



U.S. UNCLASSIFIED
REL NATO, GCTF, ISAF, AB
For Official Use Only



CALL Lesson of the Day

SUBJECT: Electronic Warfare is a new field, it is imperative that we provide insights, and share lessons learned to ensure that we provide the Warfighter with the best support possible.

Theater: Afghanistan

Date: 22 August 2012

1. **Observation:** Electronic Warfare (EW) is a rapidly growing and highly demanded function of the modern war-fighting force. Electronic warfare will be essential to any fight the U.S. enters over the next decade.

CJTF-1, RC-E Participants:

1ID EW Cell (Bagram):

CW3 John Koch-CJ3 EW Technician

John.koch@afghan.swa.army.mil

504th Parachute Infantry Regiment (TF Devil):

MAJ Melan 'Sal' Salas-BDE EWO

SCW2 Benjamin Holladay-BDE EW Technician

SSG James Angel Colon-1-504th PIR EW

SFC Franklin Hartley-2504th PIR EW

SFC Sean Froslic-3-73CAV EW

4/25th Airborne Brigade Combat Team (TF Spartan):

CPT Michael Towner-BDE EWO

Reviewed by:

LTC Samuel Saine, 1ID FSCOORD

LTC Carlos Gonzalez, 1ID EWO

2. **Discussion:**

Electronic Warfare (EW) is a rapidly growing and highly demanded function of the modern war-fighting force. Electronic warfare will be essential to any fight the U.S. enters over the next decade, and the U.S. Army will require EW capabilities to support its operation needs. As a new field, it is imperative that we provide insights, and share lessons learned to ensure that we provide the Warfighter with the best support possible.

In recent years, the U.S. Army rapidly built an EW program to meet a growing demand. The Army created EW staff positions for officers and non-commissioned

U.S. UNCLASSIFIED
REL NATO, GCTF, ISAF, ABCA
For Official Use Only



U.S. UNCLASSIFIED
REL NATO, GCTF, ISAF, AB
For Official Use Only



CALL Lesson of the Day

officers, and relied on sister services for assistance to employ Electronic Attack assets and the execution of the EW mission. As the Counter-Insurgency fight in Iraq and Afghanistan comes to a close, in which the Army has spend so much time and resources to train EW personnel and develop useful EW equipment, it is time to look to the future and prepare the next threat.

The Army EW mission requirements have beyond the principal staff officer function. It had become apparent that we need to expand our EW program. On numerous occasions, our sister services have not been able to support combat operations with Electronic Fires, due to the lack of Airborne Electronic Attacks assets available to support the Army's mission requirements. While our sister services, specifically the Air Force and Navy, have a robust EW program, their operational focus is different from the Army.

In the future, the Army needs to be able to support itself with Electronic Attack whether from the ground, or the air while maintaining the ability to integrate into the wider EW efforts of the Navy and Air Force. The United States Marine Corps provides a good model to emulate, demonstrating a way ahead, beyond the principle staff officer function.

3. **Lessons Learned:**

RC (E) CJTF-1 Task (Problem statement):

Identify shortfall within the Army Electronic Warfare Program and career field identified during combat operations in support of Operation Enduring Freedom XII-XIII, and provide recommendations regarding the way ahead for Army EW organization, structure, equipping, and training.

Key tasks:

- a. Identify Army EW tasks and best practices used in OEF
- b. Identify shortcomings in Army EW operations
- c. Provide recommendations for the Army EW way ahead specifically for the EW Schoolhouse, Proponent, and Branch

Purpose:

To establish a more robust Army electronic Warfare operational force that meets the Army's needs, and supports future combat operations.

Issue: Focus on staff integration vice tactical employment

U.S. UNCLASSIFIED
REL NATO, GCTF, ISAF, MCFI, ABCA
For Official Use Only



U.S. UNCLASSIFIED
REL NATO, GCTF, ISAF, AB
For Official Use Only



CALL Lesson of the Day

Currently most of the 29 series (POIs) focus on making these technical experts members of a Battalion or Brigade combat Team staff. Initially, this was necessary as part of the 1J program. These soldiers filled the gap due to a shortage of FA29, 290A and 29E. Now that we have filled these positions, it has become apparent that this is contrary to the way we actually function. Army EW efforts must go beyond the principle staff officer function of integrating, synchronizing, coordinating, recommending, assessing, and monitoring EW effects. In order to serve the Warfighter in the future, Army electronic warfare professionals need to be able to plan and execute electronic attack (jamming) operations utilizing future Army EW assets.

