

**17 JULY 2000**



**Maintenance**

**AIRCRAFT CRASH RECOVERY PROCEDURES**

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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OPR: 18 MXS/LGMTRS  
(MSgt Alejandro Alexander)

Certified by: 18 LG/CC (Col Kenneth R. Emery II)  
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This instruction implements AFD 21-1, *Managing Aerospace Equipment Maintenance*. It establishes responsibilities and procedures for the 18th Wing crash recovery operations. It applies to 18th Wing and associate units at Kadena AB. This publication does not apply to the Air National Guard or US Air Force Reserve.

**1. References.** PACAFI 21-101, *Objective Wing Aircraft Maintenance* and AFI 91-204, *Safety Investigations and Reports*.

**2. Responsibilities.**

2.1. 18th Maintenance Squadron (MXS) Repair and Reclamation (R&R) will:

2.1.1. Furnish crash recovery crews for in-flight and ground emergency response. Crews will consist of a minimum of three personnel, one of whom is at least an E-5.

2.1.2. Indoctrinate and train all personnel assigned to the 18 MXS Crash Recovery Team (CRT), in accordance with (IAW) PACAFI 21-101.

2.1.3. Document training on AF Form 1098, **Special Task Certification and Recurring Training**.

2.1.4. Maintain a 24-hour crash phone or crash radio standby on normal duty days.

2.1.5. Maintain a telephone standby CRT during all non-duty hours and holidays. The team will consist of a minimum of three personnel, one being a 7-level or above.

2.2. Appropriate flying squadron sortie generation flight (SGF) will:

2.2.1. Assist 18 MXS R&R during multiple or simultaneous in-flight emergencies as directed by the Maintenance Operations Center (MOC).

2.2.2. Provide backup emergency MB-4 vehicle and universal towbar support, as required.

2.3. Transient aircraft maintenance will assume the responsibility for in-flight and ground emergency response during non-duty hours and holidays and when the R&R element is on standby. In the event of an actual aircraft incident, the R&R crash recovery standby crew will be recalled.

2.4. MOC will:

2.4.1. Coordinate with AMC, US Marine Corps, or US Navy Maintenance Control for assistance in the crash recovery of their aircraft.

2.4.2. Direct the appropriate flying squadron SGF or 18 MXS agencies to assist R&R during multiple or simultaneous in-flight emergencies.

2.4.3. Notify 18 OG/18 LG Quality Assurance of all reportable major/minor crash recovery incidents.

2.4.4. Coordinate with the base Civil Engineers' Maintenance Control or US Marine Corps for the dispatch of crane and support equipment as determined by the CRT supervisor. In the event it becomes necessary to immediately clear the runway without consideration of additional damage to the aircraft, MOC will coordinate expediting any additional heavy equipment items.

2.5. Reports on aircraft involved in any major/minor accident will be initiated by 18 WG Safety IAW AFI 91-204.

2.6. In the event a wide-bodied aircraft becomes disabled at Kadena AB, the following procedures apply:

2.6.1. For C-5, C-17, C-141, or KC-10 aircraft, the 633 AMSS will coordinate recovery through HQ AMC Tanker Airlift Control Center, Scott AFB, IL, DSN 576-1763. Additionally, the 633 AMSS will coordinate recovery through the 18 WG Command Post, which will in turn notify HQ PACAF/LGM and their MAJCOM.

2.6.2. For E-4A/B: 18th Wing MOC will notify 18 WG Command Post which will in turn notify HQ PACAF/LGM and also request assistance, through the MAJCOM, from the 55th Wing Operations Center, Offutt AFB, NE, DSN 271-5147/48.

### 3. Procedures.

3.1. Upon notification of an in-flight or aircraft ground emergency, R&R will log all information received over the crash phone or radio, including aircraft type, location, and nature of the emergency (see [Attachment 1](#), [Attachment 2](#) and [Attachment 3](#)).

3.2. CRT will be dispatched for all fighter aircraft, which will engage an aircraft barrier. For the purpose of this 18 WGI, a possible barrier engagement is defined as any in-flight emergency involving arresting hook-equipped aircraft, except those whose only malfunction is hung ordnance. During other in-flight emergencies, the CRT will maintain radio standby until termination of the emergency.

3.3. During the emergency response, the CRT will proceed to taxiway "D" or "E", depending on the active runway. They will be at the disposal of the fire chief/on-scene commander to assist in the rescue operations as needed and standby to clear the disabled aircraft from the runway after it is released for movement by the Fire Department/on-scene commander.

3.4. CRT will clear the runway of disabled aircraft in the most expeditious manner practical. Tenant organizations will provide trained personnel and equipment to recover their aircraft.

