



Department of the Air Force  
HQ AEDC (AFMC)  
Arnold AFB, TN 37389

## **Safety, Health, and Environmental Standard**

**Title:** MISHAP INVESTIGATION AND REPORTING

**Standard No.:** A2

**Effective Date:** 06/12/2015

The provisions and requirements of this standard are mandatory for use by all personnel engaged in work tasks necessary to fulfill the AEDC mission. Please contact your safety, industrial health and/or environmental representative for clarification or questions regarding this standard.

Approved:

Contractor/ATA Director  
Safety, Health and Environmental

Air Force Functional Chief

**SHE Standard A2, Mishap Investigation and Reporting**

**Record of Review/Revision**

Date/POC	Description
6/27/15 Bidmead	Added AEDC/SE directed changes: (a) Paragraph 4.1.1.1: added requirements to brief AEDC/SE and Division Chief, and added restriction on making certain types of notifications off-base. (b) Paragraph 4.2 NOTE: added ESOHC briefing.
04/16/15 Semon/ Bidmead	Revised definition of Class B Mishap to comply with changes to OSHA definition throughout. Updated information on OSHA reporting criteria. Revised exceptions to AF mishap reporting to match current AFI 91-204 guidance. Updated references in Section 7 to reflect current publication dates.
08/23/12 Bidmead	Biennial review. This revision incorporates AFI 91-204, AFMC Sup1 (18 Aug 2011), AFI91-204 AFGM1 (31 May 2012), and recent organizational changes. Several paragraphs under 4.1.1 have been renamed and renumbered for consistency with AFI91-204. Added paragraph 4.1.1.5 explosives mishap investigation. Under paragraph 4.1.5 Class D property damage mishaps have been added and Class E cost thresholds have changed. Added paragraphs 4.1.5.3 Ionizing Radiation mishaps; 4.1.6 Mishap Costs; 4.1.10, Control of the Mishap Scene. Deleted all references to the Mishap Investigation Handbook because it is an ATA document.
07/07/10 Jennings	Major revision. Due to recent changes in AFI 91-204, the operating contractor is no longer permitted to exclusively investigate Air Force property damage mishaps or HAPs. The standard was revised to reflect this change. Revised the mishap cost threshold for property. Added definition for Operating Contractor. Removed contractor specific actions for post mishap drug and alcohol testing in 4.19.2. Added Area Specific Emergency template in Annex F.
06/05/09 R. Roosa	Annual Review: Added e-Matrix process to include mishap database information and definition. No additional resources are needed for using e-Matrix. The process remains the same; except the report is now completed electronically and routed via e-Matrix versus written report which were hand-carried for signature. Replaced the word "extension" with "454-." Updated reporting process to reflect centralization of Operations Center functions.
06/04/08 Bidmead/ Raabe	Annual review: Arnold Air Force Base Full-Spectrum Threat Response (FSTR) Plan 10-2 has been superseded by Arnold AFB Comprehensive Emergency Management Plan 10-2; references were updated throughout. Revised Annexes to clarify contractor reporting requirements. Changes are highlighted in yellow throughout.
02/15/07 Bidmead and 03/27/07 Raabe	Reviewed and updated to reflect most current AFI 91-204 requirements which redefined mishap classes. Added Section 4.1.1.3 on delegation of convening authority and Section 4.1.2.4 to ensure recommendations from contractor reports are tracked in the contractor corrective action system; revised text of Section 4.1.7 concerning safety privileged information. Relocated several terms from definitions to responsibilities; renumbered paragraphs accordingly. Deleted Section 4.2.2 requiring that contractor directors provide the Air Force with quarterly briefing of corrective actions for each mishap; added note that corrective action tracking status is now accomplished via the corrective action system and will be briefed to the Air Force upon request; renumbered subsequent paragraphs. Revised Paragraph 4 of Annex F to indicate that emergency procedures shall be <i>available</i> to operators and others (rather than <i>posted</i> ) and added a requirement that emergency procedures <i>be available for use by Master Work Permit issuing officials in alerting work crews to the appropriate emergency work procedures for the area in which work is to be performed</i> ; deleted Step 9 in the Supervisor Responsibility portion of Annex F-4 which referenced Quality Action Documents (replaced by the contractor corrective action system). Updated emergency response numbers throughout to specify calling 911 in all instances, and to direct mishap notification calls to Operations Center rather than individual personnel.
12/21/05 AWJ	Reviewed; no change required.
01/20/05 V. Peters	Revised "Director of Emergency Management" to "Manager, Fire and Emergency Services" and changed "Primary Incident Commander" to "Initial Incident Commander." Revised after-hours contact point throughout standard from individual names to AEDC Operations Center. Revised Annex C to include format changes to provide consistency for Mishap Investigation Report
09/26/04 Jennings/Tate	AEDC Safety, Health and Environmental Standard, A2Mishap Investigating and Reporting revised to meet current OSHA, Air Force and Contractor requirements
07/19/04 Jennings	Removed Non-Operational Mishap definition. Removed all references to Consolidated Mishap Report. Paragraph 4.1.4.9 added. Para. 4.1.4 revised per AFI 91-204. Para. 4.1.9 revised per AFI 91-204. Para. 4.2.7 revised in accordance with the Mishap Investigation Handbook. Para. 4.2.11.3 changed wording and the designation 'Class B' to 'Class C'. References updated. Updated Annex A. Added Review signature blocks in Annex C. Annex F Revised.



# **Safety, Health, and Environmental Standard**

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### **9.0 SUPPLEMENT**

NFAC A321-0801-XSP A2 Mishap Investigation and Reporting



# Safety, Health, and Environmental Standard

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## MISHAP INVESTIGATION AND REPORTING

### 1.0 INTRODUCTION/SCOPE/APPLICABILITY

#### 1.1 Introduction

- 1.1.1 Investigation and reporting of all mishaps involving injury or equipment loss or having the potential to cause injury or equipment loss is a key factor in detecting trends and establishing actions to prevent recurrence. Consequently, all mishaps shall be promptly reported, recorded, and investigated.
- 1.1.2 The purpose of every safety investigation is to identify all factors (human, material, and environmental) that directly or indirectly contributed to the mishap. This information is used to eliminate causal factors and help prevent recurrence of similar mishaps. The proper use of mishap data reduces mishap potential, since each safety investigation adds to the overall AEDC mishap experience base, providing a basis for corrective action. Investigative findings and recommendations may determine the requirements for additional training, validate a need for increased frequency of maintenance, justify improvements to material, establish future design criteria, and achieve other long-range results. Thus, the accuracy and thoroughness of each investigation determines the ultimate adequacy of action taken to remove or eliminate the causal factors.

