

**BY ORDER OF THE COMMANDER
8TH FIGHTER WING**

**8TH FIGHTER WING INSTRUCTION
21-103**



25 MAY 2021

Maintenance

**CRASH, DAMAGED OR DISABLED
AIRCRAFT RECOVERY (CDDAR) PLAN**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements Air Force Policy Directive (AFPD) 21-1, *Maintenance of Military Materiel*. Establishes guidance to effectively respond to and recover crashed, damaged, and disabled aircraft during normal and major aircraft emergencies/mishaps on or off the 8th Fighter Wing (FW), Kunsan Air Base (AB), Republic of Korea. It will be used in conjunction with Air Force Instruction (AFI) 21-101/AFI 21-101_PACAFSUP_8FWSUP, *Aircraft and Equipment Maintenance Management*; AFI 10-2501, *Emergency Management Program*; AFMAN 10-2502, *Air Force Incident Management System (AFIMS) Standards and Procedures*; Kunsan AB Installation Emergency Management Plan (IEMP) (Kunsan AB IEMP 10-2); 8 FW Mishap Response Plan, and Local Check List (LCL)-8MXG-003, *Emergency Action Checklist*. This instruction applies to all base agencies assigned supporting emergency management duties under Kunsan AB IEMP 10-2 and Technical Order (T.O.) 00-105E-9, *Aerospace Emergency Rescue and Mishap Response Information*. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*; route the AF Forms 847 from the field through the appropriate functional chain of command. 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 in accordance with Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS). The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force. It applies to all personnel assigned, attached, or associated units to the 8 MXG, Kunsan AB, Republic of Korea.

SUMMARY OF CHANGES

This document is substantially revised and must be completely reviewed. The Incident Commander definition and responsibilities have been expanded. Responsibilities of the 8th Maintenance Squadron/Maintenance Flight, Crash Recovery/Transient Alert Section (8 MXS/MXMTT) Section Chief have been redefined and expanded. Added Mission Statement and changed paragraph numbers respectively. References throughout have been updated. Added attachment checklist's for quick reference.

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1. Mission Statement: The Crashed, Damaged, or Disabled Aircraft Recovery (CDDAR) Program is established to provide local requirements for the response to aircraft related ground or in-flight emergencies; and, to recover damaged or disabled aircraft in minimal time to return Kunsan AB to operational status as soon as possible after a mishap. The CDDAR program will be designed with the following considerations in mind:

- 1.1. The requirement to reopen the runway for operational use.
- 1.2. Prevention of secondary damage to the aircraft.
- 1.3. Preservation of evidence for mishap investigation.
- 1.4. Safety of personnel involved with recovery operations.

2. General: The 8th Maintenance Squadron Commander (8 MXS/CC) has the primary responsibility for conducting CDDAR operations, as directed by the 8th Fighter Wing Commander (8 FW/CC). The 8th Fighter Wing, Maintenance Operations Center (MOC) will execute the Major Accident Response or appropriate emergency action checklist, implement any MXG/CC instructions, and will request support from the transient aircrafts home station/Major Command (MAJCOM) as required. Maintenance Flight will develop CDDAR procedures in coordination with the base 8th Civil Engineering Squadron/Fire Department (8 CES/CEF), 8th Fighter Wing/Ground Safety (8 FW/SEG), 8th CES/Readiness and Emergency Management Flight (8 CES/CEX), 8th Operational Medicine Readiness Squadron/Bioenvironmental Engineering (8 OMRS/SGXB), 8th Security Forces Squadron (8 SFS), 8th CES/Explosive Ordnance Disposal Flight (8 CES/CED), 8th Operations Support Squadron/Airfield Manager (8 OSS/OSAM) and other on/off base agencies as applicable.

3. Generalized CDDAR Responsibilities:

3.1. Supervisors at all levels must recognize the sources of hazards and apply appropriate safety practices to minimize their effects. There is an infinite variety of possible emergency and crash recovery situations; therefore, specific procedures cannot be prescribed for every situation. All aircraft recovery actions are coordinated through the Incident Commander (IC) to the Emergency Operations Center (EOC). Practice and participation in wing crash recovery exercises and implementation of operational risk management techniques are imperative for all emergency and crash recovery operations.

4. Definitions:

4.1. Normal Responses: Aircrew declared In-Flight Emergencies (IFE) and Ground Emergencies (GE) requiring crash recovery team responses but limited action in recovering the aircraft. Examples: Flight control malfunctions, radio failures, bird strikes, hydrazine leaks/spills, low fuel, hung ordnance and gun malfunctions, emergency power unit activation, hot brakes, blown tires, hung flares, barrier engagement/cable arrestment, etc.

4.2. Major Responses: Aircrew declared emergencies requiring crash recovery team response and action in recovering and removing an aircraft by means of lifting. Examples: Landing gear will not extend, collapsed landing gear, aircraft departs runway/taxiway and/or aircraft crashes, etc.

4.3. Incident Commander (IC): The IC is a trained and experienced responder who provides on-scene tactical control using Subject Matter Experts (SME) and support from other functional areas. ICs are SMEs from the 8 CES Fire Emergency Services Flight. The IC will use the AFIMS to manage the incident.

4.3.1. Depending upon the situation, other personnel may function as ICs if they have completed Incident Command System (ICS) training In Accordance With (IAW) Chapter 6 and meet Department of Defense (DoD) and Federal certification standards for the specific type of incident. For example, the IC must meet Department of Defense Instruction (DoDI) 6055.06, *DoD Fire and Emergency Services Program* and Department of Defense Manual (DoDM) 6055.06, *DoD Fire and Emergency Services Certification Program*, requirements for Hazardous Materials (HAZMAT) and suspected Chemical, Biological, Radiological, Nuclear (CBRN) responses. Fire Emergency Services (FES) personnel serve as IC for Explosive Ordnance Disposal (EOD) incidents during peacetime and terrorist response incidents after SF have contained or neutralized any hostile forces.

