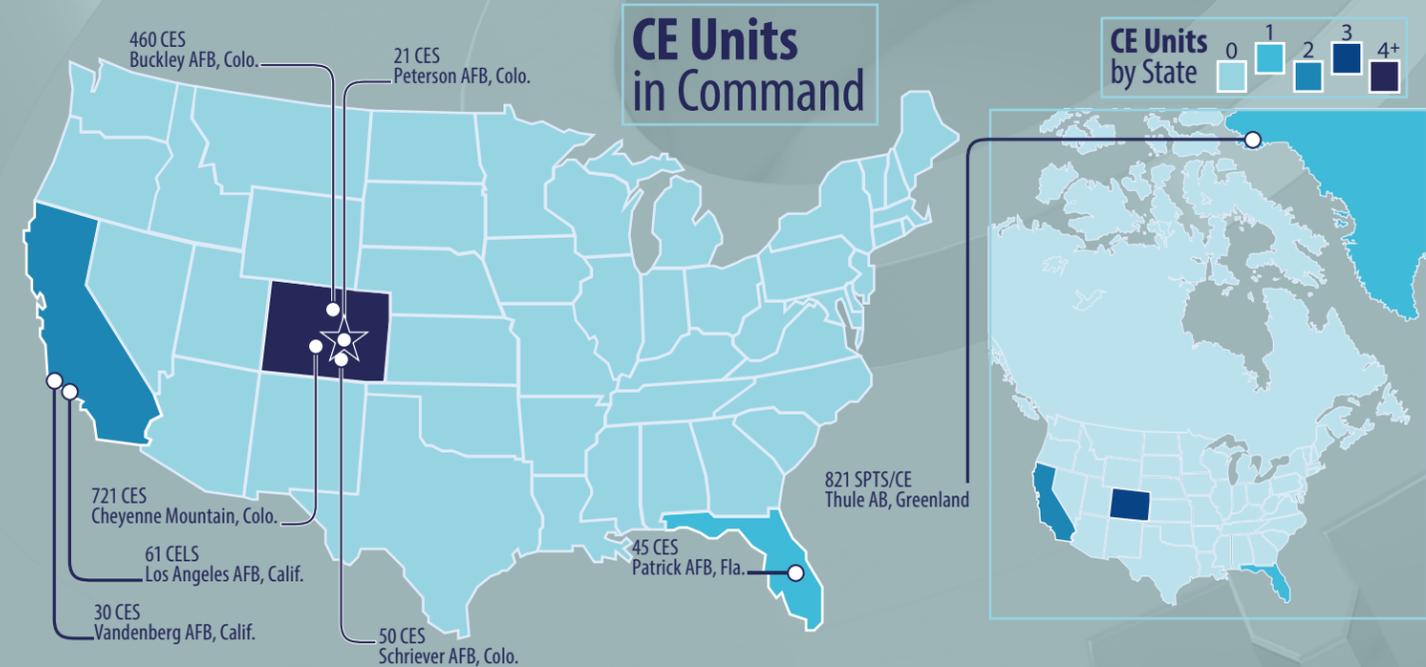
- Completed \$23.5M project to tie Clear Air Force Station, Alaska, to the local electrical grid and install a central steam heat system and backup generator. The projects to date have reduced energy usage by 82 percent and reduced costs by \$140K per month.
- Completed two-year, \$25M life-cycle replacement of the Thule AB, Greenland, runway on schedule and \$11M below programmed cost.
- Supported wings in executing 120 Facilities, Sustainment, Restoration and Modernization centralized projects totaling \$110.8M, including a \$7.5M repair to the electrical distribution system at Cape Canaveral AFS, Florida, supporting critical launch operations, the last phase (\$13.1M) of the Thule AB airfield pavements upgrade and a major \$21.4M overhaul of Dorm 97 at Thule AB.
- Programmed \$110M in mission support facilities and infrastructure to support standup of Long Range Discriminating Radar system at Clear AFS within months of basing approval.
- Successfully championed \$77M for three FY16 MILCONs supporting critical AFSPC missions. The \$21M Range Communications Facility provides reliable range communications to the entire eastern range by replacing the aging, deteriorated hub at Cape Canaveral Air Force Station. The \$14M Hurlburt Field, Florida, addition to the 39th Information Operations Squadron facility will provide much-needed schoolhouse space for cyber mission Forces, and the \$42M Thule Consolidation 1 project provides

efficient, energy-saving space for CE functions within the "Thule Triangle."

- With the award of the second Thule Consolidation phase, all MILCONs crucial to the implementation of the Thule Consolidation Plan are under construction. The consolidated vehicle maintenance and pavements and grounds, consolidated CE back shops and supply, in addition to two new dormitories, will greatly reduce the main base footprint, improve living and working conditions and cut energy costs at the "top of the world."

2016 statistics

Major bases	7
Launch ranges	2
Stations	9
Plant replacement value	\$16.4B
Buildings	30.1M sq. ft.
Airfield pavement	4.6M sq. yd.
Housing	3,504 units (100 percent privatized)
Dorms	2,702 rooms
AFSPC personnel	41,257
Active duty	13,153
Reserve/Guard	11,846
Civilians	7,837
Contractors	8,421
CE personnel	3,809
Active duty	770
Reserve/Guard: 488	
Civilians: 1,041	
Contractors: 1,510	
MILCON	4 projects/\$118.3M
SRM	120 projects/\$110.8M
Facilities operations	\$151.9M



Director of Logistics, Engineering and Force Protection

Civil Engineer (A4C)

Program Development (A4CD)

Planning Support (A4CS)

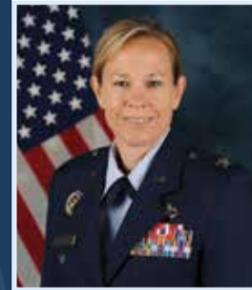
A 1960s-era coal-fired power plant at Clear Air Force Station, Alaska, was decommissioned in January 2016. The station is now connected to the local power grid and draws its power from a more efficient system, reducing monthly energy consumption by 82 percent. (Courtesy photo)





AMC

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Col Laura M. Johnson
 Chief, Logistics and Civil Engineer
 Operations Division

COMMAND MISSION

To provide global air mobility: right effects, right place, right time.

CE RESPONSIBILITIES

Validates, prioritizes and advocates for mission-driven requirements and effectiveness of the global air mobility and en route infrastructure. Provides Air Forces Transportation operational-level planning and direction of emergency responses and contingency operations of civil engineer emergency services, consisting of fire emergency services, explosive ordnance disposal and emergency management. Postures and deploys U.S. Transportation Command-assigned Air Force civil engineer and mission support group command and control forces in support of combatant command requirements worldwide. Provides direct geospatial information and services to planners, operators and contingency response forces to enable worldwide rapid global mobility.

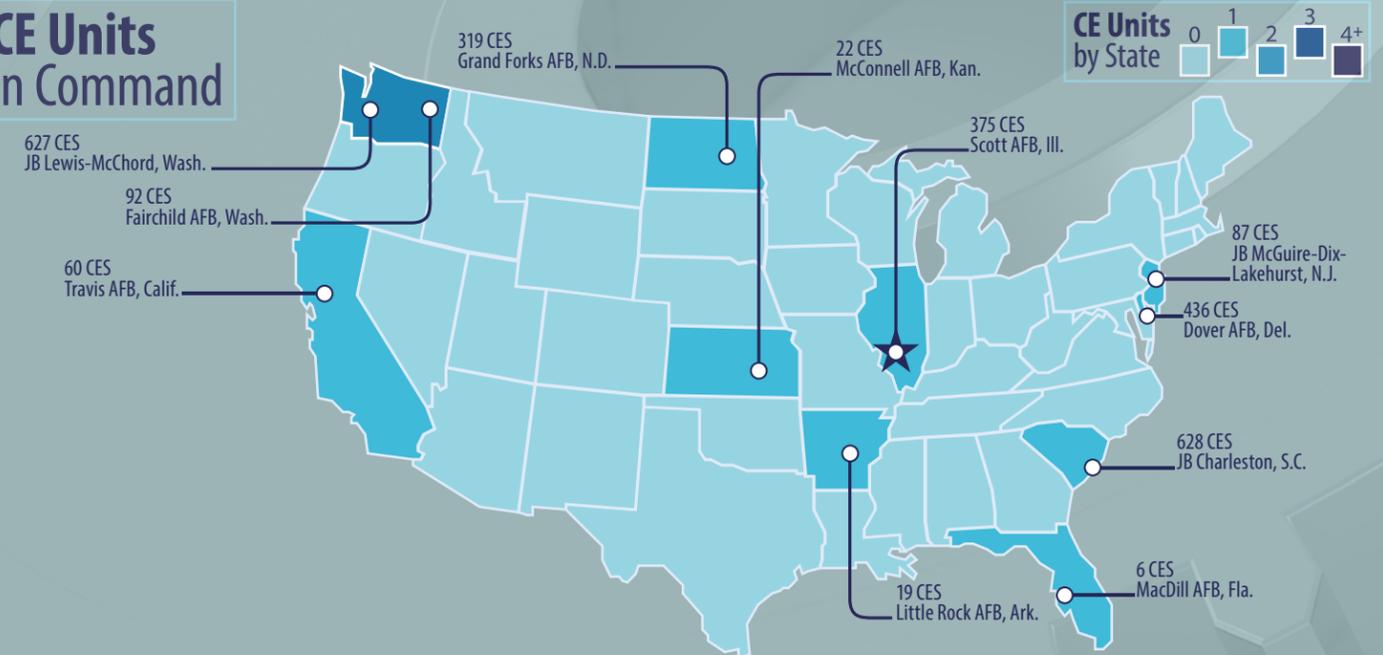
SIGNIFICANT ACCOMPLISHMENTS

- Developed a \$290M AMC facilities and infrastructure prioritized project investment plan (399 projects).
- Developed and advocated for FY2018-FY2022 future years defense plan with 75 projects valued at more than \$2.6B supporting KC-46A and Presidential Airlift Recapitalization, new mission beddowns and existing mission requirements.
- Developed a \$43M AMC En Route Transportation Working Capital Fund facilities and infrastructure prioritized project investment plan (37 projects).
- Conducted 23 AMC continental U.S. and global en route infrastructure assessment visits, validated critical requirements and led collaborative advocacy.
- Established global en route Area Development Plans for three en route locations in three different geographic combatant command areas of responsibility, or GCC AORs, validating 24 future construction and renovation projects valued at \$79.3M.
- Successfully validated and advocated for five Mobility Air Forces, or MAF, requirements valued at \$71.7M, prioritized

- by the Global En Route Infrastructure Steering Committee to mitigate operational risk within three GCC AORs.
- Deployed 454 personnel and 17.6 short tons of equipment to 20 installation across 10 countries and five GCC AORs.
- Developed and deployed MAF guidance to address the government of Italy's Zika disinsection requirements to enable inter- and intra-theater airlift.
- Developed emergency management and chemical, biological, radiological and nuclear annexes of operational plans supporting two combatant commands.
- Augmented AMC inspector general, providing civil engineer subject matter expertise and oversight to five installations.
- Spawned a new, sustainable AF-wide logistics geospatial program, protocol and capability for integrating enterprise logistics data from hundreds of information systems, improving total asset visibility, globally integrated agile logistics and more effective planning, operations and command and control.
- Embedded geospatial engineer capability into 18AF/A3 and 618 AOC (Tanker Airlift Control Center to enable current operations planning support for defeating ISIL, noncombatant evacuation operations in Turkey and Africa, and time-critical virtual assessment of hundreds of global airfields, landing zones and drop zones.
- Led and finalized the first Air Forcewide multimillion dollar geospatial support indefinite deliver/indefinite quantity contract, an enterprise strategic sourcing initiative managed by the Air Force Installation Contracting Agency that standardizes Air Force geospatial investments and save millions by avoiding redundant, disparate investments.

Facing page: Staff Sgt. Daniel Fink, 436th Civil Engineer Squadron Pest Management supervisor, at Dover AFB, Delaware, places aerosol insecticide fog canisters in a C-17 Globemaster III. Italy requires all U.S. aircraft flying into the country to be disinsected to prevent the spread of the Zika virus. (U.S. Air Force photo/Senior Airman William Johnson)

CE Units in Command



Logistics & Civil Engineer Operations Division (AMC/A40)

Civil Engineer Operations Branch (AMC/A40C)

General Engineering

Combat Engineering

Geospatial Engineering

2016 statistics

Major bases	10
Plant replacement value	\$31.2B
Buildings	60.4M sq. ft.
Airfield pavement	21.5M sq. yd.
Housing	9,397 (100-percent privatized)
Dorms	7,561* rooms

AMC personnel

Active duty	40,668
Reserve	32,655
Guard	35,448
Civilian	9,391

CE personnel

Active duty	2,218
Reserve	2,485
Guard	3,299
Civilian	1,574
Contractor	1,528

MILCON	2 projects/\$8.2M
SRM	399 projects/\$290M
TWCF	\$43M
Facilities operations:	\$158.2M

* Includes Air Force, Army and Navy dorms at JB McGuire-Dix-Lakehurst, New Jersey, and JB Charleston, South Carolina, but excludes dorms at non-Air Force led Joint Base Lewis-McChord, Washington, and Pope Army Airfield, North Carolina.





