

**BY ORDER OF THE COMMANDER
ELLSWORTH AFB**



**AIR FORCE INSTRUCTION 10-703
ELLSWORTH AIR FORCE BASE
Supplement
5 JANUARY 2016**

Operations

**ELECTRONIC WARFARE INTEGRATED
REPROGRAMMING**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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AFI 10-703, *Electronic Warfare Integrated Reprogramming*, 19 October 2010, is supplemented as follows: This instruction provides guidance and procedures for the Electronic Warfare Integrated Reprogramming (EWIR) Program. This supplement applies to all organizations assigned or attached to the 28th Bomb Wing. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual 33-363, *Management of Records*, and disposed of in accordance with Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS). Send comments and suggested changes to this supplement on AF Form 847, *Recommendation for Change of Publication*, through channels, to 28 OSS/OSK, 1956 Scott Drive, Ste 201, Ellsworth AFB, SD 57706.

SUMMARY OF CHANGES

This document is substantially revised and must be completely reviewed. It establishes new Electronic Warfare Integrated Reprogramming requirements for Ellsworth AFB.

Chapter 6 (Added)

PACER WARE/SERENE BYTE

6.1. (Added) Purpose. This chapter outlines the Electronic Warfare Integrated Reprogramming (EWIR) procedures to be used by the 28th Bomb Wing (28 BW) following receipt of PACER WARE/SERENE BYTE messages. The following procedures are established to ensure rapid and efficient reprogramming actions.

6.1.1. **(Added)** Personnel involved in Electronic Warfare (EW) reprogramming will read and comply with procedures listed in AFI 10-703, and the worldwide SERENE BYTE Exercise Plan. Changes or amendments to this supplement will be coordinated directly with the designated 28 BW Electronic Combat Officer (ECO).

6.2. (Added) Responsibilities:

6.2.1. **(Added)** 28th BW ECO will:

6.2.1.1. **(Added)** Direct the Wing EWIR action team for 28 BW reprogramming activities. If the 28 BW ECO is unavailable, the 28th Operation Support Squadron, Weapons and Tactics branch (28 OSS/OSK) can appoint another qualified ECO to perform event coordinator duties.

6.2.1.2. **(Added)** Coordinate with wing intelligence (28 OSS/IN), squadron ECOs, maintenance, and aircrew concerning new threats or threat parameters and shortcomings of electronic combat equipment when countering threats. Write and send operational change request (OCR) based on findings.

6.2.1.3. **(Added)** Ensure PACER WARE/SERENE BYTE Action Team/Point of Contact list is current. This list should be maintained in the ECO continuity binder and distributed to all EWIR Action Team members.

6.2.1.4. **(Added)** Act as the 28 BW approval authority for the implementation of PACER WARE/SERENE BYTE messages.

6.2.1.5. **(Added)** Ensure timely dissemination of EW reprogramming messages to affected organizations (Attachment 13).

6.2.1.6. **(Added)** Ensure duties of affected players are carried out.

6.2.1.7. **(Added)** Resolve reprogramming conflicts and problems.

6.2.1.8. **(Added)** Transmit a unit-loading message (ULM) to addresses listed in the PACER WARE/SERENE BYTE Reprogramming Impact Message (RIM) no later than 72 hours after reprogramming completion. Maintain and log copies of transmitted ULM's.

6.2.1.9. **(Added)** Establish an EWIR action team consisting of operations, maintenance, intelligence, communications, and command post personnel to establish training procedures for reprogramming tasks.

6.2.1.10. **(Added)** Coordinate training for identified EWIR Action Team members on PACER WARE/SERENE BYTE procedures to include the EWIR process, PACER

WARE Database (PWDB), and Multi-Service Data Distribution System (MSDDS) access.

6.2.1.11. **(Added)** Ensure squadron ECO's, either at home station or deployed, have access to PACER WARE/SERENE BYTE message traffic via the MSDDS or other means.