4.4. Senior Fire Official (SFO): Fire department personnel by certification and duty position assigned responsibility for all firefighting and rescue actions.

4.5. Crash Recovery Team Chief (CRTC): Individual assigned responsibility for managing the crash recovery program according to Air Force instructions, wing mission plans, and applicable host-tenant agreements. Qualification will consist of reviewing the following: 8 Fighter Wing Instruction 8FWI21-103, *Crash, Damaged or Disabled Aircraft Recovery Plan*, AFI 21-101, AFI 21-101_PACAFSUP_8FWSUP, 8 FW Base Support Plan, and LCL-8FW-MSTA-100, *Crash Recovery Response Checklist*.

4.6. Crash Recovery Team Supervisor/Leader (CRTS/L): Individual assigned responsibility for directing and coordinating aircraft recovery procedures and actions during normal incident responses (i.e. IFE/GEs).

4.7. Crash Recovery Team Member (CRTM): Individual tasked to perform aircraft recovery duties. CRTM training qualification consists of initial CDDAR Team Member training and refresher annual training exercises.

4.8. The United States (US) Air Force F-16C/D aircraft are the primary Mission Design Series (MDS) assigned to the 8FW.

5. Responsibilities.

5.1. 8 FW/CC is responsible for the crash recovery program. The 8 FW/CDDAR Manager, 8 MXS/MXMTT Section Chief, or designated representative will assume the duties of CRTC.

5.2. The 8 FW/CDDAR Manager and 8 MXS/MXMTT Section Chief will:

5.2.1. Establish the 8 MXG CDDAR program and serve as OPR for the unit CDDAR instruction.

5.2.2. Develop, in conjunction with the 8th Maintenance Operations Flight/Maintenance Training Flight (8 MOF/MXOT), course control documents and the course curriculum for crash recovery training.

5.2.3. Review support agreements and the base disaster response plan on an annual basis. Provide inputs/changes as required.

5.2.4. Ensure CDDAR procedures are coordinated with the 8 CES/CEF, 8 FW/SE, 8 CES/CEX/CEO/CEORHG, 8 SFS, 8 OMRS/SGXB, 8 OSS/OSAM, and on/off base agencies (as required).

5.2.5. Inform the 8 MXG/CC in writing of equipment shortages/un-serviceability that precludes effective CDDAR support/response. (See [Attachment 4](#))

5.2.6. Ensure all personnel are assigned and trained to support and sustain 24-hour CDDAR response operations. This normally consists of a minimum of four personnel on shift at all times during local flying operations and weekend duty personnel on standby for 24-hour coverage operations. The crash recovery cell phone is kept by an active Team Member 24/7 and upon notification of an incident requiring a response, all necessary personnel will be recalled as needed, depending upon the nature and expected duration of the recovery operations. Training requirements includes Initial and Annual CDDAR training course completion and documentation in the Training Business Area (TBA) and AF Form 55, Employee Safety Health Record, or equivalent as applicable:

5.3. Basic equipment operation (e.g., light carts, generators, etc.).

5.3.1. Familiarization training on any unique characteristics/hazards/materials for assigned aircraft (i.e., F-16 Emergency Power Unit (EPU), hydrazine, aircraft composite material etc.). Ensure training is documented.

5.3.2. Proper use of Personnel Protection Equipment (PPE) as determined by technical data and base Bioenvironmental Engineering (BE). Crash recovery PPE gear listing and training qualification/information will be maintained at the 8 MXS/MXMTT.

5.3.3. Special qualifications for personnel. Ensure individual team member qualifications for specific equipment operations (i.e., lift bags, recovery one truck, tow vehicle, 30 ft. trailer, etc.) are identified and documented.

5.3.4. Serviceable tools and support equipment for recovery operations (i.e., bags, slings, manifolds, tow bars, dunnage/shoring, etc.) are available. Maintain a list of all CDDAR tools and equipment. (See [Attachment 5](#)).

5.3.5. Inspect tools and support equipment for recovery operations (i.e., bags, slings, manifolds, tow bars, dunnage/shoring, etc.) for proper paperwork and documentation (i.e., AFTO Form 244's, *Industrial/Support Equipment Record* and AFTO 95's, *Significant Historical Data*).

5.4. Normal Responses: Assign an F-16 qualified Crash Recovery Team (CRT) consisting of at least three team members to include a Team Leader possessing a Seven-skill level (minimum). The second and third CRTMs will assist the CRTL, one of which will be a qualified aircraft tow member/vehicle operator. The aircrew shall act as a brake rider if mission/time constraints dictate.

5.5. Major Responses: For an aircraft crash, runway/taxiway departure or any event requiring an aircraft lift, a qualified Crash Recovery Team Chief will assume responsibility once cleared into scene from SFO or IC. Absolutely no recovery operations will commence until the Safety Investigative Board President or designated official has clarified his/her expectations. The assigned CRT members will consist of at least six members with a Team Leader qualified to the seven skill-level (minimum). The remaining five team members will be qualified in all aspects of CDDAR operations.

5.6. Ensure a CRT is available during all scheduled flying hours and a standby crew is designated for all non-scheduled flying hours. A list of standby CRT members will be published weekly and furnished to 8 MXG MOC, through 8 MXS supervision, on the standby duty roster. Refer to 8 MXS weekend duty standby listing.

5.7. Ensure the following equipment is centrally located and available for emergency dispatch 24 hours a day: (Refer to [Attachment 5](#))

5.7.1. Primary response vehicle, designated Recovery 1, will be a 6-passenger, 1-ton, and 4X4 pickup with heavy duty pintle-hook utility body (or equivalent, i.e. bed mounted tool boxes) for storage, security of tools and immediate normal response crash equipment. Vehicle will be equipped with off road capable tires, emergency lights, siren, Land Mobile Radio (LMR) (capable of monitoring the Fire, Ramp and Tower radio frequencies), technical orders, tools and safety equipment to perform immediate normal response operations.

