



GENERAL  
MEETING

# WELCOME

to the

**Association of the U.S. Army**

MORNING BRIEFING

(18 May 2021)

Guest Speaker:

**Colonel Daniel Holland,  
Army Capability Manager, Electronic  
Warfare**



PLATINUM (\$5,000)



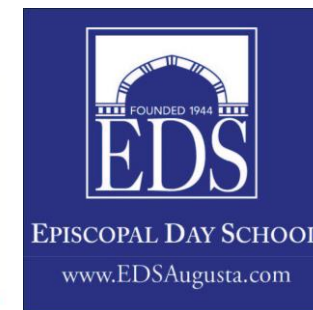
GOLD (\$2,500)



SILVER (\$1,000)



SCHOLARSHIP





# Greater Augusta-Fort Gordon CHAPTER HIGHLIGHTS

- AUSA Scholarship Deadlines
  - National Level (\$300,000) - Applications due May 31<sup>st</sup>
    - Apply online at [www.ausa.org/scholarship](http://www.ausa.org/scholarship)
  - Chapter Level (\$9,000) - Applications due June 1st
    - Open to military service members, spouses & children *(and {NEW} Veterans who are enrolled in the IBEW LU1579 Apprenticeship Training Program)*
    - *Application located on Facebook and Chapter Website*
- AUSA Golf Tournament (Sep 10, 2021)
  - Sponsorship Opportunities
  - Register to Play.....or..... Sponsor a Military Team



# Greater Augusta-Fort Gordon CHAPTER HIGHLIGHTS

## CCOE Best Warrior Competition & Drill Sergeant of the Year Winners

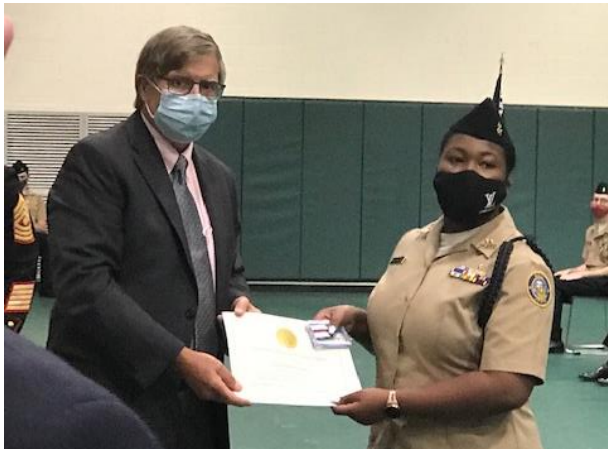




# Greater Augusta-Fort Gordon CHAPTER HIGHLIGHTS

- JROTC Award winners:

- Westside HS- Cadet Kabrya Berry
- Harlem HS- Cadet 1SG Joseph Lane
- Greenbrier HS- Cadet Ensign Alexander Dotson and Cadet PO First Class Savannah Koback
- Jenkins County HS- CDT LTC Collin Arms and Cadet MAJ Logan Saxon
- Grovetown HS- CDT LTC Sonia Tegang and CDT CPT Daniela Banuel
- Metter HS- CDT Jamarion Hobbs
- Silver Bluff HS- CDT Kaylee Moore and CDT Robert Murphy
- Aiken HS- CDT Lydia McGhee and CDT Kasbie Tolliver-Jones
- Richmond Academy- CDT Nichole Irwin and CDT Kahnye Greenlee





Please Welcome

***Colonel Daniel Holland***

**Army Capability Manager for  
Electronic Warfare,  
US Army Future's Command**







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# Electromagnetic Warfare 101

COL Dan Holland

*Army Capability Manager – Electromagnetic Warfare*





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# Part 1 – Some High School Physics