6.2.1.12. **(Added)** Coordinate with 28 BW Command Post (CP) to ensure PACER WARE notification checklists and POC lists are up to date.

6.2.1.13. **(Added)** Prior to being reassigned to a new position, ensure that the incoming 28 BW ECO is transferred ownership of all accounts.

6.2.1.14. **(Added)** Coordinate with Maintenance Supervision and Defensive Avionics System (DAS) maintenance; as appropriate, during any PACERWARE-directed maintenance activity. Provide MSDDS information and software to DAS maintenance as appropriate.

6.2.2. **(Added)** Squadron ECO's will:

6.2.2.1. **(Added)** In the absence of 28 BW ECO (i.e. Temporary Duty (TDY), leave, etc.), be prepared to perform event coordinator duties as assigned by 28 OSS/OSK or if deployed without 28 BW ECO.

6.2.2.2. **(Added)** Brief squadron aircrew on new threats, threat parameters and reprogramming actions described in PACER WARE/SERENE BYTE messages and how they affect electronic warfare equipment and tactics.

6.2.2.3. **(Added)** Coordinate with squadron intelligence on any unusual threat indications and report these findings to 28 BW ECO.

6.2.2.4. **(Added)** Inform event coordinator after the squadron has complied with any RIM messages.

6.2.2.5. **(Added)** Prior to being reassigned to a new position, ensure that the incoming squadron ECO is transferred ownership of all account access.

6.2.3. **(Added)** Wing/Squadron Intelligence will:

6.2.3.1. **(Added)** Ensure the wing/squadron at home or deployed has access to the MSDDS to retrieve PACER WARE/SERENE BYTE messages. SIPRNET access is required.

6.2.3.2. **(Added)** Brief aircrew on new threats and threat parameters and reprogramming actions described in PACER WARE/SERENE BYTE messages and how they affect electronic warfare equipment and tactics.

6.2.4. **(Added)** 28th DAS Maintenance (28 AMXS/MXAS) will:

6.2.4.1. **(Added)** Maintain necessary account access to MSDDS and SIPRNET.

6.2.4.2. **(Added)** Obtain the 28 BW ECO's approval prior to beginning system modifications IAW AFI 10-703, paragraph 3.2.

6.2.4.3. **(Added)** Obtain software from 28 BW ECO and reprogram the aircraft as required.