5.7.2. Secondary response vehicle, designated Recovery 4, will be a 6- passenger, 1-ton, 4X4 pickup with heavy duty pintle-hook, utility body (or equivalent, i.e. bed mounted tool boxes) for storage, security of tools and immediate response crash equipment. Vehicle will be equipped with off road capable tires, emergency lights, siren, LMR (capable of monitoring the Fire, Ramp and Tower radio frequencies), technical orders, tools and safety equipment to perform immediate normal response operations.

5.7.3. 10-ton Semi truck, designated Recovery 3 and a 30 ft. enclosed trailer (for storage and transportation of major response recovery equipment).

5.7.4. Aircraft tow vehicle, MB-2 or equivalent, designated Recovery 2. Tow vehicle will be equipped with emergency lights and a LMR that is capable of monitoring the Fire, Ramp and Tower radio frequencies.

5.7.5. Aircraft tow bar (universal). Tow bar must be capable of towing the primary MDS assigned to Kunsan AB. Scheduled maintenance and periodic inspections will be performed by 8 MXS Aerospace Ground Equipment (AGE) Flight.

5.7.6. Two disabled wheel dollies. Scheduled maintenance and periodic inspections will be performed by 8 MXS AGE Flight.

5.7.7. There are no assigned cranes to the 8 FW but in the event that 8 MXS needs to lift an aircraft, support can be requested through Fleet Management and Analysis at DSN: 782-5110.

5.7.7.1. In the event a crane cannot be procured, an off base contractor will be employed. An off the shelf style contract will be used to facilitate the 8 MXS crane requirement. The contract will specify:

- 5.7.7.2. A 25 ton, 50 ton, and 100 ton capacity crane will always be available. The CRTC will decide which crane is appropriate for the situation.
- 5.7.7.3. The crane operator will remain with the crane for the duration of the recovery operation, or until released by the CRTS.
- 5.7.7.4. It is the crane owner/operators responsibility to ensure the crane remains fueled and serviceable during the operation.
- 5.7.7.5. The crane operator is required to comply with all directions given by the CRTS, unless safety is compromised. The owner/operator will be responsible for any injuries/damage caused by unsafe or undirected actions made by the provided operator.
- 5.7.7.6. The crane owner/operator will deliver the crane to requested location as soon as safely possible.
- 5.7.8. F-16 sling, bellybands, snatch cables, chains, etc.
- 5.7.9. PPE approved by BE required to perform recovery of aircraft containing composites, to include, but not limited to, respirators, protective suits, boots, gloves, etc.
- 5.8. Conduct/participate in annual training exercises IAW T.O. 00-80C-1, *Crashed, Damaged, Disabled Aircraft Recovery Manual*, para 2.1.5.1.2, 2.3.2.2, and 2.3.3. Coordinate with the 8 OSS/OSAM at least 48 hours prior to exercises for all potential crash scenarios when applicable.
- 5.9. Coordinate with unit QA weight and balance manager when weight and Center of Gravity (CG) conditions are unknown.
- 5.10. The CRT responds to all IFE and GE and is responsible for removal of disabled, damaged and/or crashed aircraft from the active runway, taxiways or other areas on or off base. The CRT also has responsibility for composite material mishap containment and cleanup IAW T.O. 00-105E-9.
- 5.11. The SFO is in command of IFEs and GEs until the danger of fire or explosion has been eliminated or a trained and qualified representative assumes command as the IC.
- 5.12. Aircraft removal/recovery will not commence until the IC or SFO has released the aircraft to the CRT.
- 5.13. The 8 MXS production superintendent will coordinate with the MOC for all support requests IAW AFI 21-101, para 4.3.
- 5.14. The 8 MXS Accessories Flight Fuels Section will provide a Hydrazine Response Team (HRT) for all hydrazine related aircraft emergencies. The HRT is responsible for detection, neutralization and clean-up of hydrazine leaks/spills IAW AFI 21-101 and LCL-8MXG-009, *F-16 Hydrazine Leak Detection, Activated EPU Checks*.
- 5.15. The 8 CES/CEF, in conjunction with the 8 SFS, is responsible for establishing a 300-foot cordon and notifying the EOC who will in-turn notify other agencies to clear the area. The IC or HRT may expand the cordon size as the situation warrants IAW LCL-8MXG-009.
- 5.16. The 8 OMRS/SGXB will monitor the area for nuisance hazards, hazardous vapors, etc., upon request by the IC, SFO or CRTS.

5.17. The 8 MXS Munitions Flight (8 MXS/MXMW) will provide a driver and 40-foot flatbed trailer or MHU-110 munitions trailer as needed for removal of munitions/explosives.

5.18. The 8 MXS AGE Flight (8 MXS/MXMG) will provide ground equipment at the request of IC, and/or CRTS. All equipment must be readily available for use during CDDAR operations. (See [Attachment 2](#))

5.19. The 8 LRS Ground Transportation Element (8 LRS/LGRDDO) will provide qualified drivers and special purpose vehicles at the request of IC, EOC and/or CRTS. All vehicles and drivers must be readily available for use during CDDAR operations (See [Attachment 3](#))

5.20. MOC will maintain a current MAJCOM/owning organization telephone roster of points of contact for aircraft transiting to Kunsan AB. This roster will be used to notify the appropriate organization in the event of a mishap. MOC will be the focal point to relay information between the CRTS and the MAJCOM/owning organization.

6. Crash Recovery Response Procedures:

6.1. Normal Response:

6.1.1. The CRT will consist of a CRTL and two recovery members. The CRTL will respond with one CRTM in the primary crash recovery vehicle. The second CRTM will standby with an aircraft tow vehicle for further guidance from the CRTL. The CRTL will establish and maintain radio contact with the IC on the Fire net.

6.1.2. If upon landing the aircraft stops on the active runway, the IC will normally determine if a fire or explosive hazard exists. Once the fire or explosive hazard is eliminated, the IC will normally clear the CRTL to begin recovery operations.