Discussion: Army EW School curriculum

The current POI is very broad and largely focused on recent conflicts (OIF/OEF). The 1J, 29E, 290A, and FA29 courses share most of the same curriculum. This has been necessary to rapidly equip the Army with officers and NCOs capable of filling multiple roles. However, as the EW field becomes fully staffed, there is a need to focus the POI on an EW Soldier's particular function. Army EWO's perform duties that are in the tactical, technical, and staff realms. The EW Schoolhouse curriculum has prepared us for the staff aspect, but it lacks training on the crucial technical and tactical skills necessary to support Army ground formations.

Issue: EWO's are not properly trained to direct AEA effects

Discussion: Training the modern Army EW Force

In theater, EWO's are required to direct Airborne Electronic Attack (AEA) effects through radio communications. Currently, most of the aircraft do not have mIRC capability. During Operation Enduring Freedom XIII, Army EWs have directed the jam plan from the ground, and must be in contact with available collection or jamming assets to de-conflict and adjust targeting. In Afghanistan, EWOs embedded with Low-Level Voice Intercept (LLVI) teams have had great success in selectively locating, verifying, and placing non-lethal effects on the enemy by using a combination of signals intelligence (SIGINT) and electronic attack (EA) assets. While the JTAC's are capable of acting as the Jam Control Authority (JCA), they lack the time available to properly coordinate AEA effects. Therefore, EWOs having training to direct AEA platforms would decrease the JTAC's workload while providing someone with greater familiarity with EW tactics, techniques, and procedures having direct contact with the AEA platform. Currently, EWO's are not qualified to talk with aircraft using radios; nevertheless, this is done on a daily basis in theater to ensure mission success. It had become apparent that this skill set is necessary to more effectively employ AEA. It is imperative that Army EWO's be equipped with multi-band radios to execute this mission set.

U.S. UNCLASSIFIED
REL NATO, GCTF, ISAF, MCFI, ABCA
For Official Use Only



U.S. UNCLASSIFIED
REL NATO, GCTF, ISAF, AB
For Official Use Only



CALL Lesson of the Day

4. Recommendations:

- a. Train and qualify Army EWO's to coordinate with AEA and direct non-lethal effects.
- b. An AEA controller qualification should be developed. Adding the training and qualification to existing courses such as the US Army Joint Fires Observer Course could be a low-cost solution.
- d. Refine the EW MTOE to include AN/PRC-117G, Harris AN/PRC-152, or similar multi-band radio for all EW control teams.

EW Way Ahead

Training the Force:

- a. The current Advanced Individual Training Course for Military Occupational Skill (MOS) 29E should be continued for post-1st enlisted, re-enlisting Soldiers. This course covers the basics of Electronic Warfare (EW), and its employment. Initiating a student's Top Secret Clearance upon acceptance to the course is crucial. The EW Schoolhouse should develop advanced professional development courses for non-commissioned officers, officers and warrant officers, In addition, an appropriate number of Schoolhouse staff and cadre must be established to support these courses. These duty slots will be described later in this document.
- b. For enlisted personnel, three Additional Skill Identifiers (ASI) should be created to meet Army EW operational and sustainment requirements. After completion of the Basic EW/EW Operational Fundamentals Course (20E), Soldiers would then proceed on to their specialized skills provided by ASI training. Senior Instructors at the schoolhouse could review the student's test scores (to include physical and academic testing), and recommend which career field the student is best suited. After a period of three years, and as the needs of the Army allow, enlisted personnel will have the option of gaining additional ER ASIs, if desired. These ASIs and a description of their functions are listed below. Potential EW Warrant Officers (290A) must have at least six years time in service as a 29E, and hold at least two Electronic Warfare ASI's to be considered for recommendation. The EW ASI's are listed below.
 - I. ASI 1C. Electronic Attack Controller:

This ASI will address will address the issue of Army EW personnel being able to talk directly to Airborne Electronic Attack (AEA) aircraft, and focus non-lethal

U.S. UNCLASSIFIED
REL NATO, GCTF, ISAF, MCFI, ABCA
For Official Use Only



U.S. UNCLASSIFIED
REL NATO, GCTF, ISAF, AB
For Official Use Only



CALL Lesson of the Day

effects on the battlefield. Also, this would establish an EW presence on the ground with the maneuver element 29E1Cs will:

- a. Be responsible for the planning for and requesting of Airborne Electronic Attack (AEA) assets to support combat operations.
- b. Perform duties as the Jam Control Authority (JCA) for AEA aircraft/platform through whatever means of communication available (FM/VHF/UHF, SIPR mIRC, etc) on the ground or in the Joint/Tactical Operation Center during combat operations.
- c. Be responsible for the operation and operator-level maintenance of the AN/PRC-117G Multi-Brand Radio, and the Harris AN/PRC-152 Single Channel, Multi-Band, Handheld Radio.
- d. Works closely with the Signals Intelligence (SIGINT), Low-Level Voice Intercept (LLVI) Team(s) on the ground to coordinate and refine Electronic Attack effects (both ground-based and airborne).
- e. Operates mounted and dismounted EW weapons systems.
- f. Professional development courses: Radio Operator Maintainer and Driver (ROMAD, USAF course), Joint Fires Observer (JFO, USA course), Field Artillery Observer (13F, USA course (audit only)), and unit specific schools.

II. ASI 1M, Electronic Warfare Maintenance Specialist:

This will create an Army EW Systems Installer and Maintainer, and will reduce the need for dependence on civilian contractors and field service representatives to perform repairs. This ASI would enable Army EW to become more self-sufficient, and thus more effective to the ground force commander. The 29E1Ms will:

- a. Conduct installation and higher-level maintenance of Counter Radio-controlled IED Electronic Warfare (CREW) systems (while this threat remains).
- b. Perform technical inspections and repairs for all Army ground-based and aviation-based jammers.
- c. Professional development courses: (working with industry, advanced electronics repair courses, unit specific schools, etc.)

III. ASI 1S, Electronic Warfare Systems Specialist:

This ASI would provide commanders with the capability to conduct continuous ground-based jamming. Due to the limited amount of Joint-Service and Army AEA assets available, this function will be crucial to conducting of counter-command and control (C2) operations on the enemy. The 29E1S will:

U.S. UNCLASSIFIED
REL NATO, GCTF, ISAF, MCFI, ABCA
For Official Use Only



U.S. UNCLASSIFIED
REL NATO, GCTF, ISAF, AB
For Official Use Only



CALL Lesson of the Day

- a. Emplace, operate, conduct operator-level maintenance of, and extract ground-based electronic warfare communications jammers.
- b. Coordinate and work in conjunction with SIGNIT personnel and systems to target, exploit, and perform jamming operations on enemy communications networks.
- c. Integrates and deconflicts with SIGINT to ensure unity of effort.
- d. Professional development courses (Targeting schools, NSA apprenticeship programs, language training, unit specific, etc.)

Structure of Army EW:

1. Develop and electronic Warfare Company at the Division Headquarters and Headquarter Battalion (DHHB), as part of the Division Fire Support Element capable of supporting Battalion, Brigade, and Division operations. Also , there would be an Electronic Warfare Company at each Combatant Command Headquarters, subordinate to the Operations Section:
 - a. 1115 EW personnel slots would be created for the active duty force with this plan in effect.
 - b. This would create leadership opportunities for enlisted positions as well as PL time, and Company Command time for officers.
 - c. In Garrison environments, time is spent training on specific functions of Electronic Warfare, attending professional development courses, conducting combined training with LLVI teams. USAF Air Support Operations Squadrons (ASOS), as well as attending joint training exercises.
2. EW CO Personnel MTOE:
 - a. Command Section:
 - 1 X O-4 (29A) / CW3 (290A), Company Commander
 - 1 X O-3 (29A) / CW2 (290A), Executive Officer
 - 1 X E-8 (29 Series), Company 1SG
 - 3 X E-6 (29 Series), Operations/Training/Schools
 - b. Electronic Attack Control Platoon:
 - 1 X O-3 (29A) / CW2 (290A), Platoon Leader
 - 1 X E-7 (29E401C), PLT SGT
 - 2 X E-6 (29E301C), SQD LDR
 - 4 X E-5 (29E201C), TM LDR
 - 12 x E-4 (29E101C), Team Member
 - c. Electronic Warfare Maintenance Platoon:

U.S. UNCLASSIFIED
REL NATO, GCTF, ISAF, MCFI, ABCA
For Official Use Only



U.S. UNCLASSIFIED
REL NATO, GCTF, ISAF, AB
For Official Use Only



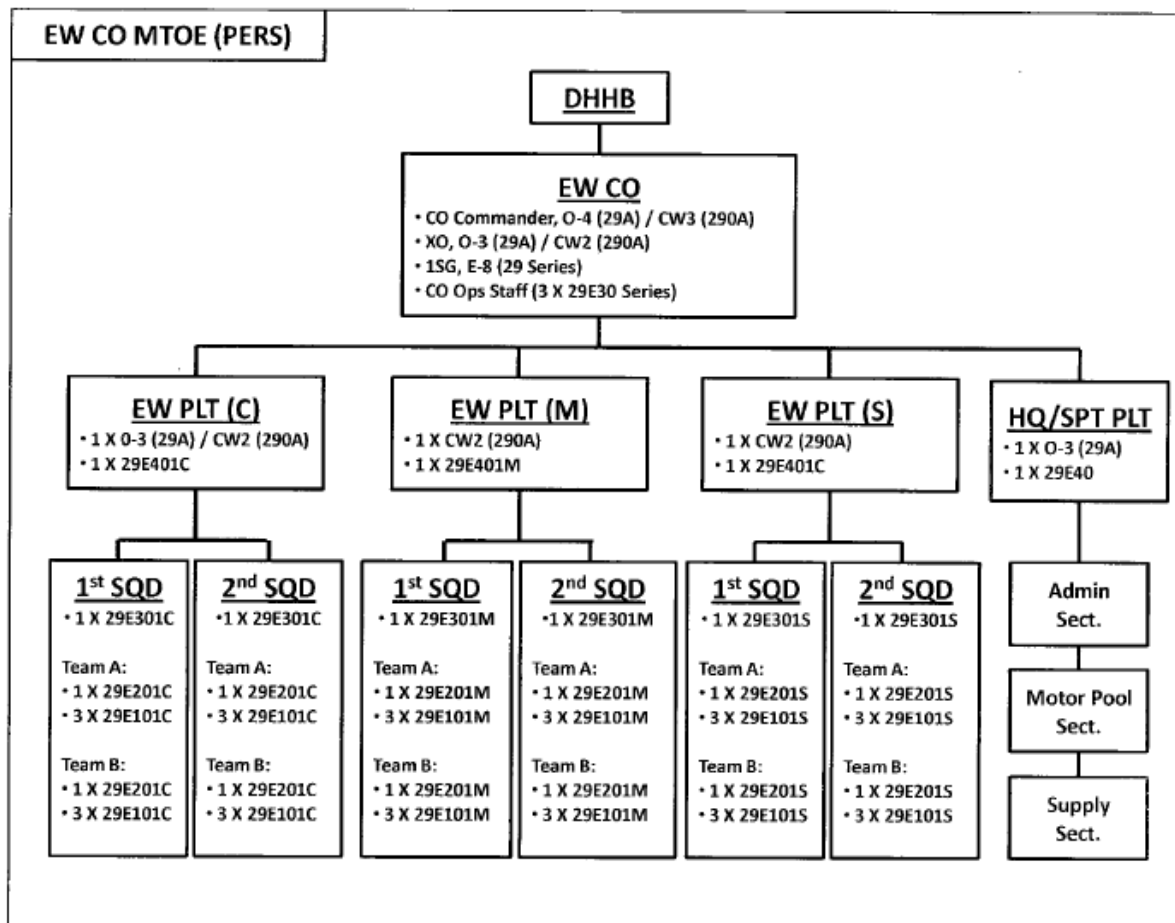
CALL Lesson of the Day

- CW2 (290A), Platoon Leader
 - 1 X E-7 (29E401S), PLT SGT
 - 2 X E-6 (29#01S), SQD LDR
 - 4 X E-5 (29E201S), TM LDR
 - 12 X E-4 (29E101S), Team Leader
- d. Electronic Warfare Systems Platoon:
- CW2 (290A), Platoon Leader
 - 1 X E-7 (29E401S), PLT SGT
 - 2 X E-6 (29E301S), SQD LDR
 - 4 X E-5 (29E201S), TM LDR
 - 12 X E-4 (29E101S), Team Leader
- e. Support Platoon:
- 1 X O-3 (29A), Platoon Leader
 - 1 X E-7 (29 Series), PLT SGT
 - Admin Section
 - Motor Maintenance Section
 - Supply Section