# Some necessary physics.... (1 of 3)



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## Types of Energy

### Kinetic Energy

- Thermal
- Sound
- Electrical
- Motion
- **Radiant**

*Motion*

### Potential Energy

- Chemical
- Mechanical
- Nuclear
- Gravitational

*Storage, position*

### ***Kinetic (Army)***

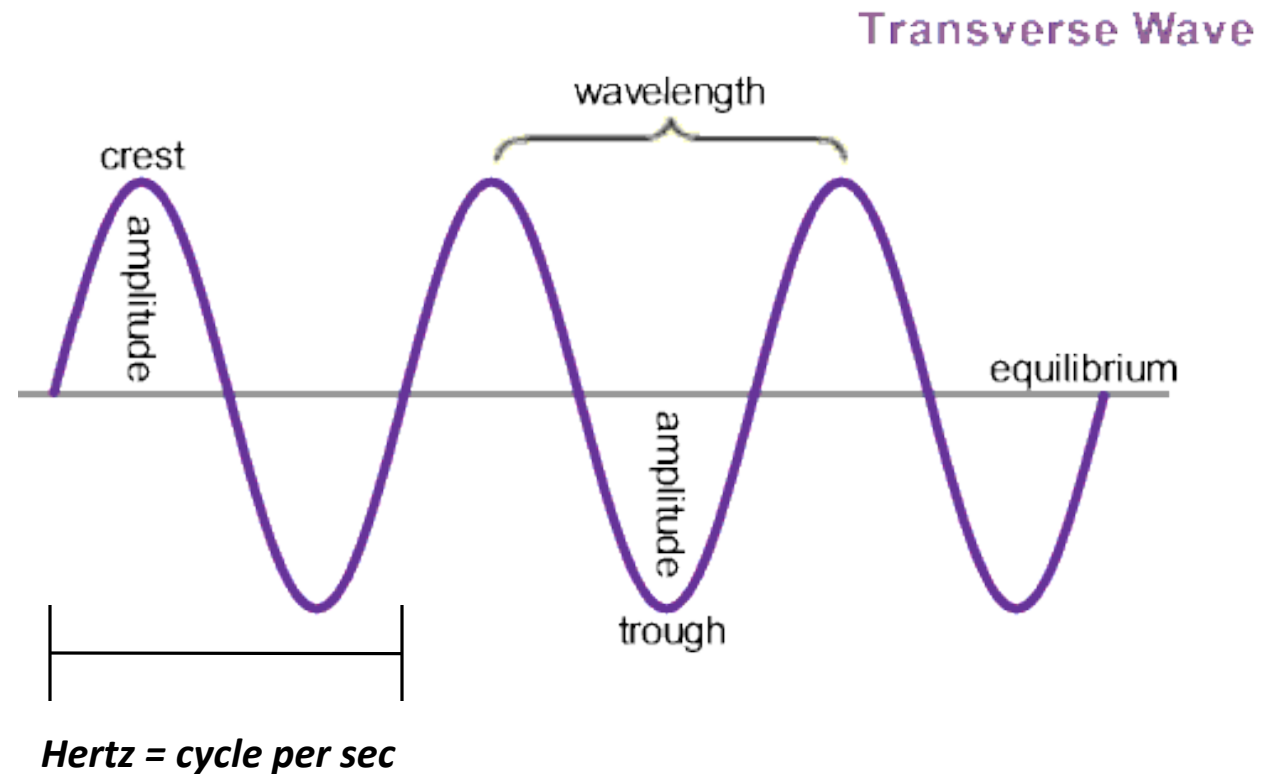
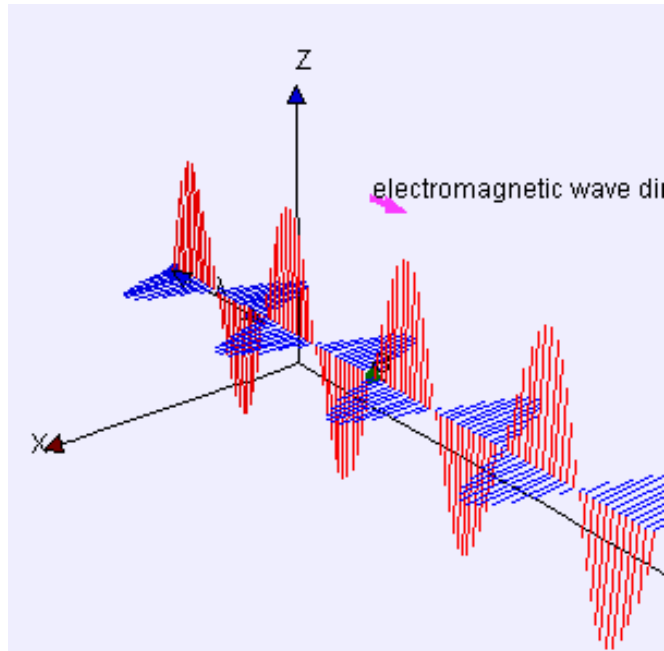
- Lethal ?
- Heat
- Blast
- Fragmentation

### ***Non-kinetic (Army)***

- Non-lethal ?
- Information?