6.1.3. The CRT will establish interphone/hand signal communication with the aircraft commander and if no further assistance is required, the CRT will clear the aircraft to taxi to End of Runway (EOR) and be de-armed by the EOR crew. If aircraft is not owned by Kunsan AB, the CRT will contact MOC to coordinate de-arming by Weapons Standardization Section. The IC will normally terminate the In-Flight Emergency.

6.1.4. If further assistance is required, the CRTL will supervise normal engine shutdown procedures on the runway. The CRT will, with the pilot as brake rider, tow the aircraft to an open parking location at either North or South EOR or designated location from the control tower. The EOR crew will respond to de-arm the aircraft. The CRTL will then contact Dragon Super. Dragon Super will coordinate with the respective squadron and the squadron will send a tow crew to retrieve the aircraft. Once the aircraft has cleared the runway the IC will normally terminate the IFE.

6.2. Major Response:

6.2.1. The CRT will consist of a recovery supervisor and five recovery members. The CRTM will respond with one CRTM in the primary crash recovery vehicle. A second CRTM will standby with an aircraft tow vehicle for further guidance from the CRTS while the remaining CRTMs will respond as necessary.

6.2.2. The CRTC will, if required, notify the 8 MXS Munitions Flight, Munitions Control (8 MXS/MXMWSA) to dispatch a driver and MHU-110 trailer to stage at the South Overflow parking ramp. The CRTS will establish and maintain radio contact with the SFO or IC on the Fire net.

6.2.3. Aircraft Departs Runway/Taxiway/Crash: **NOTE:** SFO or IC should consult with EOD (if on scene) prior to releasing the HRT. On scene EOD team(s) should provide advice to the SFO or IC on mitigating hazards.

6.2.3.1. Once cleared by the SFO or IC, the HRT will check for hydrazine leaks or spills. If leaks/spills are discovered, the HRT will clear/safe the area IAW LCL-8MXG-009.

6.2.3.2. Once cleared by the HRT supervisor, the CRT will inspect the aircraft for damage to items containing composite materials. The CRT will secure all loose composite fibers IAW T.O. 00-105E-9 and T.O 00-80C-1, Crashed, Damaged, Disabled Aircraft Recovery Manual.

6.2.3.3. The CRT will make the aircraft safe for maintenance to the maximum extent possible.

6.2.3.4. The CRTS will monitor the safing and/or removal of munitions by weapons crew or Weapons Load Barn.

6.2.3.5. The CRT will recover the aircraft IAW applicable safety standards, technical orders and instructions.

6.2.3.6. The CRT will transport the aircraft to a facility designated by the IC or 8 MXG/CC.

6.3. Transient Aircraft:

6.3.1. Should a transient fighter aircraft become damaged, disabled, or crashed, 8 FW Command Post or MOC will notify the appropriate MAJCOM/unit for further handling instructions. If the owning unit is on Temporary Duty (TDY) at Kunsan AB, the MOC will notify the TDY unit and request an aircraft technician and specialized equipment be dispatched to the scene. The dispatched technician will report to the IC or CRTS.

6.3.2. Should a wide-bodied aircraft become damaged, disabled, or crashes, the 8 FW Command Post or MOC will notify the appropriate MAJCOM/unit for further handling instructions. Further actions will be accomplished IAW pre-established MAJCOM agreements, or owning agency guidance.

6.3.3. General crash recovery procedures may be used to facilitate the safe recovery and removal of the aircraft; however, prior to any recovery/removal actions, MOC will contact the owning organization for technical support and relay acquired information to the CRTC.

6.4. Tenant Agencies, i.e. Republic of Korea Air Force (ROKAF) are responsible for CDDAR support for their assigned aircraft. The 8 MXS CRT will respond and render assistance as requested/available.

6.4.1. Kunsan Civilian Airport frequent aircraft (737's) will be handled as followed if disabled on runway: owning agency will provide a qualified brake rider, tow supervisor and appropriate tow bar. CRT will provide a tow vehicle and driver.

7. On/Off-Base Recovery Procedures: NOTE: The Wing Commander through disaster response force, i.e., 8 Fighter Wing Command Post (8 FW/CP), unit control centers, EOC and any specialized teams, coordinates on/off-base recovery actions. Refer to Kunsan AB IEMP 10-2, and 8 FW Mishap Response Plan for agency/team responsibilities.

7.1. Runway closure and recovery priorities

7.1.1. As a minimum, a disabled aircraft on the runway or taxiway will be treated as a Ground Emergency (GE). Tower personnel and/or Supervisor of Flying will initiate GE procedures.

7.1.2. In the event that a crashed, damaged, or disabled aircraft is on the runway, the 8 FW/CC or designated representative will determine the degree of urgency required to clear the runway. If immediate removal priority is given, the CRTC has the option of using heavy equipment from 8 CES after coordination with Airfield Management. CRTC will direct the operation and the CRT will assist as necessary to push, pull or lift the aircraft from the runway as the situation warrants.

7.2. In the event of an off base incident that requires off-road capabilities in order to reach the scene, the CRTC will provide transportation to the Armament Flight response team when they are required to safe associated weapons systems.

8. Additional Training and Certification Requirements for CRT Personnel:

8.1. All CRTMs will possess a valid AF Form 2293, *US Air Force Motor Vehicle Operator Identification Card*, and AF Form 483, *Certificate of Competency*, for flight line driving with the runway access endorsement stamp for Kunsan AB Controlled Movement Area (CMA).

8.2. All CRTMs will be provided initial and recurring crash recovery training. Training will be updated in Integrated Maintenance Data System (IMDS) and TBA IAW T.O. 00-80C-1, para 2.3.2..

