BY ORDER OF THE COMMANDER
4TH FIGHTER WING

SEYMOUR JOHNSON AIR FORCE
BASE INSTRUCTION 21-202

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Maintenance

CRASHED DAMAGED DISABLED AIRCRAFT RECOVERY (CCDAR) EMERGENCY RESPONSE

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This instruction establishes the responsibilities and procedures governing the 4th Fighter Wing (FW) along with the 916th Air Refueling Wing's (ARW) crashed, damaged, and disabled aircraft recovery operations at Seymour Johnson Air Force Base (AFB), North Carolina. It supplements Seymour Johnson AFB's Installation Emergency Management Plan 10-2, 4 FW Mishap Response Plan, Technical Order (TO) 00-80C-1, *Crash, Damaged, Disabled Aircraft Recovery Manual*, and aircraft specific Dash-2 & Dash-3 series TOs. This publication is applicable to all units assigned or attached to the 4th FW. Refer recommended changes and conflicts between this and other publications to 4 Equipment Maintenance Squadron/Maintenance Flight, Repair & Reclamation Section (4 EMS/MXMTR) through your Lead Command channels, using the AF Form 847, *Recommendation for Change of Publication*. This publication may be supplemented at any level, but all direct supplements must be routed to the Office of Primary Responsibility (OPR) of this publication for coordination prior to certification and approval. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with AFI 33-322, *Records Management and Information Governance Program*, and disposed of IAW Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS). Failure to observe the prohibitions and mandatory provisions in paragraphs **1.1.4** and **1.5.14** of this publication by military members is a violation Article 92 of the Uniform Code of Military Justice (UCMJ).

SUMMARY OF CHANGES

This document has been revised to include the list of references required per DAFI 21-101, *Aircraft and Equipment Maintenance Management* in the opening statement. This Instruction should be completely reviewed.

1. 4 FW CDDAR Roles and Responsibilities

1.1. Definitions and Guidance.

1.1.1. A crashed aircraft is an aircraft that has suffered catastrophic damage and requires team operations to recover the aircraft.

1.1.2. A disabled aircraft is an aircraft that cannot/should not be moved using its own power, but can be towed using its own undercarriage.

1.1.3. A damaged aircraft is an aircraft that cannot be moved using its own power, or by towing using its own undercarriage.

1.1.4. Wreckage will not be disturbed IAW DAFI91-204, *Safety Investigations and Reports* with the exception of essential rescue operations. To prevent interference with vital air operations, the 4 FW Commander (4 FW/CC) or the Incident Commander (IC) may direct wreckage to be moved as deemed necessary.

1.1.4.1. In the event the response portion of an incident has been terminated, the role of IC can be transferred IAW *Air Force Manual* (AFMAN) 10-2501, *Emergency Management Program* to an appointed Recovery Operations Chief (ROC). For the purposes of this instruction, any reference to IC will also apply to a ROC when appointed.

1.1.5. If directed by the 4 FW/CC, the Crisis Action Team and/or Emergency Operations Center (EOC) will stand up and operate in accordance with SJAFB Installation Emergency Management Plan 10-2.

1.2. Responsibilities.

1.2.1. The 4 FW/CC has overall responsibility for the removal of crashed, damaged, or disabled aircraft recovery (CDDAR) from the runway.

1.2.2. Group/Squadron Commanders are responsible for ensuring compliance with this instruction.

1.2.3. The 4th Equipment Maintenance Squadron (4 EMS) Maintenance Flight will:

1.2.3.1. CDDAR *Composite Tool Kit* (CTK)/equipment will be inspected every 90 days and inventoried prior to and after every use.

1.2.3.1.1. 4 EMS Repair and Reclamation Section is the SJAFB host responsible unit for Crash Recovery. Crash Recovery personnel will respond to aircraft emergencies when notified via secondary crash phone or by *Maintenance Operation Center* (MOC) via mobile radio communication.

1.2.4. Crash Recovery Team Chief will:

1.2.4.1. Determine lift and transport requirements for crashed, damaged or disabled aircraft recovery.

1.2.5. Crash Recovery Team will:

1.2.5.1. Maintain the required programs, training, and equipment items to perform composite material handling during an aircraft recovery operation in accordance with TO 00-105E-9, *Aerospace Emergency Rescue and Mishap Response Information*

(Emergency Services), TO 00-80C-1 *Crash, Damaged, Disabled Aircraft Recovery Manual*.

1.2.5.2. Receive directives from the Crash Recovery Team Chief.

1.2.5.3. Provide immediate response during scheduled flying periods.

1.2.5.4. During unscheduled flying periods, respond with standby personnel as soon as possible, but no later than 30 minutes after mishap occurrence and notification.

1.2.5.5. During normal flying periods, damaged or disabled aircraft will be recovered from the runway consistent with the following considerations:

1.2.5.5.1. The requirement to re-open the runway for operational use.

1.2.5.5.2. Prevention of unnecessary secondary damage.

1.2.5.5.3. Preservation of evidence for mishap or accident investigation (determined by Flight Safety).

1.2.6. Disabled aircraft will be recovered / towed from the runway/taxiway to the nearest Arm/De-Arm area for owning organization pick-up.

1.2.7. Damaged aircraft will be recovered from the runway, taxiway or mishap site and delivered to a maintenance facility per IC directives.

1.2.8. When transient aircraft and other support aircraft are involved, Transient Alert will provide technical support.

1.3. 4 EMS Maintenance Flight Commander/Chief will:

1.3.1. Ensure procurement and storage is provided for crash recovery equipment.

1.3.2. Ensure the monitoring of inspections, repair, and storage of crash recovery equipment.

1.3.3. Ensure coordination with appropriate agencies to repair or replace out of commission equipment.

1.3.4. Maintain and review, annually or when changes dictate, an approved CDDAR equipment inventory.

1.3.5. Ensure the appointment of Senior non-commissioned officer (SNCO) CDDAR Team Chiefs, in writing, by the 4th Maintenance Group Commander (4 MXG/CC) and that appointed individuals are tracked on the special certification roster (SCR).

1.3.5.1. 4 MXG/CC may waive the grade requirement to Technical Sargent (TSgt) as per (DAFI 21-101_ACCSUP) *Aircraft and Equipment Maintenance Management*.

1.4. Repair and Reclamation Section Chief/Team Chief will:

1.4.1. Procure and maintain applicable technical orders, instructions, and directives necessary for crash recovery accomplishment (Technical Orders located in the 4 EMS Maintenance Flt Support Section).

1.4.2. Schedule a minimum of one crash recovery lift training exercise annually and ensure all training is documented in the Integrated Maintenance Data System (IMDS) and in each

individual's training records. Wing exercises and real world occurrences that satisfy training requirements may be substituted.

1.4.3. Schedule a minimum of one crash recovery training quarterly to fulfill the complete CDDAR Training Plan over an annual period and ensure all training is documented in the IMDS and each individual's Training Business Area (TBA). Wing exercises and real world occurrences that satisfy training requirements may be substituted.