#### 1.2 Scope

- 1.2.1 This standard implements and explains the process for investigating and reporting contractor and DoD/Air Force mishaps at AEDC, including OSHA-reportable injuries. It is to be used by all persons who investigate and report Air Force mishaps, and is particularly tailored to the needs of persons assigned to interim and formal Safety Investigation Boards. This standard also provides guidance for preparation of limited-use privileged safety reports, which must conform to format and distribution criteria contained in AFI 91-204, Safety Investigations and Reports.
- 1.2.2 This standard covers investigating and reporting of mishaps as required by AFI 91-204. Additional information regarding spill reporting is provided in AEDC Safety, Health and Environmental Standard (SHE Std) E17, Oil and Hazardous Substances Spill Response.

#### 1.3 Applicability

- 1.3.1 AEDC investigation and reporting responsibilities are divided due to the mix of DoD/Air Force and contractor personnel. In general, the Air Force is primarily responsible for investigation of injury/illness to DoD/Air Force personnel and property damage mishaps. The AEDC Commander or Chief of Safety (AEDC/SE) may delegate responsibility for investigations as deemed necessary (see paragraph 4.1.4).
- 1.3.2 The base operating contractor is responsible for investigation of injury/illness to base operating contractor personnel and damage to base operating contractor owned/leased property.
- 1.3.3 Applicability to outside/subcontractor projects – Each outside/subcontractor working at AEDC shall maintain its own company written program for the project(s) it is working at AEDC to include mishap investigations. Outside contractors shall follow the reporting requirements contained in this SHE Std.

### 2.0 BASIC HAZARDS/HUMAN FACTORS

Mishap investigators must consider the conditions that caused, contributed or resulted from the accident before entering the area. These post-accident hazardous materials and gases created by the mishap are potential hazards to the investigator or other mishap responders. Blood-borne pathogens, fluids, toxic gases, smoke, dust, mechanical hazards, electrical hazards, unstable walk or overhead surfaces are just some of the hazards faced by personnel investigating the scene of a mishap. To help prevent post-accident injury to personnel or material damage, investigators must complete a Job Safety Analysis (JSA) or Job Safety Review (JSR) in accordance with AEDC SHE Standard A10 before entering the mishap area.

### 3.0 DEFINITIONS

Accident – An unexpected happening causing loss or injury.

Accident Investigation Board (AIB) – An investigation board convened under AFI 51-503, Aerospace Accident Investigations. This board functions independently and apart from the Safety Investigation Board (SIB) to provide a publicly releasable report of facts and circumstances surrounding the accident, to include a statement of opinion on the cause of the accident, and to gather and preserve evidence for claims, litigation, disciplinary and adverse administrative actions, and for all other purposes. AIB investigators will not attend SIB proceedings, or meetings, or have access to or discuss any Part II privileged information of the Safety Investigation with SIB investigators.

Base Operating Contractor – A base contractor directly accountable to the Air Force for the AEDC mission.

Causal Finding – Those findings which singly, or in combination with other causal findings, logically result in damage or injury. They are identified with the word “cause” at the start of the text of the finding.

Cause – A deficiency the correction, elimination, or avoidance of which would likely have prevented or mitigated the mishap, damage and/or injuries.

Contractor – Term used to identify the AEDC Operation, Maintenance, Information Management and Support Contractor.

Convening Authority – The individual who has the authority to order a mishap investigation and who appoints the Safety Investigation Board (SIB) or Single Investigating Officer (SIO). (See Section 4.1.1.4. for delegation of authority.)

Disability – Disabilities resulting from mishap injuries are divided into two categories, permanent total disability and permanent partial disability.

Environmental Incident (Spill) – An unplanned, uncontrolled, or accidental release of fuel, oil, or hazardous substance into air, soil, ditches, creeks, gravel, drains, or discharge sumps, which may cause an adverse impact, either through potential damage or adverse public perception.. A spill also includes discovery of oil slicks or sheens on drainage ditches and creeks. Leaks that are contained in a drip pan or bucket or that can be wiped up with none of the material lost are not considered spills. See SHE Std E17 for investigating and reporting requirements.

Explosives Mishap – A mishap involving explosives where the item functions unintentionally or abnormally, or is damaged in storage, handling, or transportation.

Findings – The conclusions of the SIB or investigator. Findings are single statements, in chronological order, of each significant event or condition sustaining the sequence leading to the mishap.

First Aid – Any one-time treatment or follow-up visit for observation of minor scratches, cuts, burns, and splinters which do not ordinarily need medical care. Such one-time treatment and follow-up visits for observation are first aid, even though provided by physicians or registered professional personnel.

High Accident Potential (HAP) Event (Near Misses, Significant Event) – Any hazardous occurrence that has a high potential for becoming a mishap, but does not meet mishap reporting injury or property damage criteria.

Illness – Any abnormal condition or disorder, other than one resulting from an occupational injury, caused by exposure to environmental factors associated with employment. This includes acute and chronic illnesses or diseases which may be caused by inhalation, absorption, ingestion, or direct contact.

Incident Commander – The personal representative of, and solely responsible to, the AEDC Commander. All AEDC personnel responding to incidents, mishaps, emergency or disaster situations are under the command and control of the Incident Commander. The person (usually fire response or security personnel) first on the scene trained and equipped to take charge of the mishap emergency response shall assume this duty until arrival of the AEDC Manager, Fire and Emergency Services, who is the Initial Incident Commander. The responsibilities of the Incident Commander are identified in Arnold AFB Comprehensive Emergency Management Plan 10-2.

Injury – Traumatic bodily harm, such as a cut, fracture, strain, burn, poisoning, or amputation, caused by a single or one-day exposure to an external force, toxic substance, or physical agent.

Job – A sequence of separate steps or activities that together accomplish a work goal.

Lost Workday Injury – An injury not resulting in death or disability but with one or more lost workdays involving eight hours or more away from work beyond the day or shift on which the injury occurred. Lost workdays include all calendar days after the day of the onset of the injury or illness. The day of injury or the day returned to duty is not considered a lost day.

Matrix® Mishap Database – An interactive searching database used to record, coordinate, report and archive base operating contractor mishap reports.

Medical Aid Station (MAS) – The AEDC on-site clinic/dispensary.

Mishap – An unplanned occurrence, or series of occurrences, that results in damage or injury and meets Class A, B, C, D or E reporting criteria. A mishap is further defined as:

- DoD Mishap – A mishap involving damage to DoD/Air Force property; occupational illness to DoD/Air Force military or civilian personnel; injury to DoD military personnel on- or off-duty; injury to on-duty DoD civilian personnel; damage to public or private property, or injury or illness to non-DoD personnel caused by Air Force operations.
- Contractor Mishap – A mishap that does not meet the definition of a DoD mishap but involves injury to contractor personnel, damage to contractor property, or damage to non-contractor property as a result of contractor operations.

Occupational Illness – Any abnormal physical condition or disorder, other than from an occupational injury, resulting in adverse consequences and caused by occupational factors associated with employment. Includes all confirmed cases of acute and chronic illnesses or diseases caused by inhalation, absorption, ingestion or direct contact with suspect substances.

