US Army Engineer Regiment





Sappers, Mappers, Builders, Divers, and Firefighters


ESSAYONS

Essayons! We WILL Succeed!

Multiple Roles

Support Chief of Engineers in role as ARSTAF Engineer

DOD / JIIM

JOINT
OSD, CCMDs, JOINT STAFF
USN, USAF, USMC
STRATCOM, TRANSCOM, DLA
NGA , DISA, DIA

INTER-AGENCY
DEPARTMENT OF STATE
HOMELAND DEFENSE
USAID
FEMA

Materiel Management
Military Hydrology
Field Force Engineering
Tele-Engineering
Mobilization
Troop Construction
Disaster Relief
Geospatial Engineering
DOD Policy
Force Sufficiency Analysis

ARMY

ARMY
ASCCs
FORSCOM, AMC, TRADOC
MSCOE, USAES, ARCIC
IMCOM, SMDC, USAR, ARNG

ARSTAF
VCSA, DAS
ASA(ALT), ASA(CW), ASA(IE&E)
ASA(FM&C)
OBT, ACSIM, OCPA, OPMG, TSG
G1, G2, G3/5/7, G4, G6, G8

TAP ACP PPBE
TAA/FMR FAA
CONOPS
Contingency Basing
Operational Energy
SPARs
Force Management
Force Development
Readiness
Talent Mgmt

HQDA's focal point for military engineering activities

Synchronize multiple Chief of Engineers roles and responsibilities

USAES

Joint Operational Engineering
Capabilities Based Assessments
Joint Force Readiness Review
Engineer Interoperability
Joint Doctrine and Training

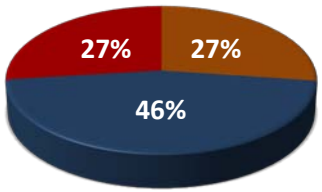
USACE

Military Operations
Military Engineering
Topography / Real Estate
Research & Development
Utilities Acquisition
Operational Energy
Contingency Basing

Army Engineer Force Structure

CMF 12 Authorizations

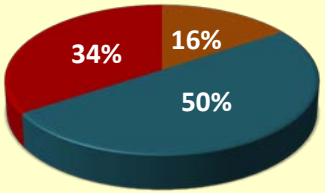
66,265Auth.



- Active 18,016
- Guard 30,398
- Reserve 17,851

Echelons Above Brigade

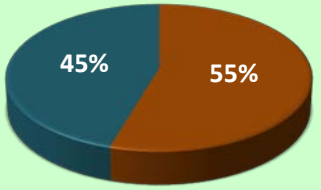
44,596 Auth.



- Active 6,970
- Guard 22,366
- Reserve 15,260

Brigade Combat Teams - BEBs

12,700 Auth.



- Active 6,936
- Guard 5,764

USACE

- Corps HQ - 1
- Divisions – 9 (O-7/8)
- O-6 Districts AC - 34
- O-5 Districts AC - 9
- Prime Power AC - 1 (O-5)
- FEST – A AC - 8

EAB Engr Command and Control

85	AC - 12 NG - 47 AR - 26
17	AC - 4 NG - 9 AR - 4
2	AR - 2

Combat Engrs

49	AC - 8 NG - 35 AR - 6
28	AC - 12 NG - 4 AR - 12
30	AC - 3 NG – 11 AR - 16
1	AC - 1

General Engrs

36	AC - 8 NG - 22 AR - 6
62	AC - 10 NG - 31 AR - 21
78	NG – 45 AR - 33
24	AC - 4 NG - 11 AR - 9

Specialty Engrs

7	GPC AC - 7
5	Dive Det AC - 5
5	FEST – M NG – 2 AR - 3
20	FEST – A AR - 20

16	AC - 11 NG - 5
9	AC - 7 NG - 2
25	AC - 5 NG - 20
5	AC - 5
3	AC - 3
6	AC - 5 NG - 1

Source: FMSWEB FY20

UNCLASSIFIED

As of: 11 Mar 2020

US Army Engineers - Bridging the Gap to 2035

2020	2028	2035+
Lethality, survivability mobility, and situational awareness derived from currently fielded capabilities	Enable current capabilities to reach overmatch	Modernized force to enhance overmatch
PL/PSG CO CDR/1SG	BN S3/XO, SGM	BN CDR/CSM BDE CDR/CSM

NATO/Allied Interoperability

Mobility **Sappers in the Breach**	- Armored Vehicle Launch Bridge - M113 - Assault Breaching Vehicle	- Combat Engineer Company (CEC-A/I) - M113 Replacement (EAB Formation) - Joint Assault Bridge (JAB) - Robotic Breaching/ABV	- Exoskeleton - Explosive Breacher/AME (NGCV CFT) - Scalable Robotic Breaching (Combined Arms, Dense Urban Environment, SbTO)
Bridging	- Rapid Emplaced Bridge Systems (REBS) - IRB and DSB - Bridge Supplemental Set (BSS)	- Family of High Mobility Load Class (FoHMLC) (DSB, IRB and Scissor Bridge) - Line of Communication Bridge (LOC-B) - Enable the Contact Layer/Grow the Blunt Force	- Autonomous and Self Healing Robotic Bridging - Autonomous Bridge Delivery/transport systems
Counter Explosive Hazards	- MMPV - Buffalo - MTRS - PSS 14B/C - HMDS - VOSS	- Next Gen Handheld Detector - Robotic Detector	- Remote/UAV Sensing and Defeat - Persistent Change Detection - Subterranean Threat Assessment by Rapid Sensing (STARS)
Countermobility **- Terrain Shaping Area Denial**	- Scatterable Mines/PPD 37 Changed - Volcano SLEP - Remote Activated Munitions (RAMS) - Wire/Tank Ditches	- Standoff Activated Volcano Obstacle (SAVO) - Interim Top Attack (ITA) - Terrain Shaping Obstacle Close(CTSO) - Robotic AT Ditch	- Terrain Shaping Obstacle Mid(MTSO)/Deep(DTSO) - Terrain Shaping by swarm - Multiple Sensors and Capabilities on countermobility platforms
Survivability	*Hull and Turret Defilade, Fighting Positions, Berms, Long Range Precision Fires, Vertical Lift, AMD*		
General Engineering	*Roads and Trails, Airfields, FARP/FACE, ADR, Combat Outposts, Forward Operating Bases, SPODs* - Dozer, Grader, Scraper - HMEE - HYEX - 22T Crane - ERACC I, II	- 50T Cranes - Commercial 40T Cranes - Construction Simulators	- Invisibility - Robotic Earthwork - Robotic Construction3D Printing of Structures - Mobile Nuclear Power Plant (MNPP)
Geospatial	- DCGS-A (GWS, IFS) - Standard and Sharable geospatial foundation (SSGF) - Functional geospatial information	- Cross Domain database ISO Command, Control, Communication and Intelligence - Seamless integration ISO Assured Position, Navigation and Timing	- User defined/enabled and 3D products - Persistent, Adaptive mapping integrated into AI and SA geospatial planning tools
Soldiers	*SDBC/Master Breacher, STE, Living Doctrine, Geospatial Integration, Credentialing, NATO/AJP Doctrine, Interoperability*		

Ethical Leaders who embody the **Army Values.** **Mentally tough, Physically Fit, Credentialed**, **Technical/Tactical Experts,** sitting **At The Table**, **Engaging**, and **SOLVING Maneuver Commanders TOUGHEST Problems**

,

ESSAYONS! WE WILL SUCCEED!

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THE DIRTY DOZEN

Building and Maintaining Readiness of the Engineer Regiment

1. **Be the Engineer EXPERT of the Combined Arms Team:** Develop combined arms experts, capable of operating from the tactical to strategic levels. Actions: Emphasize leader development / PME focused on MDO and LSCO.
2. **Shape the Operational Environment:** Shape and control physical terrain. Actions: Continue adherence to "Fight Tonight" modernization plan as interim solution and incorporate transition to Terrain Shaping 2035.
3. **Develop a feasible Engineering Portfolio Modernization Plan:** Prioritize critical engineer systems while sustaining low-density enablers. Actions: Develop feasible Engineer Modernization Plan for Legacy Equipment (EAB M113s, ACE and MICLIC).
4. **Revolutionize Regimental Processes:** Integrate with AFC and execute IWGs (TSO, combined arms obstacle reduction, bridging) specified in the AMG. Actions: Nominate TSO and breaching for IPT designation; integrate Gap 8 DOTMLPF-P analysis w/in AFC CFTs.
5. **Develop Force Structure to execute LSCO & MDO**: Develop multi-functional organizations to meet emerging challenges for MDO force packages. Actions: Complete General Support Bridge Company FDU and TEC FDUs; TAA 24-26 MRBC growth.
6. **Transform Engineer Training for the Total Force (AC/NG/USAR):** Set conditions for multi-compo unit synchronization, and support multi-compo training and exercises. Action: Continue total regiment integration efforts; promote total force collaboration and training.
7. **Embrace the Engineer Profession:** Develop competent, values based leaders (both military and civilian) who are disciplined, deployable, committed to self-development, and are advocates for the Engineer Regiment.
8. **Optimize Talent Management and develop Technical Expertise**: Remain in the forefront to acquire, develop and retain talent. Actions: Continue to lead the way with ATMTF initiatives; continue credentialing efforts and targeted STEM recruitment.
9. **Develop a Geospatial Transformation Plan**: Posture the Regiment to provide exceptional Geospatial Engineering to achieve an MDO capable Army by 2028 and dominate by 2035. Actions: Develop milestones, gather CoE/CFT requirements, finalize AGE CONOPS.
10. **Improve Joint Engineer Force and Allied Interoperability and Collaboration**: Leverage capabilities based solutions to resource, develop, equip, and train ready forces. Actions: Sustain E-PEP; reenergize JOEB; and increase Joint/Allied participation and synergy.
11. **Revitalize Engineer Governance and Engagement in the Total Force:** Implement a collaborative governance architecture to synchronize efforts across the Army and Joint forces. Action: Adjust regimental governance structure to enhance strategic dialogue.
12. **Support to Disaster Response**: Resource and utilize a total force effort to train, plan, and execute engineer operations in support of Homeland Defense, Humanitarian Assistance and disaster response. Action: Increase 249th PP capacity, expedite USAR “Fight Fast”.

On schedule | Action in progress / in development | Off schedule; un-resourced; GO-level engagement required | COE focus areas | Progress status

As of: 21 May 2020

US Army Engineer Regiment





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ESSAYONS

Essayons! We WILL Succeed!