1.4.4. Schedule a minimum of one KC-46A crash recovery familiarization training event semi-annually and ensure all training is documented in each individual's training records. Wing exercises and real world occurrences that satisfy training requirements may be substituted. (Support Agreement # FB4809-xxxxx-009)

1.4.5. Ensure the accomplishment and documentation of crash recovery equipment inspections are complied with quarterly and perform operational checks IAW applicable directives. (Inspections are documented on (AFTO Form 244) *Air Force Technical Order.* Report any out of commission status to 4 MXG/CC, Maintenance Flight Commander and Chief for immediate action.

1.4.6. Ensure a fully qualified crash recovery team is available for immediate dispatch during normal flying periods.

1.4.7. Ensure procedures are established for crash recovery availability during weekends and holidays. Minimum crew size will be one *Air Force Specialty Code* AFSC 2A373 and two 2A3X3 personnel. Weekly squadron standby duty is published and maintained by the squadron standby supervisor and MOC.

1.4.8. Coordinate with appropriate agencies to repair or replace out of commission equipment.

1.4.9. Procure and provide storage for crash recovery equipment.

1.4.10. Ensure a respiratory program is established and maintained IAW AFI 48-137, *Respiratory Protection Program.*

1.4.11. Maintain a CDDAR Team Chiefs Appointment letter signed by the 4th MXG/CC and ensure the individuals are tracked on the SCR. Team Chief can be reached 24 hours 7 days a week. See Team Chief Contact memorandum for record or call MOC for the number.

1.4.12. Ensure the rapid return of Crash Recovery personnel and equipment to "Ready" status.

1.5. 4 EMS Crash Recovery Section will:

1.5.1. Remove blown wheel/tire assemblies when aircraft is on the runway or taxiways replace with temporary crash recovery wheel assembly, red in color, and tow aircraft to an acceptable immediate temporary parking location (i.e. End of Runway (EOR), 916th parking ramp). The Aircraft Maintenance Unit (AMU) will then tow aircraft to the desired final parking location. AMU will enter the appropriate aircraft status/documentation in the aircraft 781 series forms, remove the crash recovery temporary wheel/tire assembly and immediately return assembly to Crash Recovery for their inspection and return to service.

1.5.2. Provide a qualified Recovery Operations Chief to assume overall responsibility for the recovery operation after the aircraft has been declared fire-safe by the Incident Commander or designated representative.

1.5.3. Maintain all CDDAR equipment/vehicles and ensure any discrepancies are reported to the Maintenance Flight Commander/Flight Chief. All discrepancies will be reported to the appropriate agency for immediate repair/replacement.

1.5.4. Provide a qualified crash recovery team supervisor (7-level or above) to assume overall responsibility for In-flight/Ground emergency after the aircraft has been declared fire-safe by the Incident Commander or designated representative.

1.5.5. Ensure the Bioenvironmental Engineering (BE) section has verified the aircraft composite/environmental hazards associated within the recovery area. BE will provide the ROC the recommended personal protective equipment to be worn by Crash Recovery personnel during the aircraft recovery process.

1.5.6. Establish radio contact with MOC and the IC.

1.5.7. Ensure the Crash Recovery response MB2/MB4 Coleman is immediately available to remove disabled aircraft from the runway.

1.5.8. Notify MOC to contact the owning unit. Upon notification, the responsible unit will respond with assembled tow team to include brake rider, establish radio contact with the IC/Crash Recovery, and await further instructions.

1.5.9. Once permission is granted by the IC, install chocks and landing gear pins. Only authorized personnel will install armament/weapons safety pins. Aircraft engine shutdown will be coordinated with the aircrew.

1.5.10. Escort all non-crash recovery personnel into the mishap area with permission/access granted by IC.

1.5.11. Advise the Incident Commander or designated representative on the most expedient method of removing the affected aircraft from the runway or taxiway.

1.5.12. Perform required maintenance and remove aircraft from the runway or taxiway. Once clear of the runway/active taxiway, aircraft will be released to owning organization. Crash Recovery will coordinate with the owning organization for towing or movement of the aircraft to an area where it can be safely parked without interfering with taxiing aircraft or airdrome flying operations.

1.5.13. If a disabled aircraft is blocking the active runway, the aircraft must be removed in a safe and expeditious manner. If insufficient time is available or the aircraft is damaged to an extent that the aircraft cannot be lifted or towed off of the runway within sufficient time, one of the following methods may be used: Note: Either method is likely to cause further damage to the aircraft and should only be used when time is the most urgent consideration. Time permitting, the coordination and approval by the 4 FW/CC or designated representative must be obtained prior to moving the aircraft.

1.5.13.1. Towing with tow vehicle and debog/reverse tow sling assembly. Connect debog/reverse tow sling to a major structural component such as the main landing gear or tail hook assembly. For C-17, C-5, C-130, E-8, KC-135, RC-135 and KC-46A

aircraft, attach sling around the main landing gear using synthetic tow slings as applicable or each gear towing eye if installed and tow cables are used. For heavy aircraft use the 916 ARW Crash Recovery reverse tow synthetic slings and recovery assistance.

1.5.13.1.1. If the main landing gear or tail hook is inaccessible, loop the cables or sling assembly around the tail assembly section of the aircraft and avoid looping the cable/sling assembly around the vertical stabilizers.

1.5.13.1.2. If using a tow cable; attach a cable to each tow vehicle and drag the affected aircraft off the active runway or taxiway.

1.5.13.2. Pushing disabled aircraft off the active runway with a heavy equipment. This method is used as a last resort. 4 FW/CC will assess if the aircraft is beyond economical repair and authorize the removal by heavy equipment. If the tow vehicle is unable to tow the affected aircraft for any reason, the IC will contact MOC and request heavy equipment from 4 Civil Engineering Squadron (CES) Heavy Equipment Section to assist crash recovery with the removal of the aircraft. The crash recovery Team Chief will instruct the heavy equipment operator to push/pull damaged aircraft clear of the active runway.

1.5.14. All personnel involved in crash recovery operations will adhere to recovery and safety procedures per aircraft specific Technical Orders and AFMAN 91 series standards.

1.5.15. Communication between the Civil Engineer Squadron, Fire Emergency Services, and Crash Recovery will be maintained to ensure aircraft recovery actions are performed as safely and quickly as possible.

1.5.16. Aircraft maintenance personnel are not trained, nor equipped, to accomplish crash-rescue functions. Crash-rescue is the responsibility of the 4 CES, Fire Emergency Services Flight.

1.5.17. The 4 EMS Crash Recovery Section is specifically trained to recover F-15E aircraft and assist the 916 ARW with the recovery of KC-46A aircraft. (Support Agreement # FB4809-xxxxx-009)

1.5.18. Crashed Damaged Disabled Aircraft Recovery key positions within the crash recovery team are:

1.5.18.1. The Team Chief will determine the number of personnel required at the time of an operation and keeps the Safety Investigation Board President (SIBP) informed of the recovery.

1.5.18.2. The Crash Recovery Team Chief is the liaison for any agency requiring contact with crash recovery personnel, is responsible for planning/coordination with base agencies and advises the IC of recovery operations. The Crash Recovery Team Chief is also responsible for assigning crash recovery team member task assignments and the physical recovery of the aircraft.

1.5.18.3. Crash Recovery Team Members will be qualified crash-trained technicians (except augmentees), responsible to the Crash Recovery Team Chief for the safe recovery of aircraft and parts.