Operational Mishap – A work-related mishap that involves injury or occupational illness to persons or damage to property as a result of an AEDC operation. AEDC operations include Air Force or contractor personnel performing official tasks in support of the AEDC mission.

Outside Contractor/Subcontractor – An organization employed by a contractor or the Air Force to do construction, maintenance, repair or other work at AEDC. There is no employment relationship, control or supervision of the subcontractor's employees by AEDC contractors. Also referred to as the construction contractor.

Permanent Partial Disability – An injury or occupational illness, which in the opinion of competent medical authority, results in permanent impairment through loss, or loss of use, of any part of the body. Exceptions: Loss of teeth, fingernails, toenails; loss of fingertips or toe tips without bone involvement; repairable inguinal hernia; disfigurement; sprains or strains that do not cause permanent limitation of motion.

Permanent Total Disability – Any nonfatal injury or illness, which is totally incapacitating. For purposes of this standard, any mishap resulting in injury severe enough for the individual to be comatose is a permanent total disability. Competent medical authority determines the disabled person cannot follow any gainful occupation or is medically discharged, retired, or separated. The loss of use of both hands, both feet, both eyes, and any combination of these body parts in a single mishap is a permanent total disability.

**NOTE:** An injury shall be upgraded to a fatal mishap if death occurs within 30 days of medical discharge, retirement, or separation due to complications arising from the mishap injury.

Privileged Information – Any information which is exempt by statute or case law from disclosure outside the Air Force safety community. The Air Force treats this information confidentially to ensure commanders quickly obtain accurate mishap information, thereby promoting safety, combat readiness, and mission accomplishment. Privileged information includes:

- Findings, conclusions, causes, recommendations, and the deliberative process of the SIB or SIO for all classes of investigation. This protection may also apply to findings, conclusions, causes, recommendations and deliberative process of the investigator in a ground or explosive mishap.
- Statements or testimony given to the SIB pursuant to a promise of confidentiality.
- For more details on privileged information see Section 4.1.7 and AFI 91-204.

Property Damage – Damage to facilities, equipment, property, materiel, or resources. If the occurrence meets mishap reporting criteria, the cost of environmental cleanup is included in property damage costs.

**NOTE:** Inadvertent releases of ozone-depleting substances are reported when they meet mishap reporting criteria.

Recordable Injury – All work-related deaths and illnesses, and those work-related injuries, which result in: Days away from work, loss of consciousness, medical treatment beyond first aid, significant injury or illness diagnosed by a physician or other licensed health care professional, restriction of work or transfer to another job.

Recommendations – These are actions designed to prevent a similar mishap or reduce its effects.

Safety Automated System (SAS) – The Air Force automated reporting system used for all reportable ground Class A, B, C, and HAP mishaps.

Safety Investigation Board (SIB) – Used for full-scale mishap investigations. The SIB consists of multiple members per AFI 91-204.

Single Investigating Officer (SIO) – A person designated by the convening authority to investigate a safety mishap or event; with few exceptions this will be a qualified member of the convening authority's safety staff.

## 4.0 REQUIREMENTS/RESPONSIBILITIES

### 4.1 Requirements

#### 4.1.1 General Guidance for Mishap Investigation and Reporting

4.1.1.1 All mishaps, including accidents involving personal injury (first aid, recordable injury, etc), shall be reported in accordance with AFI 91-204 and Annexes A and B of this standard.

4.1.1.1.1 Mishap reports and briefings shall be reviewed by the applicable Division Chief and AEDC/SE prior to briefing the Commander.

4.1.1.1.2 All recommendations to convene boards or make notifications off-base shall be communicated to the AEDC Chief of Safety or AEDC Ground Safety Manager for determination in accordance with AFI 91-204, Safety Investigations and Reporting para. 1.3.3.

4.1.1.2 Mishaps resulting in the following shall be reported to AEDC Safety (AEDC/SE) by telephone as soon as possible: Damage of \$5,000 or more, a fatality, permanent partial disability, or **in-patient** hospitalization of **one** or more people, **an amputation or loss of an eye**, HAP, radioactive source damage or failure, incidents involving explosives, release resulting in actual or potential damage to the environment.

4.1.1.3 Annex A lists the reporting requirements for contractors. Contractors shall submit sufficient mishap information to AEDC/SE in a timely manner to meet reporting requirements as described in Annex A.

4.1.1.4 Annex B lists the notification and reporting requirements for serious or fatal mishaps.

4.1.1.5 Mishaps involving weapons/explosives shall be investigated and reported in accordance with AFI 91-204 and AFMAN 91-221.

4.1.1.6 Mishaps involving the environment, reporting will be made by AEDC/TSDCA Civil Engineering Branch Asset Management Section to the appropriate authority. The need for investigation will be determined on a case-by-case basis.

4.1.1.7 Mishaps involving spills shall follow additional guidance specified in SHE Std E17.

4.1.1.8 Immediate Response - Annex D details the immediate steps to take in the event of a mishap.

**4.1.2 Exceptions to Mandatory Reporting Requirements – The complete list of exceptions to Air Force mishap reporting is in AFI 91-204, Chapter 1.**

**4.1.2.1 These exceptions include but are not limited to:**

**4.1.2.1.1 Intentional or anticipated damage to DoD equipment or property incurred during authorized testing**

**4.1.2.1.2 Equipment damage when all of the following three conditions are true (unless required to be reported as a Class E, HAP or near miss):**

- The failed item is a component part or line-replaceable unit (LRU). Examples include flight line replaceable engine components, electronic boxes, air cycle machines, pumps, tires, and drag braces. The following are major assemblies and not component parts nor LRUs: aircraft subsystems such as engines, engine modules, landing gear, and gearboxes.**
- All damage and/or wear is confined to that component part or LRU (if not confined, all associated damage costs must be added to determine if the occurrence is a reportable mishap).**
- The failed item is maintained as used until they fail or reached pre-determined wear limits due to normal wear and tear.**

**4.1.2.1.3 Property damage, death, or injury as a result of vandalism, riots, civil disorders, sabotage, terrorist activities, or criminal acts (e.g., arson). Note: Injury or death resulting from workplace violence or terrorist acts at work will be recorded.**

**4.1.2.1.4 Natural phenomena ground mishaps where adequate preparation, forecasting, and communication actions were taken and there were no injuries to personnel. In order to determine if adequate actions were taken, an investigation must be initiated.**

**4.1.2.1.5 Injuries or fatalities to persons in the act of escaping from or eluding military or civilian custody or arrest.**

**4.1.2.2 The above exceptions apply to mishap reporting through Air Force safety channels ONLY. These exceptions DO NOT relieve the organization from any reporting required through other channels such as OSHA, the Base Operations Center, legal channels, maintenance channels, etc.**