PACAF

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Col Dwayne M. Robison
 Chief, Civil Engineer Division

COMMAND MISSION

PACAF delivers rapid and precise air, space and cyberspace capabilities to protect and defend the United States, its territories, allies and partners; provides integrated air and missile warning and defense; promotes interoperability throughout the area of responsibility; maintains strategic access and freedom of movement across all domains; and is postured to respond across the full spectrum of military contingencies in order to restore regional security.

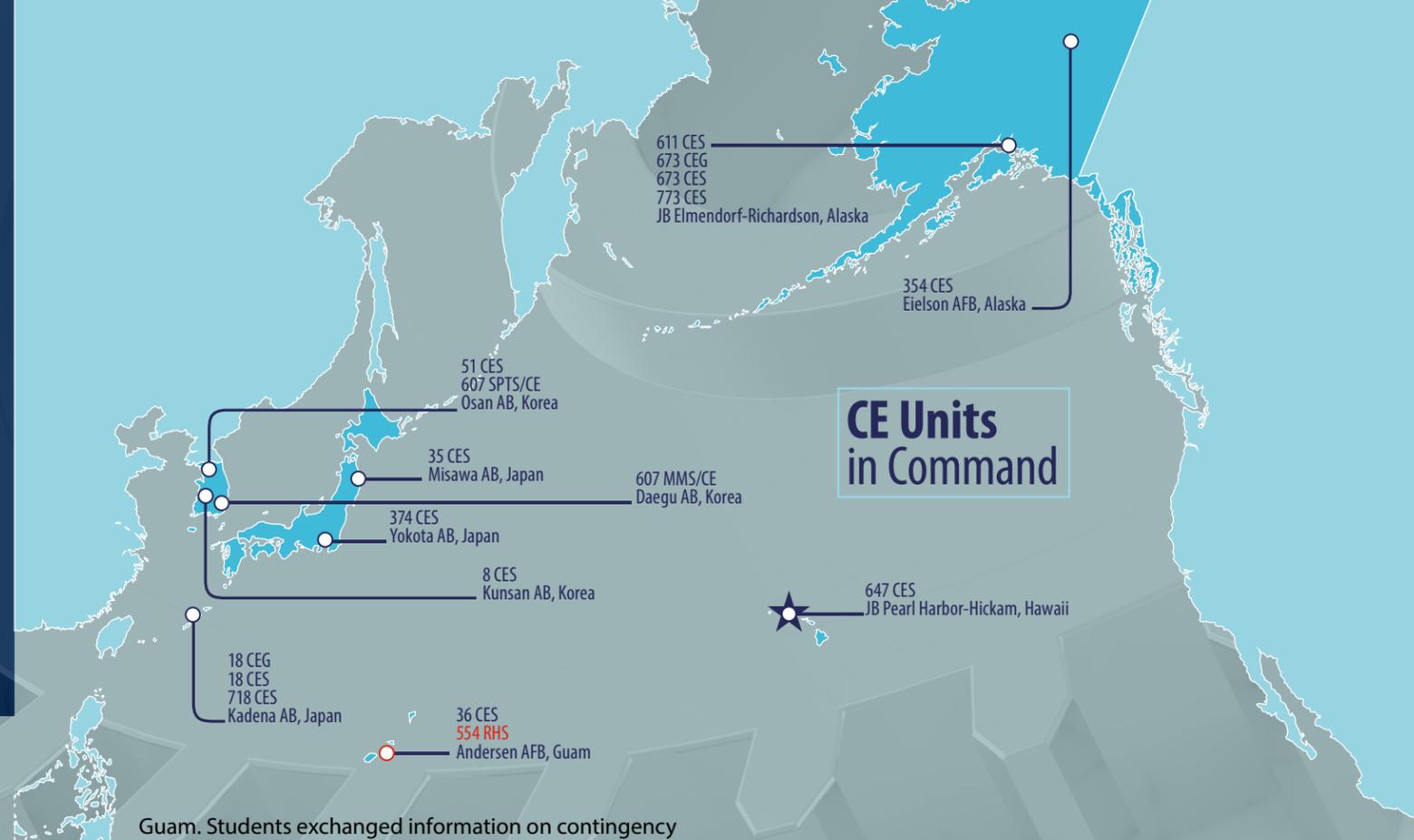
CE RESPONSIBILITIES

PACAF/A4C plans and directs engineer forces to shape the theater, build partnerships, deter our enemies and prepare to win the fight tonight in an AOR that includes 60 percent of the world's population, five of the 10 largest economies, five of seven U.S. treaty allies, seven of 11 of the world's largest democracies, seven of 10 of the world's largest armies, and four of eight of the world's largest missile arsenals. PACAF faces 80 percent of all natural disasters in this AOR. This region is challenged with terrorism, organized crime, drug and human trafficking, territorial disputes, rising near-peer powers, unprecedented anti-access/area denial capability, the tyranny of distance and a long history of cultural and historic strife. PACAF/A4C provides adaptive planning for two operational plans and 10 concept-of-operation plans and injects civil engineering expertise to drive leading-edge resiliency initiatives for distributed operations and passive defense.

SIGNIFICANT ACCOMPLISHMENTS

- Executed the Air Force's first rapid airfield damage repair exercise during PACAF Resilient Shogun. The five-day event at Kadena Air Base, Japan, provided 107 engineers from three PACAF civil engineer squadrons (from Kadena, Yokota and Misawa ABs) their first hands-on use of the equipment, vehicles and material fielded as part of the Air Force's \$1.5B rapid runway repair modernization initiative. The exercise demonstrated use of the capability, and the units provided feedback for improvements and changes to the current tactics, techniques and procedures.
- Led effort to synchronize and collaborate with U.S. Pacific Command service components to leverage unique service chemical, biological, radiological and nuclear, or CBRN, capabilities and support existing plans while building capability and capacity with partner nations and allies.

- Analyzed the Air Force's Adaptive Basing Concept of Operations; developed baseline for civil engineer planning factors by scrutinizing over 30 locations across the Pacific AOR to execute major combat operations. Crafted the textual definitions to describe required engineer capabilities and capacity along with force modules that enable the Joint Planning and Execution System to provide for three base endurance levels to support three base constructs utilized according to risk to force in an anti-access area denial environment. Future planning efforts will streamline standard Civil Engineer Unit Type Codes, revise site survey data collection and storage methods and further enhance adaptive planning.
- Re-aligned 554th RED HORSE Squadron with the 819th RHS into a lead/follow construct; initiated 35 authorization change requests to create personnel UTCs unit type codes mirroring a standard single active-duty RHS blueprint. Additionally, reconfigured 20 equipment UTCs and 15 special capabilities to support OPLAN and combatant command requirements.
- Developed 10 exercise-related construction projects worth \$21M that bolster interoperability with partner nations and support joint service exercises in the Philippine Islands and Thailand.
- Deployed 306 engineers in support of CENTCOM and PACOM; provided support to PACOM's Theater Campaign Plan by executing 25 engagements and four COCOM exercises with eight partner nations: Australia, China, Japan, Korea, Philippines, Singapore, Taiwan and Thailand. Additionally, PACAF engineers supported CENTCOM/AFCENT by filling requests for forces during emerging requirements and rotational operations.
- As part of the command's theater security cooperation efforts toward building U.S. and partner nation interoperability and capabilities, 54 civil engineers from Australia, Japan, Korea and Singapore participated in the first multilateral Partner Nation Silver Flag at Andersen AFB,

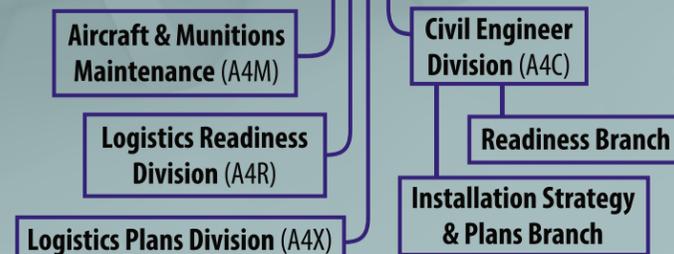


Guam. Students exchanged information on contingency engineering during specialized workshops that included command and control, CBRN, electrical systems, power production, and pavements and equipment. After completing the workshops, the participants displayed their competency during an all-inclusive base recovery exercise.

- U.S. Air Force and Republic of Korea engineers participated in the second annual Pacific Unity Airfield Damage Repair engagement at Gwangju AB, Republic of Korea, which included bilateral information exchanges on tactics, techniques and procedures for airfield damage repair process and concluded with an integrated airfield damage repair exercise to demonstrate hands-on interoperability.
- HQ PACAF engineers held a two-week engagement on tilt-up concrete panel construction with engineers from the Philippines and Royal Thai Air Force. This subject matter expert exchange presented construction technology used by the 554th RHS to build the Pacific Regional Training Center, which is advantageous to the typhoon-prone environment in the AOR.
- Twenty-one engineers from the 673rd CEG at Joint Base Elmendorf-Richardson, Alaska, along with 49 engineers from the Philippine Air Force and Army continue to strengthen ties through the construction of a three-classroom facility for Floridablanca Elementary School at Papanga, Central Luzon, Philippines, in support of a student population of 2,200.
- EOD technicians from four PACAF CE units participated in Exercise Kingswood, a full-spectrum EOD exercise conducted in Australia and hosted by the Royal Australian Air Force's 65th Squadron EOD team. The exercise presented a unique training opportunity to exchange and train with a key ally. The exercise covered deep search and unique tool/explosives familiarization followed by an exercise involving full-spectrum EOD responses.

CE Units in Command

Director of Logistics, Engineering & Force Protection



2016 statistics

PACAF personnel	
Active duty	28,215
Reserve	1,474
Guard	4,642
Civilian	11,499
Contractor	3,317
MILCON	
SRM	9 projects (\$178.3M)
Facilities Operation	228 projects (\$249.9M)
	\$142.6M



USAFE-AFAFRICA

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 Ramstein AB, Germany
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 DSN 314-480-6773



Col Anthony A. Higdon
 Chief, Civil Engineer Division

COMMAND MISSION

As the air component for both U.S. European Command, or USEUCOM, and U.S. Africa Command, or USAFRICOM, USAFE-AFAFRICA executes the Air Force, EUCOM and AFRICOM missions with forward-based airpower and infrastructure to conduct and enable theater and global operations. USAFE directs air operations in a theater spanning three continents, covering more than 19 million square miles, containing 104 independent states, and possessing more than a quarter of the world's population and more than a quarter of the world's gross domestic product.