1.5.18.4. The Crane and Operator will be provided via contract through 4th Contracting Squadron (4 CONS), will report to the Crash Recovery Team Chief, and will be responsible for the safe and proper operation of the equipment during recovery operation.

1.5.19. Ensure the IC or designated representative has provided the mishap scene to be fire safe prior to physical recovery of the aircraft and parts.

1.5.20. Ensure the SIBP or Wing Safety Office has cleared/released the mishap scene for recovery prior to physical recovery of the aircraft and parts.

1.6. Crash Recovery Program/Procedures.

1.6.1. The Crash Recovery Program is designed to remove crashed, damaged, or disabled aircraft from the runway and active taxiways in minimal time to reopen the airdrome for operational use. During normal flying operations, aircraft with in-flight or ground emergencies (i.e. blown tires, hot brakes, hung gun/munitions, or barrier engagements) will be removed from the runway or taxiway expeditiously. Crash Recovery personnel will in no way support the removal of aircraft from the barrier using the "slingshot" method.

1.6.2. The IC will:

1.6.2.1. Approve all recovery actions, (IAW AFI 10-2501, *Emergency Management Program*).

1.6.2.2. Consider the requirement to reopen the runway for operational use.

1.6.2.3. Consider the need to prevent initial or secondary damage to the affected aircraft.

1.6.2.4. Consider the requirement to gather and preserve evidence for a mishap investigation. In all cases, 4 FW Standard Evaluation (SE) and MXG/QA must be notified and document all events that create secondary damage to aircraft.

1.6.2.5. IC is responsible to mitigate the emergency and make the area fire safe for the ROC and recovery teams.

1.6.3. Crash Recovery will:

1.6.3.1. Respond to all in-flight and ground emergencies declared on all assigned and transient aircraft.

1.6.3.2. Provide a qualified Crash Recovery team supervisor (7-level or above) for all in-flight and ground emergencies.

1.6.3.3. Communicate with pilot/aircrew to determine exact nature of problem and check the affected aircraft for safety and overall condition.

1.6.3.4. Perform required maintenance to remove affected aircraft from the runway using applicable aircraft specific -2 and -3 series TOs as required.

1.6.3.5. Keep MOC and the IC informed of aircraft status and any maintenance requirements throughout the emergency.

1.6.3.6. Respond immediately, 24 hours a day, 7 days a week. Weekly squadron standby duty is published and maintained by the squadron standby supervisor and MOC.

1.6.3.7. Inspect/inventory rapid emergency response gas powered equipment monthly and red, temporary Crash Recovery wheels for serviceability/accountability weekly. Inspection will be documented in TCMax at the time of inspection and documented on the appropriate AFTO Form 244.

1.6.3.8. No Geographically Separated Units (GSU) are attached to the 4 FW.

1.6.4. The owning AMU will:

1.6.4.1. Respond with a tow team (consisting of tow driver, tow supervisor, brake rider, required tow equipment, tow vehicle and tow bar with applicable Technical Order) once notified by the crash recovery supervisor that the aircraft will not be moved under its own power.

1.6.5. The MOC will:

1.6.5.1. Relay all information to the Crash Recovery Section via land line or mobile radio.

1.6.5.2. Relay all requirements, as determined by CDDAR Team Chief, for equipment and personnel from servicing agencies for aircraft recovery in coordination with the Crash Recovery Section.

1.6.5.3. Relay dispatch requests from CDDAR Team Chief to personnel from required squadrons to assemble at the designated assembly point.

1.6.5.4. Act as the controlling agency for all additional recovery requirements.

1.6.6. Weapons Load Team (WLT) will:

1.6.6.1. Provide weapons safing for non-assigned/transient aircraft.

1.6.7. EOR will:

1.6.7.1. Provide weapons safing for base assigned aircraft.

1.6.8. Munitions Armament Shop (MUNS) will:

1.6.8.1. Provide and assist EOR, AMU Weapons, WLT and Explosive Ordinance Disposal (EOD) for jammed guns as needed.

1.6.9. The 4 EMS Aerospace Ground Equipment (AGE) Section will:

1.6.9.1. Maintain a minimum of two serviceable 35-ton fighter wheel skates, two 35-ton axle jacks and one MC7 cart.

1.6.10. All other agencies that are involved in CDDAR operations and are not identified in this instruction are listed in the SJAFB Installation Emergency Management Plan 10-2.

1.7. Condition Removals/Procedures.

1.7.1. EMERGENCY: A condition that requires immediate clearance of the runway at the risk of causing additional damage to the aircraft or equipment. The runway will be cleared in 30 minutes or less.

1.7.2. URGENT: A condition that requires clearance of the runway as soon as possible after required fire and rescue operations are accomplished, not to exceed 1 hour and 30 minutes, unless Explosive Ordnance Disposal considerations require additional time.

1.7.3. ROUTINE: A condition that allows sufficient time to use recovery techniques in accordance with specific aircraft technical orders. It is designed to minimize further damage to affected aircraft and precludes exposing personnel and equipment to danger.

1.7.4. Runway Closure and Recovery Priorities. In the event that a crashed, damaged, or disabled aircraft is on the runway, the 4 FW/CC or designated representative will determine the degree of urgency required to clear the runway. If immediate removal priority is given, the Crash Recovery Team Chief has the removal process option of using heavy construction equipment from 4 CES after coordination with Airfield Management for use on the airfield for runway/taxiway access. Personnel must contact the Control Tower for approval onto the runway for any activity taking place on or within 100ft of the runway. Personnel who are escorted must remain with their escort at all times. Crash Recovery will direct the operation and assist as necessary to push, pull, or scrape the aircraft from the runway as the situation warrants. **Note**: 4 CES procedures to facilitate response as dictated by this paragraph are listed in SJAFB Installation Emergency Management Plan 10-2, AFI 10-2501, *Emergency Management Program* and 4 FW Mishap Response Plan. Current runway priorities are listed in SJAFB 11-250, *Airfield Operations*. WARNING: If a weapons system discrepancy exists, EOR, Armament Shop, WLT or EOD personnel will safe weapons prior to aircraft movement IAW SJAFBI 11-250 Airfield Operations and LJG-4MXG-041 *Crash Recovery Emergency Response Guide.*

1.7.5. Once the aircraft is fire safe the IC or Senior Fire Official will turn over the aircraft recovery operation to the Crash Recovery Team Chief or Crash Recovery Team Supervisor.

1.8. Vehicle Requirements.

1.8.1. The following vehicles are required for in-flight emergencies (IFE) response and crash recovery capability: two trucks, general-purpose 4-wheel drive 6 pax with recovery winch, non-tactical radio, emergency response lights red & white in color, tactical flood lights and pintle hook; response trailer, 25-40 feet; aircraft tow tractor (MB-2 or MB-4) with universal tow bar; emergency response lights red & white in color & non-tactical radio; 2 all-terrain utility vehicle with transport trailer; one flat 16’ utility trailer; and 60 ton (minimum size) crane (*NOTE* 4 CONS maintains two Blanket Purchase Agreements (BPAs) for crane rental with operator. Contact 4 CONS for ordering procedures).