8.3. All CRTMs will, as a minimum, receive familiarization training to recover the 8FW primary assigned aircraft.

8.4. Perform recovery exercises at least annually IAW T.O. 00-80C-1, para 2.3.2.2..

8.5. All CRTMs will, as a minimum, receive aircraft familiarization training on any transient aircraft operating flying missions at Kunsan AB for an extended length of time, (i.e., 3 or more months).

8.5.1. Aircraft Familiarization Training will consist of (at a minimum):

8.5.1.1. Specific aircraft -21 safety equipment locations and installation required to safe the aircraft in an emergency.

8.5.1.2. Aircraft Danger Areas: Engine inlet and exhaust(s) zones, flight control surface hazards, auxiliary power supply/unit exhaust port(s), and any other hazards CRT may encounter during an emergency response/recovery.

8.5.1.3. Training will be conducted by the transient unit, specific aircraft commander, flight crew and/or qualified aircraft crew chief(s).

8.5.1.4. The 8 MXG/CC has determined that the 8 MXS CRT will only equip and train for recovery of 8th Fighter Wing primary assigned aircraft.

9. Supplemental Procedures:

9.1. For emergency aircraft cable/barrier engagement procedures, see LCL-8MXG-MSTA-100, *Crash Recovery Response Checklist*.

9.2. During wing deployments/contingencies to operational locations, this instruction will be implemented unless other directives are already in effect at the deployed location.

CHRISTOPHER B. HAMMOND, Colonel, USAF
Commander

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

AFPD 21-1, *Maintenance of Military Materiel*, 01 Aug 2018

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

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

AFI 21-101_PACAFSUP, *Aircraft and Equipment Maintenance Management*, 26 Oct 2020

AFI 21-101_PACAFSUP_8FWSUP, *Aircraft and Equipment Maintenance Management*, 07 Mar 2019

AFI 33-322, *Records Management and Information Governance Program*, 23 Mar 2020

AFMAN 91-203, *Air Force Occupational Safety, Fire, and Health Standards*, 11 Dec 2018

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

DoDI 6055.6, *DoD Fire and Emergency Services Program*, 3 Oct 2019

DoDM 6055.6, *DoD Fire and Emergency Services Certification Program*, 22 Jan 2020

T.O. 00-105E-9, *Aircraft Emergency Rescue Information*, 1 May 2020

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

Kunsan AB IEMP 10-2, *Installation Emergency Management Plan*, 7 Jul 2020

8FW *Mishap Response Plan*, 22 Dec 2019

LCL-8FW-MSTA-100, *Crash Recovery Response Checklist*, 12 Sep 2011

LCL-8MXG-003, *Emergency Action Checklist*, 9 May 2018

LCL-8MXG-MSTA-100, *Crash Recovery Response Checklist*, 9 Jun 2015

LCL-8MXG-009, *F-16 Hydrazine Leak Detection, Activated EPU Checks*, 20 Jul 2016

8FW *Base Support Plan*, 6 Jan 2020

Prescribed Forms

None

Adopted Forms

AF Form 483, *Certificate of Competency*

AF Form 847, *Recommendation for Change of Publication*

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

AFTO Form 244, *Industrial/Support Equipment Record*

AFTO Form 95, *Significant Historical Data*

AF IMT 1297, *Temporary Issue Receipt*

Abbreviations and Acronyms

AB—Air Base

AFI—Air Force Instruction

AFIMS—Air Force Incident Management System

AFMAN—Air Force Manual

AFPD—Air Force Policy Directive

AFRIMS—Air Force Records Information Management System

AGE—Aerospace Ground Equipment

AMU—Aircraft Maintenance Unit

BE—Bioenvironmental Engineering

BPA—Blanket Purchase Agreement

CBRN—Chemical, Biological, Radiological, Nuclear

CDDAR—Crash, Damaged or Disabled Aircraft Recovery

CG—Center of Gravity

CMA—Controlled Movement Area

CRT—Crash Recovery Team

CRTC—Crash Recovery Team Chief

CRTL—Crash Recovery Team Leader

CRTM—Crash Recovery Team Member

CRTS—Crash Recovery Team Supervisor

C/W—Complied With

DOD—Department of Defense

DODI—Department of Defense Instruction

DODM—Department of Defense Manual

ECP—Entry Control Point

EOC—Emergency Operations Center

EOD—Explosive Ordnance Disposal

EOR—End of Runway

EM—Emergency Management

EPU—Emergency Power Unit

FES—Fire Emergency Service

FW—Fighter Wing
GE—Ground Emergency
HAZMAT—Hazardous Material
HRT—Hydrazine Response Team
IAW—In Accordance With
IC—Incident Commander
ICS—Incident Command System
IEMP—Installation Emergency Management Plan
IFE—In-Flight Emergency
IMDS—Integrated Maintenance Data System
LCL—Local Check List
LMR—Land Mobile Radio
MAJCOM—Major Command
MDS—Mission Design Series
MOC—Maintenance Operations Center
N/A—Not Applicable
OPLAN—Operations Plan
OPR—Office of Primary Responsibility
PPE—Personnel Protection Equipment
RDS—Records Disposition Schedule
ROKAF—Republic of Korea Air Force
SCR—Special Certification Roster
SFO—Senior Fire Official
SME—Subject Matter Experts
TA—Transient Alert
TBA—Training Business Area
TDY—Temporary Duty
TO—Technical Order
US—United States
8 MXS/CC—8th Maintenance Squadron Commander
8 MXG/CC—8th Maintenance Group Commander
8 FW/CC—8th Fighter Wing Commander