3.5. Once a disabled aircraft is capable of being towed clear of the runway, responsibility for towing aircraft returns to the owning agency with the exception of 18 WG aircraft, which will be towed by the CRT to the designated parking spot when practical. When this is not possible, the SGF will tow aircraft back to the designated parking area. Non-towable aircraft will be moved by R&R to a location designated by MOC.

3.6. Aircraft that shut down clear of active runways or active taxiways will be towed to the parking spot by the owning organization. If the CRT has already been dispatched, they should tow the aircraft to the parking spot unless they have to respond to another call.

3.7. In the event of an aircraft mishap or impoundment, all personnel will ensure current status of CAMS database is preserved.

3.8. During normal duty hours, Database Management (DBM) Office will immediately put CAMS in file update (FUD). During non-duty hours, MOC will contact CAMS DBM noncommissioned officer in charge (NCOIC) or Assistant NCOIC and DBM will contact the regional processing center by telephone and have CAMS brought off-line immediately. The DBM will report to their duty section, have CAMS brought on-line, and place system in FUD.

3.9. MOC will notify the primary or alternate Aerospace Vehicle Distribution Officer (AVDO) of aircraft mishaps. AVDO will comply with AFI 21-103, *Equipment Inventory, Status, and Utilization Report* and 21-103/PACAF SUP 1, and AFCSM 21-564 Volume 2, *Status and Inventory Reporting* requirements.

3.10. DBM will then process CAMS program NFS140 TRE for the aircraft, ensuring all job data documentation is included in report.

3.11. CAMS database will then be saved by processing the appropriate save runstream. Upon completion of save, the print file will be reviewed to ensure all database areas were successfully saved. The saved runstream will be reprocessed until a complete and successful save is accomplished.

3.12. CAMS database will then be brought on-line and normal processing will resume.

3.13. Output from NFS140 will be downloaded to a personal computer and copied on two diskettes. One diskette will be provided to OG Plans, Scheduling & Documentation (PS&D), one will be maintained by DBM. A hard copy of the print file will also be provided to OG PS&D.

3.14. When an outside agency such as an accident investigation board wishes to look at the saved CAMS database, it will be copied to training database (gang three). ADS terminal for gang three will be opened and will place database in FUD. Personnel desiring access to gang three will then use ADS terminal for all transactions. Upon completion of use of this database, original training database will be reloaded to gang three. DBM Section will determine if a save of the training database is needed before loading the database saved after mishap.

#### **4. Disabled/Crashed Aircraft Removal Training Requirements.**

4.1. 18 MXS R&R will:

4.1.1. Develop training course outlines with the assistance of the 18th Logistics Support Squadron Logistics Group Training Management (LGLT) to cover all required training.

- 4.1.2. Give the following information in writing to the LGLT prior to the monthly maintenance scheduling deadline.
  - 4.1.2.1. Date and time training is desired.
  - 4.1.2.2. Type of aircraft and length of the time required.
  - 4.1.2.3. Inform MOC of start and stop times of training.
- 4.1.3. Conduct the required monthly and quarterly training and record all training data on an AF Form 797, **Job Qualification Standard Continuation/Command JQS**.
- 4.2. 18th Operations Support Squadron Plans and Scheduling will publish the following in the monthly/weekly maintenance plan:
  - 4.2.1. Aircraft tail number to be used.
  - 4.2.2. Location where training will take place.
  - 4.2.3. Time span of training.
- 4.3. MOC will:
  - 4.3.1. Coordinate with the appropriate flying squadron SGF to have aircraft properly configured.
  - 4.3.2. Ensure aircraft is parked in the proper location (moved by owning organization, if required).
  - 4.3.3. Monitor training start and stop times.
  - 4.3.4. Notify the fire department of when and where training will take place.
- 4.4. LGMTRS will ensure that the training course outlines are developed to cover the required training.

JAMES B. SMITH, Brigadier General, USAF  
Commander, 18th Wing

**Attachment 1****TECHNICAL ORDER LISTING**

FOLLOWING IS A LIST OF TOs THAT MAY BE REQUIRED FOR RECOVERY:

F-15

|                    |   |
|--------------------|---|
| 1F-15C-2-05JG-00-1 | AIRCRAFT SAFE FOR MAINTENANCE                 |
| 1F-15C-2-05JG-00-2 | MAIN AND NOSE WHEEL REMOVAL AND REPLACEMENT   |
| 1F-15C-2-07JG-00-1 | AIRCRAFT LIFTING AND HOISTING                 |
| 1F-15C-2-09JG-00-1 | AIRCRAFT TOWING                               |
| 1F-15C-3-1         | APPLICABLE AIRCRAFT RECOVERY METHODS/HANDLING |
| 4B-1-1             | HOT BRAKES                                    |
| 35D3-32-3-1        | WHEEL DOLLY                                   |