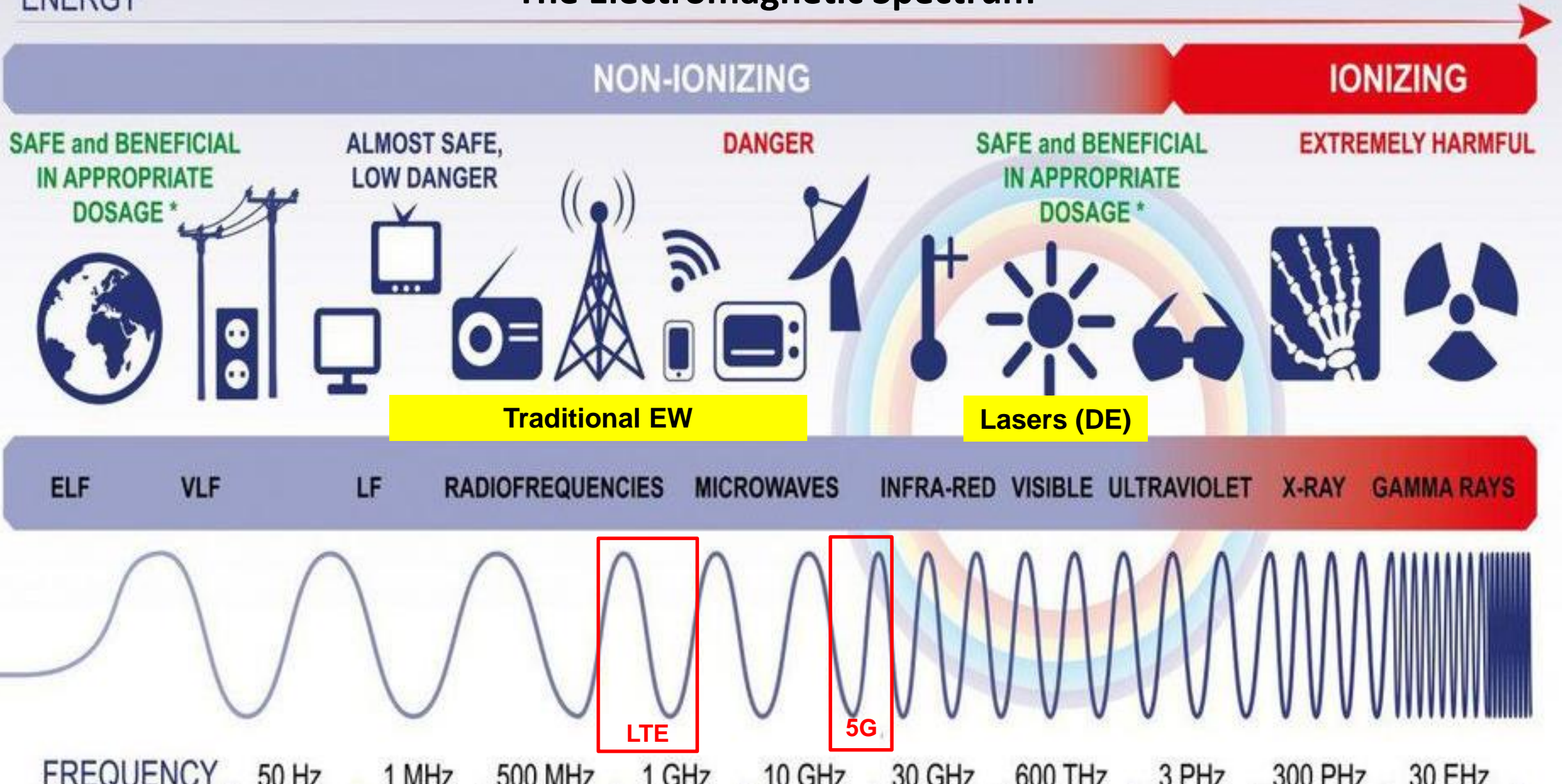
## Radiant Energy and Transverse Waves “Electro Magnetic”





ENERGY

## The Electromagnetic Spectrum







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## Part 2 – What is EW?