Naval Construction Force Update

SAME NoVA Military Engineering Panel

June 2020

NCG Organization

NECC PAC

- Naval Construction Group 1
  - 30 NCR
  - 1NCR
    - NMCB 18
    - NMCB 22
    - NMCB 25
  - CBMU 303
  - UCT 2
  - NMCB 3
  - NMCB 4
  - NMCB 5

NECC

- Naval Construction Group 2
  - 22 NCR
  - 7NCR
    - NMCB 14
    - NMCB 27
  - CBMU 202
  - UCT 1
  - NMCB 1
  - NMCB 11
  - NMCB 133

AC Command

RC Command

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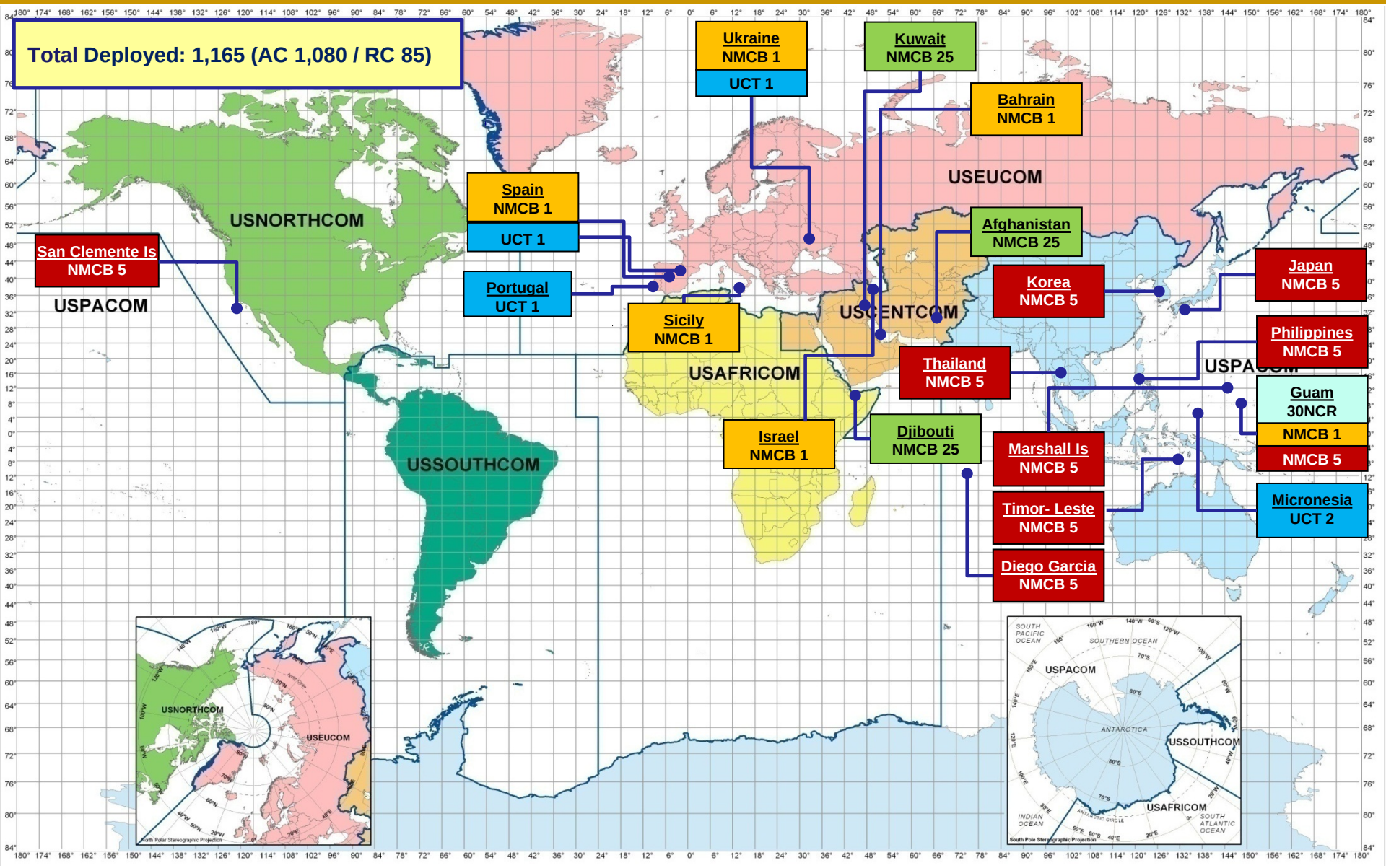
NCF Force Laydown

(as of 3 Mar 2020)

Total Deployed: 1,165 (AC 1,080 / RC 85)



Humanitarian Assistance / Disaster Relief in the Pacific

NMCB-1 Detail Tinian Seabees perform C-130 offload in preparation for emergency response efforts on the island of Tinian in the Northern Marianas Islands after damage from Supertyphoon Yutu.

NMCB-1 Detail Rota hard at work, preparing sheet metal to be cut. In total 33 houses had been repaired in the 18 days that the Seabees were in Rota.

Africa & Spain

NMCB-1 Seabees hold a ceremony for the completion of a maternity clinic (Ali Oune, Djibouti)

NMCB-1 Seabees conduct project for cliff restoration to prevent erosion in a base housing area at Naval Station Rota, Spain.

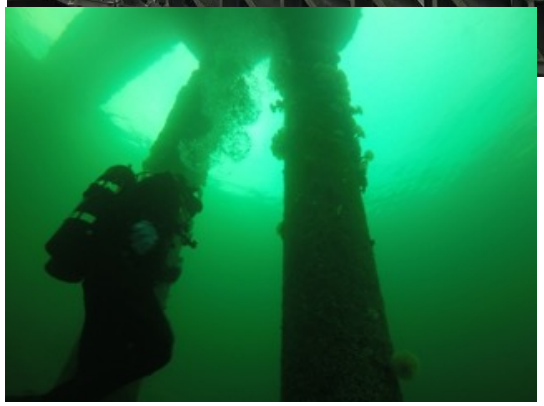
Hurricane Michael Relief
Panama City, FL

NMCB-11 Seabees erect field messing tent on 15 Oct 2018 to support daily meals for 125 personnel at NSA Panama City in response to damage caused by Hurricane Michael including debris clearing, shower and laundry operations.

NMCB-11 Seabees remove debris from the Youth Center at Naval Support Activity Panama City, Florida. NMCB-11 sent a 54-man, task-tailored Seabee detachment that includes, mechanics, electricians, equipment operators, builders, logistics and culinary personnel in response to damage caused by Hurricane Michael.

Columbia, South America & USMC Exercise in Norway

NMCB-133 Seabees complete a water well for the residents of Riohacha, Columbia during Southern Partnership Station. Present w/ U.S. Ambassador to Columbia.



NMCB-1 Seabees and 8th ESB personnel conduct joint training on Medium Girder Bridge in Norway as part of exercise Trident Juncture Oct18. UCT 1 inspects pier pile for deterioration during Trident Juncture Oct18.

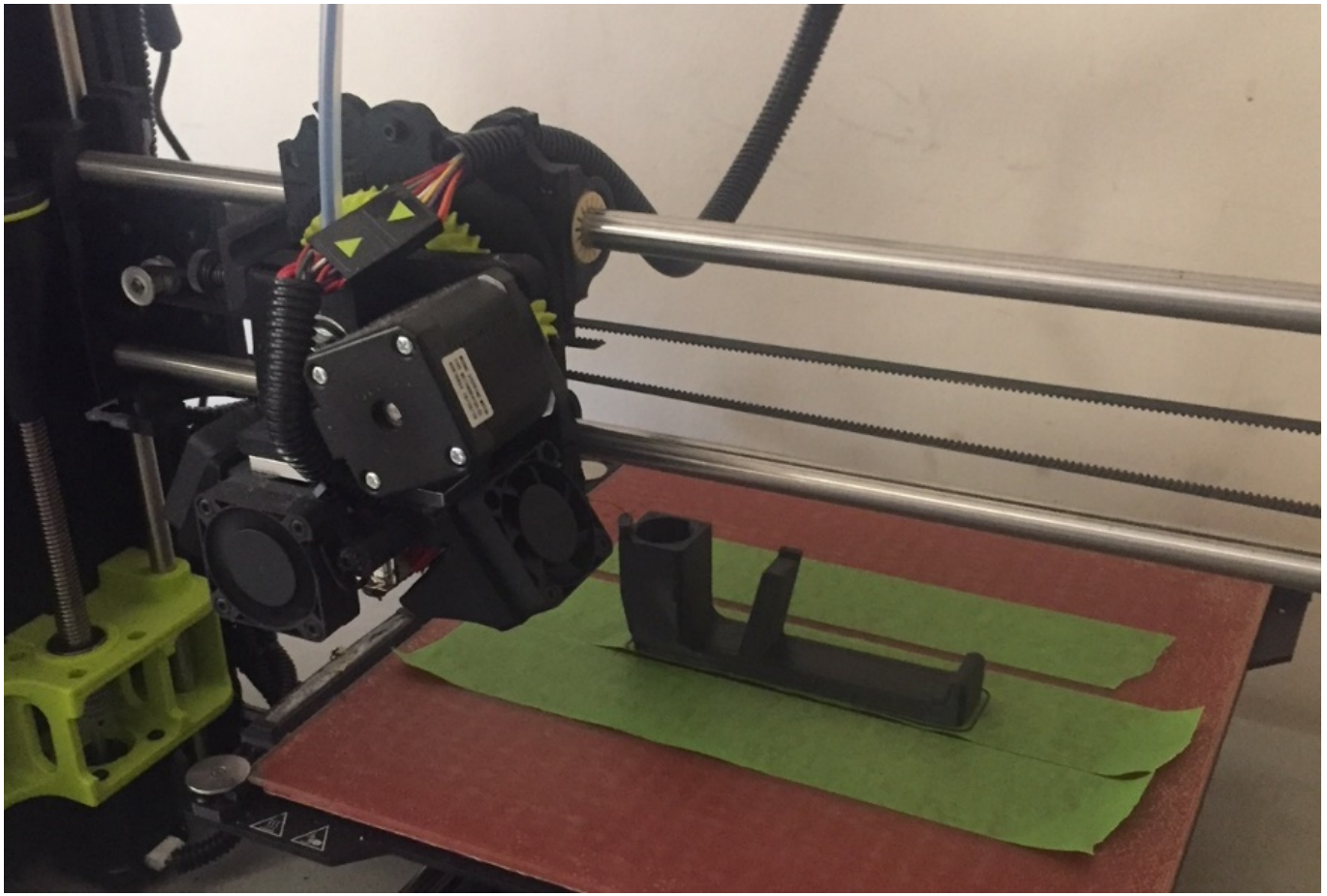
PACOM

UCT 2 Divers provide assistance in rescuing passengers following the crash landing of Air Niugini flight PX56 in the island of Chuuk, Federal States of Micronesia.