CE RESPONSIBILITIES

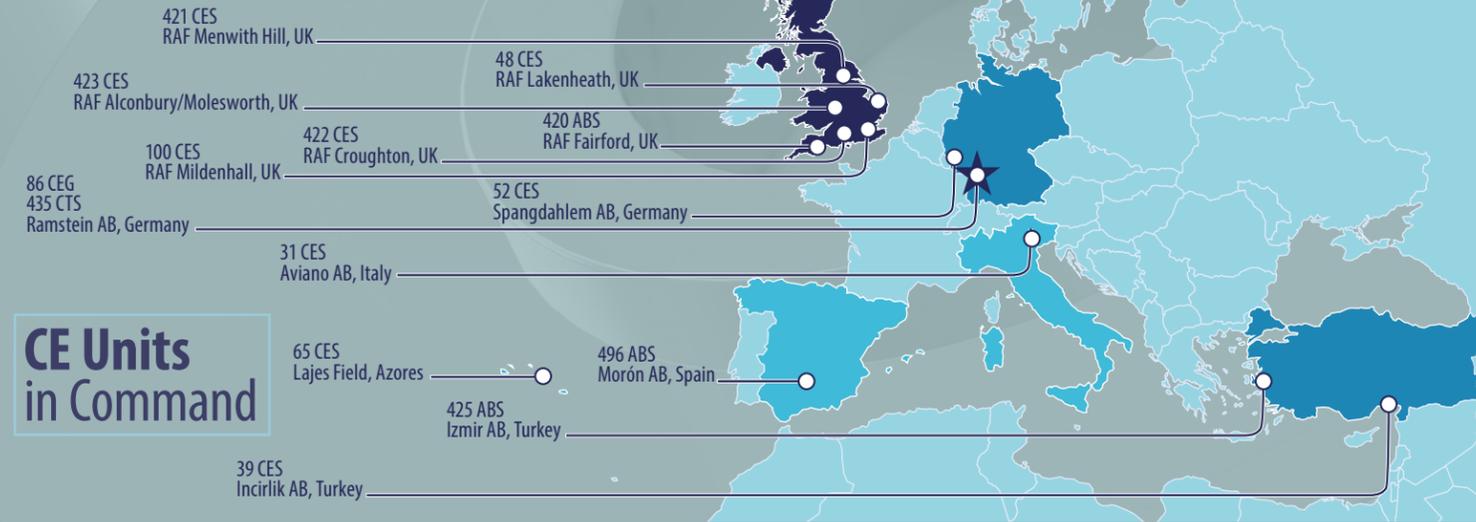
HQ USAFE-AFAFRICA/A4C provides expeditionary and contingency engineering operational support and planning to enable combat, humanitarian assistance, sustainable infrastructure, emergency services and building partnership capabilities throughout the European and African theaters of operation. Further, A4C represents USAFE-AFAFRICA on the Strategic Governance Board for the Next Generation Estate Contracts-United States Forces Prime, providing engineer support worth \$86M annually to six United Kingdom installations. Finally, A4C continues to manage infrastructure improvements as outlined in the European Reassurance Initiative, or ERI, and the NATO Security Investment Program.

SIGNIFICANT ACCOMPLISHMENTS

- Quickly deployed 56 civil engineers to Incirlik Air Base, Turkey, in response to political unrest across the country, and postured civil engineers to support the base in the event of a general worker strike.
- Participated in crisis action planning for Exercise Austere Challenge, incorporating equipment and manpower across the EUCOM theater.
- Obligated \$29M in FY2016 for 32 O&M projects in support of the ERI in nine countries. Assisted in planning 13 ERI MILCON and nine O&M projects anticipated for FY2017, supporting six countries and totaling \$87M.
- Maintained GeoReach image mosaics of current imagery, totaling 38,000 sq. km.; provided geospatial visualization of 425 airfields of interest via web map services and project

- tracking database to support 18 named operations and missions of interest for EUCOM and AFRICOM.
- In coordination with 10 host nations, advocated for the inclusion of more than 100 USAFE and ERI airfield projects (\$437M) in new NATO capability packages. Garnered NATO authorization of 90M euros toward 32 projects.
- Accomplished expeditionary site surveys for 38 airfields in 18 countries throughout Europe and Africa; identified contingency operating locations and evaluated their capabilities to support future air operations.
- Managed three MILCON projects in Djibouti worth \$86.4M. Directed first Integrated Defense Plan detailing \$132M in construction supporting 250 troops and assets valued at \$523M.
- Deployed 298 combat-trained USAFE engineers to three COCOMs across three continents.
- Supported theater security packages in three different countries, providing exercise support for EUCOM theater.
- Planned and initiated construction of a \$104M AFAFRICA air base through troop labor including \$50M MILCON of a new airfield construction project in Niger supporting intelligence, surveillance, reconnaissance and crisis response operations across AFRICOM.

CE Units in Command



Chief, Civil Engineer Division (A4C) & Command Civil Engineer

Chief Enlisted Manager

Civil Engineer European Branch (A4CE)

Civil Engineer African Branch (A4CA)

Civil Engineer Support Branch (A4CS)

Civil Engineer United Kingdom Branch (A4CW)

2016 statistics

Major bases	6
Plant replacement value	\$ 25.8B
Buildings	51.5M sq. ft.
Airfield pavement	12.3M sq.yd.
Housing	6,071, not privatized
Dorms	6,035 rooms
USAFE personnel	
Active duty	22,313
(27,936, including tenant unit members)	
Civilian	9,149
AFRC/ANG	198
Contractors	1,638
CE personnel	
Active duty:	1,667
Civilian (U.S.)	103
Civilian (local)	2,086
Contractor	1,041



'Dirt Boys' from the 435th Construction Training Squadron and 786th Civil Engineer Squadron build a bare base to support Airmen and assets in southeast Turkey. (U.S. Air Force photo/Airman 1st Class Cory W. Bush)



AFDW

JB Andrews, Md.

A4: USAF.JBANAFW.AFDW-STAFF.MBX.

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A4C: USAF.JBANAFW.AFDW-STAFF.MBX.

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Commercial: 240-612-6210

DSN 612-6210



Col Keith Welch
Director, Logistics, Engineering
and Force Protection

COMMAND MISSION

The Air Force District of Washington reports to the Air Force chief of staff and serves as the Air Force service component to the Joint Force Headquarters-National Capital Region, providing the designated single Air Force voice for planning and implementing Air Force and joint solutions concerning the NCR. AFDW organizes, trains, equips and provides forces within the NCR for worldwide employment and Air Expeditionary Force deployments and prepares and conducts, when directed, homeland operations within the NCR. AFDW executes specified military department statutory responsibilities for administration and support of Headquarters Air Force and assigned Air Force units and personnel within the NCR and worldwide. AFDW provides headquarters support to the 11th Wing, 79th Medical Wing, 844th Communications Group and the U. S. Air Force Band and Honor Guard.

CE RESPONSIBILITIES

AFDW civil engineers provide assigned forces to the Joint Task Force-National Capital Region. They conduct deliberate planning and prepare for consequence management in the NCR, supporting senior leader protective services and continuity of government. AFDW engineers provide airfield and base infrastructure supporting reception and staging of forces at Joint Base Andrews, aerospace control and defense over the NCR and distinguished visitor aerial transport. AFDW engineers maintain the high-visibility Air Force Memorial site and enable no-fail support to Air Force One.

- Awarded \$3.3M design for taxiway whiskey pavements recapitalization; received SAF/IEI concept approval; and postured JBA for future \$132M phased investment.
- Led MILCON planning and programming efforts in support of the \$331M Presidential Aircraft Recapitalization program.
- Partnered with the Federal Aviation Administration to resolve airfield encroachment concerns over a local landfill.
- Awarded \$37.7M infrastructure and facility projects in FY2016.
- Accomplished \$4.4M facility repairs for the Presidential Airlift Group.
- Improved JBA quality of life with \$3.6M dining facility renovation project.
- Enabled funding/award of \$400K improvements for the Air Force Memorial, ensuring site safety and security.

SIGNIFICANT ACCOMPLISHMENTS

- Rebuilding America's Airfield – continued advocacy for long-range recapitalization of JB Andrews' critical airfield infrastructure.
- Validated/prioritized five current mission MILCON projects valued at \$282M.
- Advocated/gained U.S. Strategic Command and U.S. North Command support for JB Andrews No. 1 unfunded consolidated communications center, a \$50M MILCON project.
- Secured \$13M for FY2017 21-point firing range MILCON project. New firing range will provide adequate facility to train DOD and interagency personnel across the NCR.
- Continued construction of \$219M ambulatory care center; achieved phase one completion and grand opening.
- Enabled ground-breaking construction for new helicopter operations facility and high voltage substation repairs.
- Secured an off-base wetlands reserve, using a real-property partnership for the compensatory mitigation of 12 acres of wetlands caused by the west runway reconstruction – an Air Force first.

Facing page: Civil engineers used a real-property partnership to secure a 63-acre, off-base wetlands reserve in Clinton, Maryland. Officials with the Piscataway Creek Wetlands Mitigation Project gathered for a commemoration ceremony in June. (U.S. Army photo/Alredo Barraza)



11 CES
JB Andrews, Md.

CE Units in Command

2016 statistics

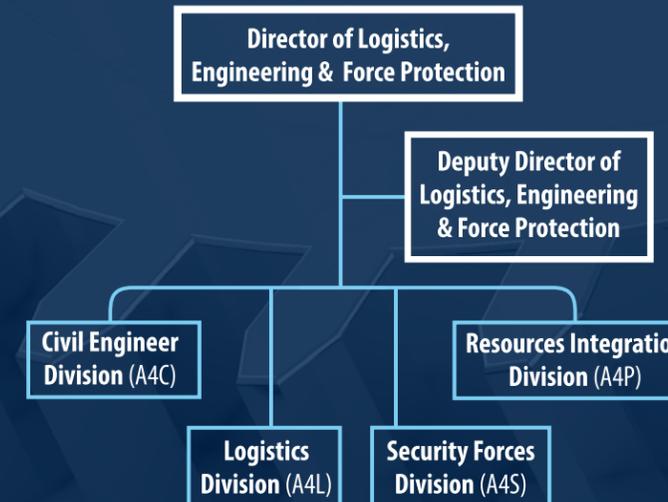
Major bases	1
Plant replacement value	\$5.6B
Buildings	6.7M sq. ft.
Airfield pavement	2.5M sq. yd.
Housing	1,115 units (100% privatized)
Dorms	634 rooms

AFDW personnel*	
Active duty	2,221
Reserve	88
Civilian	874

CE personnel:	
Active duty	285
Reserve	6
Civilian	143

MILCON	5 projects/\$335M
S/R&M	67 projects/\$129.2 M
Facilities operations	\$27.5M

*AFDW executes worldwide accountability and support to 26,000+ Airmen not assigned to a MAJCOM or an Air Force installation





AFRC

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 Commercial: 478-327-1103
 DSN 497-1103



Col James P. Hickman
 Associate Director of Logistics,
 Engineering and Force Protection

COMMAND MISSION

Provide Combat-Ready Forces to Fly, Fight and Win.

CE RESPONSIBILITIES

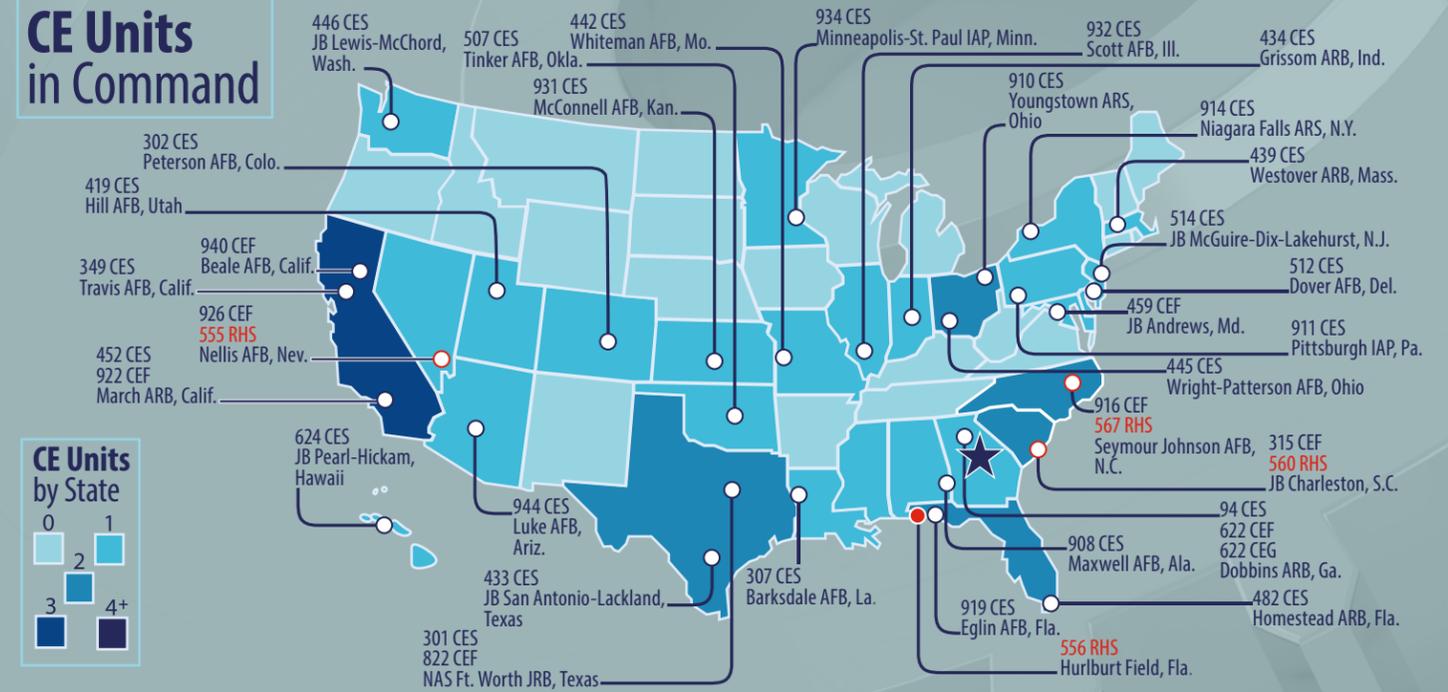
Air Force Reserve civil engineers directly support combat-ready forces by providing basing structure, emergency management, explosive ordnance disposal and fire and emergency services for 69,200 Citizen Airmen worldwide. AFRC's civil engineer is responsible for the acquisition, operation, maintenance and repair of a \$7.5B physical plant, including 14 million square yards of airfield pavements and 13 million square feet of building floor space located at nine host and 57 tenant installations and ranges. Moreover, AFRC organizes, trains, equips and prepares more than 5,000 civil engineers in 44 units for worldwide contingencies.