U.S. UNCLASSIFIED
REL NATO, GCTF, ISAF, MCFI, ABCA
For Official Use Only



CALL Lesson of the Day



3. Additional EW Positions: This will allow for post-command billets and ensures that the Army maintains a solid experience based in electronic warfare:
- Army EW Human Resources Command, responsible for Active Duty EW personnel manning.
 - 1 X O-4 (29A)
 - 1 X E-7 (29 Series)
 - 1 X CW3 /CW4 (290A)
 - Army EW Combines Arms Center Representatives, responsible for fielding initiatives.
 - 1 X O-6 (29A)
 - 1 X MSG / SGM (29 Series)
 - 1 X CW5 (290A)
 - Army EW School (Fires Center of Excellence), responsible for the training and mentoring of future and present Army EW personnel at the Officer, Warrant Officer, and enlisted ranks.
 - 1 X O-5 (29A), Director
 - 2 X O-4 (29A), Officer Lead Instructor, Deputy Director



U.S. UNCLASSIFIED
REL NATO, GCTF, ISAF, AB
For Official Use Only



CALL Lesson of the Day

- 4 X 0-3 (29A), Instructor Cadre
- 1 X CSM (29Z), Senior enlisted Mentor
- 2 X E-7 (29 Series), Enlisted Lead Instructor
- 2 X E-6 (29C), Enlisted Instructor Cadre
- 2 X E-6 (29M), Enlisted Instructor Cadre
- 2 x E-6 (29S), Enlisted Instructor Cadre
- 1 X CW4 (290A), Senior Warrant, EW Proponent Warrant
- 1 x CW4 (290A), Warrant Lead Instructor
- 2 X CW3 (290A), Warrant Instructor Cadre

Equipping the force:

Utilization of current equipment (some of which will need to become programs of record) and vehicles (with some minor to moderate modifications) already in the Army inventory would be the preferred method. This will reduce cost, and accelerate the fielding time. Each EW Company (EWCO) will be fielded the same, only the prime movers would be different, depending on the type of unit assigned. Efforts must be tracked, and Stryker vehicles. Several systems already exist that the Army could use as models. These include the USMC's AN/MLQ-36A Mobile Electronic Warfare Support System (MEWSS) and the AN/ULQ-19 (V) 2 Electronic Attack Set. Both of these systems are in a vehicle similar to a Stryker already, and with some modification to the Bradley Fighting Vehicle, could be installed on that platform as well. Also, there are several surface-to-surface available (HARPY, HARPO, etc) that could be utilized to loiter for enemy communications emissions, verified via full motion video (FMV), and engaged and destroyed by the same system. This capability will be critical during future high intensity conflicts (HIC).

EW CO Equipment:

For brevity, I will only EW equipment; Vehicles/Prime Movers will depend on Brigade type.

- Man-portable tactical, selective frequency, directional, multi-band, communications jammer such as those available from manufacturers like SESP, or modified from existing dismounted PRPHET systems (Twelve per Company).
- Vehicle-mounted, tactical multi-band communications jammer, such as the PROPHET EA (towed) or a STRYKE/.Mechanized version of the AN/AMLQ-36A and/or the AN/ULG-19(V) 2. (Four per Company).
- Air Hammer EA (developmental need), EAUAV (developmental need), and EC-12 CEASAR (currently in use). Identified LNO's and crews will work with the CAB/AV element (Two per Company).

U.S. UNCLASSIFIED
REL NATO, GCTF, ISAF, MCFI, ABCA
For Official Use Only



U.S. UNCLASSIFIED
REL NATO, GCTF, ISAF, AB
For Official Use Only



CALL Lesson of the Day

- AN/PRC-117G (Twelve per Company).
- AN/PRC-152 (16 per Company, issued to 1C TM LDR and TM Members).
- Laptops (Thirty per Company).

In the event that an air Hammer EA or an electronic Attack Unmanned Aerial Vehicle (EAUAV) is developed, and/or the EC-12 CEASAR becomes a program of record, the aircraft crews, and maintenance personnel would become part of the Division's Combat Aviation Brigade (CAB). Each EWO Company would need a minimum of two aircraft to support Electronic Attack operations.

Closing Remarks:

The Army EW program has enormous potential, and there is much work to be done to ensure that it meets that potential. The recommendations above provide a good sharing point, however there is much refinement still needed. The goal of this article is to suggest an EW design for the future. The main concern is what changes need to be made to better support troops on the ground, on the battlefields of today, and tomorrow.

5. Related CALL Publications: None found. All of this information is credited to the authors listed at the beginning of the document.

6. MAJ Elba D'Asaro, CALL LNO: TF 4-4 MW, Lessons Learned, Jalalabad, Afghanistan

U.S. UNCLASSIFIED
REL NATO, GCTF, ISAF, MCFI, ABCA
For Official Use Only