Seabees assigned to Naval Mobile Construction Battalion (NMCB) 3, Construction Civic Action Detail (CCAD) Palawan, Philippines and members of the Municipality of Aborlan community celebrated the completion of a two-room school house for the Magsaysay School.

NCF Technology

Additive Manufacturing



NMCB-133 Seabees print a HMMWV door handle using a 3-D printer. This technology was introduced at FTX and during the current deployment.

Additive Manufacturing with 7th ESB / USACE

- *CONOPS:*
  - *NMCB 5 provided support to 7th ESB and USACE program managers during execution from 3-13 December aboard Camp Pendleton.*
  - *Printed (2) piers and (4) span sections over three days which were allowed to cure for 48 hours prior to being transported to installation site and craned into place.*

- *Take Aways:*
  - *Inclement weather affected plans, original scope was to print 5 different designs. Rain and other issues limited execution to the one bridge.*
  - *System was easy to assemble, taking less than 1 hour with a crew of 8 personnel.*
  - *Hose/pump system not adequately sized, causing clogging and limiting mix design (<3/8" aggregate)*
  - *Placement of reinforcement and orientation of printing (vertical or horizontal) impacted performance. Horizontal printing more effective than vertical.*
  - *Technology demonstration was promising. With continued refinement and improvement concrete 3D printing will prove to be a valuable asset.*

Additive Manufacturing

Exercise STEEL KNIGHT

Additive Manufacturing

NMCB 5 and 7th ESB

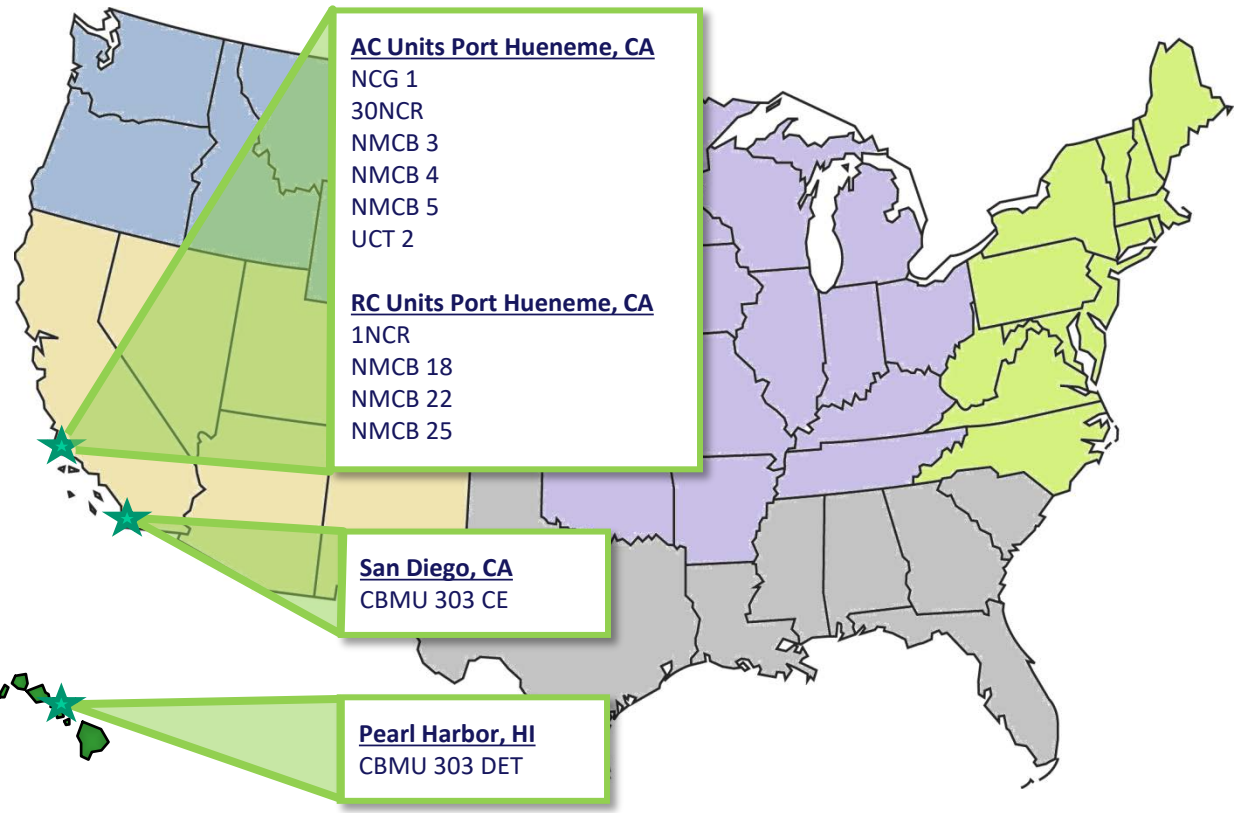
Unmanned Aerial System (UAS)

- Rugged and Reliable
  - All-weather, daytime/nighttime capability
  - Durable & sustainable airframe
  - AES-256 encryption
  - 40 minute endurance with a 3km range
    - Multiple aircraft allow sustained persistence beyond 40 minutes
  - Equipped with multiple EO/IR cameras
    - Can track targets over 3km away
- One Platform, Many Missions
  - More than just a flying camera…
  - Tactical ISR
    - Front mounted EO/IR payload allows for day and night situational awareness
  - Persistent Overwatch/Force Protection
  - Airfield Damage Assessment
  - Payload delivery
    - Can deliver nearly any object up to 2.2kg

Backup

SAME
Northern Virginia Post

NCG 1 Unit Locations



NCG 1 and Subordinate Units	
Total AC Military Personnel:	2,469
Total RC Military Personnel:	2,363
Total Civilian Personnel:	31
TOTAL:	4,863

NCG 1, Port Hueneme CA
- Military AC Personnel: 297 AC/104 RC
- Civilian Personnel: 36

30NCR, Port Hueneme CA
- Military AC Personnel: 80 AC/32 RC
- Civilian Personnel: 12

1NCR, Port Hueneme, CA
- Military Personnel: 93

NMCB 3, Port Hueneme, CA
- Military Personnel: 581 AC

NMCB 4, Port Hueneme, CA
- Military Personnel: 581 AC

NMCB 5, Port Hueneme, CA
- Military Personnel: 581 AC

NMCB 18, Port Hueneme, CA
- Military Personnel: 581

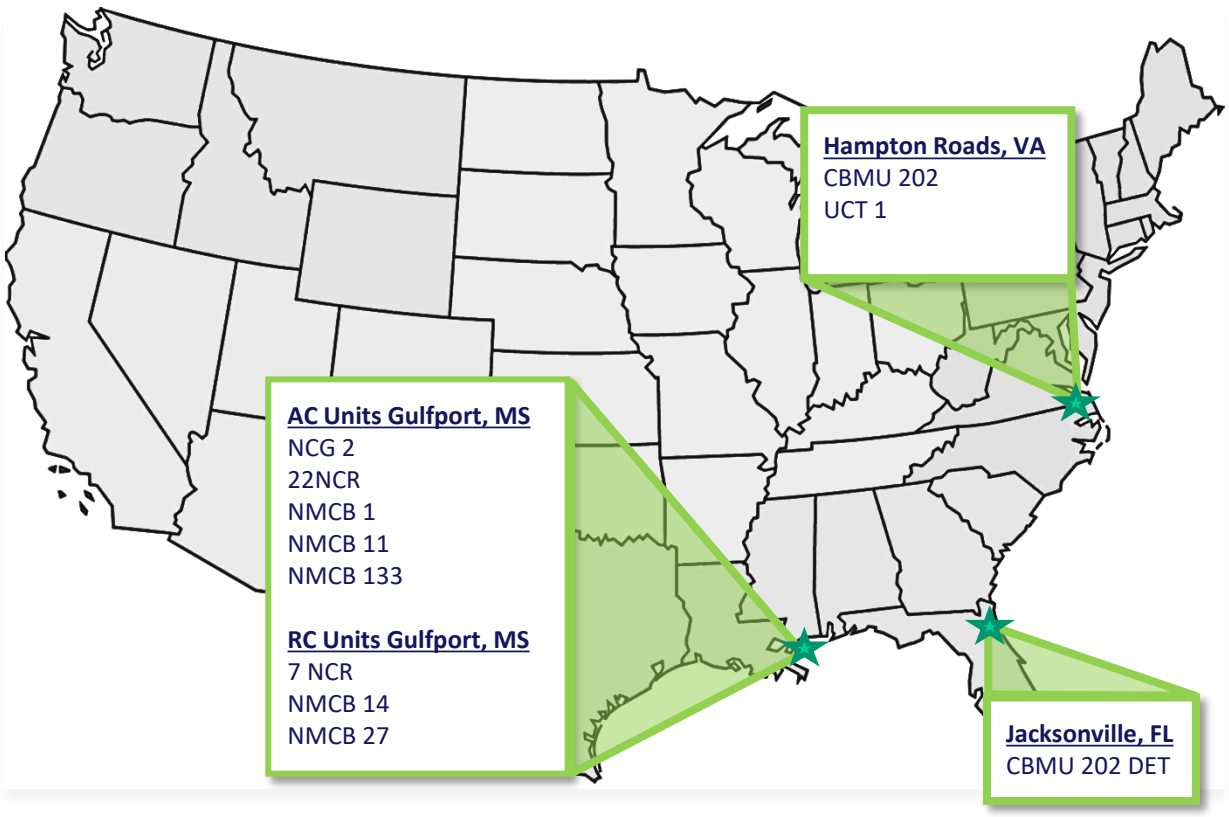
NMCB 22, Port Hueneme, CA
- Military Personnel: 581

NMCB 25, Port Hueneme, CA
- Military Personnel: 581

CBMU 303, San Diego, CA
- Det, Pearl Harbor, HI
- Military AC Personnel: 293 AC/382 RC

UCT 2, Port Hueneme, CA
- Military Personnel: 79 AC

NCG 2 Unit Locations



NCG 2 and Subordinate Units	
Total AC Military Personnel:	2,407
Total RC Military Personnel:	1,903
Total Civilian Personnel:	61
TOTAL:	4,371