SIGNIFICANT ACCOMPLISHMENTS

- Six civil engineer squadrons participated in Joint Exercise Patriot Warrior, Aug. 6-26, at Fort McCoy, Wisconsin, home of the Army's Total Force Training Center. A total of 161 personnel, representing all civil engineer career fields, accomplished 365 total training hours. Civil engineers established air operations to safely recover and launch aircraft; provided installation and mission support in the Training Assembly Area; built, sustained and operated an expeditionary base using a basic expeditionary airfield resources kit at an austere contingency location; conducted joint chemical, biological, radiological and nuclear defense operations with Army Chemical Corps teams; and accomplished Status of Resources and Training System reportable, skills proficiency and home-station training requirements while providing real-world support to AFRC, Army and international personnel and to achieve credit for Silver Flag.
- Explosive ordnance disposal personnel took part in over 300 continental U.S. missions that included VIP protective support assistance and defense support to civil authorities. These responses ranged from suspect packages, vehicles and devices to collections of military war souvenirs and support of the 2016 presidential election. Deployed AFRC

- EOD personnel conducted over 20 operations supporting combatant commander requirements without incident.
- The 94th CES EOD Flight on Dobbins Air Reserve Base, Georgia, hosted the first Eastern National Robot Rodeo. This event allowed civilian bomb technicians and military EOD teams to develop and refine operational robotic techniques, training and procedures. It also identified capability shortfalls that affect execution of combating terrorism operations. The rodeo provided nine EOD teams (over 200 personnel) an opportunity to conduct EOD and C-IED operations in a free-flowing environment through realistic scenarios that enhanced teamwork and robot/robotic tool operational skills. AFRC teams also leveraged this forum to identify and prioritize new robotic requirements. Because of the success of the 2016 ENRR, the 94th CES was asked to host the 2017 ENRR and include international EOD teams in the event.
- AFRC completed a \$5M command purchase of 1,200 sets of fire emergency services personal protective equipment to replace those that became unserviceable due to change of shelf-life. Purchase provided equipment for civilian firefighters operating at their home stations and deploying military firefighters.
- The civilian fire emergency services departments at the seven AFRC installations with response capability conducted a total of 1,159 emergency responses. Of those, 1,030 were on base responses and 129 were mutual aid responses to local communities. Most mutual aid provided to local communities supported responses to structural fires and rescue calls.

CE Units in Command



Logistics, Engineering and Force Protection Directorate (A4)

AFRC Command Civil Engineer & A4 Associate Deputy (A4D)

Civil Engineer Division (A4C)

Environmental & Asset Accountability Branch (A4CA)

Program Management Branch (A4CM)

Emergency Services Branch (A4CE)

Program Development Branch (A4CD)

Installation Operations Branch (A4CO)

Readiness & Sustainment Branch (A4CX)

2016 statistics

AFRC personnel

Traditional Reserve	45,089
Air Reserve technicians	10,303
Active Guard and Reserve	2,755
Individual mobilization augmentees	8,088
Active duty	177
Civilian	3,765

CE personnel

Traditional Reserve	4,582
Air Reserve technicians	140
Active Guard Reserve	110
Individual mobilization augmentees	639
Active duty	5
Civilian	742

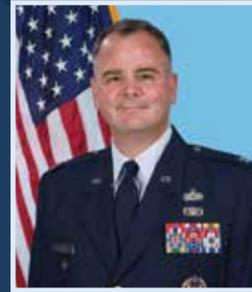


A remotely controlled F6A robot is maneuvered through a scenario during the inaugural Eastern Robotics Rodeo & Capability Exercise in Atlanta, Aug. 29 - Sept. 1, 2016. The event is competition where military, federal and local EOD units maneuver remotely controlled, hazardous-duty robotic platforms to dismantle inert explosive devices in real-world scenarios. The exercise also provides an opportunity for participants to network with their counterparts and exchange best practices. (U.S. Air Force photo/Malcolm McClendon)



ANG

JB Andrews Naval Facility, Md.
 USAF.JBANAFW.NGB-A4.MBX.
 NGB-A4-FRONT-OFFICE@MAIL.MIL
 Commercial: 240-612-8060
 DSN 612-8060



Col Scott Chambers
 ANG Lead Engineer

COMMAND MISSION

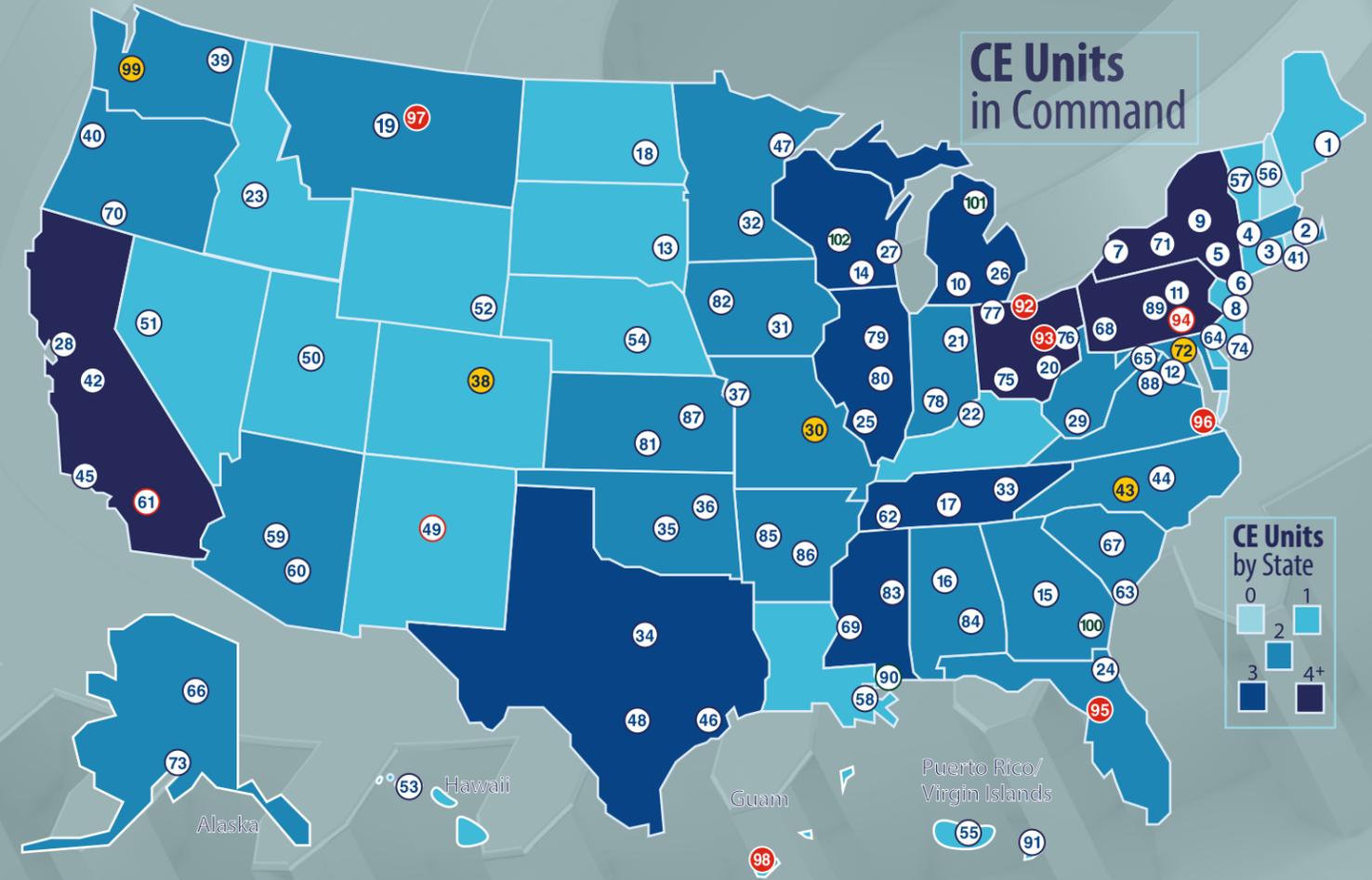
The Air National Guard Readiness Center develops, manages and directs Air National Guard programs that implement national level policies set by the Department of Defense, the Air Force and the National Guard Bureau. It also performs operational and technical functions to ensure combat readiness of ANG units and is a channel of communications between the NGB and the states on ANG operational activities.

CE RESPONSIBILITIES

Engineers in ANG A4 Installations and Mission Support Directorate oversee planning, programming, policy and financial oversight for the command's civil engineering programs: fire protection, EOD, emergency management operations, manpower, technical support, maintenance, repair, energy programs, MILCON, environmental programs, infrastructure, asset management, real property, and facilities sustainment, restoration and modernization.

SIGNIFICANT ACCOMPLISHMENTS

- Executed more than \$315.5M of critical SRM projects to repair and maintain ANG installation.
- Four large projects exceeding SRM PA of \$84M for airfield pavement and adjacent facility restoration approved through the secretary of the Air Force.
- Approved 18 MILCON projects for recapitalization and addressing shortfalls within the ANG enterprise.



Director of Installations & Mission Support (NGB/A4)
Deputy Director of Installations & Mission Support
Associate Director of Installations & Mission Support (NGB/A4)

Chief Enlisted Advisor

Resources (A4R)

Security Forces (A4S)

Asset Management (A4A)

Readiness (A4X)

Operations (A4O)

2016 statistics

Major bases	2
Plant replacement value	\$15.9B
Buildings	45.2M sq. ft.
Airfield pavement	14.8M sq. yd.

ANG personnel

Active Guard Reserve	14,921
Drill Status Guard	90,463
Dual Status Technicians	29,297
Civilian	815

CE personnel

Active Guard Reserve	524
Drill Status Guard	8,124
Dual Status Technicians	586
Civilian	107
State Support Staff	2,771