1.8.1.1. Crash recovery emergency response vehicles will be inspected daily by the on-coming shift for verification of response capability and documented on the vehicles inspection form 1800.

1.8.1.2. Crash recovery emergency response vehicles turned in for maintenance/inspections will be placed on an elevated priority, to reduce 4 Logistics Readiness Squadron (LRS) strain and rental vehicle requirements.

1.9. Response for Off-Base Mishaps Recovery Procedures.

1.9.1. Off-base recovery actions are coordinated through the 4 FW/CC through the disaster response force, including the Wing Command Post, unit control centers, EOC, and any specialized teams. Refer to SJAFB Installation Emergency Management Plan 10-2, and 4 FW Mishap Response Plan.

1.10. Training and Certification Requirements for Crash Recovery Personnel.

1.10.1. The 4 EMS Crash Recovery Section will:

1.10.1.1. Establish training, requirements and currencies for all assigned personnel in the use and inspection of crash recovery equipment. Qualified 7-level personnel will be designated as Crash Recovery Team Supervisors for specific aircraft mishaps at time of the incident.

1.10.2. The Crash Recovery Team Chiefs will be designated by the Group Commander in writing, will be SNCOs (waivered TSgt) and tracked on the SCR, IAW AFI 21-101_ACCSUP.

1.10.3. All Crash Recovery personnel will possess a valid AF Form 2293, *US Air Force Motor Vehicle Operator Identification Card* and an AF Form 483, *Certificate of Competency* (tracked in IMDS) for airfield driving.

1.10.4. All Crash Recovery Team Chiefs and Team Supervisors will be proficient at performing communication signals with the designated (BPA) contract crane operator. Electronic communication devices are sufficient.

1.10.5. CDDAR qualified trainers will:

1.10.5.1. Teach initial, recurring, and annual lift CDDAR requirements.

1.10.5.2. Provide initial and recurring crash recovery training for personnel, and update training in IMDS and TBA IAW AFI 36-2650, *Maintenance Training*, Chapter 3 Maintenance Training Documentation and TO 00-80C-1 Chapter 2.

1.10.5.3. Conduct crash recovery lift exercises at least annually. Refer to TO 00-80C-1, Chapter 2. Crane and operator, 60 ton minimum, will be contracted by 4 CONS and payment will be made by 4 EMS Government Purchase Card holder.

1.10.5.3.1. Conduct quarterly, recurring, crash recovery training. Special equipment training is documented in individual's TBA.

1.10.5.4. Track Crash Recovery qualifications in IMDS for Initial and Recurring certification for assigned MDS. Refer to TO 00-80C-1 chapter 2.

2. 916 ARW CDDAR Roles and Responsibilities

2.1. Purpose

2.1.1. This instruction outlines responsibilities, personnel, and training procedures for the effective movement of crashed, damaged and disabled aircraft assigned to the 916 ARW. In addition to the listed regulations in the purpose statement, it also implements the provisions in TO 00-105E-9, TO 00-80C-1.

2.1.2. Wreckage will not be disturbed in accordance with DAFI 91-204, *Safety Investigations and Hazard Reports*, with the exception of essential rescue operations. To prevent interference with vital air operations, the 4 FW Commander or the On-Scene Commander (OSC) may direct wreckage to be moved as deemed necessary. (Refer to 4 FW Mishap Response Plan.)

2.1.3. Specific Positions Defined

2.1.3.1. 916 CDDAR Team Chief

2.1.3.1.1. Responsible for KC-46A specific CDDAR program development, implementation and management. The Team Chief will be the airframe Subject Matter Expert (SME) and will advise the OSC on recovery operations. The CDDAR Team Chief is responsible for CDDAR Team Member task assignment and the physical recovery of unit assigned KC-46A Aircraft.

2.1.3.2. 916 CDDAR Team Members

2.1.3.2.1. Work directly for and reports to the CDDAR Team Chief. Team members will be qualified on basic CDDAR operations and training will be tracked in G081.

2.2. Responsibilities

2.2.1. The 4 FW has primary responsibility for the base CDDAR Program per DAFI 21-101 and the current Support Agreement # FB4809-xxxxx-009.

2.2.2. The 4 FW will provide recovery support for the 916 ARW and coordinate CDDAR procedures with the following activities: Base Fire Department, Safety, CES, Emergency Managment, EOD, Security Forces, BE, Airfield Manager, and local off-base authorities, as required per DAFI 21-101.

2.2.3. The 916 *Maintenance Group* (MXG) will provide CDDAR qualified personnel, airframe specific crash recovery equipment and will physically recover unit assigned KC-46A aircraft.

2.2.4. In the event of a major mishap, additional members may be augmented to assist in CDDAR operations under the direct supervision of the 916 CDDAR Team Chief.

2.2.5. The 916th Maintenance Flight will maintain a current recall roster of qualified CDDAR personnel and update the list semi-annually or as required.

2.2.6. The 916th MOC will monitor the secondary crash net for KC-46A IFE's, ground emergencies, mishaps and notify the 916 *Aircraft Maintenance Squadron* (AMXS) Production Superintendent or a designated representative and 916 CDDAR Team Chief as required.

2.3. Procedures

2.3.1. 916 MOC will relay information of an IFE to the 916 AMXS Production Superintendent or a designated representative.

2.3.2. Upon notification, the 916 AMXS Production Superintendent or a designated representative will establish radio contact with the OSC and dispatch to the location of the OSC when requested.

2.3.3. 916 AMXS Production Superintendent or a designated representative will ensure a tow team is assembled and ready to be dispatched, as required.

2.3.4. If the IFE is crash-damaged or departed the prepared surfaces, the 916 MOC will contact 916 CDDAR Team Chief which will in-turn initiate CDDAR team member recall and instruct them to report to a designated meeting place.

2.3.4.1. 916 CDDAR Team Chief will establish radio contact with the OSC and respond when requested to the mishap area.

2.3.4.2. The 916 CDDAR Team Chief will advise the OSC on the most expedient method of recovering the aircraft.

2.3.4.3. The 916 CDDAR team will begin recovery efforts once permission is granted from the OSC.

2.3.5. If a disabled KC-46A aircraft is blocking the active runway, the OSC in conjunction with the CDDAR Team Chief will use all available assets to accomplish a safe and expeditious removal of the crashed/disabled aircraft. If sufficient time is not available or the aircraft is damaged to an extent that the aircraft cannot be lifted or towed off the runway, one of the follow methods may be used. **Note**: The following methods are likely to cause further damage to the aircraft and should only be used when time is the most urgent consideration. The use of these methods shall be approved by the 4 FW/CC.

2.3.5.1. Towing aircraft with tow vehicle and debog/reverse tow slings connected to major structural components.

2.3.5.2. Pushing the disabled aircraft off the active runway with a bulldozer. This method is used as a last resort, when the aircraft is beyond economical repair.

2.3.6. If a damaged or disabled aircraft recovery is needed after duty hours, on weekends, or holidays, the 916 MOC or Command Post will notify the CDDAR Team Chief which will initiate the CDDAR team member recall roster and instruct them to report to a designated meeting place.

2.3.7. 916 ARW Command Post will notify 4 FW Command Post if 4 FW CDDAR coordination/support is required after duty hours.