#### 4.1.3 Acting on Critical Safety Information

- 4.1.3.1 Any investigator who discovers information which seriously impacts the operation of a test facility, system or the continuation of an exercise, shall immediately notify the convening authority by telephone and follow up with a confirming message, regardless of whether or not such information is associated with the mishap under investigation.
- 4.1.3.2 If safety investigators discover, or suspect, by any means that the mishap may have been caused by criminal misconduct, they shall immediately suspend investigation and report to the convening authority.
- 4.1.4 Convening Authority** – The Air Force Test Center (AFTC) commander is the convening authority for all AEDC mishaps except as delegated:
- 4.1.4.1 For all Air Force on-duty Class A and nuclear mishaps, the AFTC Command commander is the convening authority. This authority may not be delegated.
- 4.1.4.2 For Air Force Class B, C, D mishaps and Class E events, AFTC/CC has delegated convening authority to the AEDC Commander. The AEDC Commander may delegate convening authority for Class C, D and Class E events to an appropriate level of command in accordance with AFI 91-204.
- 4.1.5 Mishap and Event Classification**
- 4.1.5.1 Mishaps are classified as follows:
- 4.1.5.1.1 Class A – Total cost of \$2,000,000 or more for property damage, or a permanent total disability or fatality. Property damage includes all government equipment, vehicles, or munitions.
- 4.1.5.1.2 Class B – Total cost of \$500,000 or more but less than \$2,000,000 for property damage. Permanent partial disability, or **in-patient** hospitalization of **one** or more people, **amputation or loss of an eye**.
- 4.1.5.1.3 Class C – Total cost of \$50,000 or more but less than \$500,000 for property damage. Minor injury, minor occupational illness. An injury resulting in a lost workday case, or an occupational illness that causes loss of time from work at any time. An occupational injury or illness resulting in permanent change of job.
- 4.1.5.1.4 Class D – Total cost of \$20,000 or more but less than \$50,000 for property damage. Any nonfatal injury or occupational illness that does not meet the definition of lost workdays (lost time). These are cases where, because of injury or occupational illness, the employee only works partial days, has restricted duties, or is transferred to another job, lost consciousness, required medical treatment greater than first aid, or incurred a significant injury or illness diagnosed by a physician or other health care professional.
- 4.1.5.1.5 Class E – All property damage mishaps totaling less than \$20,000 will be investigated. Mishap investigation efforts should be tailored in response to the seriousness and the potential for re-occurrence. As a minimum, the investigation will answer who, what when, where, how and why. AF Safety may request/conduct a more detailed investigation, when warranted.
- 4.1.5.1.5.1 High Accident Potential (HAP) Events – Any hazardous occurrence that has a high potential for becoming a mishap will be investigated and tracked as a Class E.
- 4.1.5.1.5.2 All Class E events will be investigated and tracked locally. HAP and property damage above \$5,000 will be used in assessing base operating contractor safety metrics.
- 4.1.5.2 Laser or Radio Frequency (RFR) incidents or accidents. All incidents or accidents involving alleged or suspected exposures of laser radiation need to be investigated according to AFOSH Std 48-139 Laser Radiation Protection Program Paragraph 2.6, immediately reported via the Laser Injury Hotline (1-800-473-3549 or DSN 240-4784) and reported in AFSAS. Similarly, alleged or suspected RFR exposures in excess of exposure limits will be investigated and reported as prescribed in AFOSH 48-9, and reported in AFSAS.
- 4.1.5.3 Ionizing Radiation incidents or accidents. All ionizing radiation incidents or unplanned exposures must be reported in accordance with AEDC SHE Standard D11 *Ionizing Radiation* and the Tennessee Department of Environment and Conservation (TDEC) State Rules for Protection Against Radiation (SRPAR).
- 4.1.6 Mishap Costs** - It is DoD policy to determine the total direct mishap cost in order to provide a factual basis for the allocation of resources in support of DoD mishap prevention programs. Direct mishap costs only include property damage costs (DoD and Non-DoD), associated repair labor costs, and environmental cleanup costs. The direct cost does not include the cost of implementing corrective actions. All other costs (examples: investigation and transportation costs) are indirect costs.
- 4.1.6.1 Contractor Repairs. Use the actual cost charged to the government for repairs performed by contractors. Costs to repair damage must be reported even if the Air Force is reimbursed or if the repair is accomplished under warranty.



4.1.6.2 Determining Costs to Non-DoD Property Damage. If Air Force operations result in damage of non-DOD property, calculate and report the damage cost. Determine non-DOD property damage costs using official estimates, such as from police reports.

4.1.6.3 Determining Environmental Clean-Up Costs. Obtain these costs from the local civil engineering environmental section. The end cost of this type of clean up may not be available inside the nominal 30 day investigation timeframe. Use the best estimate available at the time of the final message. Environmental clean-up costs include: clean up, environmental decontamination, and restoration of private and government property.

#### **4.1.7 Air Force Equipment/Property Damage and HAP Mishaps**

4.1.7.1 Mishaps involving equipment/property damage shall be reported to base operating contractor safety, and AEDC Air Force Safety by the contractor involved in the operation at the time of occurrence and shall be investigated to determine the cause(s) and action required to prevent a recurrence.

4.1.7.2 The Air Force shall have primary responsibilities for mishap investigations for mishaps involving Air Force property damage, Class A, B, C, and E mishaps unless delegated. This will be coordinated on a case-by-case incident.

4.1.7.3 The current AFI 91-204 shall be followed in investigating and reporting mishaps involving Air Force equipment/property damage/HAPs.

4.1.7.4 Recommendations from AEDC/AF mishap reports shall be transmitted to the affected AEDC/AF organization which in turn will communicate those recommendations to the affected contractor.

4.1.7.5 Mishap reporting requirements and notification/reporting requirements for mishaps are contained AFI 91-204 and summarized in Annex A and Annex B.

#### **4.1.8 Contractor Equipment/Property Damage and HAP Mishaps**

4.1.8.1 The contractor shall have primary responsibility for investigating mishaps involving contractor property or for contractor HAP's, unless otherwise determined by the AEDC Commander/Chief of Safety. The convening authority may decide to appoint an SIO or SIB.

4.1.8.2 The convening authority for base operating contractor mishaps shall be the Office of General Manager (OGM) who may delegate convening authority.

4.1.8.2 Base operating contractor mishap investigations and reports shall follow guidance from the Safety Health and Environmental (SHE) Director or OGM.

4.1.8.3 The safety investigation should be completed within 30 days of the mishap. The investigation should place a greater priority on a complete and accurate safety report than on trying to finish in the 30 day timeline. If the investigation cannot be completed within this 30 day period, the base operating contractor SIB/SIO will request an extension from the convening authority.