MILCON	8 projects/\$146.1M
SRM	162 projects/\$174.4M
Facilities operations	\$2M

- | | | | | | |
|--|---|--|--|---|--|
| 1 101 CES
Bangor ANGB, Maine | 19 120 CES
Great Falls IAP, Mont. | 38 140 CES
Buckley AFB, Colo. | 56 157 CES
Pease AGS Portsmouth IAP, N.H. | 73 176 CES
JB Elmendorf-Richardson, Alaska | 92 200 RHS
Port Clinton, Ohio |
| 2 102 CES
Otis ANGB, Mass. | 20 121 CES
Columbus IAP, Ohio | 39 141 CES
Fairchild AFB, Wash. | 57 158 CES
Burlington IAP, Vt. | 74 177 CES
Atlantic City IAP, N.J. | 93 200 RHS Det 1
Mansfield, Ohio |
| 3 103 CES
Bradley IAP, Conn. | 21 122 CES
Ft. Wayne IAP, Ind. | 40 142 CES
Portland IAP, Ore. | 58 159 CES
NAS New Orleans, La. | 75 178 CES
Springfield-Beckley MAP, Ohio | 94 201 RHS
Fort Indiantown Gap, Pa. |
| 4 104 CES
Barnes ANGB, Mass. | 22 123 CES
Louisville IAP, Ky. | 41 143 CES
Quonset State AP, R.I. | 59 161 CES
Phoenix Sky Harbor IAP, Ariz. | 76 179 CES
Mansfield Lahm RAP, Ohio | 94 201 RHS
Fort Indiantown Gap, Pa. |
| 5 105 CES
Stewart IAP, N.Y. | 23 124 CES
Gowen Field, Idaho | 42 144 CES
Fresno IAP, Calif. | 60 162 CES
Tucson IAP, Ariz. | 77 180 CES
Toledo Express AP, Ohio | 11 201 RHS Det 1
Horsham AGS, Pa. |
| 6 106 CES
Gabreski AP, N.Y. | 24 125 CES
Jacksonville IAP, Fla. | 43 145 CES
Charlotte IAP, N.C. | 61 163 CES
March ARB, Calif. | 78 181 CES
Terre Haute, Ind. | 202 RHS
Camp Blanding, Fla. |
| 7 107 CES
Niagara Falls, N.Y. | 25 126 CES
Scott AFB, Ill. | 44 145 RTS
Stanley County, N.C. | 61 163 RTS
March ARB, Calif. | 79 182 CES
Peoria IAP, Ill. | 96 203 RHS
Virginia Beach, Va. |
| 8 108 CES
JB McGuire-Dix-Lakehurst, N.J. | 26 127 CES
Selfridge ANGB, Mich. | 45 146 CES
Channel Islands AGS, Calif. | 62 164 CES
Memphis IAP, Tenn. | 80 183 CES
Capitol AP, Ill. | 49 210 RHS
Kirtland AFB, N.M. |
| 9 109 CES
Schenectady County AP, N.Y. | 27 128 CES
General Mitchell IAP, Wis. | 46 147 CES
Ellington Field JRB, Texas | 63 165 CES
Savannah/Hilton Head IAP, Ga. | 81 184 CES
McConnell AFB, Kan. | 97 219 RHS
Malmstrom AFB, Mont. |
| 10 110 CES
W.K. Kellogg AP, Mich. | 28 129 CES
Moffett Federal Air Field, Calif. | 47 148 CES
Duluth IAP, Minn. | 64 166 CES
New Castle County ANGB, Del. | 82 185 CES
Sioux City AP, Iowa | 98 254 RHS
Andersen AFB, Guam |
| 11 111 MSG
Horsham AGS, Pa. | 29 130 CES
Charleston ANGB, W.V. | 48 149 CES
JB San Antonio - Lackland, Texas | 65 167 CES
Martinsburg, W.V. | 83 186 CES
Key Field, Miss. | 30 231 CEF S-Team
Jefferson Barracks, Mo. |
| 12 113 CES
JB Andrews Naval Facility, Washington, Md. | 30 131 CES
Lambert St. Louis IAP, Mo. | 49 150 CES
Kirtland AFB, N.M. | 66 168 MSG
Eielson AFB, Alaska | 84 187 CES
Montgomery RAP, Ala. | 72 235 CEF S-Team
Martin State AP, Md. |
| 13 114 CES
Joe Foss Field, S.D. | 31 132 CES
Des Moines IAP, Iowa | 50 151 CES
Salt Lake City IAP, Utah | 67 169 CES
McEntire Joint NGB, S.C. | 85 188 CES
Fort Smith RAP, Ark. | 38 240 CEF S-Team
Buckley AFB, Colo. |
| 14 115 CES
Truax Field, Wis. | 32 133 CES
Minneapolis-St. Paul IAP, Minn. | 51 152 CES
Reno IAP, Nev. | 68 171 CES
Pittsburgh IAP, Pa. | 86 189 CES
Little Rock AFB, Ark. | 43 245 CEF S-Team
Charlotte IAP, N.C. |
| 15 116 CES
Robins AFB, Ga. | 33 134 CES
McGhee/Tyson AP, Tenn. | 52 153 CES
Cheyenne MAP, Wyo. | 69 172 CES
Jackson IAP, Miss. | 87 190 CES
Forbes AFB, Kan. | 99 248 CEF S-Team
Camp Murray, Wash. |
| 16 117 CES
Birmingham IAP, Ala. | 34 136 CES
Ft. Worth, Texas | 53 154 CES
JB Pearl Harbor-Hickam, Hawaii | 70 173 CES
Klamath Falls AP, Ore. | 88 192 MSG
JB Langley-Eustis, Va. | 100 CRTC GA
Garden City, Ga. |
| 17 118 CES
Nashville, Tenn. | 35 137 CES
Oklahoma City, Okla. | 54 155 CES
Lincoln, Neb. | 71 174 CES
Syracuse Hancock IAP, N.Y. | 89 193 SOCES
Harrisburg IAP, Pa. | 101 CRTC MI
Alpena, Mich. |
| 18 119 CES
Hector Field, N.D. | 36 138 CES
Tulsa, Okla. | 55 156 CES
Luis Muñiz Marin IAP, P.R. | 72 175 CES
Martin State AP, Md. | 90 209 CES
Gulftport, Miss. | 90 CRTC MS
Gulftport, Miss. |



AFCEC

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Commercial: 210-395-8000
DSN 969-8000

MISSION

The Air Force Civil Engineer Center, headquartered at JB San Antonio–Lackland, Texas, is a primary subordinate unit of the Air Force Installation and Mission Support Center. AFCEC is responsible for providing responsive, flexible full-spectrum installation engineering services.

AFCEC missions include facility investment planning, design and construction, operations support, real property management, readiness, energy support, environmental compliance and restoration, and audit assertions, acquisition and program management. The unit conducts its operations at 75 locations worldwide.

SIGNIFICANT ACCOMPLISHMENTS

Facility Engineering, CF

The facility engineering directorate provides centralized facility design and construction for military construction, restoration and modernization, sustainment and military family housing. The Air Force Comprehensive Asset Management Plan enables the center and installation civil engineers to improve project delivery by increasing lead times for planning and design, ensuring earlier and more effective construction awards.

- Completed construction of a \$10.5M tactical missile maintenance facility on Andersen AFB, Guam. The reinforced concrete structure includes offices, training areas, a kitchen/break room and three air-conditioned high bay areas to conduct maintenance operations and repair of precision guided munitions.
- Completed construction of a \$3.2M logistic facility for the 544th RED HORSE Squadron on Andersen AFB.
- Completed phase 1 of construction of a KC-46A flight simulator at McConnell AFB, Kansas. The project scope included construction of an additional simulator bay and minor updates/upgrades of some rooms/offices in the existing facility to accommodate the beddown of the KC-46A. The design-bid-build project was completed at \$3.2M (94.9 percent of the programmed amount) with 1 percent contract cost growth.
- Completed a fire protection water storage project at Al Dhafra Air Base, United Arab Emirates. The project included two 300,000-gallon water storage tanks, a pump house with generator and a fire water main line with fire hydrants around the main bulk fuels storage area.
- The U.S. ambassador to Niger has allowed AFCEC authority to travel to Niger to engage with local leadership on technical issues related to water well and environmental and cultural resources issues in Agadez.

Installations, CI

The installations directorate provides enterprisewide housing solutions and conducts the strategic acquisition, management and disposal of Air Force real property. It executes policies of the deputy assistant secretary of the Air Force for Installations through a full suite of services, including appraisals, lease renewals, licenses, easements, title opinions, environmental cleanup and transfer of property impacted by base realignment and closure legislation and other support services.

- Amended an Economic Development Conveyance lease to transfer possession of approximately 1.73 acres of land on the former McClellan AFB, California, to McClellan Business Park. This property was excluded from the lease while the Air Force cleaned a former disposal pit that included radium paint waste. The disposal pit has been cleaned, released by federal and state regulators, and is suitable for transfer. AFCEC/CIBW is working with the Air Force Radioisotope Committee to remove the site from the radioactive material permit.
- The New York State Departments of Health and the Environmental Conservation concurred with CI's 2015 Post-Record of Decision Minor Change Memoranda, resulting in the closure of five sites at the former Griffiss AFB, Rome, New York.
- AFCEC approved a proposal to initiate the first portfolio reinvestment effort for Boyer Hill Military Family Housing on Hill AFB, Utah. The project's long-term plan is to build and replace homes in small increments every few years. Rebuilding through smaller projects increases flexibility and eliminates the revenue impact of a single, large-scale replacement project.
- The Air Force Housing Privatization Program commemorated the 20th anniversary of the Military Housing Privatization Initiative. A year-long campaign highlighted successes, promoted privatization as a viable and valuable



Randy Brown
Director



Col Charles Kuhl
Deputy Director - San Antonio



Col Charles Kelm
Deputy Director - Tyndall

housing option for Airmen and families, built program understanding and advocacy through education and training and highlighted initiatives within the portfolio.

- The Air Force submitted the final closure certification report for the former Norton AFB, California, to the state Department of Toxic Substances Control. The report documented the investigations and remedial action performed, and concluded the site is suitable for unrestricted use and unlimited exposure, i.e., site closure.
- Transferred responsibility for four former environmental sites on the former Carswell AFB, Texas, that are now within Naval Air Station Fort Worth Joint Reserve Base, to the U.S. Navy.

Energy, CN

The energy directorate consists of engineers, energy experts, contract officers and support staff who identify, evaluate and help implement technologies and funding strategies to reduce Air Force energy consumption and costs to meet federal energy goals.

- AFCEC provided support to the Air Force Institute of Technology energy manager course held July 18-22, at Wright-Patterson AFB, Ohio. AFCEC taught 17 of the 24 lessons, providing the latest on policy, data and reporting, governance, renewables and investments to a class of 32 energy managers and utility engineers. The course was rewritten to incorporate changing fiscal environment and new regulatory requirements. Course comments and critiques were overwhelmingly positive.

Operations, CO

Operations directorate professionals make an impact on the capabilities of base civil engineers every day by providing direct technical, managerial and training expertise. They provide operations support to develop and apply best management practices, mission-oriented training systems and facility/infrastructure standards to the Air Force civil engineer community. Its members deliver expert technical guidance and consultation to AFCEC's customers worldwide to help civil

engineers accomplish their mission better, faster and more cost effectively.

- The asset visibility team performed an on-site assessment May 11-19 on 13 facilities at JB Andrews, Maryland, for a total building area of 290,000 sq. ft., which included conducting advanced Builder™ training and validating data collected by the base.
- Supported an Air Force civil engineering officer deployed in support of the Afghan National Army, Helmand Province, with airfield damage repair guidance. In preparation for possible runway damage from common inbound weapon types, Craig Rutland, Ph.D., airfield pavement subject matter expert, outlined available guidance for expedient repairs.
- The aircraft arresting system subject matter expert reviewed a funding-request package for a system at Ali Al Salem Air Base, Kuwait, which included a quote to the U.S. Army Corps of Engineers for a non-Air Force approved aircraft arresting system.
- AFCEC's anti-terrorism subject matter expert fielded a new SharePoint site for simplifying the reporting requirement for quarterly vehicle barrier maintenance and safety inspections.

Planning and Integration, CP

The planning and integration directorate provides a comprehensive framework to enable strategic and long-term planning for installation complexes to support the Air Force and its customers at the combined, joint, major command and installation levels through development of investment strategies.

- Launched the AFCAMP website, a one-stop shop for all AFCAMP related activities. The website is accessible via the CE Portal.
- The comprehensive planning division led an installation support team to RAF Lakenheath, England, to identify base operating support shortfalls related to the closure of RAF Mildenhall, the European Infrastructure Consolidation and F-35 beddown activities. The team created a development plan for the Army and Air Force Exchange Service/nonappropriated funding area of the base to replace crumbling infrastructure and enhance the force support squadron experience for Airmen across Great Britain. The final recommendation was endorsed by the 48th Fighter Wing commander.
- The AFCEC/CPD sponsored an installation support team to Incirlik AB, Turkey, with members from AFIMSC Detachment 4, AFCEC/CF and Holloman AFB, New Mexico. The team provided critical mission beddown support to U.S. Air Forces in Europe and AFIMSC, which directly impacts the near- and long-term ability to deliver combat capability in the region. The team helped develop the funding application for installation MILCON priorities.
- Members of the CP team were recognized by Maj. Gen. Theresa Carter, then AFIMSC commander, for being the second runner-up for the the 2014 Chief of Staff Team Excellence Award. The 2014 Activity Integration Skunkwork team was recognized for innovation and commitment to instilling asset management principles throughout civil engineer business processes.

Readiness, CX

The mission of the readiness directorate is to provide readiness and emergency services support to the Air Force civil engineer community through technical information and standardized



methodology, enabling civil engineers worldwide to execute their expeditionary combat support and emergency services missions safely, effectively and efficiently.