NCG 2, Gulfport, MS
- Military Personnel: 259 AC / 136 RC
- Civilian Personnel: 42 Billets / 38 Filled

22NCR, Gulfport, MS
- Military Personnel: 51 AC / 38 RC
- Civilian Personnel: 13 Billets / 11 Filled

7NCR, NOSC Gulfport, MS
- Military Personnel: 11 AC / 85 RC
- Civilian Personnel: 1 Billet / 0 Filled

NMCB 1, Gulfport, MS
- Military Personnel: 591 AC

NMCB 11, Gulfport, MS
- Military Personnel: 591 AC

NMCB 14, Gulfport, MS
- Military Personnel: 15 AC / 692 RC

NMCB 27, Gulfport, MS
- Military Personnel: 16 AC / 693 RC

NMCB 133, Gulfport, MS
- Military Personnel: 591 AC

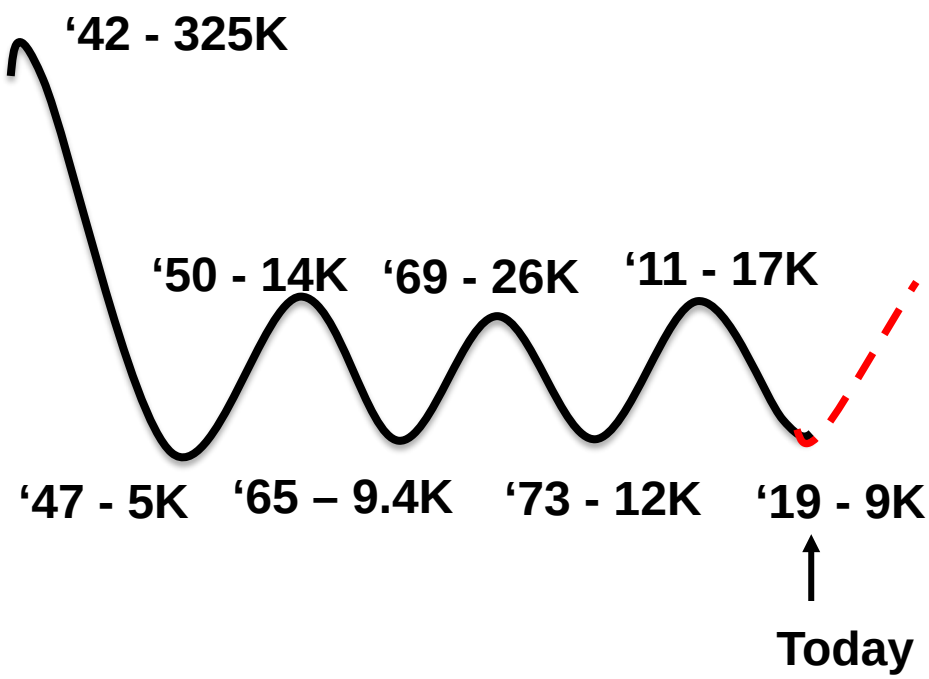
CBMU 202, Little Creek, VA
- DET, Jacksonville, FL
- Military Personnel: 166 AC / 211 RC

UCT 1, Little Creek, VA
- Military Personnel: 76 AC

NCF Strategic Framework

Vision: Seabees are expeditionary engineering and construction experts for the Naval Services.

Mission: We provide task-tailored, adaptable, and combat effective engineering and construction forces that deploy to support Naval objectives globally and enable logistics for distributed Fleet operations.



Objective 1:
Deepen Our Pride and Professionalism

Objective 2:
Strengthen Combat Power

Objective 3:
Enhance and Expand Partnerships

Objective 4:
Actively Communicate

USAF CIVIL ENGINEERS (CE)

Col Aaron Atwies
Chief, Readiness Division

MISSION: To provide, operate, maintain, and protect sustainable installations as weapon-system platforms through engineering and emergency services across the full mission spectrum.

VISION: To provide global combat support and efficient, sustainable installations worldwide using transformational business practices and innovative technologies supporting combat commanders to enable the projection of global air, space, and cyberspace power.

USAF Civil Engineers

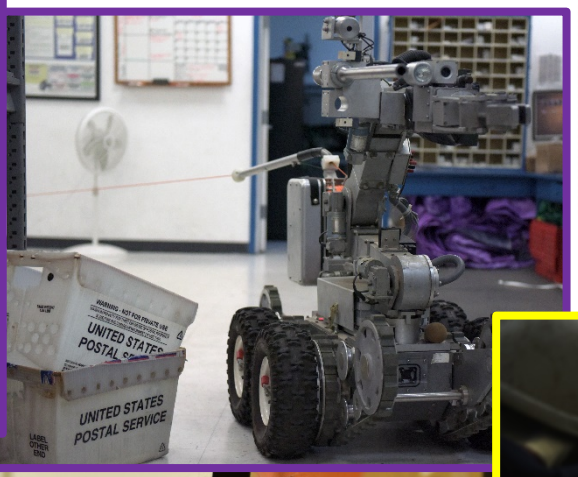
Lead the way…

Built and
Natural Infrastructure
… even Cyber

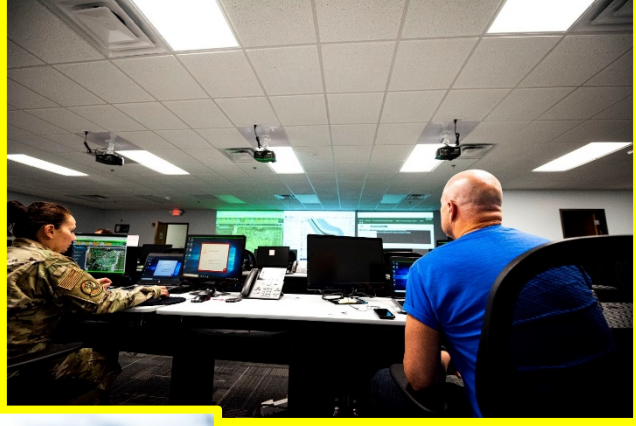
Design Build Operate
Maintain Repair
Close

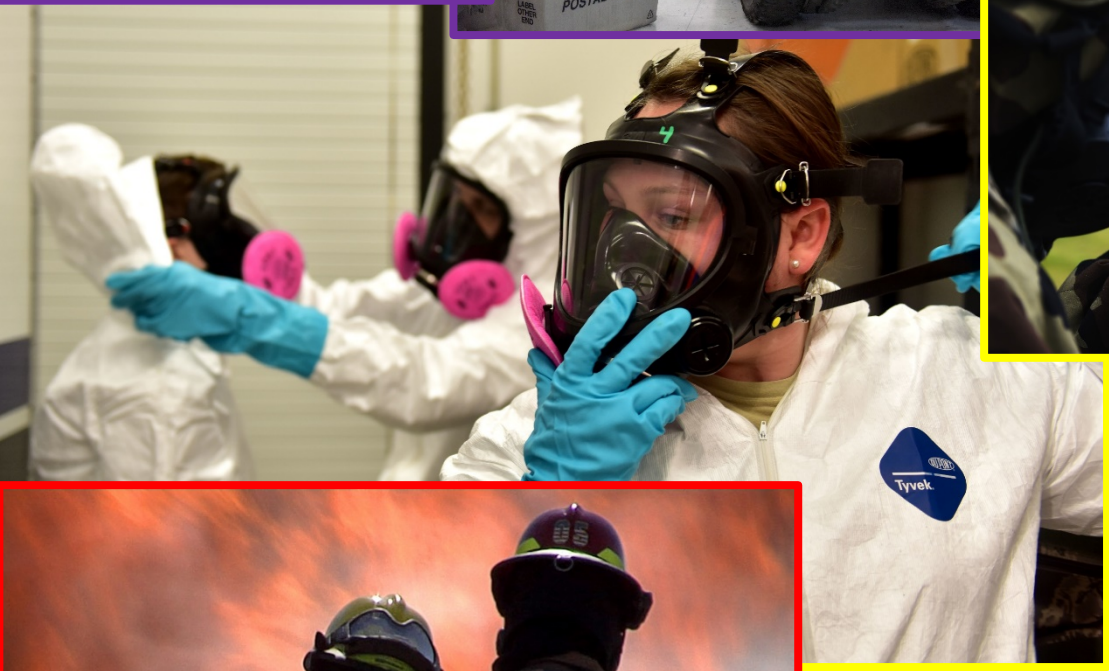
Wing
Mission Support Group
Civil Engineer Squadron
Operations Flight
Engineering Flight
Installation Mgmt Flt

Emergency Services



EOD

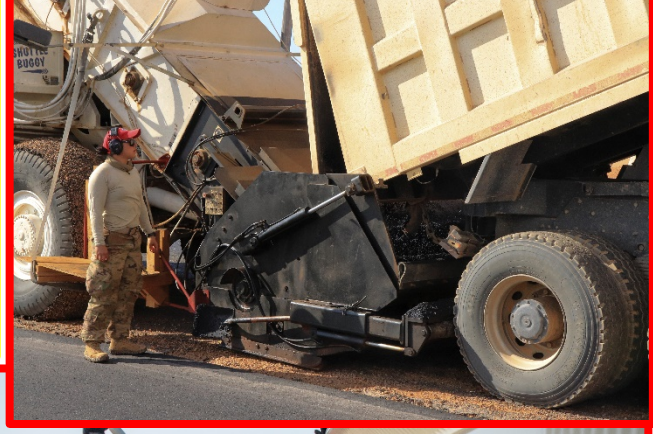




Emergency Mgmt
+
CBRN Defense

Fire & Emergency Services

Prime Base Engineer Emergency Force



Rapid Engineer Deployable Heavy Operations Repair Squadron Engineers

USCG Facility Engineering Overview

SAME NOVA/DC Chapters, 11 June 2020

CAPT Patrick Dugan, PE, PMP
Chief, Office of Civil Engineering

Mission Support

Overview

- CG Facility Portfolio
- Facility Engineering Organization
- Facility Engineer Responsibilities
- Regional Facility Engineer Assistance
- Contingency Response
- Housing Assistance Teams (New!)

"Every Coast Guard mission begins and ends at a shore facility."