2.3.8. Taxiway and runway will not be crossed without direct radio contact with the control tower or escorted by the base Fire Chief. Caution will be exercised to prevent crossing in front of armed aircraft.

2.3.9. The 916 CDDAR Team Chief will coordinate with 916th Quality Assurance (QA) Weight and Balance manager for aircraft weight and center of gravity.

2.3.10. The 916 CDDAR Team Chief will coordinate and brief evacuation, safety, and recovery procedures to all CDDAR members before the recovery effort begins.

2.3.11. All personnel involved in crash recovery operations will adhere to recovery and safety procedures per aircraft specific Technical Orders and AFI 91 series standards.

2.4. Personnel

2.4.1. Refer to 916 MXG/MXMTR Appointment Letter which identifies specific positions for the CDDAR team(s) IAW 21-101 (e.g., CDDAR team chief, special vehicle operator, team members, etc.).

2.4.2. Refer to 916 MXG/MXMTR Appointment Letter which identifies specific task for the CDDAR team(s) IAW 21-101 (e.g., identifying and handling of classified equipment, *Ariel Flight Equipment* (AFE) or egress systems specific tasks, etc.).

2.5. Vehicles and Equipment

2.5.1. All KC-46A specific CDDAR equipment maintained by 916 MXG will be inspected and serviced at least semi-annually, before and after each use, and in accordance with applicable T.O.'s. All inspections will be documented on applicable inspection forms and will be tracked in TC MAX and G081.

2.5.2. All non-specific KC-46A recovery equipment will be maintained, stored and provided by the 4 FW IAW Support Agreement FB4809-xxxxx-009.

2.5.3. The 916 ARW will reimburse 4 FW for any expenses associated with heavy crane or tractor trailer rental for unit assigned aircraft recovery IAW Support Agreement FB4809-xxxxx-009.

2.5.4. The 916 MXG will designate the following vehicles and support equipment for 24 hour CDDAR operations.

2.5.4.1. Weatherproof trailer and/or containers to transport and store KC-46A specific recovery equipment.

2.5.4.2. Refer to the local MIL in 916 ARW CDDAR continuity book for list of tools/equipment.

2.5.4.3. MC-7 Air Compressors (3 Each).

2.5.4.4. Aircraft tow tractor with KC-46A tow bar.

2.5.4.5. Two 120-ton, one 40-ton primary and three 25-ton auxiliary tripod jacks with transport trailer.

2.5.5. Obtain a truck (radio equipped general purpose type), through 4 LRS, for crash recovery operations in the event of an aircraft incident. These provisions are outlined in current Support Agreement FB4809-xxxxx-009.

2.5.6. No GSU are attached to the 916 ARW.

2.6. Training

2.6.1. The 916th Maintenance Flight will ensure a viable KC-46A specific training program exists and is reviewed semi-annually and updated as required.

2.6.2. The 916th Repair and Reclamation section will provide, KC-46A specific and simulated training to include, but not limited to:

2.6.2.1. KC-46A crash/disabled recovery procedures.

2.6.2.2. Safety precautions to include hazards associated with initial response.

2.6.2.3. KC-46A specific crash recovery equipment and location.

2.6.2.4. Active runway/taxiway radio communication procedures.

2.6.3. All 916 MXG personnel identified as CDDAR Team Members will coordinate with 916th Repair and Reclamation Section Chief for any required training and attend one of the KC-46A semi-annual training sessions.

2.6.4. The 916th Repair and Reclamation Section Chief will ensure training is conducted with the 4 FW/CDDAR Program Manager on KC-46A aircraft familiarization semi-annually IAW Support Agreement FB4809-xxxxx-009.

3. 4 FW/916 ARW Mutually Agreed Upon Provisions

3.1. Introduction. This Chapter details the agreement between the 4 FW and the 916 ARW CDDAR Programs. This is to include, but not limited to, crash response/recovery, training, aircraft familiarization, and teamwork. Each host base has overall responsibility for recovery of host/tenant crashed/disabled aircraft. Since tenant units are responsible for the condition/repair of their aircraft, the tenant units must be actively involved in training to assist host base recovery operations during real world responses. Technical expertise, technical data, MDS-unique tools/special equipment, and airframe/system familiarization are the primary contributions tenant units make to the host CDDAR recovery program.

3.1.1. Owning agencies will reimburse cost/replenish supplies that are used during CDDAR operations.

3.2. The 4 FW will:

3.2.1. Host units must ensure they are capable to provide and support recovery operations for all base assigned aircraft, to include tenant aircraft. Tenant units are required to participate in host training exercises.

3.2.1.1. GITA assigned will be used to fulfill the lift requirement for all assigned Team Chiefs, to include tenant unit personnel.

3.2.1.2. KC-46A's will not be lifted by any means for training purposes. Pneumatic lift bags may be position under the aircraft and inflated for training. However, the bags will not touch the skin of the aircraft. Refer to the AFI 21-101_AFRCSUP *Aircraft and Equipment Maintenance Management* and TO 00-80C-1.

3.2.2. Provide recovery support for the 916 ARW and coordinate CDDAR procedures with the following activities: Base Fire Department, Safety, CES, Disaster Preparedness, EOD, Security Forces, BE, Airfield Manager, and local off-base authorities, as required per DAFI 21-101.

3.2.3. Notify owning unit for other than KC-46A heavy aircraft for SMEs and technical support.

3.3. The 916 ARW will:

3.3.1. CDDAR team members will attend base host training exercises.

3.3.1.1. Team Chiefs will participate with the 4 FW and use Ground Instructional Training Aircraft (GITA) to fulfill their lift requirement.

3.3.2. Provide qualified Crash Recovery personnel, tech data, and airframe specific crash recovery equipment, as required in the Base Support Agreement. 4 EMS crash recovery

personnel will assist the 916 ARW with crash recovery operations on assigned aircraft. 916 ARW will provide semi-annual aircraft familiarization/crash recovery training sessions for the 4 EMS Repair and Reclamation personnel. (Support Agreement # FB4809-xxxxx-009)

3.3.3. Provide on call support in the event of a crash, damaged, or disabled aircraft within SJAFB area of responsibility. Support may consist of, but is not limited to, tools, expertise, or manpower.

3.3.3.1. After owning unit is notified, by the 4FW, for other than KC-46A heavy aircraft and have arrived to recover their aircraft, 916 ARW CDDAR team will augment as needed and on what the team is specifically qualified on.