# What is Electronic Warfare? (1 of 2)



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- Detecting, identifying, and locating the enemy transmitters on the battlefield by their radio frequency signals (electromagnetic energy)
  - communications
  - RADARs (Radio Detection And Ranging)
- Attacking the enemy receiver with electromagnetic energy



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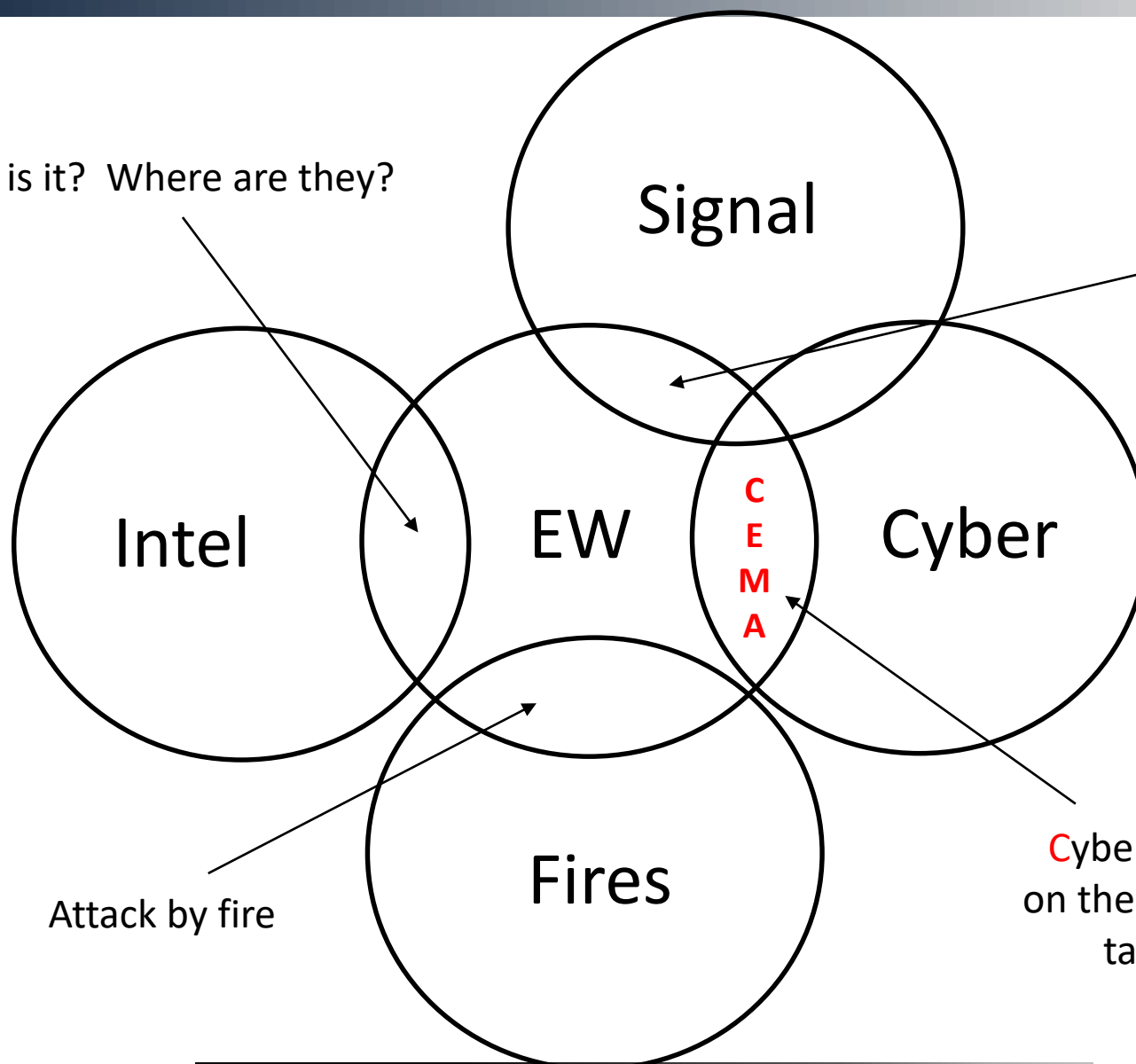


# What is Electronic Warfare? (2 of 2)



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Who is it? Where are they?



Which freqs? Interference?

