

**CDC 2W171**

# **Aircraft Armament Systems Craftsman**

## **Change Supplement for Volume: 01**

**IMPORTANT:** Make the corrections shown in this supplement before beginning your study of the volume it affects. This supplement contains pen-and-ink changes and/or replacement pages.



**Air Force Career Development Academy  
The Air University  
Air Education and Training Command**

## CDC 2W171-01-1705, Edit Code 07

### Changes for Text: Volume 1

#### Pen-and-Ink Changes:

Page	Subject	Line(s)	Correction
1-15	008	24 fr top	Change: “AFI 36–2201, <i>Air Force Training Program</i> ” to “AFI 36-2651, <i>Air Force Training Program</i> ”
1-21	010	6 fr top 7 fr top	Change: “AFI 91–203, <i>Air Force Consolidated Occupational Safety Instruction.</i> ” to “AFMAN 91–203, <i>Air Force Occupational Safety, Fire, and Health Standards</i> ”
1-21	010	12 fr top	Change: “AFI” to “AFMAN”
1-23	011	6 fr top	Change: “AFI 91–203, <i>Air Force Consolidated Occupational Safety Instruction</i> ” to “AFMAN 91–203, <i>Air Force Occupational Safety, Fire, and Health Standards</i> ”
2-7	021	3 fr bot	Change: “material” to “materiel”
2-9	023	4 fr top	Change: “material” to “materiel”
2-10	023	4 fr bot	Change: “material” to “materiel”
2-14	027	14 fr top	Change: “material” to “materiel”
3-1	TOC	7 fr top	Change: “material” to “materiel”
3-3	028	3 fr bot	Change: “Material” to “Materiel”
3-5	028	2 fr top	Change: “material” to “materiel”
3-5	029	22 fr top	Change: “Air Force equipment management system (AFEMS)” to “Defense Property Accountability System (DPAS)”
3-5	029	23 fr top	Change: “AFEMS” to “DPAS”
3-5	029	25 fr top	Change: “ <a href="https://www.afems.wpafb.af.mil">https://www.afems.wpafb.af.mil</a> ” to “ <a href="https://app.dpas.dod.mil/">https://app.dpas.dod.mil/</a> ”
3-8	030	4 fr top	Change: “material” to “materiel”
3-8	030	5 fr top	Change: “material” to “materiel”
3-8	030	21 fr bot	Change: “material” to “materiel”
3-8	030	10 fr bot	Change: “material” to “materiel” (both instances on line)
3-10	031	13 fr bot	Change: “Material” to “Materiel”
3-11	031	8 fr top	Change: “Material” to “Materiel”
3-11	032	5 fr bot	Change: “material” to “materiel”
3-12	032	10 fr top	Change: “material” to “materiel”

3-12	032	10 fr bot	Change: “material” to “materiel”
3-15	032	5 fr bot	Change: “material” to “materiel”
3-15	032	4 fr bot	Change: “material” to “materiel”
3-15	032	3 fr bot	Change: “material” to “materiel”
3-17	033	20 fr top	Change: “Material” to “Materiel”
3-19	035	5 fr top	Change: “All weapons loading AFTO Form 22 submissions are routed through weapons standardization section.” to “Weapons Standardization is responsible for reviewing all weapons loading AFTO Form 22 submissions before being sent to the appropriate TOMA.”
3-20	033	7 fr top	Change: “three,” to “two,”
3-21	036	12 fr bot	Change: “Center” to “Complex”
3-21	036	19 fr top	Change: “Air Force Catalog (AFCAT) 21–209 Volume 1, <i>Ground Munitions, UCML</i> ” to “Air Force Manual (AFMAN) 21–209, Volume 1, <i>Ground Munitions</i> ”
3-27	033	17 fr bot	Delete “(2) CAT I (Mishap)”
3-27	033	16 fr bot	Change: “(3)” to “(2)”
G-1	Glos	5 fr top	Delete “AFCAT Air Force catalog”
G-1	Glos	11 fr top	Change: “Material” to “Materiel”
G-3	Glos	17 fr bot	Change: “Integrated Data Management System” to “Integrated Maintenance Data System”
G-3	Glos	11 fr bot	Change: “Chief” to “Chiefs”
G-4	Glos	6 fr bot	Change: “Center” to “Complex”
G-4	Glos	12 fr top	Change: “material” to “materiel”