Admin/Leased Spaces

Operational Bldgs

Towers & C4IT

Waterfront

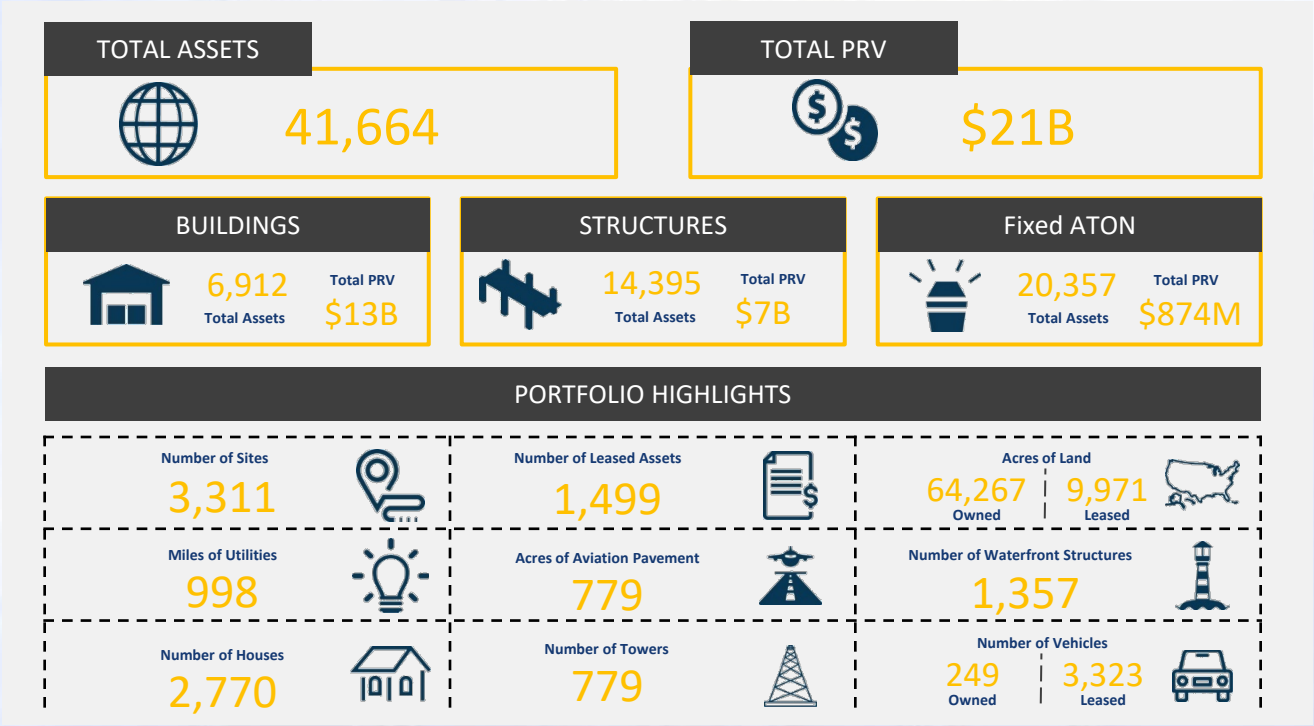
Housing & Berthing

Aviation Support

ATON

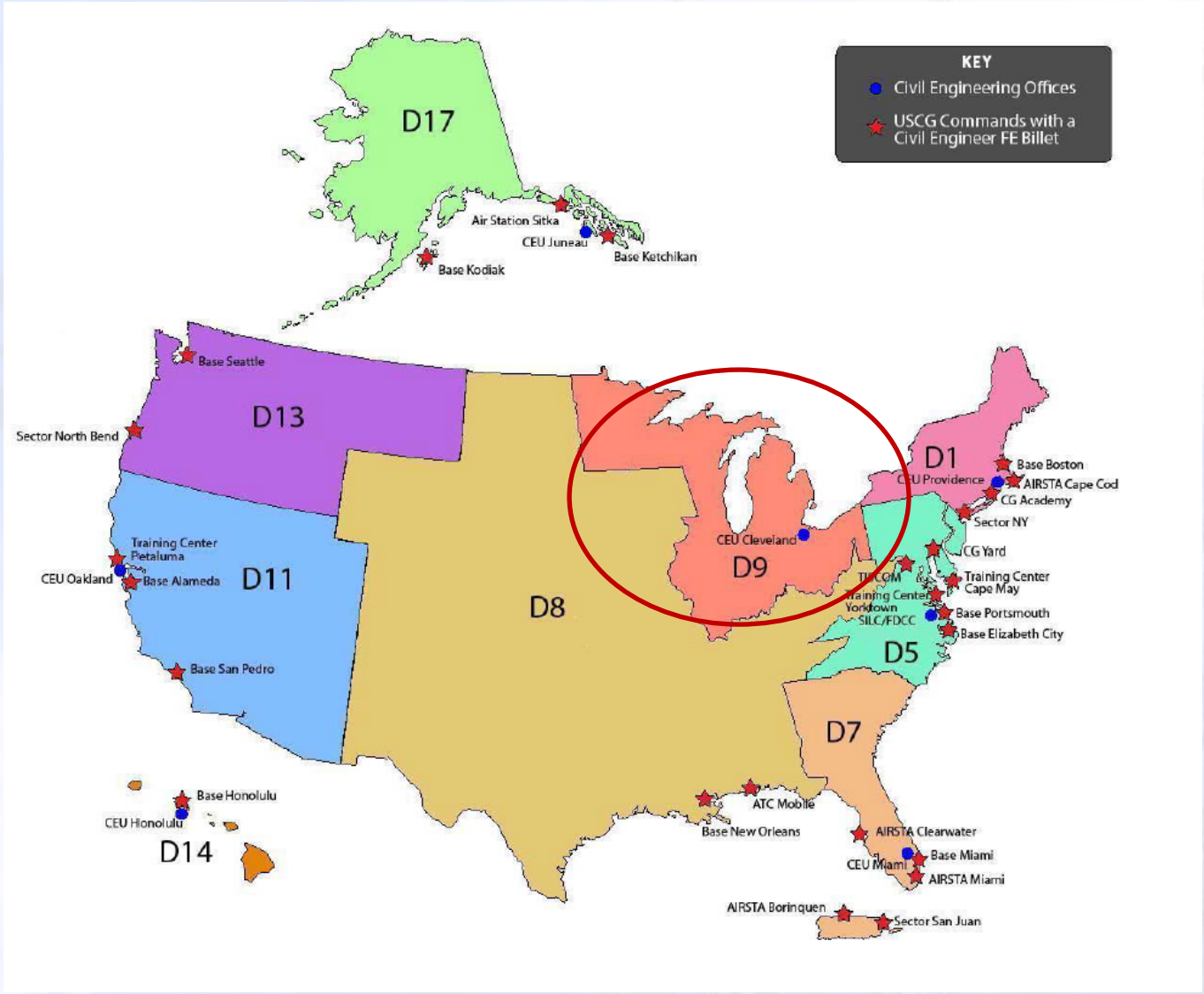
We Manage an Amazing Portfolio

Strategically manage the life cycle of over 41,000 assets valued at approximately $21B



The USCG is the largest real property owner in DHS

Facility Engineering Organization



Regional Civil Engineering:

- Providence RI
- Cleveland OH
- Miami FL
- Oakland CA
- Honolulu HI
- Juneau AK

MILCON:

- Norfolk, VA
- Seattle, WA

The CG's facility engineers are here

Great Lakes (District 9) Stations

Problem: CG Stations are boat operations and maintenance, roughly 40-50 personnel. No facility engineers assigned.

Facility Engineer Responsibilities

- Plan/execute day-to-day organizational level maintenance (includes corrective and preventive maintenance)
  - Over 130K pieces of equipment, 275K PM hours, and 310 PM FTE within CG
  - Personnel responsible for facility maintenance also responsible for boat / cutter maintenance
- Identify depot-level maintenance requirements for project development

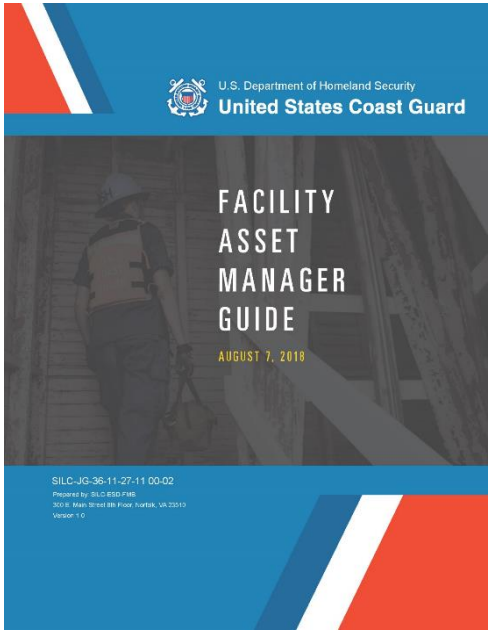
Other Facility Engineer Responsibilities

- Real Property Accountability
- Environmental Management
- Budget Development and Execution
- Government Vehicles / Yellow Gear Management
  - Includes overhead cranes, forklifts, hoists, and material/weight handling equipment
- Housing Maintenance
- Shore Energy Program
- Regional Facility Engineer Assistance
- Damage Assessment Team (DAT) Assistance

Regional Facility Engineer Assistance

- Engineering Officers (LT-CDR) in Charge of Facility Maintenance at 17 Bases and 4 Training Centers
  - Stations and smaller locations have Chief Petty Officers (E-7) or below in charge of facility maintenance
- Regional Facility Engineer Program
  - Established to provide technical assistance to smaller units
  - Broken down by each engineering officer's area of responsibility

Facility Asset Managers from regional Civil Engineering Units

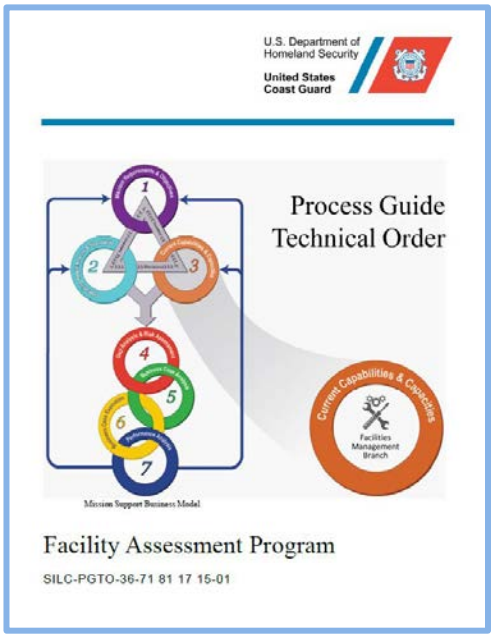


FAM Roles and Responsibilities

- Customer Service
- Facility Assessments
- Information Management
- Contingency Response