Attack by fire

Cyber-ElectroMagnetic Activities –  
on the battlefield, computers (radios)  
talk to each other wirelessly

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## EW's Organizational Journey within the Army 1945-2021

### Part 3







# EW's Organizational Journey within the 1945-2021



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Signal Corps



97<sup>th</sup> Signal Batt

- In WWII, the Army's Signal Security Agency (SSA) conducted radio countermeasures and radar deception through a newly formed unit called the Protective Security Branch.
- 1945 – Signal Security Agency separated from the Signal Corps and reorganized as the Army Security Agency (ASA) - placed under the leadership of the Director of Military Intelligence.
- Most of ASA's work centered on breaking codes, but it also included the location of enemy emitters using direction finders.
- The Signal Corps retained responsibility for noncommunication EW missions – ELINT techniques and countermeasures against enemy communications and radar.
- One of the few Signal Corps units dedicated to EW was the 97<sup>th</sup> Signal Battalion at Fort Riley, KS.
- The unit's mission was to radiate false, but plausibly realistic signals in order to mislead the enemy.
- The division of EW roles between ASA and Signal Corps confused and inhibited the overall EW mission.
- 1955 – ASA assumed control of Electronic Intelligence (ELINT) and communications Electronic Countermeasures (ECM) from the Signal Corps.



Army Security  
Agency

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# EW's Organizational Journey within the 1945-2021



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Signal Corps

- Through the early 1960s, EW responsibility continued to be split between the Chief Signal Officer and the Chief of the Army Security Agency (ASA).
- Although ASA was now responsible for the ECM function, including intelligence acquisition, the Chief Signal Officer handled ECCM.
- 1962 – ASA acquired the non-communications ECM mission from the Signal Corps.
- 1963 – ASA acquired full responsibility for Army EW, but used it almost exclusively for SIGINT and direction finding.



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# EW's Organizational Journey within the 1945-2021



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- 1976 – A new type of unit emerged: the **Combat Electronic Warfare Intelligence**, or **CEWI** Battalion
  - The first was the 522d MI (CEWI) Battalion at Fort Hood, TX, assigned to the 2d Armored Division.
- 1977 – ASA was redesignated the Army Intelligence and Security Command (INSCOM)



Army Security Agency



INSCOM



522d MI CEWI  
Battalion

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# EW's Organizational Journey within the 1945-2021



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## Army EW Organization in the 1980s and 1990s

2LT Kelly Knitter ~1994



- 1989 – After Berlin Wall came down, EW became less of a priority within the Army
- 1991 – Army CEWI units operated in Desert Storm in 1991 in aircraft and land operations, but this was the last main utilization for some time
- 1990s – With the end of the Cold War, the Army's EW capability slowly eroded and became ineffective
- Military Intelligence community trained its last dedicated EW Officer in the 1990s
  - Leadership accepted risk
  - No replacement for aging electronic warfare/electronic attack systems
  - Army's participation in stability operations in 1990s did not require EW support



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# EW's Organizational Journey within the 1945-2021



## Army EW Begins to Change After 9/11

The terrorist attacks on September 11, 2001 led to:

- Operation Enduring Freedom (OEF) in Afghanistan - October 2001
- Operation Iraqi Freedom (OIF) - March 2003

These conflicts resulted in a renewed need for EW in the Army



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# EW's Organizational Journey within the 1945-2021



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## Improvised Explosive Devices

During OEF and OIF:

- Ground forces encountered the Remote Controlled Improvised Explosive Device (RCIED) for the first time
- Soldiers and Marines had no mobile electronic countermeasures capable of disrupting RC triggers by blocking the radio signal

RCIED quickly became single most effective weapon against US forces

Army had to rely on Air Force and Navy EW to do the majority of EW:

- By May 2005, over 7,700 casualties occurred from RCIEDs
- Army leadership looked to revive its own EW capability



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# EW's Organizational Journey within the 1945-2021



## Counter RCIED Electronic Warfare (CREW)

DOD called the anti-RCIED program "CREW"

- Early jammers became outdated quickly
- Every time a countermeasure proved successful, the enemy quickly adapted and outstripped it
- The Pentagon increased efforts and funding

2006: Vehicle mounted Warlock Duke introduced with success

2006-2007: Portable backpack jammers such as THOR increase in number

Ultimately, CREW is successful in forcing enemy to use less advanced means and remote controlled bomb use declined



Warlock Green



Warlock Duke



THOR  
Backpack  
Jammer

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# EW's Organizational Journey within the 1945-2021



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## The New Army EW Career Field & School



- 2003 – Combined Arms Center (CAC) designated proponent for EW
- 2004 – Fires Center of Excellence, Ft. Sill, OK designated new EW School location
  - Focusing on Electronic Attack (EA)
- 2006 – First pilot course for Army Operational EW is held
- 2009 – Army approved 29 series career management field
  - **Functional Area (FA) 29 – EW Officer**
  - **290A – EW Technician (Warrant Officer)**
  - **29E – EW Specialist (NCO)**

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# EW's Organizational Journey within the 1945-2021



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## Electronic Warfare Insignia

Approved – 26 October 2011

The Electronic Warfare insignia worn on the collar of the Army Service Uniform



Warrant Officer



NCO

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# EW's Organizational Journey within the 1945-2021



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## EW Transition to Cyber (2014-2018)

Jan 2014: Army announced transition of EW functional area to Cyber

2016: EW School at Ft. Sill becomes subordinate to Cyber School

- Now called "EW College"

**1 October 2018: EW officially became part of Cyber Branch**



- 17B – EW Officer
- 170B – EW Technician (Warrant Officer)
- 17E – EW Specialist

- 2020/2021 – EW training consolidated at Fort Gordon.