- 6.2.4.3.1. **(Added)** For Towed Decoy System (TDS) PACER WARE/ SERENE BYTE Operation Flight Program/ Integrated Multi-Platform Launcher Controller (OFP/IMPLC) loads; receive software disk from 28 BW ECO and install on Memory Load Verifier (MLV) Personal Computer Memory Card International Association (PCMCIA) card; utilize the Panasonic Laptops maintained by the 28 AMXS DAS shop IAW 1B-1B-2-93JG-10-3 System Subject Number 93-15-01 Tasks 01-3 & 01-4.
- 6.2.4.3.2. **(Added)** For Band 8 Radio Frequency Source (RFS) Directed Radio Frequency Modulator (DRFM) technique release; receive software disk from 28 BW ECO and transfer disk information to the Mobile Data Link Terminal (MDLT) laptop and load .hex file IAW 1B-1B-2-93JG-10-3 System Subject Number 93-14-01 Task 01-2.
- 6.2.4.3. 3(Added) For Waveform Generator (WFG) Electronically Erasable Programmable Read-Only Memory (EEPROM) data load; receive software disk from 28 BW ECO and utilize Panasonic Laptops and Serial Interface Unit (SIU) maintained by 28 AMXS DAS Shop IAW 1B-1B-2-93JG-10-3 System Subject Number 93-19-1 Task 01-2.
- 6.2.4.3. 4 (Added) For Enhanced Pre-Processor Avionics Control Unit (PACU) Reprogrammable Computer (EPRC) data updates; receive software disk from 28 BW ECO and transfer disk information to the MDLT laptop and load IAW 1B-1B-2-93JG-70-2 System Subject Number 93-78-01 Task 01-2.
- 6.2.4.3. 5 (Added) For Jammer Allocation Logic (JAL) update data; receive software disk from 28 BW ECO and transfer disk information to the MDLT laptop and load IAW 1B-1B-2-93JG-00-1 System Subject Number 93-00-06 Task 06-7.
- 6.2.4. 4 (Added) Notify 28th MOS Operations Center (MOC) of all reprogramming activities to include start and stop times for each aircraft.
- 6.2.4.5. **(Added)** Notify 28 BW ECO upon completion of PACER WARE/SERENE BYTE activity.
- 6.2.5. **(Added)** 28th Command Post (28 BW/CP) will:
- 6.2.5.1. **(Added)** Maintain 24/7 access to the 28 BW CP NIPRNET/SIPRNET email account for any PACERWARE message traffic labeled URGENT or EMERGENCY.
- 6.2.5.2. **(Added)** Report any URGENT or EMERGENCY PACER WARE activity to the wing ECO, utilizing standby duty-officer notification procedures if necessary. If unable to reach the primary or alternate wing ECO, a squadron ECO should be notified.
- 6.2.6. **(Added)** 28th MX Plans and Scheduling (28 MOS/MXOOP) will:
- 6.2.6.1. **(Added)** Track progress of PACER WARE Time Compliance Technical Order (TCTO) reprogramming.
- 6.2.6.2. **(Added)** Report progress of reprogramming activity, when requested, to event coordinator by aircraft tail number.
- 6.2.7. **(Added)** 28th MXG Quality Assurance (QA) (28 MXG/MXQI) will:
- 6.2.7.1. **(Added)** Monitor PACER WARE/SERENE BYTE activities throughout maintenance on a 24-hour basis until event has ended.

6.2.7. 2(Added) Validate first system's modification.

6.2.7.3. (Added) Ensure event coordinator is informed of problems and delays.

6.2.7.4. (Added) Note problems encountered and potential solutions. Give findings to event coordinator.

6.2.7.5. (Added) Verify any applicable TCTO's have received appropriate date/time stamp.

6.2.8. (Added) 28th MOS Operations Center (MOC) (28 MOS/MXOOM)

6.2.8.1. (Added) Monitors reprogramming activities and records progress on the PW/SB Log (Attachment 14) or 28 MOS PACER WARE or SERENE BYTE checklist.

6.2.8.2. (Added) Keeps the Wing ECO and Mission Planning Cell (MPC) Team Chief informed of the status of the aircraft, including any delays/problems.

6.2.9. (Added) 28th Communications Squadron (28 CS) will:

6.2.9.1. (Added) Ensure all communications and network control center personnel understand the importance of EWIR and facilitate the flow and proper handling of EW messages and data.

6.2.9.2. (Added) Immediately notify 28 BW ECO of communications deficiencies affecting EWIR capability to include NIPRNET and SIPRNET outages.

6.2.10. (Added) Affected organization(s) will:

6.2.10.1. (Added) Comply with technical order (TO) requirements for test and maintenance of reprogramming equipment and support software.

6.2.10.2. (Added) For software changes, squadron intelligence or ECO authorized to access MSDDS can download the information to a disc and distribute as required. If required, squadron DAS maintenance will receive the data and reprogram the aircraft.

6.2.10.3. (Added) If the message deals with a new EID load for mission data, the wing/squadron ECO will ensure that Portable Flight Planning System (PFPS) support representatives load the software on all 28 BW MPE machines.

6.2.10.4. (Added) Obtain the 28 BW ECO's approval prior to beginning system modifications IAW AFI 10-703, paragraph 3.2.

6.2.10.5. (Added) Complete reprogramming actions as expeditiously as possible. AFI 10-703, paragraph 3.3, instructions for timeliness of ROUTINE and IMMEDIATE reprogramming actions, will be adhered to.

6.2.10.6. (Added) Check NIPRNET/SIPRNET email and MSDDS; if able, weekly during normal operations, and daily during PACER WARE/SERENE BYTE events or as directed by the wing ECO.