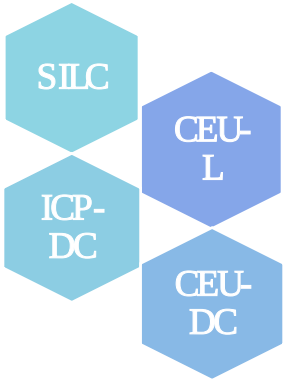
Standardized Facility Assessments

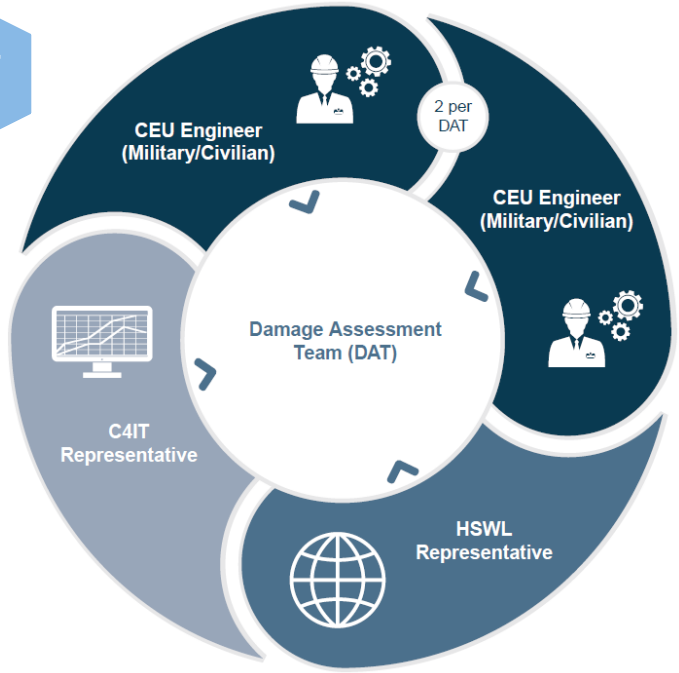
- The responsibility for every step of this PGTO is on the FAMs
- The PGTO includes a checklist of required steps, templates, and instructions for entries in SAM
- This PGTO looks toward the future for BUILDER but recognizes we currently do not have BUILDER. At this time, this report is static but the plan is to get this in SAM in the future.



0	3	7	10	15	20	23	27	30	Age
G+	G	G-	A+	A	A-	R+	R	R-	Condition Rating
100%	95%	88%	80%	71%	61%	50%	30%	10%	Percent Remaining Life

Contingency Response





- Expectations in the field
- DAT Reports and why they're important
- Supplemental estimates
- Contingency Portal

Portal Link:

https://cg.portal.uscg.mil/units/silc/silc-esd-fmb/FMB_DEV/Contingency/SitePages/ContingencyHome.aspx

Damage Assessment Team (DAT) Assistance

- Damage Assessment Team – Group of Engineers Assembled to Respond to Contingencies
  - Organic capability does not exist at each unit
- Can involve any type of contingency
  - Objective is to mitigate the impact of critical missions caused by damaged infrastructure and to aid in the restoration of the affected assets as expeditiously as possible
- Facility Engineer Role:
  - Evaluate initial mission capability and identify whether damage has occurred after contingency event
    - DATs to determine extent of damage and emergency repair requirements
  - Take immediate actions to save lives, protect property and the environment, and meet basic human needs

Housing Assistance Team (HAT)

- CG has Base housing and dispersed housing
  - Kodiak: 424 houses, O5 Facility Engineer, BOSS contract
  - Station Rio Vista CA: 5 houses, no facility engineer
- CG is standing up 3 regional teams in 2020
  - Based in Kodiak, Cape Cod, Seattle under a Facility Engineer
  - Goal is to professionalize housing maintenance across the Service
  - Deployable
- E7-E4 carpenters and electricians

Questions?

Mission Support

HQMC, I&L
Engineers and EOD Branch (LPE)

JECO/NOVA Post Military Engineering Panel

11 Jun 2020

Overall classification of this brief is: **UNCLASSIFIED**

6/17/2020
Version 1.0
POC: Mr Couser, (703) 693-9969

Agenda

- Engineers in the MAGTF
- Mission Statements
- What USMC Engineers Do
- USMC Force Design

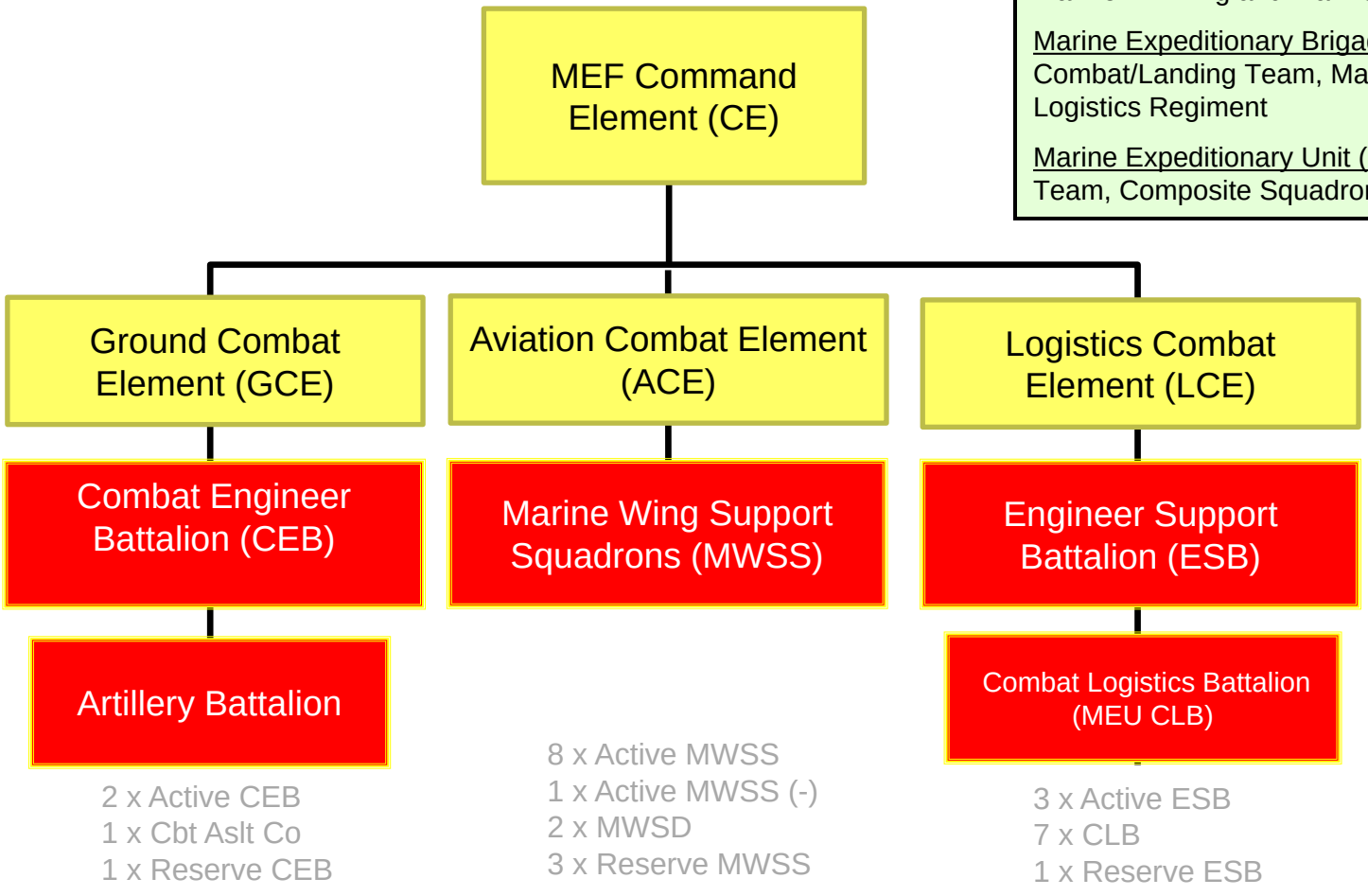
Engineers in the MAGTF

Formal MAGTFs:

Marine Expeditionary Force (MEF): Marine Division, Marine Air Wing and Marine Logistics Group

Marine Expeditionary Brigade (MEB): Regimental Combat/Landing Team, Marine Air Group, Combat Logistics Regiment

Marine Expeditionary Unit (MEU): Battalion Landing Team, Composite Squadron, Combat Logistics Battalion



- **19 Military Occupational Specialties**
- **Over 12,400 Marines (active), Over 3,400 Marines (reserve)**

Mission Statements

- Combat Engineer Battalion (CEB): Provide the Marine Division with engineer reconnaissance, mobility, counter-mobility, survivability, limited general engineering, command and control of assigned forces, and prepared to conduct provisional infantry operations in order to support ground combat operations.

- Engineer Support Battalion (ESB): Provide general engineering to the Marine Expeditionary Force (MEF) in order to enable the tactical agility and mobility of the MAGTF maneuver elements by enhancing survivability, mobility, and counter-mobility as well as tactical utilities support; and handling, storage and dispensing bulk water and bulk fuel. Additionally, provide Explosive Ordnance Disposal (EOD) support to the MEF in order to mitigate hazards associated with Unexploded Explosive Ordnance, Improvised Explosive Devices and Weapons of Mass Destruction.

- Marine Wing Support Squadron (MWSS): Provide aviation ground support to enable a Marine aircraft group (MAG) or a composite MAG to conduct expeditionary operations in ground support to a designated fixed-wing / rotary component of a Marine Aviation Combat Element (ACE), and all supporting or attached elements. This support includes: internal airfield communications, expeditionary airfield services, aircraft rescue and firefighting, aircraft and ground refueling, essential engineering services, motor transport, messing, chemical defense, security , airbase functions, and explosive ordinance disposal.