- Developed and released the Fire Emergency Services Management Tool database application, which combines five applications. The playbook, located on the CE Portal, provides strategic guidance and fire emergency services' key business processes.
- The web-based firefighter fitness and wellness training course created by PowerTrain Inc. won three bronze Omni Awards in the Government, Health and Fitness and User Interface Design categories. This project has now won five awards (two Horizons and three Omnis). The Omni Awards recognize outstanding achievements in film/video, web and mobile media .
- Consulted with FBI organizations to develop specifications for a common 3-D printer capability. These organizations advocate for the federal and most civil law enforcement bomb squad communities, which often operate under local government budgetary constraints. Common specifications will help these departments select and acquire affordable 3-D printers capable of printing tools and training aids.
- Met with representatives of the Air Force Academy and the Peterson AFB, Colorado, EOD flight to discuss plans for an AFCEC-sponsored undergraduate project to research applications of 3-D printing. The cadets will observe the Peterson flight in action and develop concepts for improving operational and mobility missions through digital on-demand fabrication of materials. AFCEC will mentor the cadets throughout the process.
- A new fire emergency services tactics, techniques and procedures publication, AFTTP 3-32.41, Contingency Firefighting Operations is available on www.e-Publishing.af.mil. This publication provides guidance for FES personnel to prepare installations for disasters and war. It also highlights FES contingency and expeditionary firefighting planning factors and operational considerations.
- The Air Force Contract Augmentation Program team awarded a \$120K task to PAE-Perini LLC in April to urgently fulfill insufficient humanitarian relief supplies to respond to the pending collapse of the Mosul Dam in the Tigris River Valley, Iraq. Iraqi forces recaptured the 2.2 mile-wide dam, which is structurally failing after being under ISIS control. U.S. State Department officials have warned up to 500,000 people, could be killed and more than a million left homeless. This task procured water purification kits, water containers, ballistic protective equipment and portable latrine structures.
- The emergency management education and training section won the Silver Horizon Award for a "Be Ready" extreme heat vignette and the bronze for the AF Emergency Management Senior Leader Guide App. The Horizon Interactive Award is an international competition that recognizes the best web sites, videos, online advertising, print media and mobile applications.

Environmental, CZ

The environmental directorate is responsible for managing Air Force restoration, compliance, sustainability and National Environmental Policy Act programs. Directorate personnel also provide environmental technical assistance and advice to Air Force installations, MAJCOMs and other clients.

- Seven sites on JB Charleston, South Carolina, attained closure status. Interim measures had been implemented at the sites and managed until contamination levels remained below promulgated standards for three years as of August 2016.
- On July 7, Avon Park Air Force Range, Florida, was designated a Sentinel Landscape, and Seymour-Johnson Air Force Base/Dare County Bombing Range were included in the Eastern North Carolina Sentinel Landscape Partnership. The landscapes are natural lands important to the nation's defense mission.
- Three sites on Beale AFB, California, have achieved site closure, suitable for unlimited use/unrestricted exposure. A fourth has been designated response complete with land use controls restricting intrusive activities and residential use.
- The Barry M. Goldwater Range in southwestern Arizona earned the U.S. Fish and Wild Service's 2016 Military Conservation Partner Award. Working in close collaboration with partners, range managers provided exemplary landscape-level stewardship for diverse and rare natural resources. The range provides 1.5 million acres of wildlife habitat and supports conservation efforts for three federally listed species: the Sonoran pronghorn, lesser long-nosed bat and acuña cactus. The range harbors one of the largest, protected expanses of Sonoran desert habitat and is managed by Marine Corps Air Station Yuma and the Air Force's 56th Fighter Wing at Luke Air Force Base.
- Florida Department of Environmental Protection approved site rehabilitation completion orders for four environmental restoration plan sites on Avon Park Air Force Range.
- For the first time since 2012, all East Region bases are in conformance with Environmental Management Systems. Bases have worked hard to achieve this milestone.
- In FY2015, Air Force installations collected more than \$1M in proceeds from the sale of hunting, fishing and other outdoor recreation user permits. During the first quarter of FY2016, AFCEC distributed these proceeds to those installations to support fish and wildlife management projects. AFCEC helps manage this program by tracking revenue and expenditures, and by preparing the funding documents to distribute the proceeds.

2016 statistics

AFCEC personnel

Active Duty	121
Reserve	21
Civilian	1,223
Contractors	182

MILCON	18 of 50 projects, \$492M
SRM*	1,605 projects, \$1.536B

*Sustainment, restoration and modernization statistics as of Sept. 29, 2016



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Carlos Cruz-Gonzalez
Director of Installations



Col John A. Christ
Permanent Professor
and Head, Department of
Civil and Environmental
Engineering



Lt Col Eric E. Rollman
10 CES Commander

MISSION

The essential and enduring mission of the U.S. Air Force Academy is "to educate, train and inspire men and women to become officers of character motivated to lead the United States Air Force in service to our nation." The Officer Development System provides all members of the Academy constituency a framework and set of strategies to accomplish this mission. Within that system, the Academy executes a single integrated course of instruction in which cadets receive an accredited bachelor of science degree and an intensive program of physical education and develop enduring leadership competencies through military development.

CE RESPONSIBILITIES

USAFA civil engineers develop future leaders through instruction, mentoring and the provision of world-class infrastructure and facilities. The Department of Civil and Environmental Engineering has responsibility for one accredited major, civil engineering. Graduates receive civil or environmental engineering bachelors of science degrees and go on to meet mission needs as rated officers or engineers. The directorate of installations prioritizes, advocates and coordinates reach-back support for USAFA facility requirements. The 10th Civil Engineer Squadron provides emergency services and operates, sustains and modernizes infrastructure and facilities on USAFA.

SIGNIFICANT ACCOMPLISHMENTS

- Design is underway for \$60M renovation of USAFA's iconic chapel, a historic landmark, anticipated for FY2018 construction funding.
- \$7.7M Sijan Hall asbestos abatement and repair of structural columns 50 percent complete.
- Hosted DOD American Indian Cultural, Communications and Consultation Course, a nationwide platform for improving relationships between bases and Native Americans.
- Hosted Traffic Engineering and Safety Seminar taught by Military Surface Deployment and Distribution Command Transportation Engineering Agency — bases from around the Air Force and DOD attended to improve road safety on installations.
- Opened the \$43.5M Center for Character and Leadership Development. The center aims to facilitate programs and activities throughout all aspects of cadet life, which help cadets develop this internal moral compass. The center supports all eight pillars of the Academy essence, in particular, developing character and leadership.

- Hosted installationwide Wildfire Preparedness Day, earning the first DOD Fire Wise certified installation in the nation.
- Utilized county 911 dispatch center for every incident. to improve response efficiency, saved more than \$700K annually and significantly enhanced interoperability with mutual aid partners.
- Oversaw \$120M in multiyear civil engineer service contracts leading up to our pinnacle event, Cadet Graduation.
- Choreographed 180 miles of road striping, 2,300 acres of sod and 350 shrub replacements all within days of President Barack Obama speaking at graduation.
- Provided exceptional multiagency disaster recovery coordination enabling seamless recovery of a downed Thunderbird aircraft.
- Graduated 48 cadets in the Class of 2016: 40 civil engineering, seven environmental engineering and one dual civil/environmental engineering majors; 14 entered the civil engineering career field, 30 entered other Air Force career fields and four international students returned to their home nations to serve in their armed forces.

2016 statistics

CE personnel

HQ USAFA/A	10 CES
Civilian	Active duty
3	28
HQ USAFA/DFCE	Civilian
Active duty	85
20	Contractor
Reserve	563
4	
Civilian	
6	

MILCON	1 projects, \$10M
S/R&M	85 projects/\$60M
Facility operations	\$27.8M



The Civil Engineer School

At The Air Force Institute of Technology

MISSION

Providing vital, relevant and connected education that enables Airmen to be ready engineers and great leaders who know how to build sustainable installations to last while leading the change for the civil engineering career field. The school's faculty and staff include 14 military personnel, 10 civilians, 11 contractors and three individual mobilization augmentees.



Col Paul Cotelleso
 Dean



Dr. Jared Astin, Ph.D.
 Associate Dean

SIGNIFICANT ACCOMPLISHMENTS

The Civil Engineer School educated more than 10,300 Air Force and joint service civil and environmental engineers through 208 course offerings and other educational opportunities during FY2016. To maximize flexibility and accommodate student schedules, these courses were offered via traditional in-residence and on-site settings, as well through advanced distance-learning methods including online, satellite, web streaming and video-on-demand. Highlights include:

- Vital**
- Graduated and badged 75 new Air Force civil engineer officers, strengthening the career field's foundation and ensuring preparedness for combined engineer operations.
 - Sustained the close partnership among active-duty, Guard, Reserve and civilian civil engineers by fully integrating all groups into the "Total Force" initial skills badge-awarding course, producing 76 field-ready engineers.
 - Served as the Air Force senior facilitator for five joint engineer operations courses, certifying 70 Air Force civil engineers and 250 joint engineers for Joint Task Force J7 operations.
 - Developed three cost-estimating courses (WENG 200, 400 and 500) in response to career field need.

- Relevant**
- Continued delivery of highly lauded WMSS 599 Civil Engineer Speaker Series through six events, reaching more than 3,700 civil engineers across the world from subject matter experts on vital real-time information.
 - Partnered with the Air Force Civil Engineer Center's environmental SMEs to launch the WESS 599 Environmental Speaker Series. Completed six events with 3,295 members either live or post-viewed attendance.
 - Led 10 on-site offerings of Occupational Safety and Health Administration-authorized 30-hour Construction Safety Standards seminars; issued 331 graduating OSHA cards.
 - Provided 19 course offerings to 571 key civil engineer leaders, ranging from CE squadron commander/deputy and CE squadron superintendent, through engineering, EOD, installation management and operations flight commanders.

- Connected**
- Sustained AFIT's Professional Engineer Review Course, which provided 30 hours of proctored material to help prepare 12 joint service graduates for the rigorous professional engineer exam.
 - Conducted 12 critical Inter-Service Environmental Education Review Board-approved course offerings with 262 joint attendees.
 - Developed DOD's first advanced five-week distant learning HVAC Control System course (WENG 563); topics include fundamentals, effective control strategies and cyber security of systems.
 - Integrated \$10K into new technologies for the distance learning program, allowing real-time, two-way audio/video interaction; improvements include addition of web conferencing capability, tablets and hardware to improve reliability.
 - Supported development teams such as OSD's Facility Energy Managers Competency Model and AF BUILDER data analysis techniques.
 - Provided 788 man-hours of timely and responsive consultation services to engineers around the world for issues in management, engineering and environmental subject areas.



GRADUATE SCHOOL OF ENGINEERING & MANAGEMENT

The Graduate School of Engineering and Management offers degrees in 23 master's level programs, eight doctoral programs and 15 certificate and continuing education programs. The Graduate Engineering Management, or GEM, program is responsible for the research and education of approximately 20 civil engineers annually. The program is responsive to the needs of the Air Force civil engineering community by developing courses and tailoring curricula that prepare graduates for the future. Students are educated to plan, organize and lead in a technology-focused organization and to apply critical thinking skills and analytical techniques to solve the most challenging problems.



Lt. Col. Chris Stoppel, Ph.D., P.E.
 Program Director

- GEM Faculty:**
- Al Thal, Ph.D.
 - Maj Greg Hammond, Ph.D., P.E.
 - Diedrich Prigge V, Ph.D.
 - Col Paul Cotelleso, Ph.D. (adjunct)
 - Dr. Jared Astin, Ph.D., P.E. (adjunct)

GEM PROGRAM DESCRIPTION

The GEM program is designed for individuals who desire to integrate technical and managerial skills in preparation for operating within a technical environment. Students learn to define problems, formulate approaches to investigate problems, collect and analyze data with appropriate analytical tools and interpret findings for managerial action. With coursework in management science, project management, decision and risk analysis, systems analysis and behavioral science, students are able to develop their management proficiency within an area of technical specialization.

The program includes several civil engineer-specific courses, including construction management, inspection, contracts and law; risk and finance; asset management, asset management modeling and risk modeling; geographical information systems; and crisis management.