4.1.8.4 Base operating contractor Safety Investigation Boards (SIB). SIBs are made up of multiple members assigned to investigate a mishap. The convening authority will determine the composition of the SIB, which should include a chairman, safety representative and other members not associated with the mishap.

4.1.8.5 Mishap reporting requirements and notification/reporting requirements for mishaps will be determined by the contractor.

4.1.8.6 Mishap reports will be submitted and coordinated for signature through the e-Matrix® Mishap database.

4.1.8.7 Recommendations from Incident and Mishap Reports will be tracked in the Contractor Corrective Action System for closure.

4.1.8.8 The Air Force establishes the authority to investigate non-USAF mishaps per AFI 91-204, paragraph 1.9.

#### **4.1.9 Contractor Injury/Illness Mishaps**

4.1.9.1 In the event of a workplace injury or illness, the first priority shall be to provide the best assistance possible to affected employees, and to ensure the safety of others who may be at risk (co-workers and/or emergency responders).

4.1.9.2 The injured employee shall report to his or her supervisor as soon as reasonably possible. See Section 4.2.6 and Annexes A and B for reporting requirements.

4.1.9.3 Each injury shall be investigated to determine the cause and action required to prevent a recurrence.

4.1.9.4 Form GC-1446, Report of Occupational Injury or Illness, or equivalent, shall be used to record the results of the investigation, cause, and corrective action.

- 4.1.9.5 For mishaps involving injury to contractor personnel, the contractor shall be responsible for OSHA reporting requirements. If the injury may have been caused by government-owned equipment, AEDC/SE shall be notified by the Operations Center as soon as possible.
- 4.1.10 Control of the Mishap Scene** - Only personnel authorized by the convening authority or the designated SIB Chairperson shall be permitted to inspect, investigate, photograph, or enter the mishap scene.
- 4.1.11 Privileged and Non-Privileged Information**
- 4.1.11.1 **Almost** all safety reports contain privileged safety information, but not all information in a safety report is privileged. See AFI 91-204 for details. Findings, conclusions, **causes**, recommendations, **other findings and recommendations of significance**, analysis, and the deliberative process of safety investigators are privileged information. Diagrams and exhibits are privileged if they contain information which depicts the analysis of safety investigators.
- 4.1.11.2 Air Force employees, military members, and government contractors, will not wrongfully use, permit the use of, gain access to, or allow access to the privileged information in any safety report, or portions thereof, for other than officially authorized mishap prevention purposes.
- 4.1.11.3 Access to safety reports shall be limited to those who have a need to know for mishap prevention.
- 4.1.11.4 Personnel having access (authorized access or unauthorized access) to privileged safety reports and information have a duty to control the reports to prevent their use for anything other than mishap prevention.
- 4.1.11.5 Promises of confidentiality are not authorized for witness statements taken during investigation of explosives and chemical agents, afloat, motor vehicle, off-duty military, and ground and industrial mishaps. Consequently, these statements are not normally privileged safety information.
- 4.1.11.6 Before taking non-privileged statements, the SIB investigator shall advise witnesses that the main purpose of the investigation is mishap prevention. The investigator shall ensure witnesses are informed that their statement will be provided to the legal investigation (if applicable) and/or may be released to the public pursuant to a Freedom of Information Act (FOIA) request. Investigators taking non-privileged witness statements from personnel involved in safety investigations should not offer protection beyond this assertion.
- 4.1.11.7 Any SIB investigator who believes personnel questioned in the investigation may be guilty of criminal misconduct should refer to AFI 91-204 for guidance.
- 4.1.11.8 Contractors shall not release the information outside of contractor safety channels; for example, privileged safety information shall not be released to the general counsel's office or public relations personnel. The number of contractor employees who have access to the information shall be strictly limited to only those individuals who have a need to know.
- 4.1.11.9 The cover and individual pages of documents containing privileged information will be clearly marked with the privileged warning statement below:

FOR OFFICIAL USE ONLY.

This contains privileged, limited-use safety information. Unauthorized use or disclosure can subject you to criminal prosecution, termination of employment, civil liability, or other adverse actions. See AFI 91-204, Chapter 3 for restrictions. Destroy in accordance with AFMAN 33-360 when no longer needed for mishap prevention purposes.

- 4.1.11.10 Requests for information, data, newspaper releases, photographs, or other matters related to mishaps shall be made to and approved for release by the Air Force Information Officer. Requests for information on mishaps investigated and controlled by the Air Force must be made through HQ AFSA.

**4.1.12 Post-Mishap Drug and Alcohol Testing**

A post-mishap drug and alcohol test will be administered for incidents involving Air Force property or equipment. The Air Force, base operating contractor and outside/subcontractors shall develop their respective plans for administering a drug and alcohol test. The following are general requirements for drug and alcohol testing for mishaps occurring at AEDC when the mishap results in:

- 4.1.12.1 A recordable injury to the employee.

- 4.1.12.2 Injury to another person.
- 4.1.12.3 Damage to government/base operating contractor property. The convening authority will determine whether an alcohol/drug test will be administered for damage to government/base operating contractor property. An alcohol/drug test should be performed if damage is \$5,000 or more, unless the convening authority determines otherwise.
- 4.1.12.4 Property damage, even if minimal, caused by employee's clear negligence or intentional misconduct.
- 4.1.12.5 A vehicle mishap, regardless of dollar amount.

#### **4.1.13 AEDC Emergency Response Procedure Handbook**

Emergency instructions contained in the handbook shall address the steps personnel must take in response to an emergency.

- 4.1.13.1 Emergency procedure books with appropriate response actions shall be required for each operating/industrial area, test support area, warehouse and motor pool area. Emergency procedures response actions contained in these books shall be written for the specific areas in which they are located.
- 4.1.13.2 The emergency procedure book shall have an easily distinguishable red-and-white striped cover. A procedure book shall be located in each work area supervisor's office, and in each plant/test unit control room throughout the industrial work areas.
- 4.1.13.4 Annex F contains the requirements and instructions for developing AEDC Emergency Response Procedure Handbooks.

## **4.2 Responsibilities**

**NOTE:** Corrective actions for mishaps are tracked via the corrective action system. The status of these actions shall be briefed at each Environmental Safety & Occupational Health Council (ESOH) or to local Air Force upon request.

### **4.2.1 Base Operating Contractor General Manager (OGM)**

The base operating contractor General Manager (the convening authority for contractor mishaps) may appoint a full SIB, tailored SIB or single investigator for operating contractor mishaps. When the causes and preventive actions are evident at the onset of the investigation, or the mishap is not technically complex, the convening authority may appoint a single investigator.

### **4.2.2 Base Operating Contractor Safety, Health & Environmental (SHE) Director**

The SHE Director shall report the accident, injury or illness to the base operating contractor General Manager as soon as practical. The SHE Director will ensure appropriate investigation and follow-up actions are taken. The SHE Director may assume duties of the convening authority as described in Section 4.1.3.2.