## **CDC 2W171-01-1705, Edit Code 07**

### **Changes for URE: Volume 1**

#### **Pen-and-Ink Changes:**

Page	Item Number	LO Number	Correction
1-37	17	007	In choice “b.” change “Integrated maintenance data system” to “Integrated Maintenance Data System”
1-38	26	010	In the stem of the question, change “Air Force Instruction (AFI),” to “Air Force Manual (AFMAN)”
1-38	28	011	In the stem of the question, change “Air Force Instruction (AFI),” to “Air Force Manual (AFMAN)”
2-21	49	019	In the stem of the question, change “integrated maintenance data system” to “Integrated Maintenance Data System”
3-31	89	032	In choice “c.” change “Center” to “Complex”

**CDC 2W171-01-1705, Edit Code 07**

**Changes for the Text: Volume 1**

**Page Changes:**

<b>Remove:</b>	<b>Insert:</b>
3-11 – 3-16	3-11 – 3-16

- **Code C**—For new, used, repaired, or reconditioned materiel in a serviceable and issuable condition, but it is a Priority Use. Code C is issued before Condition A and B materiel to avoid loss as usable assets.

When serviceable AF property is placed in use or service, remove and destroy the DD Form 1574 or other serviceable parts tag (when attached to the item), unless the applicable TOs or directives state otherwise.

#### **Department of Defense Forms 1577 and 1577-1**

DD Forms 1577 and 1577-1, Unserviceable (Condemned) Label-Materiel, (red margins and letters) is for material determined, through physical inspection, tear down, or engineering decision to be unserviceable and not repairable economically, although the item may contain serviceable components or assemblies to be reclaimed.

#### **Department of Defense Forms 1577-2 and 1577-3**

Use DD Forms 1577-2, Unserviceable (Reparable) Tag-Materiel, and 1577-3, Unserviceable (Reparable) Label-Materiel, (green margins and letters) to tag any unserviceable (repairable) subassembly, assembly unit, group, set, and /or accessory under MILSTRAP condition codes “E,” “F,” or “G.” These condition codes descriptions are identified below:

- **Code E**—For material requiring limited expense or effort to restore to a serviceable condition.
- **Code F**—For material considered economically repairable.
- **Code G**—For material requiring additional parts or components to complete the end item prior to use.

#### **Department of Defense Forms 1348-1A and DD Form 1348-2**

The Issue Release/Receipt Document, DD Form 1348-1A (or DD Form 1348-2 with attached shipping label), are prepared by the supply/shipping activity. The DD Form 1348-2 contains all of the same information from the DD Form 1348-1A but adds mailing information, such as postage, mailing address, return address, and other pertinent data. These documents are used for selecting, packing, shipping, and receiving materiel. They are also used as a receipt transaction and/or the data source for preparation of other documents. The DD Form 1348-1A (or DD Form 1348-2) is for all shipments to DOD customers, including financial management service (FMS) and contractors, from DOD and government services agency (GSA) shipping activities.

The DD Form 1348-1A (or DD Form 1348-2) may be prepared as a release document by the shipping activity (issues from supply system stock) or by the shipping DRMO (DRMS-directed issues from the DRMO). The requisitioner may also use this format when hand carrying requisitions for local issue from the DRMO.

The DD Form 1348-1A (or DD Form 1348-2) may be manually or mechanically prepared and will contain data elements described in DOD 4000.25-1-M. If an automated packing list (APL) is not produced, a copy of the DD Form 1348-1A (or DD Form 1348-2) will be used for this purpose and will be placed inside the packing list envelope and securely attached to the outside of the shipping container. On multiple container shipments, the DD Form 1348-1A (or DD Form 1348-2) will be placed inside a packing list envelope and securely attached to the outside of the No. 1 shipping container.

### **032. Munitions material handling equipment**

Munitions/armament locally manufactured equipment (LME) is specialized equipment designed to interface with or support munitions or armament suspension equipment, such as tools, handling dollies, storage racks, maintenance stands, or transport adapters. LME as the name implies is a locally built type of equipment that either is manufactured by base facilities like the metals



technology/fabrication flight or is contracted to be built by local companies. In all instances, LME is built according to approved drawings using prescribed materials.

### **Production and approval of a locally manufactured equipment**

As you can imagine, the Air Force has strict guidelines for producing and approving LME. You really do not want just anybody coming up with designs for equipment that is going to be used around munitions. This is where the munitions materiel handling equipment (MMHE) focal point comes in. The MMHE focal point located at Eglin AFB, Florida, is an organization comprised of aircraft armament and munitions personnel along with engineers and fabricators, who design, develop, test, approve, and standardize equipment for Air Force use around munitions.