KURT C. HELPHINSTINE, Colonel, USAF
Commander, 4th Fighter Wing

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

4 FW *Mishap Response Plan*, 15 Mar 2019

AFI 33-322, *Records Management and Information Governance Program*, 28 Jul 2021

DAFI 91-204, *Safety Investigations and Reports*, 10 Mar 2021

AFI 10-2501, *Emergency Management Program*, 10 Mar 2020

DAFI 21-101, *Aircraft and Equipment Maintenance Management*, 16 Jan 2020

AFI 21-101_AFRCSUP, *Aircraft and Equipment Maintenance Management*, 13 Aug 2020

AFI 21-101_ACCSUP, *Aircraft and Equipment Maintenance Management*, 23 Jun 2020

AFI 36-2650, *Maintenance Training*, 22 Jun 2022

AFI 48-151, *Thermal Stress Program*, 2 May 2022

AFMAN 10-2502, *Air Force Incident Management System (AFIMS) Standards and Procedures*, 13 Sep 2018

LJG-4MXG-041, *Crash Recovery Emergency Response Guide*, 24 Oct 2017

SJAFBI 11-250, *Airfield Operations*, 9 May 2017

SJIEMP 10-2, *Seymour Johnson Installation Emergency Management 10-2*, 8 Sep 2016

TO 00-80C-1, *Crashed, Damaged, Disabled Aircraft Recovery Manual*, 6 Jun 2019

TO 00-105E-9, *Aerospace Emergency Rescue and Mishap Response Information*, 20 Jun 2019

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*

AFTO Form 244, *Industrial/Support Equipment Record*

AF Form 2293, *US Air Force Motor Vehicle Operator Identification Card*

AF Form 483, *Certificate of Competency*

Abbreviations and Acronyms

4 FW/CC—4 Fighter Wing Commander

4 FW/SE—4 Fighter Wing Standard Evaluation

4 MXG/CC—4 Maintenance Group Commander

ACCSUP—Air Combat Command Supplement

AFB—Air Force Base

AFE—Aircrew Flight Equipment

AFI—*Air Force Instruction*

AFMAN—Air Force Manual

AFRCSUP—Air Force Reserve Command Supplement

AFRIMS—Armed Forces Research Institute of Medical Sciences

AFSC—Air Force Specialty Code

AFTO—Air Force Technical Order

AGE—Aircraft Ground Equipment

AMU—Aircraft Maintenance Unit

AMXS—Aircraft Maintenance Squadron

ARW—Air Refueling Wing

BPA—Blanket Purchase Agreement

BE—Bioenvironmental Engineering

CDDAR—Crashed, Damaged or Disabled Aircraft Recovery

CES—Civil Engineer Squadron

EMS—Equipment Maintenance Squadron

EMS—Equipment Maintenance Squadron

EOC—Emergency Operations Center

EOD—Explosive Ordinance Disposal

EOD—Explosive Ordnance Disposal

EOR—End of Runway

FW—Fighter Wing

GE—Ground Emergency

GITA—Ground Instructional Training Aircraft

GSU—Geographically Separated Units

IAW—In Accordance With

IC—Incident Commander

IC—Intelligence Community

IFE—In Flight Emergency

IFE—In-Flight Emergency

IMDS—Integrated Maintenance Data System

LJG—Local Job Guide

LRS—Logistic Readiness Squadron

LRS—Logistics Readiness Squadron

MOC—Maintenance Operations Center

MUNS—Munitions

MXG/QA—Maintenance Group Quality Assurance

MXG—Maintenance Group

MXMTR—Maintenance Recovery

NCOIC—Non-Commissioned Officer in Charge

OIC—Officer in Charge

OPR—Office of Primary Responsibility

OSC—Office of Special Counsel

PPE—Personal Protective Equipment

QA—Quality Assurance

RDS—Rounds

ROC—Required Operational Capability

SCR—Special Certification Roster

SIBP—Safety Investigation Board President

SJAFB—Seymour Johnson Air Force Base

SME—Subject Matter Expert

SNCO—Senior Non-Commissioned Officer

TBA—Training Business Arena

WBGT—Wet Bulb Globe Thermometer

WLT—Weapons Load Team

Attachment 2

CRASH, DAMAGED, DISABLED AIRCRAFT RECOVERY (CDDAR) CHECKLIST

Figure A2.1. Crash, Damage, Disabled Aircraft Recovery (CDDAR) Checklist

USE FOR REAL WORLD AND LOCAL EXCERCISES

*NOTE: This is a guide and should be used in conjunction with the appropriate Technical Orders.

*NOTE: All items will be checked either Complied With (C/W) or Not Applicable (N/A) in the boxes to the left of the line item. Items listed may not pertain to all MDS crashed/damaged aircraft and may or may not be applicable.

Type of Aircraft_ Location On□/Off□

Record all information taken over the secondary crash/MOC phone or information relayed from Crash and MOC via

_____
_____
_____
_____
_____
_____
_____
_____
_____

YES

N Recovery Team will respond to IFE/GE (treated as an IFE/GE until confirmed). Is crash

C/W
N/A Fire Emergency Services personnel will ensure the aircraft is fire safe crash recovery personnel approach the

□ □ If an aircraft crashes on Seymour Johnson AFB, Team Chief will assess and coordinate with the on-scene-commander on the tentative plan of

□ □ If an aircraft crashes off base, the Recovery Team Chief will respond to the crash site with maintenance supervision. The Recovery Team Chief will assess the damage and coordinate with the on-scene-commander on a tentative plan of recovery.

□ □ Notify Crash Recovery Work Section to:

□ □ 1. Inform NCOIC and Maintenance Flight Chief/OIC a crash has occurred.

□ Team Chief/ NCOIC /Time_____
□ Maintenance Flight Chief /Time_____
□ Maintenance Flight OIC /Time_____

□ □ 2. Initiate a recall of personnel if situation demands it. If no personnel are available at the work center, Recovery team leader will notify EMS supervision by radio to initiate the recall of C.R. personnel.

NAME_____Time_____

□ □ 3. Assign a dedicated dispatch coordinator.

NAME_____/Who will:

□ Maintain constant monitoring of Crash/Maint nets and record/pass along information.
□ Plot crash site on grid map.
□ Assemble T.O.s needed from page 7 & 8.
□ Assign someone to preflight the recovery tractor/trailer.
□ Assign someone to contact contracting; initiate crane BPA.

***NOTE: RECOVERY TEAM CHIEF IS REQUIRED TO HOLD THE 7-SKILL LEVEL OR HIGHER. TEAM CHIEF DESIGNATED IN WRITING BY GROUP CC**

C/W N/A

□ □ Recovery Team Leader that responded to the crash site initially will brief the designated aircraft recovery Team Chief on suggested plan of recovery and the events that have taken place up to this point.

□ □ Aircraft recovery team will assemble at_____. Aircraft recovery plan will then be briefed by the designated Team Chief. Team Chief will conduct phase 1 portion Safety Briefing.

TEAM CHIEF:_____.

Team Member _____ /Role _____

Team Member _____ /Role _____

Team Member _____ /Role _____

Team Member _____ /Role _____

Team Member _____ /Role _____

Team Member _____ /Role _____

Team Member _____ /Role _____

Team Member _____ /Role _____

Team Member _____ /Role _____

Team Member _____ /Role _____

C/W N/A

□ □ 4 FW Safety will be notified and release the aircraft prior to the start of the recovery operation.

□ □ Recovery team will respond to the crash site and the designated CTK monitor will ensure an inventory of the composite tool kit is completed prior to the issue of any tools or equipment. ACC Form 140 and the TCMax computer based system will be used to account for all tools and equipment issued to team members during the recovery operation.