### **4.2.3 Responsible Contractor Organization**

In general, the contractor involved in the operation at the time the mishap occurs shall have primary responsibility for the area involved in the mishap. Contractors shall:

- 4.2.3.1 Obtain emergency assistance (ambulance, rescue, firefighters) and assist injured personnel as needed.
- 4.2.3.2 Establish and maintain control of the mishap scene to protect personnel and equipment and preserve the scene for investigation. This includes controlling entry except for emergency services.
- 4.2.3.3 Inform emergency assistance personnel, upon arrival, of special measures or necessary action required to safely secure the systems and area and provide assistance as requested.
- 4.2.3.4 Request security support as needed to control entry; providing a list of persons authorized to enter.
- 4.2.3.5 Report and investigate the mishap and prepare written reports as required.
- 4.2.3.6 Take corrective action as determined by the investigation.
- 4.2.3.7 During a mishap investigation, if evidence is discovered that suggests sabotage, immediately contact AEDC/OSI and AEDC/SE.

### **4.2.4 Emergency Services**

AEDC Emergency Services personnel shall:

- 4.2.4.1 Provide emergency equipment and assistance at the mishap scene upon request.
- 4.2.4.2 Provide security support to control entry of personnel to the mishap scene upon request, and allow no one to enter the area until authorized by the Incident Commander or the AEDC Commander.

**4.2.5 Employees**

AEDC personnel shall:

- 4.2.5.1 Report all accidents, injuries and illnesses to their supervisor immediately to ensure proper follow-up; this includes proper medical treatment and/or investigation when appropriate. If the supervisor is unavailable, the employee shall report the event to any available member of management or to the safety office.
- 4.2.5.2 Report the accident/incident by calling 911 whenever an accident/incident occurs that requires fire protection, ambulance, or security police assistance.

**4.2.6 Supervisor (or Designated Representative)**

The supervisor of an employee involved in a mishap shall:

- 4.2.6.1 Ensure Emergency Response (911) has been notified.
- 4.2.6.2 Ensure medical care (first aid) for injuries is initiated.
- 4.2.6.3 Notify the Operations Center at 454-7752 and relay Emergency Response if required.
- 4.2.6.4 Take the injured employee to the Medical Aid Station if non-emergency.
- 4.2.6.5 Secure the scene for post-accident mishap investigation team. Isolate the area by barricade, posted observer, etc; ensure area is safe (lockout/tagout, warning tape, posted observer to warn personnel of hazards, etc.).
- 4.2.6.6 Report all accidents, injuries or illnesses immediately to the AEDC Operations Center.
- 4.2.6.7 If personal injury or fatality is involved, complete Form GC-1446, Report of Occupational Injury or Illness.
- 4.2.6.8 Ensure all records for accidents; injuries or illnesses to their employees are completed in a timely fashion. Request assistance, if needed, from the functional safety representative.

**4.2.7 Safety Investigation Board (SIB) Chairperson**

- 4.2.7.1 The SIB Chairperson is the final point of release for all information from the board and as such the SIB Chairperson is the final decision point for all finding, causes, and recommendations.
- 4.2.7.2 The SIB Chairperson has the authority to draw assistance from any organization as required to conduct the investigation.
- 4.2.7.3 Air Force SIB Chairperson will be appointed by the convening authority per AFI 91-204.
- 4.2.7.4 The contractor Convening Authority will determine the selection of an individual to act as the Chairperson.
- 4.2.7.5 Qualifications for base operating contractor SIB Chairperson include the following:
  - Completed mishap investigation training.
  - Not directly involved with the mishap under investigation.
  - Previous experience as a member of mishap investigation boards.
- 4.2.7.6 The base operating contractor SIB Chairperson will be appointed from outside the organization having the mishap.

**4.2.8 Safety Investigation Board Members**

- 4.2.8.1 Air Force Safety Investigation Boards (SIB) will be determined per AFI 91-204. SIBs are made up of multiple members assigned to investigate a mishap. Contractor representatives will not be primary members of an Air Force SIB. They are technical experts providing assistance to the SIB.
- 4.2.8.2 The contractor convening authority for contractor mishaps will determine the members of the contractor led SIB.
- 4.2.8.3 Base operating contractor mishaps investigations may be conducted by a SIB or by a Single Investigating Officer (SIO).
- 4.2.8.3 Base operating contractor SIB or SIO activities prescribed by this standard shall take precedence over all other duties.
- 4.2.8.3 Base operating contractor SIB or SIO members shall be appointed from outside the organization having the mishap.
- 4.2.8.4 SIB members shall be impartial individuals who have no personal interest in the investigation.

**4.2.9 Base Operating Contractor Safety Office**

Contractor safety personnel shall:

- 4.2.9.1 Assist emergency services personnel as requested.
- 4.2.9.2 Assume control of the area until Air Force/SE or the General Manager appoints a Mishap Investigation Board or until preservation of the area is no longer required.
- 4.2.9.3 Assist in determination of measures to be taken to make the area safe for entry.
- 4.2.9.4 Determine measures to be taken to preserve the scene for investigation.
- 4.2.9.5 Ensure that AEDC/SE has been notified of the incident/mishap.
- 4.2.9.6 Impound operations records, procedures, etc. and suspect property, as required.
- 4.2.9.7 Ensure that individuals working with, or having access to, safety reports, messages, video tapes or computer-generated simulations are knowledgeable of the limitations placed on their use and the required protection of such materials.

**NOTE:** In addition, AEDC/SE must annually review communications center distribution of mishap messages to ensure requirements are valid.

**4.2.10 Operations Center - Operations Center personnel shall:**

- 4.2.10.1 Notify the affected area supervisor (or designee) if not already notified.
- 4.2.10.2 Notify base operating contractor Safety Office and AEDC/SE.
- 4.2.10.3 Notify affected area Director.
- 4.2.10.4 Notify Office of General Manager.
- 4.2.10.5 Notify appropriate persons for drug/alcohol testing per Section 4.1.10 above.

**4.2.11 Convening Authority**

The Convening Authority will:

Decide scope and size of the SIB.

- 4.2.11.2 The base operating contractor Convening Authority will request support from AEDC/SE when required.
- 4.2.11.3 Ensure required reports are distributed.
- 4.2.11.4 Ensure all mishap factors are investigated and request technical and/or legal assistance as required.
- 4.2.11.5 Review safety reports to ensure they meet requirements of the Air Force mishap prevention program.
- 4.2.11.6 Ensure that formal safety reports are forwarded as required. If more information is found after a formal report has been submitted, send this information to all addressees who received the formal report.
- 4.2.11.7 Ensure that corrective actions have been taken or recommended to prevent recurrence of the mishap.
- 4.2.11.8 Authorize the release of non-privileged information to news media, relatives, and other agencies through the AIB President.
- 4.2.11.9 Request medical authority to perform drug and alcohol screening for any mishap related fatality.