6.3. (Added) Deployments. For 28 BW deployments, whether actual or simulated for an exercise PACER WARE/SERENE BYTE procedures remain the same except as amended below:

6.3.1. (Added) Reprogramming equipment, documentation, and instructions will be included in each affected organization's mobility packing list to ensure deployment.

6.3.2. **(Added)** Deployed location phone directories will be attached to reprogramming authorized recipients lists as they become available.

6.3.3. **(Added)** Prior to deployment, the squadron ECO will coordinate with the wing ECO and squadron intelligence to ensure the deployed location has the ability to receive data through secure means. Upon arrival at a deployed location, squadron ECO will determine authorized recipients and establish local EWIR procedures.

MARK E. WEATHERINGTON, Colonel, USAF
Commander, 28th Bomb Wing

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFI 10-703, *Electronic Warfare Integrated Reprogramming*, 19 Oct 2010

AFMAN 33-363, *Management of Records*, 1 Mar 2008

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*

Abbreviations and Acronyms

28 AMXS/MXAS—28th Maintenance Squadron Defensive Avionics Shop

28 BW—28th Bomb Wing

28 BW/CC—28th Bomb Wing Commander

28 BW/CP—28th Bomb Wing Command Post

28 BW ECO—28th Bomb Wing Electronic Combat Officer

28 CS—28th Communications Squadron

28 MOS—28th Maintenance Squadron

28 MOS/MXOOP—28th Maintenance Squadron Plans and Scheduling

28 MOS/MXOOM—28th Maintenance Squadron Operation Center

28 MXG/MXQI—28th Maintenance Group Quality Assurance

28 OSS/CC—28th Operations Support Squadron Commander

28 OSS/IN—28th Bomb Wing Intelligence Flight

28 OSS/OSK—28th Bomb Wing Weapons Flight

AFI—Air Force Instruction