□ □ Contact MOCC (722-8811) for Support Agencies and Support Equipment:

SUPPORT AGENCIES (IF NEEDED)

- □ EOD (Explosive Ordnance Disposal)
- □ Weapons:
  □ 333rd □334th □335th □336th
- □ Wing Safety
- □ Egress Section (Ejection system de-arm)
- □ Fuels Section (Fuel guidance)
- □ Structural Maintenance
- □ Metals Technology
- □ Quality Assurance (Weight and Balance)
- □ Aircraft Maintenance Unit (Crew chiefs, Specialists)
- □ POL (Defuel truck)
- □ Bioenvironmental (Composite/Hazardous material)
- □ Medical (never know when accidents happen)
- □ CE (Sandbags and sand)
- □ Security Forces (controlling recovery area)
- □ Fire Emergency Services
- □ Weather (updates on weather conditions)

SUPPORT EQUIPMENT (GIVE DELIVERY NOTICE)

- □ Crane (BPA, 60 Ton minimum)
- □ Crash Tractor/Trailer
- □ CE Heavy Equipment (Bulldozer, Forklift, etc…)
- □ Weapons trailer (Ammo)
- □ Fuel Tank dollies (AGE)
- □ MSOG safety w/ T.O. guidance (AMU)
- □ Maintenance Stands (AGE)
- □ Light carts (AGE)
- □ Heaters (AGE)
- □ Tripod jacks (AGE)
- □ AM2 matting
- □ Dunnage/Cribbing
- □ Disabled wheel dolly (AGE to deliver)
- □ Sandbags/Sand (CE)
- □ Engine Trailer (Engine Section)
- □ Flatbed 40'trailer w/ tractor (Transportation)
- □ Tow vehicle (AMU, Transportation)

C/W N/A

□ □ Ensure Aircraft is Safe for Maintenance per technical order to the fullest extent possible due to aircraft mishap damage.

□ □ Ensure fire bottle or fire truck is available.

□ □ Ensure aircraft is chocked and grounded (If possible).

□ □ Ensure safety pins/equipment are installed (If possible).
Note: EOD will support Egress or accomplish safing due to certain extremely hazardous/sensitive situations in the egress system.

□ □ Ensure EGRESS system is safe (remove explosive devices).

□ □ Ensure all Ordnance and aircraft gun is removed (EOD/Weapons).

□ □ Ensure all external stores are removed (If applicable notify AMU)

- □ Fuel Tanks (External/Conformal) (If possible)
- □ Special purpose Pods (NAV, TAR, TRAVEL)
- □ Pylons
- □ Other_____.

C/W N/A

□ □ Determine Fuel quantity and Defuel when practical or possible. All fuel cells will be nitrogen purged.

C/W N/A

□ Approx. Fuel quantity_____lbs.

□ □ Recovery Team Chief will conduct a safety briefing, phase 2 portion, prior to beginning the aircraft recovery operations. The following will be addressed in conjunction with safety brief: Read Safety Brief Checklist phase 2, remember can add to but not take away from).

- □ Crane operator signals (see placard).
- □ Stress Factors (On-scene-stresses).
- □ Use of Personal Protective Equipment (PPE).
- □ Make sure Plan of Recovery is clear.
- □ Make sure assignments of job tasks are clear.
- □ Understand there is One Boss, One Order

USE THIS AREA TO LIST ADDITIONAL EQUIPMENT REQUIRED FROM OUTSIDE AGENCIES:

***NOTE: QUICK REFERENCE MATERIAL (REFERENCE USE ONLY)**

Aircraft max lifting sling weight is as

follows: F-15 = 40,300 lbs.

Refer to Technical Order 00-105E-9 for Air Force Aircraft information (composites, hazards and general information).

C/W	N/A	
☐	☐	Ensure a complete inventory of the Recovery Trailer CTK is accomplished after the aircraft recovery is complete and prior to leaving the recovery site. ACC Form 140 and the TAS computer based system will be used to account for all tools and equipment issued to team members during the recovery operation.
☐	☐	Document damage and work performed in the aircraft 781A's forms.

USE THIS AREA FOR NOTES
*** Aircraft Weight and Balance Worksheets located in Crash Program Book***

_____

_____

_____

_____

***NOTE:** For assigned/non-assigned aircraft recovery some of the technical orders listed below may be applicable along with the appropriate Technical orders for the specific aircraft recovery relation. Follow the areas of this checklist that apply.

C/W	N/A		
☐	☐	35D5-5-7-1-WA-1	AMS 15 Ton Aircraft Lifting Bags
☐	☐	35DA4-15-1-WA-1	AMS Bag Control Console
☐	☐	35D3-32-3-1-WA-1	Wheel Dolly/Skate (NAVAIR 19-1-160)
☐	☐	35D6-1-106-WA-1	Sling Inspection/Shackle Inspection`
☐	☐	1F-15E-1-WA-1	Flight Manual
☐	☐	00-80C-1-WA-1	Crashed, Damaged, Disabled Aircraft Recovery Manual (ATOS-HILL)
☐	☐	246WC-1	Non-powered AGE Sling Inspection Work Card
☐	☐	00-105E-9	Emergency Rescue Info

(*Composites*) All T.O.s prefaced with "1F-15E" can be accessed through ETIMS
This is a list of Technical Orders that may be required for the Recovery of an F-15 Aircraft.

CW	N/A		
☐	☐	1F-15E-2-DV-1 (3-1)	Aircraft Recovery/Handling Methods
☐	☐	1F-15E-2-05JG-00-1-WA-1	Aircraft Safe for Maintenance
☐	☐	1F-15E-2-05JG-00-1-WA-1	Aircraft Power Applications
☐	☐	1F-15E-2-05JG-00-1-WA-1	Aircraft Canopy Operation
☐	☐	1F-15E-2-05JG-00-2-WA-1	Aircraft External Fuel Tanks
☐	☐	1F-15E-2-05JG-00-2-WA-1	Aircraft Landing Gear Doors
☐	☐	1F-15E-2-05JG-00-2-WA-1	Aircraft Wheel & Tire
☐	☐	1F-15E-2-05JG-00-3-WA-1	Aircraft CFT Removal
☐	☐	1F-15E-2-07JG-00-1-WA-1	Aircraft Lifting and Hoisting
☐	☐	1F-15E-2-09JG-00-1-WA-1	Aircraft Towing
☐	☐	1F-15E-2-10JG-00-1-WA-1	Aircraft Parking/Mooring
☐	☐	1F-15E-2-12JG-10-1-WA-1	Aircraft General Servicing
☐	☐	1F-15E-2-32JG-10-1-WA-1	Aircraft Landing Gear Main
☐	☐	1F-15E-2-32JG-20-1-WA-1	Aircraft Landing Gear Nose
☐	☐	1F-15E-2-32JG-30-1-WA-1	Aircraft Landing Gear General

Attachment 3

CDDAR SAFETY BRIEFING CHECKLIST

Figure A3.1. CDDAR Safety Briefing Checklist

This Briefing was developed to inform all personnel of the safety issues that they might encounter during any **major aircraft mishap** requiring special attention. This briefing will be read by the Team Chief of person delegated the responsibility prior to all major recovery operations – real world or exercises. Always remember – slow down and take direction from recovery team chief!!

NOTE
It is the responsibility of the senior Crash Recovery member (Team Chief) or designated representative to conduct a safety briefing for all personnel involved in recovery operations of damaged or disabled aircraft. Use this checklist to brief personnel before and during the recovery operation.