**5.0 TRAINING** - The key factor in the prevention of mishap recurrence lies not only in the implementation of better procedures, but also in training workers in the cause of mishaps, and the reason for procedures and mishap prevention techniques (i.e. JSA, hazard analysis, etc.)

- 5.1 All supervisors shall be trained in their responsibilities for timely reporting and the investigative process.
- 5.2 All employees shall be trained in their duty to report mishaps and near miss events.

**6.0 INSPECTIONS/AUDITS** - Base operating contractor Safety, Health and Environmental offices may conduct inspections/audits of mishaps and the mishap investigation program as directed by Air Force or base operating contractor management.

**7.0 REFERENCES**

- AFI 51-503, Aerospace Accident Investigations, 14 Apr 2015
- AFI 91-202, The US Air Force Mishap Prevention Program, 05 Aug 2011
- AFI 91-204, Safety Investigations and Reports, 12 Feb 2014
- AFI 91-204, AFMC Supplement 1, Safety Investigations and Reports, 18 Aug 2011

AFMAN 91-221, Weapons Safety Investigations and Reports, 08 Nov 2010  
AFMAN 91-224, Ground Safety Investigations and Reports, 24 Mar 2015  
AEDC SHE Standard A10, Job Safety Analysis  
AEDC SHE Standard E17, Oil and Hazardous Substances Spill Response  
Arnold AFB Comprehensive Emergency Management Plan 10-2, 04 Sep 2012  
DoDI 6055.07, Mishap Notification, Investigation, Reporting, and Record Keeping, 06 Jun 2011  
29 CFR 1904.39, *Reporting fatalities, hospitalizations, amputations, and loss of an eye as a result of work-related incident to OSHA*

**8.0 ATTACHMENTS**

Annex A – AEDC Safety Reporting Requirements for Contractors  
Annex B – Notification and Reporting Requirements for Serious or Fatal Mishaps  
Annex C – Sample Format for Contractor Mishap Investigation Report  
Annex D – Immediate Response Checklist  
Annex E – Witness Statement  
Annex F – Emergency Response Procedure Handbook Instruction

**9.0 SUPPLEMENT**

NFAC A321-0801-XSP A2 Mishap Investigation and Reporting

**SHE Standard A2, Mishap Investigation and Reporting**

**Annex A  
AEDC Safety Reporting Requirements\***

<b>If an event occurs that is:</b>	<b>With:</b>	<b>Then:</b>	<b>To:</b>	<b>No later Than:</b>
All Mishap Classes	Any injury, property damage, or environmental impact	Verbal Notification	Supervisor	Immediately
		Telephone Notification	Operations Center	Within 15 minutes post-mishap
Class A or B Mishap	All	Telephone Notification	AEDC/SE Contractor Safety	Immediately. Further reporting will be by AEDC/SE per AFI 91-204
	A fatality	Telephone Notification	Area OSHA Office	Within 8 hours post-mishap
	An in-patient hospitalization of one or more people, amputation or loss of an eye	Telephone Notification	Area OSHA Office	Within 24 hours post-mishap
Class C Mishap	An AF injury	Telephone Notification	AEDC/SE	Immediately. Further reporting will be by AEDC/SE per AFI 91-204
	A contractor injury	Telephone Notification	Contractor Safety	Immediately
	Property damage	Telephone Notification	AEDC/SE & Contractor Safety	Immediately
Class D Mishap or OSHA Recordable Injury	An AF injury	Telephone Notification	AEDC/SE	Immediately
	A contractor injury	Telephone Notification	Contractor Safety	
	Property damage	Telephone Notification	AEDC/SE & Contractor Safety	
Class E Event	Property damage equal or greater than \$5,000; or with High Accident Potential (HAP)	Telephone Notification	AEDC/SE & Contractor Safety	Immediately
	Property damage below \$5,000	Log event details	Contractor Safety	Available to AEDC/SE upon request
Spills or Environmental Incidents	All	Telephone Notification	Operations Center	Immediately (See AEDC SHE Std E17)

\* For information on additional reporting requirements found in AFI 91-204, contact the AEDC/SE or contractor safety office.

## SHE Standard A2, Mishap Investigation and Reporting

### Annex B Notification and Reporting Requirements for Mishaps and Events (All Classes)

#### 1.0 AEDC/Local Notifications

- 1.1 Ensure Emergency Response (911) has been notified.  
Such information reported shall include:
  - Name and location of injured  
Alert the dispatcher that you are at AEDC.
  - Extent of injuries, if known
- 1.2 Ensure the Operations Center, 931-454-7752, has been notified. This notification must be made within 15 minutes of the mishap.
- 1.3 Notification to the Local, State and Federal safety and health agencies will be made by the base operating contractor SHE Director, if necessary.
- 1.4 Next-of-Kin Notification will be coordinated through base operating contractor General Manager, Human Resources Manager and SHE Director or the appropriate AEDC Air Force office.

#### 2.0 Notification to OSHA

- 2.1 The following information must be given to OSHA within eight hours for each work-related fatality or 24 hours of work-related in-patient hospitalization, amputation or loss of an eye incident:
  - 2.1.1 The establishment name;
  - 2.1.2 The location of the work-related incident;
  - 2.1.3 The time of the work-related incident;
  - 2.1.4 The type of reportable event (i.e. fatality, in-patient hospitalization, amputation, or loss of an eye);
  - 2.1.5 The number of employees who suffered a fatality, in-patient hospitalization, amputation, or loss of an eye;
  - 2.1.6 The names of employees who suffered a fatality, in-patient hospitalization, amputation, or loss of an eye;
  - 2.1.7 The employer's contact person and his or her phone number; and
  - 2.1.8 A brief description of the work-related incident.
- 2.2 A fatality caused by a heart attack at work has to be reported to OSHA.

#### 3.0 Reports

Reports to the base operating contractor management and local Air Force will comply with AFI 91-204. Annex C to this standard (A2) may be used to develop a draft mishap report.



Annex C

Sample Format for Base Operating Contractor  
Mishap Investigation Report

Mishap Report Number: YYYY-MM-DD Revised: Month DD, YYYY
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<b>Status:</b> <i>i.e., Final</i>	<b>Category:</b> <i>i.e., Ground</i>	<b>Class:</b> <i>ie., C</i>	<b>Mishap Cost:</b>
<b>Date of Mishap/Event:</b> Month DD, YYYY	<b>Time of Mishap/Event:</b>	<b>Company:</b> <i>i.e., ATA</i>	
<b>Mishap Report Number and Title:</b> ANZY-YYYYMMDD-AEDC/SE NO.-MishapClass, <i>i.e. ANZY20040926 89737C</i>			
<b>Date of Investigation:</b> Month DD, YYYY	<b>Location of Mishap: (Include building number, name, and room/area as applicable)</b>		

**INJURY:**

[Copy table rows as needed for additional injuries.]