### **Munitions material handling equipment website**

The MMHE focal point maintains a SharePoint site that lists and stores approved designs for LME ((<https://usaf.dps.mil/teams/10134>)). This website is critical to the mission of the MMHE focal point and is a valuable reference to you, the technician in the field. Through this site, you are able to obtain official USAF drawings that will enable you to obtain LME. It can also provide you with a way to obtain instructions to properly use, inspect, or repair existing MMHE focal point designed equipment. Additionally the site allows you to contact MMHE personnel. MMHE personnel can provide expert assistance in interpreting drawings and materials lists. Lastly, the site can also provide lists of off-base manufacturers that have successfully built MMHE focal point designed support equipment in the past.

All munitions/armament LME contained on the MMHE focal point website meets applicable Air Force Occupational Safety and Health (AFOSH), explosive safety, USAF standards, and is approved for local manufacture use at unit level AF-wide. Drawing packages for these items are available to the unit via the MMHE focal point website. Units must use MMHE focal point-designed munitions/armament LME for new equipment procurements if a design exists and fills the unit's requirement.

Munitions/armament LME, not designed to interface with or support munitions, which are not contained in technical data or on the MMHE focal point website, must be approved at the unit level. Units are encouraged to forward any such approved LME for possible inclusion on the MMHE focal point website by sending an approved drawing package to the MAJCOM functional manager for coordination and evaluation. If the MAJCOM functional manager determines the item has additional AF utility, the drawing package shall be forwarded to the MMHE focal point for evaluation and approval prior to formal development and placement onto the MMHE focal point website.

Instructions to properly use, inspect, or repair existing MMHE focal point designed equipment are typically located in TO 35D-1-2-CD-1, *Munitions Material Handling and Support Equipment* (Miscellaneous and Locally Manufactured), or the applicable item TO. The MMHE focal point posts instructions to properly use or inspect specific LME temporarily on their website for newer equipment until a TO change includes the new information.

### **Maintenance and inspection of locally manufactured equipment**

All LME regardless of origin must be maintained and inspected for serviceability on a regular basis in accordance with the appropriate 00-20 series technical data. AFTO 244, Industrial/Support Equipment Record or equivalent, shall be maintained for all LME items (racks, stands, adapters, etc.). Equipment without technical data must as a minimum, be inspected every 180 days for corrosion, physical defect, and lubrication as required.



See tables below for inspection definitions and defect classification.

Definitions of Inspection Conditions	
Condition	Characteristic
Burr	A projection of metal.
Chipping	Breaking away of metal pieces generally caused by excessive stress concentrations or by careless handling. Hard-coated parts are susceptible to chipping of the hard coat surface, particularly at the corners.
Corrosion	Surface damage caused by chemical action.
Crack	Partial separation of metal, usually caused by vibration, overloading, faulty internal stresses, defective assembly, or fatigue.
Dent	Small shallow depressions in a surface, having rounded bottoms and edges, usually caused by striking the part with a rounded object.
Distortion	Deformation of a surface or part from the original configuration in a manner that impairs part function or service.
Fraying	Wearing away of a surface due to rubbing or chaffing action of another part, usually induced by vibration.
Galling	A condition in which transfer of metal occurs between two parts made of like material (usually steel), occurring when metal parts have limited relative motion under high loads.
Gouge	A furrowed depression in which displacement of metal has occurred, usually caused by a relatively large foreign particle being trapped between closed moving parts.
Groove	A recess or channel with rounded or smooth edges, generally caused by continued abnormal wear or faulty alignment of parts.
Nick	A sharp-sided gouge or depression caused by a sharp edge, usually due to careless handling of parts or tools.
Obvious Wear	A wear condition obvious to the eye without magnification.
Scoring	Scratches usually caused by foreign particles trapped between two moving parts.
Scratch	A shallow, thin line or mark, varying in width and depth, caused by presence of foreign particles during operation or by careless handling.

Defect Classification Definitions	
Defect Classification	Characteristic
Major	A defect, which has the potential of causing damage to equipment or injury to personnel and will be removed from service immediately and the defect corrected.
Minor	A defect, which does not cause the equipment to be unserviceable, but corrective action should be accomplished as soon as possible.

## Students Notes



## Self-Test Questions

After you complete these questions, you may check your answers at the end of the unit.

### 028. Base supply

1. What system is used to finance the purchase of inventory supply holds until they are required for use?
2. When you order and receive a part, where does the money come from to pay supply for the part?
3. What happens to the excess funds at the end of each quarter?
4. What are your bench stock levels based?
5. What is an urgency justification code?
6. What is the expendability, recoverability, reparability category code for special purpose recoverable authorized maintenance assets?
7. What equipment is listed in the -21 TO?
8. When should high risk cannibalizations be performed?
9. Who approves cannibalization authorities?
10. The Defense Logistics Agency aviation supports how many major weapons systems?
11. Other than military and relief support, what other function does Defense Logistics Agency serve?