What USMC Engineers Do

- Combat Engineering
  - Mobility (Countermine, Counter Obstacles, Gap-Crossing, Combat Roads and Trails, Forward Aviation Combat Engineering)
  - Counter-mobility (Barriers, Obstacles, Area Denial)
  - Survivability (Field Fortifications, Strong Points)
  - Engineer Reconnaissance (along a route, within a zone or area)





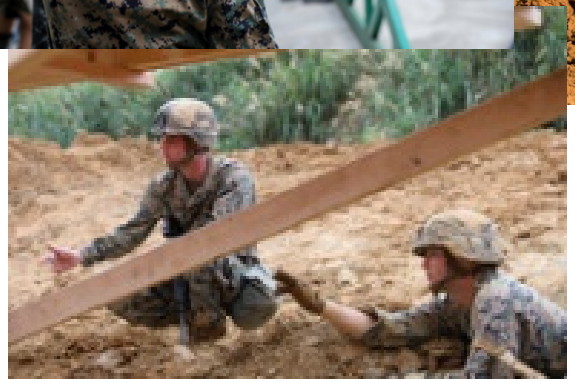




What USMC Engineers Do

- General [Expeditionary] Engineering
  - Vertical and Horizontal Construction (Initial Standard)
  - Non Standard Bridging Support
  - Follow-on Breaching and/or Area Clearance
  - Electrical Support
  - Bulk Liquid Support
  - Engineer Reconnaissance (along a route, within a zone or area)



Force Design

- Commandant's Planning Guidance identified Force Design as #1 priority
- FD Methodology – Four Phases / entering Phase 3 Experimentation
- Create a singular Marine Littoral Regiment formation as a first step
- Elimination of the requirement to size the force for a generic "2 MEB JFEO"
- Redesign of the infantry battalion
- MEU redesign recommendations
- Divestment of tanks
- Divestment of bridging companies

Questions

US Public Health Service Engineers

CAPT Nelson Mix, PE, CHMM, F. SAME

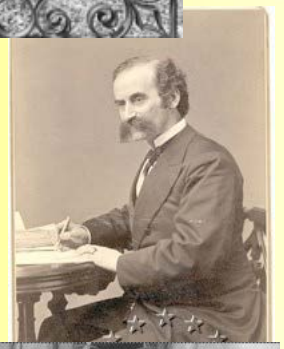
Thursday June 11, 2020

Presentation Overview

- HISTORY – The beginning, Call for engineers, Militarization, Environmental and industrial focus National responses and Deployments
- MISSION – Where we work and what we do
- WRAP UP – Engineers in Action, COSTEP Program

The Beginning

- 1798 – Marine Hospital Service established, the forerunner of the Public Health Service.
- 1871 – Dr. John Maynard, first Supervising Surgeon of the Marine Hospital Service. The position was renamed Surgeon General in 1873.
- 1889 – The United States Public Health Service Commissioned Corps was established by legislation.



Call for Engineers

- 1912 – Marine Hospital Service renamed to the Public Health Service.
- 1913 – Public Health Service retained its first engineer, Harry Letton to solve sanitation issues.
- 1914 – PHS engineers developed the first drinking water standards and launched major campaigns to decrease malaria cases.

2959 November 6, 1914

Summary.

The claim of Dr. F. F. Friedmann to have originated a specific cure for tuberculosis is not substantiated by our investigation.

The claim of Dr. F. F. Friedmann that the inoculation of persons and animals with his organism is without harmful possibilities is disproved.

BACTERIOLOGICAL STANDARD FOR DRINKING WATER.

THE STANDARD ADOPTED BY THE TREASURY DEPARTMENT FOR DRINKING WATER SUPPLIED TO THE PUBLIC BY COMMON CARRIERS IN INTERSTATE COMMERCE.

Pursuant to the recommendation of the Surgeon General, the Treasury Department on October 21, 1914, adopted a bacteriological standard for drinking water for the purpose of the administration of the Interstate Quarantine Regulations as they relate to the drinking water supplied to the public by common carriers in interstate commerce. The following is the letter of promulgation:

TREASURY DEPARTMENT,
Washington, October 21, 1914.

THE SURGEON GENERAL, PUBLIC HEALTH SERVICE,
Washington, D. C.

SIR: You are informed that, in accordance with your recommendation of October 21, 1914, the department has adopted the bacteriological standard recommended by a commission appointed by the Secretary of the Treasury January 22, 1913, to recommend standards of purity for drinking water supplied to the public by common carriers in interstate commerce.

This standard is described in the first progress report of the commission, copy of which is attached hereto.

In the future common carriers will be required to furnish water for passengers in interstate traffic which will conform to this standard.

Respectfully,

W. G. MCADOO, *Secretary.*

Militarization

•1917 – The PHS was militarized during World War I to contain outbreaks of disease in and around military installations and war industry sites.

•1918 – The PHS was authorized to recruit engineers into its reserve Commissioned Corps. In addition to addressing sanitation issues, PHS engineers expanded their role into addressing industrial hygiene issues.

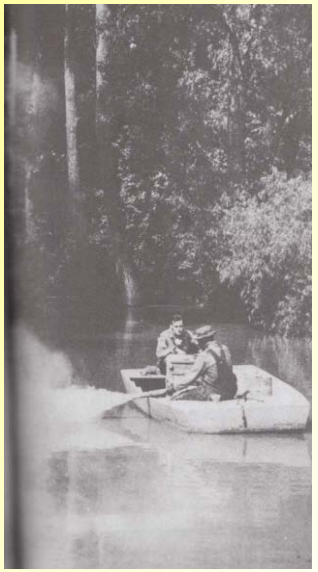
•1930 –Parker Act authorized the Public Health Service to assimilate engineers into its Regular Corps.

Militarization

•1941 – In preparation for World War II, PHS engineers were detailed to the Office of Civilian Defense to help control malaria and solve sanitation deficiencies around military facilities and critical war industries.

•1941 – 1945 –PHS engineering officers served with the U.S. Coast Guard and Army overseas.

•1946 – Communicable Disease Center, the forerunner of the Center for Disease Control and Prevention was formed focused on fighting malaria.



Environmental Focus

- 1948 – First air quality disaster investigation conducted by a PHS team of 25 engineers, doctors and scientists in Donora, Pennsylvania.
- 1953 – PHS engineers conducted investigations in all areas of health including food safety, sanitation, and radiological health
- 1955 – Indian Health Service formed to improve public health and welfare of American Indians and Alaska Natives with sanitation deficiencies

Environmental and Industrial Focus

- 1970's
  - –EPA was formed to research, monitor, set standards, and enforce regulations to ensure environmental.....
  - –NIOSH was formed to conduct research and make recommendations for the prevention of work-related injury and illness.
- 1985 – ATSDR was formed focused on minimizing health risks from exposure to hazardous substances.

Identified smelter site in Maryville, TN awarded EPA Superfund Site and received $2.6 million for clean up efforts

National Responses (recent)

2001 - Sept 11 & Anthrax

2003 – Space Shuttle Columbia

2004 - Tsunami/earthquake Indonesia

2005 - Hurricane Katrina/Rita

2010 - Earthquake Haiti, Deepwater Horizon

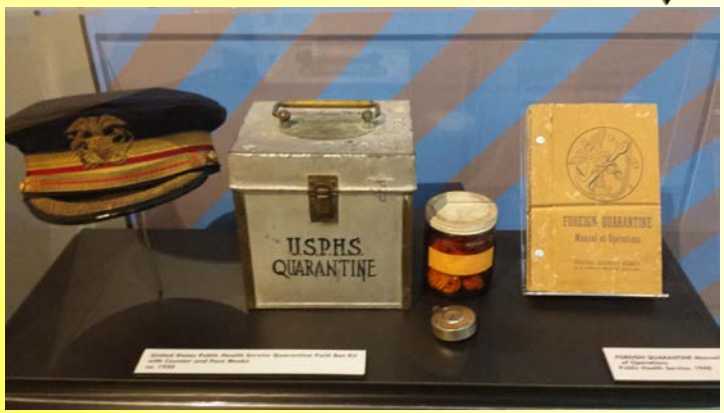
2011 - Tsunami in Japan

2012 - Hurricane Isaac and Sandy

2015 – 2016 Ebola

2017 – Record Hurricane Season

2020 – Covid 19



Deployments

Deployments:
Engineer Officers in the Commissioned Corps are deployed to serve in various capacities domestically and across the globe. Examples include:

- Haiti 2010 – Earthquake
- Hurricane Sandy 2012
- Liberia 2015-2016 – Ebola
- Hurricane Maria - 2017

Hurricane Maria 2017- Puerto Rico, image includes 4 Engineer Officers

Liberia 2015-2016, Monrovia Medical Unit construction or establishment task force

Hurricane Sandy 2012, CDR Marnell with contractors inspecting generators

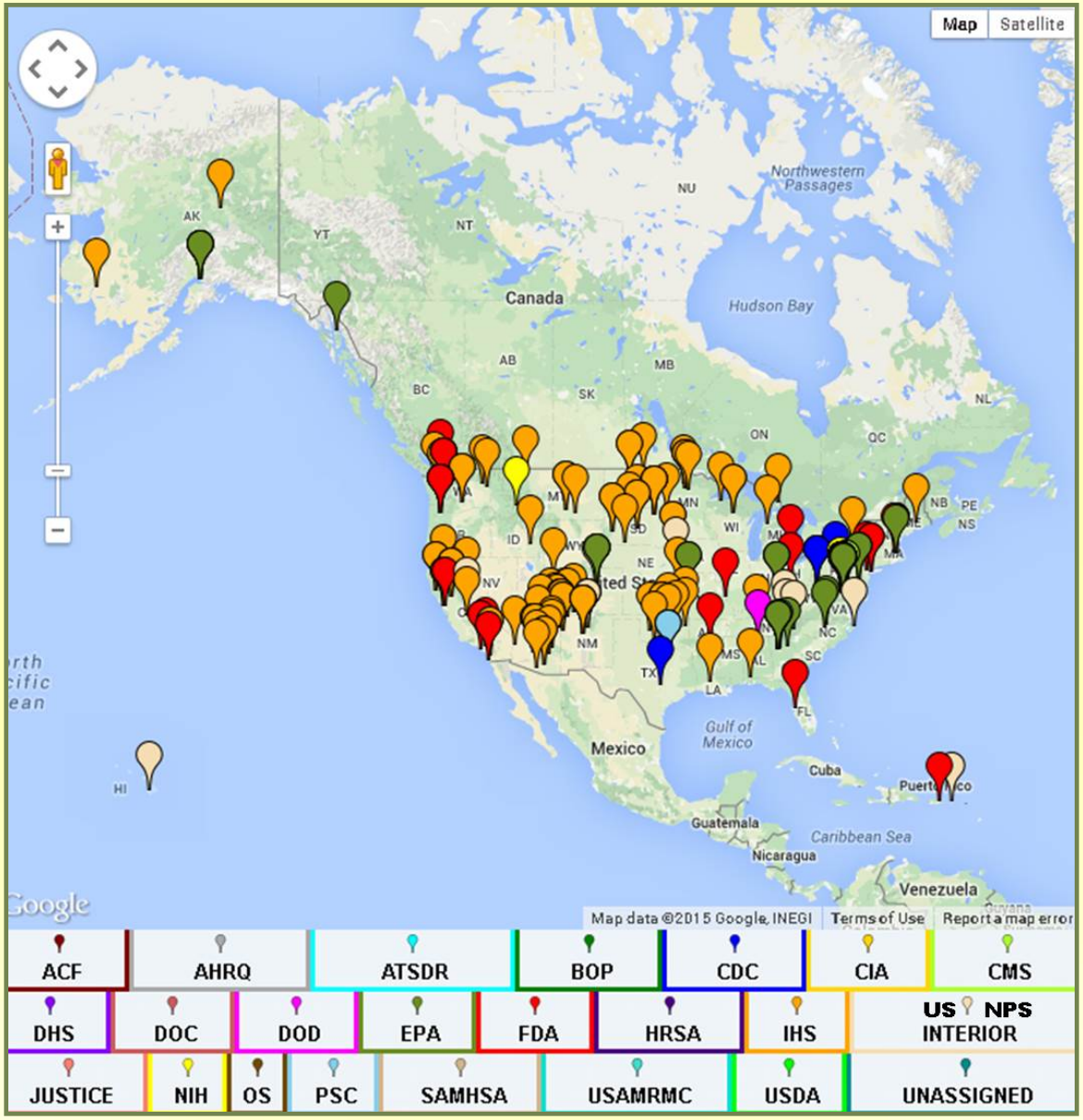
Hurricane Maria 2017 – Puerto Rico, PHS Engineers respond to support mission