DAS—Defensive Avionics System

DRFM—Directed Radio Frequency Modulator

ECO—Electronic Combat Officer

EEPROM—Electrically Erasable Programmable Read-Only Memory

EID—Emitter Identification Data

EPRC—Enhanced PACU Reprogrammable Computer

EW—Electronic Warfare

EWIR—Electronic Warfare Integrated Reprogramming

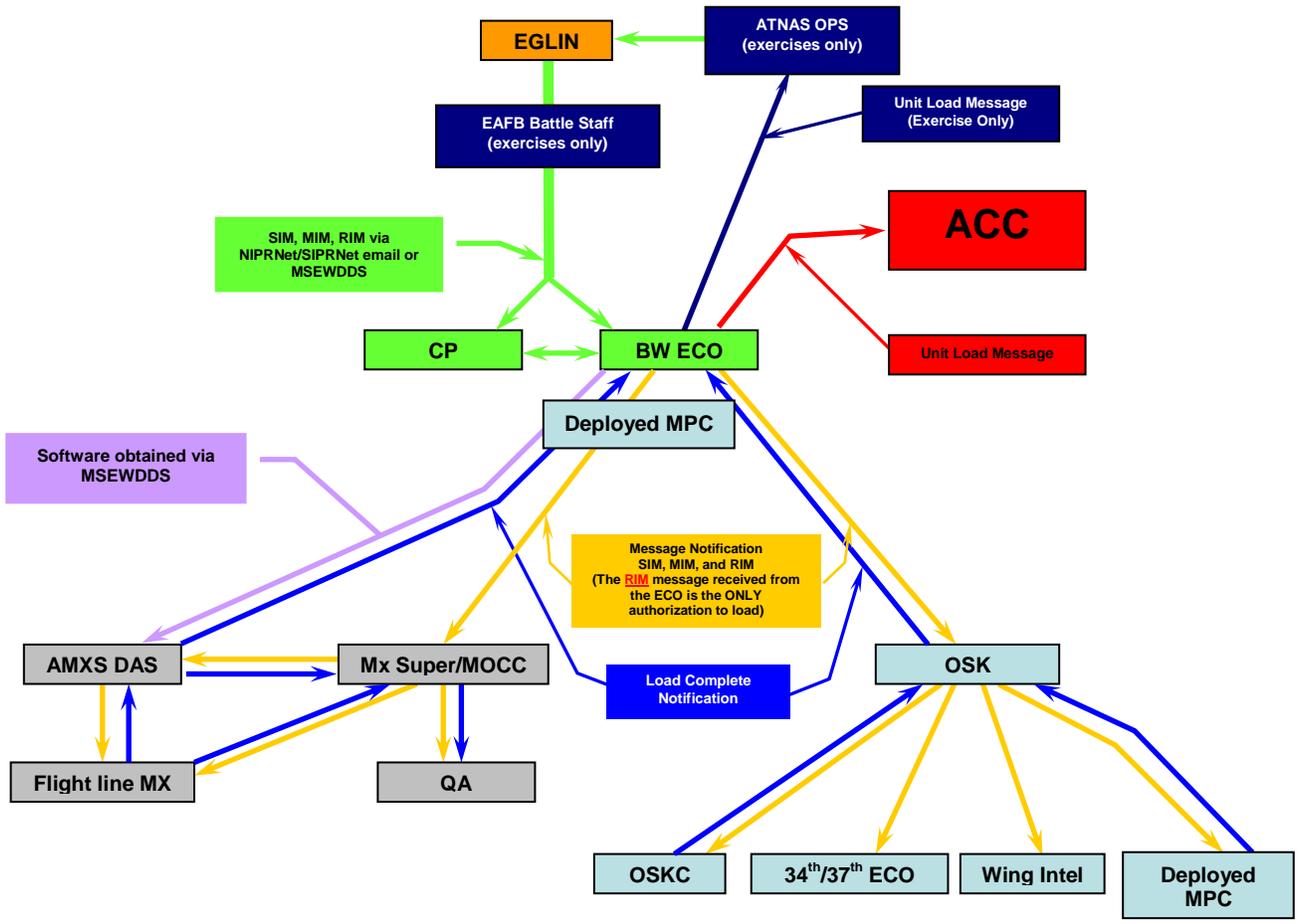
IAW—In Accordance With

IMPLC—Integrated Multi-Platform Launcher Controller

JAL—Jammer Allocation Logic
MDLT—Mobile Data Link Terminal
MLV—Memory Load Verifier
MPC—Mission Planning Cell
MSDDS—Multi-Service Data Distribution System
NIPRNET—Non-Classified Internet Protocol Router Network
OCR—Operational Change Request
OFF—Operation Flight Program
ORE—Operational Readiness Exercise
PACU—Pre-Processor Avionics Control Unit
PCMIA—Personal Computer Memory Card International Association
PFPS—Portable Flight Planning System
RIM—Reprogramming Implementation Message
RFS—Radio Frequency Source
SIPRNET—Secret Internet Protocol Router Network
SIU—Serial Interface Unit
TCTO—Time Compliance Technical Order
TDS—Towed Decoy System
TDY—Temporary Duty
TO—Technical Order
ULM—Unit Loading Message
WFG—Waveform Generator

Attachment 4 (Added)
PACER WARE MESSAGE FLOW

Figure A4.1. Example message flow



Attachment 5 (Added)**PACER WARE/SERENE BYTE LOG**

A5.1. Record times in Zulu as each event occurs.

A5.2. Contact Wing ECO (28OSS/OSK x4912/1504 or via email) as necessary for assistance.

A5.3. MOC will maintain log and return to Wing ECO after reprogramming is complete.

A5.4. Accuracy is paramount. This information will be transmitted to HQ ACC and 53d Wing RC.

Figure A5. 1 Example Log

Times	MLV load times
ALQ-161(EEPROM)	
ALE-50 (TDS)	

Date/Time Reprogramming Impact Message Received: _____ (Z)