SIGNIFICANT RECENT ACCOMPLISHMENTS

- The culmination of the GEM program is in the presentation and defense of a master's thesis. Some theses are researched and articulated in a way that contributes to a field's body of knowledge. A representative sample of theses from 2016 follow:
- Amedee, Ryan. An Economic Analysis of the Transition of a Contingency Military Installation to an Enduring Status Using Monte Carlo Simulations
 - Buchholtz, Jeffrey. An Investigation in Construction Cost Estimation Using a Monte Carlo Simulation
 - Calvo, Jay. Reducing Energy Consumption in Existing Facilities Through Retrofit Prioritization Improvements
 - Cansick, Perry. Determining Air Base Installation Capacity Through Multivariate Analysis
 - Dietrich, Arthur. Measuring the Effectiveness of U.S. Military Humanitarian Construction Projects Through Geospatial Analysis of Public Opinion in Belize
 - Ellis, Trevor. Life Cycle Cost Evaluation of Flexible Facility Designs
 - Forbes, James. Forensic Schedule Analysis of Construction Delay in Military Projects in the Middle East
 - Gallucci, Drew. Material and Design Considerations for a Portable Ultraviolet Light Emitting Diode Water Purification Device
 - Greszler, Brian. Civil Engineer Company Grade Officer Training Needs Analysis for Contingency Operations
 - Holm, Eric. Additive Manufacturing Process Parameter Effects on the Mechanical Properties of Fused Filament Fabrication Nylon
 - Meeks, Maria. Evaluating Storm Sewer Pipe Condition Using Autonomous Drone Technology
 - Quigg, Maria. Cyberspace and Organizational Structure: An Analysis of the Critical Infrastructure Environment
 - Shields, Bradford. United States Air Force Civil Engineering Additive Manufacturing Applications: Tools and Jigs
 - Smith, Clark. Mission Dependency Index of Air Force Built Infrastructure: Knowledge Discovery With Machine Learning
 - Stephens, Freddie. Enhancing Virtual Team Dynamics
 - Stewart, Brando. The Effect of pH and Pulsed Ultraviolet Light Emitting Diode Duty Cycles on the First Order Rate Constant and Byproduct Profile of the Advanced Oxidation of Tartrazine
 - Sundheim, Micki. A Simulation-Based Analysis of Chemical and Radiological Hazard Zones Adapted to Physical Boundaries
 - Wittman, Christopher. Optimizing Allocation of U.S. Humanitarian Civic Assistance Projects in Supporting of Developing Foreign Democracy

CE CHIEFS' COUNCIL

As members of the CE Council, the CE Chief of Enlisted Matters, CE Career Field Managers, CE MAJCOM Functional Managers and AFIMSC CE Chiefs translate strategic vision into action through leadership, implementation and authoritative direction for career-field wide human capital management through organization priorities, investment in the development of career-long education and training and enlisted development programs, and implementation of enterprise-wide goals and initiatives through effective optimization and equipping of the enlisted force.



Chief Master Sgt. John Wilde
civil engineer career field manager



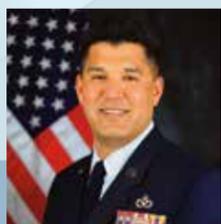
Chief Master Sgt. Jeffrey D. Felty
fire emergency services
career field manager



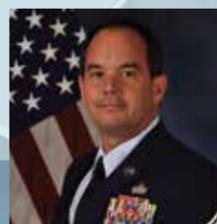
Chief Master Sgt. Douglas J. Moore
explosive ordnance disposal
career field manager



Chief Master Sgt. Daniel Moss
emergency management
career field manager



Chief Master Sgt. Nathan N. Adams
AFCEC CO



Chief Master Sgt. Michael T. Irons
AFCEC CX



Chief Master Sgt. Jumaane Izzard
HQ AFIMSC CE CEM

CE MAJCOM Functional Managers

These functional managers, based at AFIMSC headquarters at JB San Antonio-Lackland, Texas, lead teams that are responsible for implementing policy and guidance for more than 40,000 civil engineer total force Airmen assigned to all continental U.S. major commands; directing assignment actions for engineers at more than 300 worldwide operating locations; and working directly with field commanders and detachment directors on civil engineer manpower and personnel requirements. They also serve as representatives on the Air Force Civil Engineer Chief Master Sergeant Council and various Air Force-level meetings on enlisted training, quality of life, morale and career development.



Chief Master Sgt. Ronald A. Aickelin
AFRC



Senior Master Sgt. Jeffrey Coles
ANG



Chief Master Sgt. Matt L. Sanders
ACC and AFTAC



Chief Master Sgt. David L. Clifford
AETC, AFMC, AFDW



Chief Master Sgt. Larry L. Blume
PACAF



Chief Master Sgt. Patricia A. English
USAFE



Chief Master Sgt. Christopher Culbreth
AFSPC, AFSOC, others



Chief Master Sgt. Gary P. Underwood
AFGSC



Chief Master Sgt. Joel A. Jones
AMC

CE Officer Career Field Manager



Col Valerie Hasberry

The Officer Career Field Manager provides day-to-day advocacy for the civil engineer officer community. The CFM is responsible for Civil Engineer (32E) Officer career development, education and training planning; central oversight for career field education and training; review and validation of advanced academic degrees and other professional continuing education; oversight of Total Force Assessment and the Career Progression Group; supporting accessions and training processes and voting as a member of the 32E Development Team.

CE Civilian Career Field Manager



Gerald Johnson

The Civilian Career Field Manager plans, organizes and directs the completion of objectives that support a variety of career field issues. Additionally, the CFM provides a central point of contact for the effective coordination, communication and integration of key CE workforce management and development initiatives throughout DOD and Air Force so the Directorate of Civil Engineers (AF/A4C) can put added attention, resources and effort on raising the capabilities of the CE community now and into the future.

CE Civilian Development Team

Civilian Development Team members are responsible for overall policy and human capital strategies for the civil engineer civilian career field, professional development, diversity and inclusion, and recruitment and retention of talent as directed by the career field functional manager. DT members serve as part of the Civilian Intermediate Development Team to encourage feedback, increase awareness of developmental education and vectoring, and champion mentoring and career development opportunities for members of the CE civilian workforce. DT members inform the scope and operations of the CE Career Field Team and develop and collect performance measures consistent with the vision and purpose of the CE Functional Advisory Council.



Suzanne Bilbrey

Director, Environmental Management
Represents AFCEC



David Perkins*

Director, 88th Civil Engineer Group
Represents: wage grade



Martin P. Buncher

Chief, Civil Engineering Division
Represents AMC (AFIMSC Det 9/CE),
USTRANSCOM, AFDW



Brenda Roesch

Director, 502nd Civil Engineer Squadron
Represents AETC (502nd CES/CL), USAFA,
AFIT, AFELM, AFNORTH



Otis Hicks

Director, Environmental Policy And Programs
Represents SAF (IEE), HAF, AFIA, OSD,
defense agencies, joint staff



Robert Staib

Chief, Civil Engineer Division
Represents AFRC (A4C)



Keith Kellner

Branch Chief
Represents AFIMSC (IZBB), AFMSA,
AFPA, AFSFC



Lisa C. Steele, PE

Chief, Engineer Requirements Branch
Represents ACC (A4/A4C), USCENTCOM,
AFCENT, USSOUTHCOM, 25th AF (AFTAC),
557th Weather Wing



Brian C. Lee, PE

Chief, Engineering Division
Represents AFGSC (A47/A4C), USSTRATCOM



Joseph Ventrice

Chief, Europe Branch
Represents USAFE (A47/A4CP), EUCOM;
USAFRICA



Michelle A. Linn

Chief, Civil Engineering Division
Represents AFPSC (A4C), 24th AF, NASIC



Thomas Wahl

Chief, AFSOC Installations Division
Represents AFSOC, USSOCOM



Ronald J. Onderko, PE*

Command Senior Civil Engineer
Represents AFMC (AFC requirements
panel), AFTC, AFNWC, AFRL



Rick Weston

Chief, AF Utilities Privatization
Represents NGB (A7E), ANGRG,
USNORTHCOM

**Serve as FAC panel chairs. These members work specific objectives, special issues, develop policy and provide recommendations to the CE FAC in context of the Air Force Strategic Master Plan and CE Flight Plan Human Capital Annex objectives on matters related to civilian career field requirements and in service to the CE civilian community*

VACANT

PACAF (AFIMSC Det 2/CM), USPACOM

CE CAREER FIELD UPDATE



By Chief Master Sgt. Nate Adams
Chief, Force Development Division
Air Force Civil Engineer Center



By Chief Master Sgt. Ed Vallejo
ARC Career Field Liaison

AFCEC's Force Development Division is responsible for the training and development of approximately 28,000 total force civil engineer personnel in 10 Air Force specialty codes. Experts in each of the AFSCs, known as force development managers, work with Air Force career field managers in the 3E000, 3E700, 3E800 and 3E900 specialties, and the Air Reserve Component as well as career field representatives at the MAJCOMs, air staff and Air Force Personnel Center.

FDMs develop career field education and training plans, or CFETPs, and manage over 300 web-based courses on the Advanced Distributed Learning Service and the Civil Engineer Virtual Learning Center sites. They serve as enlisted subject-matter experts within their respective specialty and advise total force engineers at all functional levels. As sole voting members for the Civil Engineer Chiefs' Council, the MAJCOM functional managers sanction development of new CFETPs, initial skills and supplemental courses, and qualification training packages for multiple career fields. Additionally, in partnership with the 1st Manpower Requirements Squadron, we crossed the finish line on developing our Operations Flight Air Force Manpower Standard; which replaces a 20-year-old standard. The draft will be sent for headquarters Air Force coordination and approval in early 2017 and will serve as a zero-sum game reallocation tool across our CE enterprise.

The following pages provide specific information regarding the current status of the enlisted CE career fields. Points of contact are listed for each AFSC and they can be reached through AFCEC's Reachback Center (888-232-3721 or DSN 312-523-6995; AFCEC.RBC@us.af.mil). Up-to-date information and guidance for individual AFSCs can be found on the CE Force Development SharePoint.

In the last CE Almanac, I highlighted the Expeditionary Combat Support-Training and Certification Center from the Air Force Reserve Command located at Dobbins Air Reserve Base, Georgia. This is the Reserve training site that is primarily used by traditional reservists but open to National Guard and active-duty engineers on a space available basis.

The National Guard Bureau has a similar operation called the Regional Training Site located in four areas within the continental U.S.: The 119th CES at Fargo, North Dakota; 145th CES at Charlotte, North Carolina; 163rd CES at March ARB, California; and the 201st CES at Fort Indiantown Gap, Pennsylvania.

These sites provide hands-on upgrade training on equipment that is too costly to procure at each Air National Guard installation. The goal at the training site is to provide active-duty, Reserves and Guard engineers the resources to satisfy training requirements via direct instruction, dedication, professionalism and attention to detail. The most significant benefit other than providing first-class instructors and customer service is their billeting. If you are looking to cut costs, the site provides a hard billeting facility at no cost. The site can accommodate at least 100 personnel.

Bivouac is no longer a requirement, however, if you are able to coordinate with your unit or leadership to have your two-week annual tour or a unit training assembly, these sites are ideal, especially for training that cannot be accomplished at home installations due to lack of equipment or facilities.

Lastly, the site provides Prime BEEF mission-essential equipment training for specific individuals assigned to a unit type code, in order to meet minimum "go/no go" standards.

3E0X1 ELECTRICAL SYSTEMS 3E0X1 3E0X1 3E0X1 3E0X1 3E0X1

The new Career Field Education Training Plan was published May 15, 2016. Until this publication, electrical systems specialists have been conducting training from an outdated October 2007 CFETP; with minor changes in 2008 and 2012. The first Electrical Systems Apprentice Training course class graduated in June 2016, and the Electrical Systems Craftsman course graduated its first class in August 2016.

The Electrical Distribution Systems Maintenance and Airfield Lighting Systems supplemental courses also were upgraded. Electrical Distribution Systems Maintenance course equipment was replaced and training modules from the recently eliminated Cable Splicing and Testing course were added. Touch screen controls with associated new curricula were added to the Airfield Lighting Systems Course to better replicate what Airmen actually work on in the field.



Still in the publication queue is the five-level Career Development Course.

Future initiatives include developing the Next Generation Emergency Airfield Lighting System. We are adjusting the CE Advanced Troubleshooting supplemental course and will recruit design team members from the field to help reshape the curriculum. Lastly, we are kicking off the 3E0X1 Occupational Analysis Survey mid-2017; maximum participation is highly encouraged because results will drive all future training initiatives.

Senior Master Sgt. Mark Morgan
3E0X1 Force Development Manager

3E2X1 PAVEMENTS & EQUIPMENT 3E2X1 3E2X1 3E2X1 3E2X1

Late in the year, AFCEC finalized agreements with the Air National Guard Bureau and Air Force Reserve Command to open two additional Tractor Trailer Training, or 3T, sites in summer 2017. This training will be available at the 188 CES at Fort Smith, Arkansas, and the 163 CES/RTS at March ARB, California. With Dobbins ARB, Georgia; Fort Indiantown Gap, Pennsylvania, and the 435th Contingency Training Squadron at full capacity, these additional sites will greatly increase our training bandwidth to better meet mission requirements.



554 RHS training venue will have the opportunity to receive a civilian crane certification. The life cycle of this certification will be 60 months from the date of issue and the crane refresher window is extended to 30 months as of Jan. 1.