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# ARCYBER Ground Breaking & Construction



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Army to release more mobile apps

- Page 7

Friday, December 2, 2016 | Vol. 2, No. 48

Published for the Department of Defense and the Fort Gordon community

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## BREAKING GROUND

## Separation can be tough at holidays

BY LAURA LEVERING  
*Fort Gordon Public Affairs Office*

The holiday season is supposed to be a time filled with family gatherings, but for some, that just isn't possible. Many military families are separated from loved ones due to distance caused by deployments or training, making the holidays a tough time to endure.

To help ease the pain of separation, Hearts Apart and Mobilization and Deployment are hosting a holiday workshop for spouses separated from their service members. Hearts Apart

The workshop takes place Tuesday at the Family Outreach Center from noon to 2:30 p.m.

"We definitely want to reach out to family members whose service members are going to be gone during the holidays just to let them know that we understand how difficult it is to be alone during the holidays," said Bernadette White, mobilization and deployment specialist.

Guests will be treated to a culinary demonstration by Michelle Biron, Food and Beverage director for the Directorate

November 2016



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U.S. ARMY CYBER COMMAND  
**FORTITUDE HALL**  
BUILDING DEDICATION

Fort Gordon, Georgia  
September 3, 2020  
10 AM  
**FG  
GA**

# ARCYBER Fortitude Hall Dedication – Sept 2020



## FORT GORDON News

PATRIOT DAY  
Today

HOUSING TOWN HALL  
Thursday, 6-7 p.m., Fort Gordon FB

INSIDE:  
Commentary... 2 Chapters... 4

Friday, September 11, 2020 Vol. 6, No. 35

Published for the Department of Defense and the Fort Gordon Community

home.army.mil/gordon

## What the payroll tax deferral means for Soldiers

Thomas Drilling  
Army News Area 2

WASHINGTON — With plans to get payroll taxes on ice for the rest of the year, Army finance officials warn Soldiers the tax breaks are temporary and will be collected during January.

In the top-down kind of damage to COVID-19 pandemic, a presidential executive order was issued last month, followed by guidance from the Internal Revenue Service a few weeks later to temporarily defer Social Security taxes.

Effective January 1, 2020, the federal government will defer the withholding of payroll taxes for the remainder of the year for COVID-19 pandemic Soldiers. Soldiers will be responsible to pay their deferred taxes between January and April 15, said Larry Lock, chief of Compensation and Establish-

ment for the Army's IG-1 office.

The federal government's intent is to defer the U.S. federal payroll tax and part of the President Franklin D. Roosevelt's New Deal Social Security program. It's essential to protect funds for American workers with every paycheck taking 2 percent of wages for Social Security.

SSICA has a special government rule that, which, pays out to retired Soldiers and eligible beneficiaries. Soldiers must make sure that money goes back into the Social Security program, otherwise, a lock will be put on the Social Security benefits.

What does this mean for the Soldiers? For example, the emergency deduction wages under the federal COVID-19 pandemic, soldiers who have monthly benefits have \$5,000 per year will be deferred. If the monthly rate of pay is at or above this threshold, the Social Security tax withholding will not be affected by the temporary deferral. This threshold



Source: www.army.mil

was established by the Department of Treasury. Soldiers with monthly wages under the threshold are not eligible to opt-out of the deferral, which will happen automatically. The revenue impact of the deferred Soldiers' taxes is for grade O-1 through O-4, grade O-5 with less than 10 years of service, grade O-6 with less than 14

years of service, and all warrant officers from O-1 through O-4.

ES Soldiers' separate or retire in 2020 before Social Security taxes are collected in 2021, they will still be responsible for the tax system, Lock said.

The best way to plan for new Soldiers, Lock said, First, Soldiers need to understand the Leave and Earning Statement, or LES, in the Deductions section for SSCA SOCIAL SECURITY taxes. Once they do, they can identify the amount deferred for the applicable pay period, he said.