KC-135R

|                       |                             |
|-----------------------|-----------------------------|
| 1C-135(R)A-3-1        | CRASH HANDLING AND SHIPPING |
| 1C-135(K)R-2-2-JG-6   | AIRCRAFT JACKING            |
| 1C-135(K)R-2-7 SERIES | AIRCRAFT LANDING GEAR       |
| 1C-135(K)R-2-8 SERIES | AIRCRAFT LANDING GEAR       |

E-3A

|                              |                             |
|------------------------------|-----------------------------|
| 1E-3A-3-1                    | CRASH HANDLING AND SHIPPING |
| 1E-3A-2-7 OR 1E-3A-2-7-1CL-1 | AIRCRAFT JACKING            |
| 1E-3A-2-27-1                 | AIRCRAFT FLIGHT CONTROLS    |
| 1E-3A-2-32-1                 | AIRCRAFT LANDING GEAR       |

TOs REQUIRED FOR ALL AIRCRAFT:

|             |                  |
|-------------|------------------|
| 35D5-5-3-11 | LIFTING BAGS     |
| 35D6-1-106  | SLING INSPECTION |
| 35E11-3-53  | BLOWER OPERATION |
| 34Y1-135-51 | MC-7 AIR CART    |

## Attachment 2

## AIRCRAFT RECOVERY SAMPLE CHECKLIST

**NOTES:**

1. This is a guide and should not be used in place of appropriate TOs.
2. All items will be checked either complied with (CW) or not applicable (NA) to the left of numbers.
3. Items listed below may not pertain to all types of crashed or damaged aircraft and may not be applicable.

| CW | N/A | Checklist   |
|----|-----|---|
|    |     | 1. Fire Department personnel will insure the aircraft is fire safe before aircraft recovery personnel approach aircraft.  |
|    |     | 2. Response team responds to IFE (will be treated as an IFE until crash is confirmed).<br>Crash Confirmed YES/NO.   |
|    |     | 3. If aircraft crashes on Kadena AB, the response team leader will assess the damage and coordinate with the on-scene commander on tentative plan of recovery.  |
|    |     | 4. If aircraft crashes off base, response team leader will respond to the crash site with maintenance supers. The team leader will assess the damage and coordinate with the on-scene commander on tentative plan of recovery.  |
|    |     | 5. NOTIFY R&R SHOP TO:<br>a. Inform element shop chief and maintenance flight OIC/NCOIC that a crash has occurred.<br>b. Initiate a <b>recall</b> of personnel if current workload demands it. If no personnel are at the R&R shop, the response team leader <b>will</b> notify MOC by radio to initiate the recall.<br>c. Assign a dedicated dispatch coordinator who will: <ol style="list-style-type: none"> <li>1. Maintain constant surveillance of the CRASH net and record information.</li> <li>2. Plot the crash site on grid map.</li> <li>3. Assemble necessary TOs.</li> <li>4. Send someone to AGE for necessary gas can and gas for blowers and generators.</li> <li>5. Send someone to warm up the recovery tractor trailer.</li> <li>6. Send someone to confirm the MB-2 state of readiness.</li> </ol> |
|    |     | 6. Aircraft recovery team will assemble at the south side R&R shop. The aircraft recovery plan will then be briefed by the designated team chief.   |

| CW | N/A | Checklist   |
|----|-----|---|
|    |     | 7. The response team leader who initially responded to the crash site will brief the designated aircraft recovery team chief on the suggested plan of recovery.   |
|    |     | CONTACT MOC FOR: (if needed)  |
|    |     | a. Crane response (see crane support agreement)   |
|    |     | b. 40 foot flatbed (motor pool)   |
|    |     | c. 15-ton tractor (motor pool)  |
|    |     | d. MB-2 (Transient Alert)   |
|    |     | e. CE heavy maintenance equipment   |
|    |     | f. 4000 trailer (engine shop)   |
|    |     | g. 3000 trailer (engine shop)   |
|    |     | h. Tank dollies (AGE)   |
|    |     | i. Heaters (AGE)  |
|    |     | j. Tripod jacks (AGE)   |
|    |     | k. Maintenance stands (AGE)   |
|    |     | l. Hydro carts (AGE)  |
|    |     | m. Light carts (AGE)  |
|    |     | 8. 18th Wing Safety will be notified and release the aircraft prior to the beginning of the recovery operation.   |
|    |     | 9. <b>Recovery team chief will conduct a briefing prior to starting aircraft recovery operations. As a minimum, the following will be addressed: NOTE:</b> Crane operating signals are on a placard on the crane. |
|    |     | a. Safety factors (stress).   |
|    |     | b. Use of reflective vests, hard hats, and gloves.  |
|    |     | c. Plan of recovery.  |
|    |     | d. Assign job tasks.  |
|    |     | e. Stress coordination with team chief at all times.  |
|    |     | 10. Ensure fire bottle is available.  |
|    |     | 11. Ensure aircraft is chocked and grounded (if possible).  |
|    |     | 12. Ensure all ordnance is safe prior to maintenance or removal (EOD).  |
|    |     | 13. Ensure all safety pins and/or downlocks are installed (if possible).  |
|    |     | 14. Remove LOX bottle (if needed or possible).  |
|    |     | 15. Safe egress system (EOD).   |