8 MXS/MXMTT—8th Maintenance Squadron/Maintenance Flight, Crash Recovery/Transient Alert Section

8 CES/CEF—8th Civil Engineers Squadron/Fire Department

8 FW/SEG—8th Fighter Wing/Ground Safety

8 CES/CEX—8th Civil Engineers Squadron/Readiness and Emergency Management Flight

8 OMRS/SGXB—8th Operational Medical Readiness Squadron/Base Bioenvironmental Engineering

8 SFS—8th Security Forces Squadron

8 CES/CED—8th Civil Engineers Squadron/Explosive Ordnance Disposal Flight

8 OSS/OSAM—8th Operations Support Squadron/Airfield Manager

8 MOF/MXOT—8th Maintenance Operations Flight/Maintenance Training Flight

8 CES/CEOH—8th Civil Engineers Squadron/Heavy Repair Shop

8 MXS/MXMW—8th Maintenance Squadron/Munitions Flight

8 MXS/MXMG—8th Maintenance Squadron AGE Flight

8 LRS/LGRDDO—8th Logistics Squadron/Ground Transportation Element

8 MXS/MXMWSA—8th Maintenance Squadron/Munitions Flight, Munitions Control

8 FW/CP—8th Fighter Wing/Command Post

Attachment 2

**CRASHED, DAMAGED OR DISABLED AIRCRAFT RECOVERY (CDDAR) PLAN
AEROSPACE GROUND EQUIPMENT (AGE) REQUIREMENTS**

Figure A2.1. Crashed, Damaged or Disabled Aircraft Recovery (CDDAR) Plan Aerospace Ground Equipment (AGE) Requirements.

GROUP LETTERHEAD STATIONARY SAMPLE MEMORANDUM

Date: *DDMMYY*

MEMORANDUM FOR 8MXG/CC

FROM: 8 MXS/MXMTT

SUBJECT: Crashed, Damaged or Disabled Aircraft Recovery (CDDAR) Plan Aerospace Ground Equipment (AGE) Requirements

1. The following listing identifies the minimum AGE required for CDDAR operations IAW AFI 21-101, Chapter 11, para 11.28.2.5.3. **Note:** Each recovery operation is unique; therefore, AGE requirements are subject to change. Small bodied aircraft mishap (i.e., F-16, F-15, C-12).

Type of Equipment	Quantity	Special Requirements
Light Carts	4 each	Fully fueled
MC-7	2 each	One on standby
Air Compressor (Low-pack)	1 each	Fully fueled
Portable Heater	3 each	During extreme cold weather

Wide-bodied aircraft mishap (i.e., C130, KC-10, Navy P-3)

Type of Equipment	Quantity	Special Requirements
Light Carts	6 each	Fully fueled
MC-7	2 each	One on standby
Air Compressor (Low pressure)	2 each	None
Air Compressor (High pressure)	1 each	None
Portable Heater	4 each	During extreme cold weather

2. The point of contact for this letter is the Transient Alert/Crash Recovery Section Chief at DSN 782-1579.

FIRST MI. LAST, Rank, USAF
8 MXS Crash Recovery Team Chief

Attachment 3

CRASHED, DAMAGED OR DISABLED AIRCRAFT RECOVERY (CDDAR) SPECIAL PURPOSE VEHICLE REQUIREMENTS

Figure A3.1. Crashed, Damaged or Disabled Aircraft Recovery (CDDAR) Special Purpose Vehicle Requirements.

GROUP LETTERHEAD STATIONARY SAMPLE MEMORANDUMDate: *DDMMYY*

MEMORANDUM FOR 8 MXG/CC

FROM: 8 MXS/MXMTT

SUBJECT: Crashed, Damaged or Disabled Aircraft Recovery (CDDAR) Special Purpose Vehicle Requirements

1. The following listing identifies types, quantities and special requirements for vehicles provided by 8th Logistic Readiness Squadron (8 LRS) required for CDDAR operations IAW AFI 21-101, Chapter 11, para 11.28.2.5.2. Each vehicle will be owned and operated by 8 LRS.

Vehicle Type	Quantity	Special Requirements
All Terrain Forklift	1 each	none
40 ft. Flatbed Semi Trailer	1 each	none
Tractor for 40 ft. trailer	1 each	Off Base Driver

2. In the event of an off base aircraft crash, LRS will need to provide a driver for the tractor and 40 ft. trailer. Contact Ground Transportation at 782-5317 to coordinate driver 24/7.

3. The point of contact for this letter is the Transient Alert/Crash Recovery Section Chief at DSN 782- 1577.

FIRST MI. LAST, Rank, USAF
8 MXS Crash Recovery Team Chief

Attachment 4

FOR EQUIPMENT SHORTAGE NOTIFICATION

Figure A4.1. For Equipment Shortage Notification.

SAMPLE MEMORANDUM	
	Date: <i>DDMMYY</i>
MEMORANDUM FOR 8 MXG/CC	
FROM: 8 MXS/MXMTT	
SUBJECT: Crashed, Damaged or Disabled Aircraft Recovery (CDDAR) Equipment Shortfall	
1. The following identifies shortage of primary equipment, which would hinder proper implementation of the 8FW CDDAR program. IAW AFI 21-101, Chapter 11, para 11.28.2.5.3, and 11.28.2.5.7.	
Type Equipment: MB-2 Tow Vehicle. Discrepancy: Transmission Failure. Estimated Repair/Replacement Time: Unknown. Estimated Repair/Replacement Cost:	
Repair by/replacement part issuing from:	
2. This letter supersedes all other letters same subject. Please direct any questions regarding subject to 8 MXS/MXMTT Transient Alert/Crash Recovery Section Chief at DSN 782-1577.	
FIRST MI. LAST, Rank, USAF 8 MXS Crash Recovery Team Chief	
ROUTING INITIALS:	
8 MXS/MXMT:	_____
8 MXS/MXM:	_____
8 MXS/CC:	_____

Attachment 5

**CRASHED, DAMAGED OR DISABLED AIRCRAFT RECOVERY (CDDAR) PLAN
RESPONSE EQUIPMENT LISTING****Figure A5.1. Crashed, Damaged or Disabled Aircraft Recovery (CDDAR) Plan Response
Equipment Listing.**