After that, Soldiers should check their pay stubs during the period of January through April 2021. The deferral will be liability until the administration by the Defense Finance and Accounting Service.

Armed information becomes available, it will be posted on <https://www.army.mil/press/social-security-deferral>.



2020, several members of the U.S. Army Cyber Command and the U.S. Army Cyber School, chief of the Transformation Cell, briefs a group of military and political dignitaries at Signal Towers during a visit to Fort Gordon on Sept. 3. Among those in attendance was Under Secretary of the Army, Hon. James C. McPherson.

## 'Tremendous things are on the horizon'

Laura Levering  
Fort Gordon Public Affairs Office

Several national military and political dignitaries received a firsthand look at growth and progress being made at Fort Gordon, during a visit on Sept. 3. Among those who traveled to witness Army Cyber Command Headquarters Fortitude Hall dedication ceremony was Under Secretary of the Army, Hon. James C. McPherson.

At the conclusion of his visit, McPherson stated Lt. Gen. Stephen G. Fogarty, ARCYBER commander, and Maj. Gen. Will S. Jennings, U.S. Army Cyber Center of Excellence, and Fort G. Gordon commander, general, for an exclusive media broadcast by way of a teleconference.

In the opening comments, McPherson told reporters what was significant to him was his experience at Fort G. Gordon with regard to ARCYBER and how it is leading the way in the future and only the Army has a national community presence.

"There are tremendous things on the horizon for all those cyber in the Army," he said, in part due to the Army's partnership with the Georgia Cyber Center in Augusta.

By relocating ARCYBER's headquarters



Photo: Fort G. Gordon

Lt. Gen. Stephen G. Fogarty, commander of U.S. Army Cyber Command (left), ARCYBER deputy to the commander, general Ben Proctor (center), and ARCYBER senior enlisted leader Command Sgt. Maj. Sheri D. Lyon unveil a plaque dedicating Fortitude Hall, the command's brand-new headquarters at Fort Gordon on Sept. 3.

## Dedication heralds arrival of Army Cyber operations

William Riche  
U.S. Army Cyber Command

Army Cyber Command (ARCYBER) dedicated its new headquarters on a rainy day at Fort Gordon on Sept. 3.

ARCYBER's new headquarters at Fort G. Gordon is the centerpiece of the Army's cyber operations and will serve as the command's new headquarters.

dedicated and other information, demands, the operational and logistical support for the command's strategic decisions and the threat to the defense, are in the planned assault.

The ARCYBER has 136,000 annual first-class, with a core of 10,000 first-class, the number of approximately 100,000, as the number of plans to begin 2023 when Army cy-

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The ARCYBER has 136,000 annual first-class, with a core of 10,000 first-class, the number of approximately 100,000, as the number of plans to begin 2023 when Army cy-



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## Part 4 – ACM-EW (What we do)





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## ACM-EW (What we do)



### The Pentagon's 3 Processes

- Planning, Programming, Budgeting, Execution (PPBE) Process
  - *Figuring out how much money we have*
- Acquisition Process
  - *Spending the money*
- Joint Capabilities Integration and Development System (JCIDS)
  - *Defining what we buy with the money*

ACM-EW writes Army EW requirements

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# Modernized Army EW – TLS

## Terrestrial Layer System (TLS)

### MISSION

Terrestrial Layer System is the Army's next generation tactical vehicle based system that delivers an integrated suite of Signals Intelligence (SIGINT), Electronic Warfare (EW), and Cyberspace Operations overmatch capabilities to enable the Joint All Domain Operational (JADO) Capable Force. When fielded, TLS will be assigned to the Multi-functional Platoon and the EW Platoon organic to the Military Intelligence (MI) Company (MICO) in the Brigade Combat Team (BCT). TLS will provide the warfighter at multiple echelons critical situational awareness of the enemy through detection, identification, location, exploitation, and disruption of enemy signals of interest.

### DESCRIPTION

The convergence of SIGINT, EW, and Cyber is represented in the Army's Terrestrial Layer System. Improved versions of tactical SIGINT, new EW and Cyber capabilities, Modular Open Systems Architecture, and a Micro Services Computing Environment combine to create the Army's next generation state of the art ground based Cyber Electromagnetic Activity System.