Liberia 2015-2016, CDR Leo Gumapas operating a fork truck

Public Health Engineer Centennial Achievements

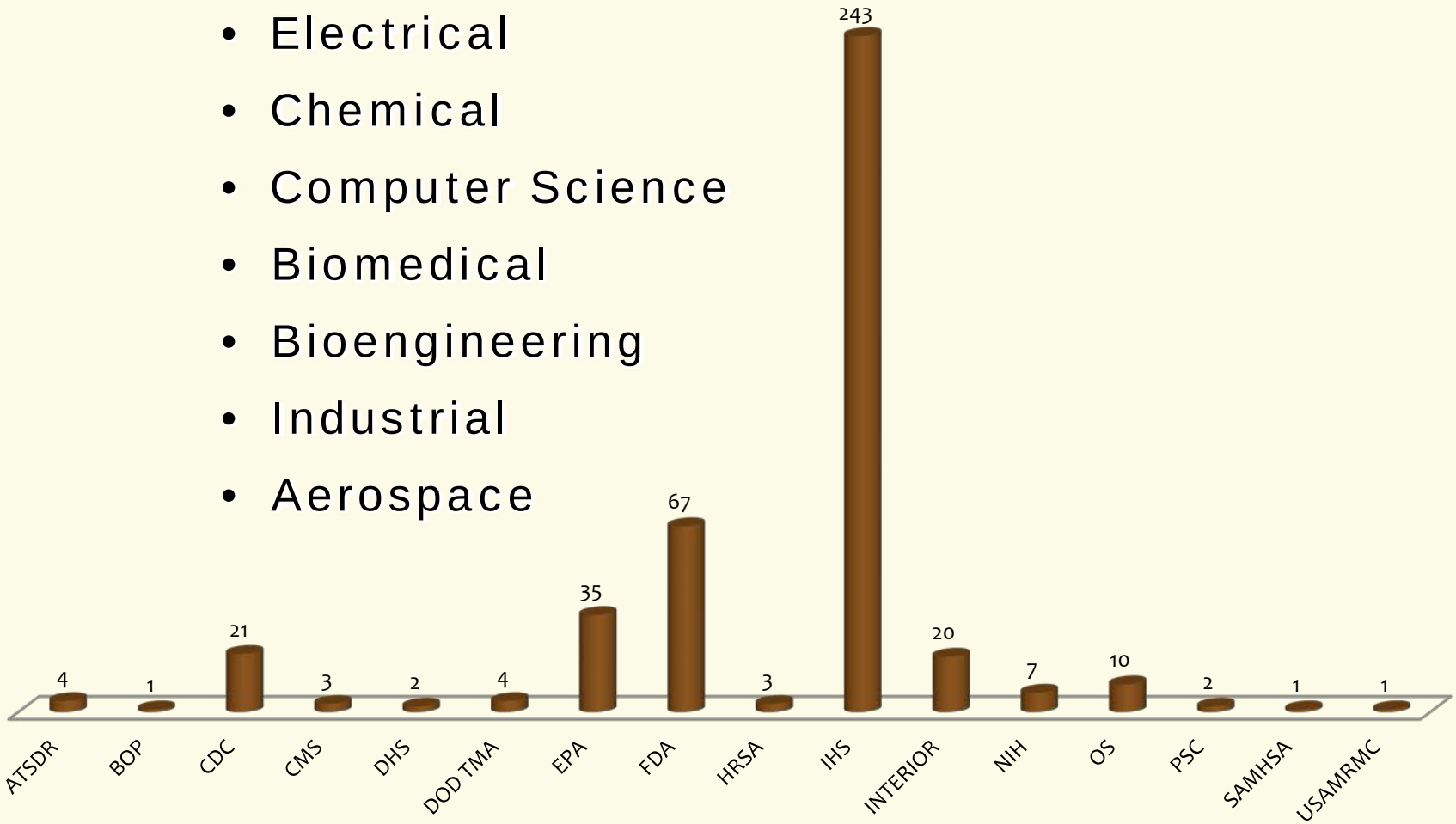
- Safe drinking water
- Control of infectious diseases
- Safer foods
- Motor vehicle safety
- Worker safety

Where Are PHS Engineers Located?



Disciplines and Where We Work

- Civil/Environmental
- Mechanical
- Electrical
- Chemical
- Computer Science
- Biomedical
- Bioengineering
- Industrial
- Aerospace



What We Do

- At CDC engineers research and lead health related engineering programs.

What We Do

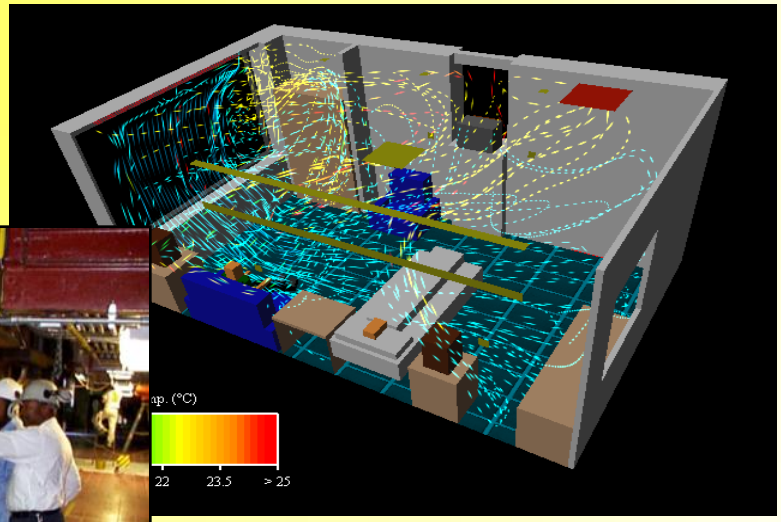
- PHS engineers at NIOSH work in many environments from the laboratory to the field.

What We Do

- PHS engineers at ATSDR assess and advise populations near Superfund sites of their environmental health risks.

What We Do

- PHS engineers at NIH build and maintain state of the art facilities and equipment used by some of our nations leading scientists.



What We Do

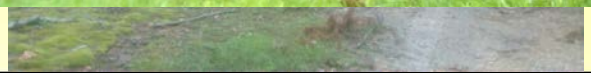
- PHS engineers at FDA insure public safety by testing new medical devices and devices that influence medical devices.
- Engineers also lead 3-D printing, inspections and other activities at the FDA.

What We Do

- PHS engineers at EPA detailed to EPA Superfund Site program work to investigate and remediate sites.
- Work to keep the water safe and clean.
- Support other EPA programs and the US Trust Territories in the Pacific.

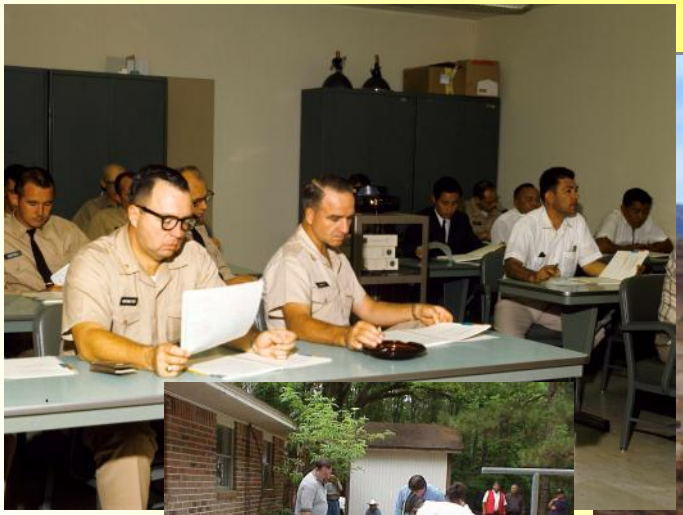
What We Do

- PHS engineers at DOI (National Park Service) provide engineering, project and construction management, and assessments of water and wastewater facilities.



What We Do

- PHS engineers at IHS Sanitation Facilities Construction Program provide engineering, project and construction management services.



IHS – Photo Gallery

IHS – Photo Gallery

IHS – Photo Gallery

USPHS Engineers in Action

USPHS Engineers In Action

At Work:

- Consulting
- Designing
- Constructing
- Testing
- Evaluating
- Analyzing
- Training
- Management

USPHS COSTEP Application Window

Engineer Junior COSTEP & Senior COSTEP

Commissioned Corps of the

United States Public Health Service

When:

Applications may be submitted

JUNE 1, 2020 – SEPTEMBER 30, 2020!

Who:

Applicants that meet the following criteria:

- Have at least a two (2) years of an engineering degree completed from an ABET-accredited baccalaureate program
- U.S. native or naturalized citizen
- Less than 44 years of age
- Meet suitability, professional, medical, physical and security requirements

Interested in becoming a USPHS COSTEP?

- *Call the Commissioned Corps Recruitment Center at 1-888-225-3302 or email costep@hhs.gov to learn more about the application process and eligibility.*
- *Visit https://www.usphs.gov/apply/apply.aspx to begin the pre-screening process and submit an application.*

For More Information and Questions about the USPHS

Nelson Mix, PE, CHMM, F. SAME

mix.nelson@epa.gov 202-564-7951