NOTE
Ensure all personnel involved in the recovery effort are briefed on the importance of operations security. Instruct individuals to direct all inquiries to 4FW Public Affairs.

NOTE
All aircraft recovery operations should be divided into two (2) separate phases. Phase I is the prep phase for the aircraft recovery. Phase II is the actual recovery of the aircraft. Always brief personnel at the start of each phase.

PHASE I Operations :(Do as soon as initial scene evaluation is complete/prior to setup)

- Explain the type of recovery operation:
□ Sling lift
□ Air bag lift
□ Belly band
□ Rough terrain tow (Debog)
□ Combination of any of the above
□ Explain command and control (YOU DO AS I SAY AND TELL ME WHEN YOU ARE FINISHED). Also explain that no "OUTSIDER" gives out orders to the crash crew; instead refer these individuals to the team chief.
□ Explain the importance of personnel being your eyes and ears and when they detect problems or see potential problems to up channel all information directly to you. Anyone can stop the operation.
□ During hot weather, ensure personnel are well hydrated and familiar with heat stress table A4.1 and A4.

Prior to using any equipment, the following will be accomplished:
□ Review all forms, i.e. AFTO 244 forms, for equipment requirements and serviceability.
□ Visually inspect equipment for serviceable condition and accomplish any pre-use requirements, i.e. lube or re-torque of attaching hardware.
□ Ensure technical orders are present and operational procedures are understood and followed by the individual operating the equipment.
□ Person(s) inspecting equipment will report status and availability to the Team Chief.

Personnel involved in the mishap recovery will remove all jewelry.
□ At this time all personnel will remove the following, but not limited to: Rings Bracelets Watches Necklaces (i.e. dog tags) Any Personal tools

Brief personnel on the Personal Protective Equipment requirements as applicable:

□ Hardhat – during all facets of the recovery operation.

□ **Gloves** – when handling ropers, chains, cables, or during cutting operations.

□ **Steel** toed boots – during all facets of the recovery operation

□ **Reflective** belts/vest – during all facets of the recovery operation.

□ **Safety** goggles/glasses – cutting/grinding operations, handling chemicals, and compressed air (Air Bag Blower, Lift bag and hoses, Compressors, etc…)

□ **Hearing** protection – double protection required during operation of powered equipment.

□ **Whistles** – during all facets of the recovery operation. Sound whistle any time potential hazard exists. Team Chief will mitigate and resume operations.

The following personal protective equipment will be worn unless otherwise stated during a composite material environment recovery.

□ Minimum PPE requirements for a controlled composite material environment Goggles or safety glasses
Work gloves with inserts Coveralls
Hardhat

□ Maximum PPE requirements for uncontrolled composite materials environment Industrial full face respirator with filters
Disposable Tyvek suits w/ hood Work gloves with nitrile inserts Wet weather boots

Brief personnel on precautions while working around equipment:

□ No personnel will walk under boom of crane while it is supporting a load

□ No personnel will walk under suspended loads (unless absolutely necessary, i.e. to position jacks)

□ Personnel will exercise extreme caution while working on top of aircraft

□ Personnel will not go under aircraft until it is adequately supported and cleared by the Crash Recovery Team Chief

□ Verify wind speed to ensure lift operation is feasible (consult applicable TO's)

□ Ensure aircraft "Safe for Maintenance" is performed to the maximum extent possible; areas not accessible will be safetied at the first available opportunity

□ Assign tasking and SUPERVISE!!!!

PHASE II Operations: (DO THIS JUST PRIOR TO STARTING RECOVERY)

□ Verify all equipment is properly installed/employed

□ Re-verify wind speed to ensure it is within allowable limits

□ If recovery operations take place on base, contact tower & inform them of the crane's max boom height.

□ **Inform** personnel to be alert while aircraft is being raised; specifically watch out for:
-- Springing metal that could puncture a pneumatic bag
-- Unusual noises, sounds, smells (fuel, oil), etc.
-- Aircraft weight shift

□ Above all STAY ALERT!!

□ Tell personnel not to wrap or attach mooring lines to their bodies (VERY IMPORTANT)

□ Explain to personnel that what goes up needs to come back down safely. (ASK QUESTIONS NOW NOT WHEN THE AIRCRAFT IS A SUSPENDED LOAD)

□ Ensure Team Members thoroughly understand their job tasking.

□ **ANY QUESTIONS**, reiterate **SAFETY #1** and that anyone can stop the operation.

*Personnel involved in a mishap recovery situation are normally in the workload categories of moderate to heavy. During all mishap operations stress and fatigue are the normal human factors. Heat stress is the key, preventing this will minimize or eliminate fatigue and the operation will flow smoothly.
The Team Chief should consult with MOC or 4 MDG for appropriate work/rest cycles. The Team Chief will monitor or assign monitoring duties tracking the time of work and rest cycles to maintain a ready working force

Attachment 4

TRAINING GUIDELINES FOR ACCLIMATIZED AND UN-ACCLIMATIZED PERSONNEL WEARING HOT WEATHER OCP

Table A4.1. Heat Guidelines for Average Acclimatized Individuals.

RD WORK

Heat Cat/Flag Color	WBGT (F)	EASY WORK		MODERATE WORK		HARD WORK	
		Work Rest Cycle	Water Intake Qt/hr	Work Rest Cycle	Water Intake Qt/hr	Work Rest Cycle	Water Intake Qt/hr
1	78 – 81.9	No Limit	0.5	No Limit	0.75	40/20 min	0.75
2	82 – 84.9	No Limit	0.5	50/10 min	0.75	30/30 min	1.0
3	85 – 87.9	No Limit	0.75	40/20 min	0.75	30/30 min	1.0
4	88 – 89.9	No Limit	0.75	30/30 min	0.75	20/40 min	1.0
5	>90	50/10 min	1.0	20/40 min	1.0	10/50	1.0

Table A4.2. Heat Guidelines for Average Un-Acclimatized Individuals.

RD WORK

Heat Cat/Flag Color	WBGT (F)	EASY WORK		MODERATE WORK		HARD WORK	
		Work Rest Cycle	Water Intake Qt/hr[a]	Work[b] Rest[c] Cycle	Water Intake Qt/hr	Work Rest Cycle	Water Intake Qt/hr
1	78 – 81.9	No Limit	0.5	50/10 min	0.75	30/30 min	0.75
2	82 – 84.9	No Limit	0.5	40/20 min	0.75	30/30 min	1.0
3	85 – 87.9	No Limit	0.75	30/30 min	0.75	20/40 min	1.0
4	88 – 89.9	50/10 min	0.75	20/40 min	0.75	10/50 min	1.0
5	>90	40/20 min	1.0	10/50 min	1.0	Not allowed	Not applicable

a. For all 3 work rates, individual water requirement may vary by +/- 0.25 qt/hr.
b. When performing work/exercise with ground crew ensemble, fire-fighting gear or other similar restrictive or impermeable clothing arrangements should be made for remote site measurement of the WBGT and 10 degrees F added to the measurement before using tables 2.3 or 2.4 of AFI 48-151, *Thermal Stress Program*. Add 15 degree WBGT if also wearing combat armor.
c. Rest means minimal physical activity, i.e. sitting or standing, accomplished in the shade if possible.