| CW | N/A | Checklist   |
|----|-----|---|
|    |     | <p>16. Determine fuel quantity and defuel when practical or possible. Approximate fuel quantity _____ lbs.</p> <p>Aircraft max lifting weights are as follows:</p> <p style="padding-left: 40px;">F-15 = 40,300 lbs. F-16 = 33,000 lbs.</p> <p style="padding-left: 40px;">F-4 = 42,000 lbs. F-18 = 37,400 lbs.</p> |
|    |     | <p>17. Ensure a complete inventory of the aircraft recovery trailer is accomplished after aircraft reclamation and prior to leaving the site. An inventory sheet will be used to ensure that all items are accounted for.</p>   |
|    |     | <p>18. Document all damage and work performed on aircraft in 781As.</p>   |

## Attachment 3

## KC-135/E-3 RECOVERY SAMPLE CHECKLIST

This is a guide and should not be used in place of the appropriate TOs. Every scenario is different; some items may not pertain.

| CW | N/A | KC-135/E-3 Crash Recovery Checklist   |
|----|-----|---|
|    |     | 1. Fire department personnel will ensure the aircraft is fire safe before crash recovery personnel approach the aircraft.   |
|    |     | 2. A/R North will respond to KC/RC-135 and E-3 IFEs and they will be treated as an IFE until a crash is confirmed.  |
|    |     | 3. The shift supervisor will act as the response team leader.   |
|    |     | 4. Upon notification of an IFE, call sign A/R-5 becomes Recovery-5.   |
|    |     | 5. Recovery-5 will notify CHIEF-2 through physical communication, radio (crash net), or the Maintenance Super, that they are standing by to assist, as needed.  |
|    |     | <p>6. <b>NOTE: SEE RECALL ROSTER FOR CRASH TEAM</b></p> <p>If an aircraft crashes on or off base, the response team leader will go to the crash site to debrief the on-scene commander and assess the damage. He/she will then recall the primary crash response team.</p>  |
|    |     | 7. When a crash trailer is required, the south side A/R shop will provide a qualified driver.   |
|    |     | <p>8. The section chief or shift super will appoint a team chief for the recovery operation.</p> <p><b>WARNING</b></p> <p>Due to the many unknown factors of aircraft condition immediately following a crash landing, the use of special equipment or procedures should not be attempted without the approval of the OC-ALC/LACRA. Also Wing Safety must clear the aircraft before recovery.</p> |
|    |     | 9. The response leader will brief the crash recovery team chief on the suggested plan of recovery.  |

| CW | N/A | <b>KC-135/E-3 Crash Recovery Checklist</b>   |
|----|-----|--|
|    |     | <p>10. Procedures and techniques employed after the crash will have to be determined at the crash site.</p> <p>Some things to consider are: damage to primary structures, repair allowance, topography, access to site, distance to repair site, fuel load, and aircraft weight.</p> <p>Hoisting and transportation requirements must be elevated to determine if reclamation and salvage operations are practical.</p> <p><b>NOTE:</b> The preferred method of aircraft hoisting is jacking, and the F-2 air bag, secondary. Crane hoisting the aircraft is possible, although not desirable.</p> |
|    |     | <p>11. Recovery team chief will brief team members on:</p> <ul style="list-style-type: none"> <li>a. Safety factors (<b>STRESS SAFETY</b>).</li> <li>b. Assign job tasks.</li> <li>c. Stress coordination with recovery team chief.</li> <li>d. Use of reflective vest, hard hats, gloves, and steel-toed boots.</li> </ul>  |
|    |     | <p>12. Ensure the aircraft is chocked and grounded. <b>NOTE:</b> Ground points on top of the wing.</p>   |
|    |     | <p>13. Ensure a fire bottle is available.</p>  |
|    |     | <p>14. Defuel aircraft to the lowest possible fuel quantity, if possible or needed.</p>  |
|    |     | <p>15. Contact MOC if any of the following are needed:</p> <ul style="list-style-type: none"> <li>a. Any powered or non-powered AGE equipment.</li> <li>b. CE heavy equipment.</li> <li>c. Two 30-ton cranes and one 20-ton crane. <b>NOTE:</b> Two 10-ton cranes will work instead of the one 20-ton crane. <b>NOTE:</b> See crane support agreement.</li> <li>d. 40-foot flatbed trailer.</li> <li>e. 15-ton tractor.</li> </ul>   |