SAMPLE MEMORANDUM RESPONSE EQUIPMENT LISTING	
	Date: <i>DDMMYY</i>
MEMORANDUM FOR 8MXG/CC	
FROM: 8 MXS/MXMTT	
SUBJECT: Crashed, Damaged or Disabled Aircraft Recovery (CDDAR) Plan Response Equipment Listing	
<ol style="list-style-type: none">1. The following listing identifies primary crash recovery equipment required to support wing CDDAR responses. Each piece of equipment/tool has been strategically located within the 8 MXS complex and shall have 24-hour availability IAW AFI 21-101, Chapter 11, para 28.2. Primary crash recovery equipment will be located in the 30ft. crash trailer and consists of 160 items. Refer to Material Inventory Listing KUTARECV3 for individual equipment/tool listing.3. Secondary/Quick response crash recovery equipment will be located in the recovery 1 (6 pack) vehicle. Refer to Material Inventory Listing KUTARECOV for individual equipment/tool listing.4. This letter supersedes all other letters same subject. For individual equipment/tool status or any questions regarding this subject please contact 8 MXS Transient Alert/Crash Recovery Section at 782- 1577.	
FIRST MI. LAST, Rank, USAF 8MXS Crash Recovery Team Chief	

Attachment 6

**VEHICLE REQUIREMENTS FOR CRASHED, DAMAGED OR DISABLED
AIRCRAFT RECOVERY RESPONSE**

Figure A6.1. Vehicle Requirements for Crashed, Damaged or Disabled Aircraft Recovery Response.

SAMPLE MEMORANDUM VEHICLE REQUIREMENTS

Date: *DDMMYY*

MEMORANDUM FOR 8 MXG/CC

FROM: 8 MXS/MXMTT

SUBJECT: Vehicle Requirements for Crashed, Damaged or Disabled Aircraft Recovery Response

1. The following listing identifies primary and alternate recovery vehicles required for CDDAR response. Each vehicle has been strategically located within the 8 MXS complex and shall have 24-hour availability IAW AFI 21-101, Chapter 11, para 11.28.2.5.

Primary Vehicles	Reg. Number	Location
Recovery 1 (6 pack)	XXXXXX	Building 2223
Recovery 4 (6 pack)	XXXXXX	Building 2223
MB-2 (tow-vehicle)	XXXXXX	Building 2223
10-ton Tractor	XXXXXX	Building 2223
30 ft. Equipment Trailer	XXXXXX	Building 2223
Alternate Vehicles	Reg. Number	Location
TA-1 (3 pack)	XXXXXX	Building 2223

1. For individual vehicle status please contact 8 MXS Transient Alert/Crash Recovery section at 782- 1577.

FIRST MI. LAST, Rank, USAF
8 MXS Crash Recovery Team Chief

Attachment 7

APPOINTMENT OF CRASH RECOVERY TEAM CHIEFS

Figure A7.1. Appointment of Crash Recovery Team Chiefs.

SAMPLE MEMORANDUM TEAM CHIEF APPOINTMENT LETTER

Date: *DDMMYY*

MEMORANDUM FOR 8 MXG/CC FROM: 8 MXS/CC

SUBJECT: Appointment of Crash Recovery Team Chiefs

1. IAW T. O. 00-80C-1, Chap 1, para 1.10.2, a Crash Recovery Team Chief must be a SNCO. The MXG/CC may waive the grade requirement. Individuals must be appointed in writing by the MXG/CC and tracked on the Special Certification Roster (SCR).
2. The following individual has been appointed as a Crash Recovery Team Chief IAW AFI 21-101, para 11.28.2.6.1 and will be updated on the SCR.

MSgt David J. Dukette 782-1579	8 MXS/MXMTT	DEROS	JUN 21
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3. The following individuals have been trained IAW T.O. 00-80C-1, Ch2, para 2.3.2.2.2. Due to a shortage of SNCOs qualified in crash recovery operations, this letter waives the grade requirement and appoints the following individuals as Crash Recovery Team Chief's. These individuals will also be updated on the SCR.

TSgt Andre D. Smith 782-1577	8 MXS/MXMTT	DEROS	FEB 22
TSgt Justin R. Gestring 782-1577	8 MXS/MXMTT	DEROS	APR 21

4. Please contact MSgt David J. Dukette at 782-1579 or david.dukette@us.af.mil with any questions or concerns.

FIRST MI. LAST, Rank, USAF
Commander, 8th Maintenance Squadron

1st Ind, 8 MXS/CC, DDMMYY, Appointment of Crash Recovery Team Chiefs.

MEMORANDUM FOR 8 MXG/CC

DDMMYY

Approved/Disapproved

FIRST MI. LAST, Rank, USAF
Commander, 8th Maintenance Group

Attachment 8

CRASHED, DAMAGED, DISABLED AIRCRAFT RECOVERY (CDDAR) CHECKLIST

Figure A8.1. Crashed, Damaged, Disabled Aircraft Recovery (CDDAR) Checklist.

USE FOR REAL WORLD AND LOCAL EXERCISES

*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.

*NOTE: Recovery Team Chief is required to hold the 7-skill level or higher. Team Chief is designated in writing by § MXG/CC. (See Attachment 7)

Type of Aircraft _____ Location _____ On Base Off Base

Record all information taken over the secondary crash phone or information relayed from MOC via radio net.