The Air Force-unique portion of the apprentice course has been revamped to include multiple concrete pours, fencing installation, small engine fundamentals, barrier layout and construction and updated multiple blocks of instruction.

Master Sgt. Ron C. Oudean
3E2X1 Force Development Manager

The civilian accreditation of the AFCEC-approved Mobile Crane Training Course was awarded in September. These certifications will begin being issued early in 2017. Members who attend a Dobbins ARB, Fort Indiantown Gap, 435 CTS, or

3E0X2 ELECTRICAL POWER PRODUCTION 3E0X2 3E0X2 3E0X2

In 2016, the last two projects from the 2013 utilization and training workshop were completed. Thanks to the 366th Training Squadron at Sheppard AFB, Texas, the new Z3E052 Career Development Course was published in April. With the help of the civil engineer maintenance inspection and repair team at Tyndall AFB, Florida, which installed two generators, automatic transfer switches and two BAK12 trainers, the Troubleshooting Electrical Power Production Equipment course at Sheppard AFB came on line in November. The course incorporates newer commercial equipment and BAK12 troubleshooting to sharpen technicians' ability to diagnose and repair issues that are commonly found in the field.



the BEAR Power Unit. The move will increase the number of Airmen trained on the Air Force's new prime power generator.

Credentialing opportunities for Electrical Power Production Airman through AFCOOL were expanded with the approval of two new certifications: Diesel Engine (T2) and the Electrical/Electronic Systems (T6), both from the National Institute for Automotive Excellence. These certifications will allow technicians to obtain commercial certifications and help broaden competencies across the active duty force.

Senior Master Sgt. Stewart R. Herringshaw
3E0X2 Force Development Manager

On the contingency training front, we finally said goodbye to the MEP 12A at all training sites. Each site now teaches only

3E3X1 STRUCTURAL 3E3X1 3E3X1 3E3X1 3E3X1 3E3X1 3E3X1

In January 2016 we published a new career field education and training plan and implemented changes to our technical school. We also published the newest CDCs and updated qualification training packages and identified change 1 to the CFETP/STS, which removes contingency items no longer included in BEAR inventory. We also updated the Roof Inspection Maintenance and Repair course at Gulfport, Mississippi, and synced curriculum with the AFIT Roof Design and Management course.



For contingency training, we updated the medium shelter course on the CE-VLC and at Silver flag to include the addition of the Alaskan Medium Shelter. We've also created and published a Fabric Shelter Maintenance and Repair course; inserting hands-on fabric repair instruction into the Silver Flag sites. We've also nearly completed updates to the Contingency Locksmith and Roll-up Door courses.

Senior Master Sgt. Todd Davis
3E3X1 Force Development Manager

We developed a Fall-Protection Awareness course and added it to the CE-VLC in two formats, individual and group. This course is required for skill-level upgrade, but more important, it's a great tool to complement a shop's fall protection program.

3E1X1 HVAC & REFRIGERATION 3E1X1 3E1X1 3E1X1 3E1X1 3E1X1

Team HVAC is inches away from publishing the new career field education and training plan, which will drive activation for the next-generation three-level apprenticeship, five-level CDCs and seven-level craftsman courses. The 366th Training Squadron professionals are eager and ready to teach the Air Force's newest Airmen. Massive improvements to HVAC labs have been completed. Approximately \$600K in new equipment and trainers have been resourced and installed, including all contingency equipment Airmen will see while deployed.



stood up and is located on the CE-VLC. Also, the HVAC Electrical and Mechanical Troubleshooting web-based course is in its final stages. This course is designed to enhance HVAC-specific troubleshooting skills for home-station and deployed locations.

Our rock-star NCOs should consider taking AFIT's WENG 460/563 DL Courses. They are challenging but will provide that next level of expertise. Lastly, don't forget about the AFCOOL opportunities; especially those getting close to transitioning to the next career. Continue to train ... continue to lead!

Senior Master Sgt. Christopher L. Tilstra
3E1X1 Force Development Manager

We also adjusted contingency training. The TRICON Refrigerated Containerized System hit the inventory last year. Lesson plans for Silver Flag and Regional Training Sites are nearly complete and we expect to offer new hands-on training in spring 2017. The web-based course for the TRCS

3E4X1 WATER & FUEL SYSTEMS MAINTENANCE 3E4X1 3E4X1

I would like to thank the career field for the outstanding work supporting the mission both at home and abroad. Your contributions are key to mission success!

In FY16, we looked at ways to enhance training on fire suppression systems. We are developing web-based training on inspection, testing and maintenance of water-based fire suppression systems that lines up with the tasks required in the Unified Facilities Criteria.

Our PACAF Airmen currently train on Rapid Utility Repair Kit. This system will be replaced by Water and Fuel Expedient Repair System, or WaFERS, a modular, tailorable material and equipment set used to recover water and fuel systems.



Training is for Airmen assigned to PACAF bases and will take place at Silver Flag on Andersen AFB, Guam.

CONUS bases will secure backflow prevention training in agreement with their state or local municipality. The Backflow Prevention Testing course is available for overseas locations. Senior Master Sgt. Jerry R. Ruiz, AFIMSC installation engineering program manager, is leading the backflow program. Base backflow program managers should contact AFIMSC for support.

The new 3E431 apprentice course is now expected to start in spring 2017 with CDCs to publish soon after.

Senior Master Sgt. David M. Kledzik
3E4X1 Force Development Manager

3E4X3 PEST MANAGEMENT 3E4X3 3E4X3 3E4X3 3E4X3 3E4X3

We finished the last curriculum update from the Utilization and Training Workshop. The new CDC, 3E453 Edit Code 01, was published in November 2016. The old course consisted of two sets in seven volumes whereas the new CDC is one set in five volumes. This is great news for Airmen entering five-skill level upgrade training. While the old CDC was deactivated, any Airmen enrolled in that course before Sept. 1, 2016, will be required to complete the old set. We will have two separate CDCs for approximately 18-24 months to allow the total force to complete upgrade requirement.



guide addressing feral animal risk management is awaiting a publication number. Technical guides are available at www.acq.osd.mil/eie/afpmb/tech-guides.html.

In FY17, we will assess Pest Management Certification and Recertification courses and update the wildlife management computer-based training course. We will take a look at expeditionary training to ensure contingency requirements are accurately captured in the Wartime Training Standard.

Master Sgt. Charles E. Curnutte II
3E4X3 Force Development Manager

Our pest management experts updated and developed guidance for the field. The Pest Management Technical Guide 2, Integrated Pest Management in Child Development Centers and Schools, was published in November. A new technical

3E7X1 FIRE EMERGENCY SERVICES 3E7X1 3E7X1 3E7X1 3E7X1

The relocation of the Fire Emergency Services career field manager from AFCEC to the Pentagon in February 2016 prompted the standup of an independent FES force development manager to oversee training initiatives. In March, AFCEC dedicated an authorization and classified it as a key development position for future FES senior master sergeants.



Firefighter I and Firefighter II certifications. Additional adjustments were made in the Hazmat and Rescue Technician advanced courses to comply with international requirements.

To enhance the nonmilitary acceptance of FES certifications upon separation or retirement, FES successfully added ProBoard accreditation, ultimately gaining dual accreditation for all FES certifications retroactive to 2003. An internal Force Development Team led by the new FDM, exchanges information via conference calls and emails, in turn, enhancing training and development programs throughout the enterprise.

Senior Master Sgt. Steven M. O'Connell
3E7X1 Force Development Manager

The Specialty Training Requirements Team completed a review of the CFETP in August and the updated CFETP was published in September. This update included several certification courses that FES has fielded since the last revision of the CFETP in August 2014.

Several adjustments were made to the DOD Fire Academy's course construct. The apprentice course was realigned from seven blocks into three to create a clear division between

3E5X1 ENGINEERING 3E5X1 3E5X1 3E5X1 3E5X1 3E5X1 3E5X1

In FY16 our Engineering Occupational Analysis Report survey was completed and over 400 questions were taken by Airmen in active duty, Guard, Reserves, Prime BEEF and RED HORSE units.



the proficiency code levels to reflect the depth of knowledge and understanding required to perform certain tasks.

A new Air Force-centric Advanced GIS, or geographic information system, supplemental course is being developed. This customized course will use geodatabases from typical Air Force garrison and expeditionary bases, resulting in realistic training to support TRIRIGA, environmental, logistics, cyber engineering and expeditionary geospatial services. This 42-lesson course with a comprehensive Capstone lesson will be available in the third quarter of FY17.

Lastly, a versatile acquisition vehicle is being developed to address the aging optical and Global Navigation Satellite Services surveying equipment in the inventory. AFCEC is exploring the best options to meet the mission requirements of high-demand units with possible leasing options to meet the needs of units with less frequent usage. Most important, rapid software, firmware and hardware support will be available in CONUS and the overseas environment supported by state-of-the-art, hands-on training in 2017.

Senior Master Sgt. Solomon Q. Vincent
3E5X1 Force Development Manager

We streamlined CDCs, deactivating the seven-level CDC, while merging that information into the five-level CDC. We modified

3E8X1 EXPLOSIVE ORDNANCE DISPOSAL 3E8X1 3E8X1 3E8X1

In August 2016 our team at Sheppard AFB, Texas, conducted a beta test of the new team leader course curriculum. The test was successful and provided a great deal of insight into how the course will need to be managed. Validation class is expected to begin in spring 2017.



A training workshop was held in October 2016 with flight representation from AFGSC, USAFE, PACAF, AFRC, ACC, AFMC and NAVSCOLEOD. A training continuum was developed to map out an EOD Airman's career from graduation to retirement. This continuum displays current advanced training, PME and other potential training course opportunities designed to help EOD Airmen progress from team member to team leader to flight/career field leader.

Senior Master Sgt. Steven R. Coppock
3E8X1 Force Development Manager

A new CFETP was published in March 2016 with an interim change published in August, which removed the five-level core tasks for the TCV and replaced them with diamond tasks until all flights receive their own TCVs. The new Mission Skills Tactics Training and Global Counter IED Threat Assessment courses are almost complete. The courses will include advanced training in medical first aid and armored transport licensing.

3E6X1 OPERATIONS MANAGEMENT 3E6X1 3E6X1 3E6X1 3E6X1

In 2016 we rolled out TRIRIGA to 24 bases. Training has been revamped and reference guides have been produced to aid in the rollout.



We partnered with AFIT to update the WMGT 436 Requirements and Optimization, WMGT 417 Activity Management and develop the WMSS 301 Introduction to Asset Management courses. These courses are hosted via satellite through AFIT and will be offered twice in 2017. For contingency locations, IWIMS is still being used in the AOR and we are actively considering various solutions for the future at enduring bases. For the AFIT schedule and course info, go to <https://www.afit.edu/CE>. For information on TRIRIGA training, go to the CE Portal.

Master Sgt. Amy Dare
3E6X1 Force Development Manager

We completed the 3E6X1 Interim three-level course at Sheppard AFB, Texas. The new course will focus more on foundational processes within our asset management principles. Those currently enrolled in the CDCs will continue in the current CDCs; however, all graduates of the new course will have other training requirements for upgrade that do not include CDCs. We expect to hold another Specialty Training Requirements Team career field review in summer 2017.

3E9X1 EMERGENCY MANAGEMENT 3E9X1 3E9X1 3E9X1 3E9X1

AFCEC's Emergency Management and Requirements and Acquisition divisions, in collaboration with Natick Soldier Research, Development and Engineering Center, and the U.S. Army Research Institute of Environmental Medicine, tested new chemical biological lightweight improved thermal ensemble suits for the Defense Threat Reduction Agency. The primary goals of the week-long testing were to obtain physiological data of participants wearing the suits and to demonstrate the ability to perform airfield damage repair operations in a chemical warfare agent-contaminated environment. Eight volunteer Airmen from Detachment 1, 823rd REDHORSE executed airfield damage repairs in MOPP-4 wearing different suit configurations. The data from this test will aid in the development of U.S. Air Force-specific CBRNE requirements.



The division participated in the AF EM 459 allowance standard review at Robins AFB, Georgia, in August. Fifteen subject matter experts validated 25 allowance identifiers, and 191 national stock numbers, valued at over \$11.3M. The overall changes to the allowance resulted in a cost savings of \$2.8M. The AFCEC-funded protective M50 mask refurbishing initiative began full production in October with the capability to process approximately 12K masks per month, saving a projected \$9M per year.

The 2016 America's PrepareAthon! Campaign, sponsored by the Office of the Secretary of Defense, reached more than 700,000 Air Force personnel and family members.

Chief Master Sgt. Anthony Hatcher
3E9X1 Force Development Manager

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