### 029. Supply ordering

1. What does an allowance standard authorize?
2. When do equipment items show up on a custody authorization/custody receipt listing?

3. What AF Form can be used to order equipment authorized by an allowance standard?
4. What do supply personnel refer to when an item is unavailable?

**030. Repair cycle**

1. What is considered the beginning and the end of the repair cycle?
2. What are the two codes used to denote repair cycle assets?
3. What assets cannot be condemned locally?
4. What do supply personnel establish in the base supply computer when a part is issued or on backorder?
5. Who uses the due in from maintenance detail to track repair cycle assets at base level?
6. What is one of the prime responsibilities of asset managers?
7. What are the three categories of repair cycle actions?
8. Does delayed maintenance time update repair cycle time?
9. What happens if the repair technician cannot repair the asset?
10. What control system is used to identify the asset repair destination?
11. What is the repair cycle?
12. What are the key entries on the AF Form 2005?

13. What are the two functions of the “Mark For” block on the AF Form 2005?
14. When are assets automatically entered into the repair cycle?
15. What do supply personnel do with serviceable assets that are turned in to supply?
16. What register provides a means for organizations to review all document numbers processed during the day by the Enterprise Solution-Supply?
17. What does the D18 provide?
18. What is a D19?

### **031. Supply forms and tags**

1. What is the main function of the AFTO Form 375?
2. What does serviceable condition code “A” represent on a DD Form 1574 or 1574-1?
3. What is the main difference between the DD Form 1348-1 and the 1348-2?

### **032. Munitions material handling equipment**

1. What is the primary function of the munitions material handling equipment focal point?
2. How does munitions material handling equipment focal point make drawings available to units requiring LME?
3. What must locally manufactured equipment without technical data be inspected for?



## 3-2. Deficiency Reporting System

The USAF Deficiency Reporting and Investigating System feeds deficiency data back to those activities responsible for the development and procurement of material for the Air Force and other logistical management functions.

### 033. Deficiency reporting

Deficiency reporting (DR) allows the responsible agency to initiate action to correct and prevent material design and quality deficiencies. These reports are crucial to the Air Force to identify and correct problems you face in the performance of your duties. This lesson covers the two types of reports, the tracking system, and the screening point responsibility in the DR process.

#### Type of deficiency reports

The regulation covering product quality DR is TO 00-35D-54, *USAF Deficiency Reporting, Investigation, and Resolution System*. There are two types of DR reports—Category (CAT) I and CAT II. Let's take a look at their definitions and what types of deficiencies they apply to.

#### CAT I deficiency reporting

A CAT I report of a deficiency includes situations that, if uncorrected, would cause death, severe injury, severe occupational illness to personnel or, if uncorrected, would cause major loss or damage to equipment or a weapons system. The system program director (SPD) or IM determines whether the deficiency is reportable for analysis and tracking.

#### CAT II deficiency reporting

A CAT II report is used when a “new” supposedly serviceable item fails functional or operational checks after installation. This type of deficiency is used in the following situations listed below:

- When a deficiency is found during installation, functional test, or visual inspection before test.
- When a deficiency is attributable to errors in workmanship, nonconformance to specifications, drawing standards or other technical requirements.
- When a report is required for tracking by agreement of the system manager (SM), IM, and the using command DR point of contact (POC).
- When a deficiency is found during the initial acceptance inspection (critical or major defects only).
- When there is an error in the statements of instruction compromising computer program software used for functional testing/calibration of equipment.

The originator of the DR discovers and identifies the defect, if possible. The originator also verifies whether the NSN is listed in the master nuclear certification list (MNCL). If it is, then a DULL SWORD report may be necessary. Check AFI 91-204, *Safety Investigations and Reports*, to be sure. The DR originator uses a local worksheet to record data prior to entering it in an approved automated reporting system, such as, IMDS or joint deficiency reporting system (JD RS), when drafting the report. Forward draft DRs with supporting data to the screening point. You must forward CAT I reports to the screening point within 24 hours; you must forward CAT II reports within three workdays. When submitting a single report conveying several occurrences of the same deficiency, make sure you include all the required information. If ten aircraft have experienced the same deficiency, the report must contain information on each occurrence, that is, aircraft serial number, dates discovered, and operating time of unit before failure. Formally, submit CAT I DRs within two workdays after discovery of the deficiency and submit CAT II DRs within 13 workdays after discovery of the deficiency.



## **Student Notes**

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