### PROGRAM STATUS

- MDD achieved in June 2019
- Milestone A achieved in 2QFY20
- 3QFY20 OTA Prototype, Integration, and Assessments began

### PROJECTED ACTIVITIES

- First Unit Equipped (FUE) planned for FY22
- 4QFY21 Up-select winning vendor from the OTA competitive rapid prototyping effort

OEM/Contractor: Digital Receiver Technology, Inc through Consortium Management Group, Inc (CMG)

Contract Number: W15QKN-17-9-5555; OTA: C5-19-2005 1A

OEM/Contractor: Lockheed Martin through CMG Contract Number: W15QKN-17-9-5555; OTA: C5-19-2005 1B



Rendering courtesy of Digital Receiver Technology, Inc.,  
a subsidiary of The Boeing Company



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# Modernized Army EW – MFEW



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ACAT III | Engineering, Manufacturing and Development

## Multifunction Electronic Warfare – Air Large (MFEW-AL)

### MISSION

Multi-Function Electronic Warfare–Air Large (MFEW-AL) is a capability set that will provide Brigade Combat Team (BCT) Commanders with an organic airborne offensive Electronic Warfare (EW) capability.

### DESCRIPTION

MFEW-AL is a single, self-contained, airborne electronic warfare pod which will be mounted onto Gray Eagle (GE) Unmanned Aircraft Systems (UAS). MFEW-AL is based on Software-Defined Radio (SDR) /Digital Radio Frequency Memory (DRFM) architecture, which will utilize both pre-programmed signal characteristic information and real-time battlefield information to complete the intended mission. MFEW-AL will be interoperable with EWPMPT to support command and control; remote operations and dynamic tasking.

### PROGRAM STATUS

- FY18: Joint Requirements Oversight Council (JROC) CDD Approved
- FY18: MFEW-AL tailored Milestone B approved
- FY18: Phase 1 OTA awarded for prototype system development
- FY20: Phase 2 OTA awarded for Engineering & Manufacturing Development

### PROJECTED ACTIVITIES

- FY21: Milestone C
- FY22: Limited User Test (LUT) on Gray Eagle
- FY22: Production Contract Award

OEM/Contractor: Lockheed Martin Rotary and Mission Systems (LM RMS) through CMG  
Contract: W15QKN-17-9-5555; OTA: C5-18-1001C





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## Counter RCIED Electronic Warfare (CREW) / Duke

### MISSION

Provide Counter-Radio Controlled Improvised Explosive Device (C-RCIED) Electronic Warfare (CREW) technology to protect ground forces operating in convoys, single vehicle operations, or fixed locations by blocking or jamming Radio Frequency (RF) signals intended to detonate Improvised Explosive Devices (IEDs).

### DESCRIPTION

The Duke family of systems supports coalition operations in U.S. theatres of operations and other locations worldwide. CREW Duke enables spectrum dominance to protect vehicle convoys against the radio-controlled initiation of roadside bombs. CREW Duke is used in both mounted and fixed site configurations as well as for other non-CREW applications to include GATOR V3 and Sabre Fury. The Duke V5 is the RESET version of the legacy Duke V3 Program of Record that has increased jamming effectiveness against certain threats and improves reliability and maintainability.

### PROGRAM STATUS

- FY10: CREW-2 Duke designated as ACAT II Program of Record
- FY12: Duke V3 Sustainment transitioned to CECOM LRC and SEC
- FY13: HQDA G3/5/7 approved Directed Requirement for DTI Assets for D&T
- FY15: CREW-2 CPD Update validated by HQDA G-3
- FY16: CECOM Commanding General (CG) approved Full Materiel Release (FMR)
- FY20: HQDA EXORD 117-20
- FY21: Duke Family of Systems Sustainment Contract Delivery Order 1 Awarded

### PROJECTED ACTIVITIES

- FY22: Duke Family of Systems Task Order 2

OEM: SRC, Inc. | Contractor (FSR/Sustainment): GDIT GS00Q140ADU312; Task Order: GSQ0016AJ0035

Contractor (OEM Support): SRCtec, LLC W56KGY21D0002



ACAT II | Operations and Support





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# Questions?



# **CALENDAR of EVENTS:**



## **Monthly Breakfast & Briefing:**

- 15 Jun – Return to Gordon Club (MTF)

## **Events:**

- 10 Sep – AUSA Local Chapter Golf Tournament
- 11-13 Oct – AUSA Annual Meeting (Washington DC)

**Thank you for  
joining us today!**

**Stay Safe and have  
a wonderful  
month!**





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**SILVER**

**AGAIN,**

*Thank You*



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[Ausa.org.augusta](http://Ausa.org.augusta)