YES	NO	
<input type="checkbox"/>	<input type="checkbox"/>	Is crash confirmed? Recovery Team will respond to IFE/GE (treated as an IFE/GE until crash is confirmed).
C/W	N/A	
<input type="checkbox"/>	<input type="checkbox"/>	Fire emergency services personnel will ensure the aircraft is fire safe before crash recovery personnel approach the aircraft.
<input type="checkbox"/>	<input type="checkbox"/>	If an aircraft crashes on Kunsan AB, the 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.
<input type="checkbox"/>	<input type="checkbox"/>	Notify Crash Recovery Work Section to: 1. Inform Team Chief/NCOIC and Maintenance Flight Chief a crash has occurred. Team Chief/NCOIC: _____ /Time _____ Maintenance Flight Chief: _____ /Time _____

C/W	N/A																										
<input type="checkbox"/>	<input type="checkbox"/>	2.	Team Chief will initiate a recall of personnel if situation demands it. Date/Time Recall Initiated: _____																								
<input type="checkbox"/>	<input type="checkbox"/>	3.	Team Chief will assign a dedicated dispatch coordinator. Name: _____ Dispatch Coordinator will: A. Maintain constant monitoring of crash and maintenance nets and record/pass along information to the Team Chief. B. Plot crash site on grid map. C. Check out and have ready recovery vehicles/CTKs. D. Assign someone to preflight the recovery tractor/trailer. E. Assign someone to contact contracting; initiate crane Blanket Purchase Agreement (BPA)																								
<input type="checkbox"/>	<input type="checkbox"/>	4.	Aircraft recovery team will assemble at the Crash Recovery shop in Bldg 2223. The aircraft recovery plan will then be briefed by the designated Team Chief. Team Chief will conduct phase 1 portion of the safety brief. Day shift Team Chief: _____ Swing shift Team Chief: _____ <table border="0" style="width: 100%;"> <tr> <td style="width: 25%;">Team Member:</td> <td style="width: 25%;">Role:</td> <td style="width: 25%;">Team Member:</td> <td style="width: 25%;">Role:</td> </tr> <tr> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> </table>	Team Member:	Role:	Team Member:	Role:	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Team Member:	Role:	Team Member:	Role:																								
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_____	_____	_____	_____																								
<input type="checkbox"/>	<input type="checkbox"/>		<u>Prior</u> to the start of the recovery operation, ensure the aircraft has been released for maintenance by the Safety Investigation Board.																								
<input type="checkbox"/>	<input type="checkbox"/>		<u>All</u> tools dispatched to the crash site will be issued by designated individual and tracked using AF IMT 1297 Temporary Issue Receipt for each team member. Designated Support Monitor Name: _____ Contact MXS Production Superintendent (Dragon Super) for support agencies and support equipment																								

Support Agencies (If Needed):

- EOD (Explosive Ordnance Disposal)
- Weapons (35th/80th)
- Wing Safety
- Egress Section (Ejection System de-arm)
- Fuels Section
- Structural Maintenance
- Metals Technology
- Quality Assurance (Weight and Balance)
- AMU (Crew Chief's/Specialists)
- POL (Defuel Truck)
- Bioenvironmental (Composite/Haz materials)
- Medical (accidents happen)
- CE (Sandbags, sand, and AM2 matting)
- Security Forces (controlling recovery area)
- Fire Emergency Services
- Weather (updates on weather/wind speeds)

Support Equipment (Give Delivery Notice)

- Crane (BPA, 60 ton preferred)
- Crash Tractor/Trailer
- CE Heavy Equipment (Bulldozer, Forklift, ect)
- Weapons Trailer (Ammo)
- Fuel Tank Dollies (AGE)
- Maintenance Stands (AGE)
- Light Carts (AGE)
- Heaters (AGE)
- Tripod Jacks (AGE)
- AM2 Matting/Rapid Runway (CE Readiness)
- Dunnage/Cribbing (Crash Shop)
- Disabled Wheel Dolly (AGE)
- Engine Trailer (Engine Section)
- Flatbed 40' Trailer w/Tractor (Trans)
- Tow Vehicle

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

Recovery Operation

Recovery Team Chief will conduct phase 2 of the safety briefing prior to beginning the aircraft recovery operation. The following will be addressed in conjunction with safety brief:

		<input type="checkbox"/> Crane Operator Signals.
		<input type="checkbox"/> On-Scene Stress Factors.
		<input type="checkbox"/> Use of Personal Protective Equipment (PPE).
		<input type="checkbox"/> Make Sure Plan of Recovery is Clear.
		<input type="checkbox"/> Make Sure Assignments of Job Tasks are Clear.
		<input type="checkbox"/> UNDERSTAND THERE IS ONE BOSS, ONE ORDER
C/W	N/A	
<input type="checkbox"/>	<input type="checkbox"/>	Ensure aircraft is safe for maintenance per technical order to the fullest extent possible due to aircraft mishap damage.
<input type="checkbox"/>	<input type="checkbox"/>	Ensure fire bottle or fire truck is available.
<input type="checkbox"/>	<input type="checkbox"/>	Ensure aircraft is chocked and grounded (If possible).
<input type="checkbox"/>	<input type="checkbox"/>	Ensure safety pins/equipment are installed (If possible).

***NOTE:** EOD will support Egress if needed to accomplish cockpit safing due to certain extremely hazardous/sensitive situations in the egress system.

<input type="checkbox"/>	1F-16CG-2-24JG-00-1	External Power Application / Cooling Air
<input type="checkbox"/>	1F-16CG-2-28JG-10-2	Wing External Fuel Pylon/Tank Removal
<input type="checkbox"/>	1F-16CG-2-32JG-00-1	Landing Gear General
<input type="checkbox"/>	1F-16CG-2-32JG-10-1	Main Landing Gear and Doors Nose
<input type="checkbox"/>	1F-16CG-2-32JG-20-1	Landing Gear and Door
<input type="checkbox"/>	1F-16CG-2-32JG-30-1	Landing Gear Extension and Retraction
<input type="checkbox"/>	1F-16CG-2-32JG-30-2	Landing Gear Extension and Retraction
<input type="checkbox"/>	1F-16CG-2-32JG-40-1	Nose / Main Wheel Removal

Attachment 9

CDDAR SAFETY BRIEFING CHECKLIST

Figure A9.1. 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 directions 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 or Team Supervisor.
- 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

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
- Minimum PPE requirements for **uncontrolled** composite materials environment:
 - Industrial full face respirator with filters
 - Disposable Tyvex 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. Wind speed: _____ knots.
- 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 IS #1** and that anyone can stop the operation.

***NOTE:** 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 § 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.