



## ANNEX 3-51 ELECTRONIC WARFARE

### ELECTRONIC WARFARE EMPLOYMENT

Last Updated: 10 Oct 2014

The employment of [electronic warfare](#) (EW) capabilities is vital throughout all [phases of an operation](#): shape, deter, seize initiative, dominate, stabilize, and enable civil authority. During the shape and deter phases, [electronic warfare support](#) (ES) assets contribute to the overall understanding of the [operational environment](#). A commander may employ EW to implement favorable [joint intelligence preparation of the operational environment](#) without prematurely crossing the threshold to conflict. The potential to employ nondestructive and nonlethal capabilities make EW assets vital to the preparation of the operational environment and [mission analysis](#).

Using all aspects of EW, air component forces may set the conditions for combat, and prosecute the attack once combat is underway. The ability to achieve an objective through nondestructive means may allow a more rapid transition from seizing the initiative and dominate phases to support operations in the stabilization phase. From stabilization to enabling civil authority, EW can foster restorative operations by offering options such as force protection through ES to monitor subversive elements, [electronic attack](#) (EA) to counter radio controlled improvised explosive devices (RCIEDs), or broadcasting messages supporting [military information support operations](#) (MISO) and/or civil defense to assist civil authorities.

#### B1-B Lancer



B1-B Lancers dispensing chaff and flares

## EW Support to the COMAFFOR

**The COMAFFOR provides unity of command and unity of effort for Air Force EW operations.** The COMAFFOR normally exercises [operational control](#) (OPCON) over assigned and attached US Air Force EW forces. EW personnel support the COMAFFOR by accomplishing the following:

- ★ Make recommendations on the proper employment of EW capabilities and forces.
- ★ Develop a daily EW battle rhythm that supports EW planning and operations requirements.
- ★ Accomplish specified and implied EW tasks.
- ★ Represent EW within the information operations (IO) cell.
- ★ Maintain current assessment of the EW resources available (to include number, type, and status of EW assets) and analyze what resources are necessary to accomplish operational objectives.
- ★ Develop, coordinate and integrate operations to achieve EW effects based on JFC's objectives.
- ★ Predict effects of friendly and enemy EW activity on joint and multinational operations.
- ★ Plan, coordinate, execute, and assess EP (e.g., frequency management, emission control (EMCON), EW reprogramming).
- ★ Assist in frequency management. This includes deconflicting frequency requirements and assignments.
- ★ Coordinate and monitor EW reprogramming by identifying where EW reprogramming decisions and reprogramming actions affect operations.
- ★ Conduct reachback to organizations supporting air component EW operations.
- ★ Provide EW liaison to other Service and functional components of joint and multinational forces
- ★ Prepare an EW estimate of the situation to support the JFC's estimate.
- ★ Function as the EW integrator for counterair operations, strategic attack, the overall [air interdiction](#) effort, [space support](#), and theater airborne reconnaissance and surveillance.

- ✦ Coordinate EW support for [combat search and rescue](#).
- ✦ Provide [EMS database](#) and communications network support.
- ✦ Conduct joint EW training of components for joint force components, in joint operations planning for which the COMAFFOR has or may be assigned primary responsibility, or for which the air component's facilities and capabilities are suitable.

### EA-18G Growler



The EA-18G Growler is a joint EW weapon system that conducts EM jamming, and employs high-speed anti-radiation missiles.

### EW Employment Considerations

In contested environments, the density and potential lethality of the adversary air defense systems may challenge mission effectiveness and the survivability of air friendly forces. At the tactical level, mission planning tries to strike the appropriate balance between mission accomplishment and risks. Thorough planning at the operational level gives tactical commanders the proper tools to allow them to strike that balance. **The decision to employ EW should be based not only on overall joint campaign or operation objectives, but also on the risks of possible adversary responses and other potential effects on the campaign or operation. A properly constructed force package that includes EW enhances the probability of mission effectiveness and survival of friendly forces.**

The application of EW can prevent an adversary's use of the EMS for employment of improvised explosive devices (IEDs), specifically remotely-controlled IEDs (RCIEDs). Employing electronic attack, EW can deny or degrade the adversary's ability to use the EMS to detonate IEDs. EW can also enable friendly use the EMS to pre-detonate RCIEDs at a time of our choosing. Similarly, EW can disrupt adversary communications by disrupting an adversary's ability to use the EMS, interfering with their ability to react to friendly activity in a timely manner.

Recent increases in power supply capacities in EW systems (especially DE systems) provide capabilities for disruption or damage to many physical targets. This provides additional options in lethal/destructive attack and may enable friendly forces while causing significantly less collateral damage. New EM systems can target humans with both lethal and nonlethal effects, in some cases with debilitating but non-damaging effects.

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