<b>Did injury result?</b> YES <input type="checkbox"/> NO <input type="checkbox"/>	<b>If YES, provide information below for <u>each</u> injury:</b>				
<b>Employee Name (First, Middle Initial, Last):</b>		<b>Badge Number:</b>		<b>Organization:</b>	
<b>Company:</b>	<b>Years With Co:</b>	<b>Skill:</b>	<b>Years In Skill:</b>	<b>Hours Worked</b>	
				<b>Day of Incident:</b>	<b>Last Ten Days:</b>
<b>Describe Type Of Injury (include occupation, injury type, body part, and activity at time of mishap)</b> (e.g. Carpenter sprained left ankle when he jumped out of the bed of a P/U truck) :					

**PROPERTY DAMAGE:**

<b>Was property damaged?</b> YES <input type="checkbox"/> NO <input type="checkbox"/>	<b>If YES, describe damage:</b>				
<b>Is damaged property secured/maintained?</b> YES <input type="checkbox"/> NO <input type="checkbox"/>		<b>If YES, person maintaining:</b>			
<b>Name:</b>		<b>Phone No:</b>			

**WITNESSES:**

List witnesses, coworkers, persons involved and describe their involvement with the mishap/event:  
[Copy table rows as necessary for additional witnesses.]

<b>Name (First, Middle Initial, Last):</b>	<b>Badge Number:</b>	<b>Organization:</b>

<b>Involvement:</b>		
<b>Name (First, Middle Initial, Last):</b>	<b>Badge Number:</b>	<b>Organization:</b>
<b>Involvement:</b>		

**WORKING CONDITIONS:**

<b>Environmental Conditions (Temperature, Weather, Wind, Etc.):</b>			
<b>Was weather a factor? YES <input type="checkbox"/> NO <input type="checkbox"/></b>		<b>If YES, explain:</b>	
<b>Lighting Condition at Time of Mishap:</b>			
<b>Was lighting a factor? YES <input type="checkbox"/> NO <input type="checkbox"/></b>		<b>If YES, explain:</b>	
<b>List/describe all personal protective equipment (PPE) in use by person(s) exposed or injured:</b>			
<b>List/describe all safety equipment used and/or required:</b>			
<b>Was number of hours worked a factor? YES <input type="checkbox"/> NO <input type="checkbox"/></b>			
<b>If YES, explain and provide the information requested below for each employee involved.</b>			
It is not necessary to duplicate information already recorded for injured employees. [Copy table rows as needed for additional employees.]			
<b>Employee Name (First, MI, Last):</b>	<b>Badge No:</b>		<b>Hours Worked</b>
	<b>Organization:</b>		<b>Day of Incident: Last Ten Days:</b>
	<b>Company:</b>		
<b>Employee Name (First, MI, Last):</b>	<b>Badge No:</b>		<b>Hours Worked</b>
	<b>Organization:</b>		<b>Day of Incident: Last Ten Days:</b>
	<b>Company:</b>		

**CHEMICALS:**

<b>Were chemicals involved? YES <input type="checkbox"/> NO <input type="checkbox"/></b>	
<b>If YES, provide the following for each chemical: (Include volume or quantity released in hazard column.)</b> [Copy table rows as needed for each chemical.]	
<b>Chemical Name:</b>	<b>Hazard(s) for each; include form (i.e., solid, liquid, gas, vapor, dust mist, fume):</b>

**RADIOLOGICAL MATERIALS:**

<b>Were radiological materials involved? YES <input type="checkbox"/> NO <input type="checkbox"/></b>	
<b>If YES, specify volume or quantity released:</b> [Copy table rows as needed for each material.]	

**ENVIRONMENTAL ISSUES:**

Was environmental cleanup required?	YES <input type="checkbox"/>	NO <input type="checkbox"/>
If YES, what type of cleanup was required:		

**FIRE/EXPLOSION:**

Was there an explosion or fire?	YES <input type="checkbox"/>	NO <input type="checkbox"/>
If YES, give brief description:		

**SUMMARY OF MISHAP:**

**OTHER FACTORS:**

1. Was a Form GC-1707, Job Safety Analysis (JSA) developed for the task being performed? If YES, attach a copy.	YES <input type="checkbox"/> NO <input type="checkbox"/>
2. Did a hazard analysis address activity/hazard involved with the mishap? If YES, attach copy.	YES <input type="checkbox"/> NO <input type="checkbox"/>
3. Were procedures being used? If YES, attach copy of the procedure/work instruction in use at time of mishap.	YES <input type="checkbox"/> NO <input type="checkbox"/>
4. If procedures were not being used, were procedures work instructions required? If YES, attach copy of procedure/work instruction required at the time of the mishap.	YES <input type="checkbox"/> NO <input type="checkbox"/>
5. Was training (or lack of training) a factor? If YES, answer the following questions:	YES <input type="checkbox"/> NO <input type="checkbox"/>
A. Was the person (or persons) involved trained and/or qualified?	YES <input type="checkbox"/> NO <input type="checkbox"/>
B. Was the training current and adequate? If NO, briefly describe:	YES <input type="checkbox"/> NO <input type="checkbox"/>

**CHRONOLOGY:**

Provide chronological sequence of events if not included in Mishap Summary.

**INVESTIGATION:**

**FINDINGS AND CAUSES:**

**Describe each finding separately; include related cause(s) for each.**

[Copy table rows as needed for additional findings.]

<b>FINDING NUMBER:</b>	

<b>FINDING NUMBER:</b>	

**ROOT CAUSE(S) OF MISHAP:**

Failure to  Plan,  Direct,  Organize,  Control,  Other

Explain below:

--

**RECOMMENDATIONS:**

- Describe the corrective actions being taken to prevent recurrence.
- Specify the number of the finding(s) related to each recommendation.
- List the organization responsible for implementing the action and the target completion date for each.

[Copy table rows as needed for additional recommendations.]

<b>RECOMMENDATION NUMBER:</b>		<b>RELATED TO FINDING(S):</b>	
<b>OPR:</b>		<b>PHONE NO:</b>	<b>ECD:</b>

**ATTACHMENTS:**

LIST ALL ATTACHMENTS IN ORDER REFERENCED. IF THERE ARE NO ATTACHMENTS, STATE "NONE."  
 INCLUDE COPIES OF JSAs, HAZARD ANALYSES, PROCEDURES, WORK INSTRUCTIONS, ETC. RELATED TO THIS REPORT.  
 ATTACH ANY DRAWINGS, SKETCHES, PHOTOGRAPHS, ETC. THAT ARE NOT PROVIDED ELSEWHERE IN THIS REPORT.

NO.	ATTACHMENT TITLE
1.	
2.	
3.	

**INVESTIGATION TEAM MEMBERS:**

<u>Board Chair:</u>	_____	_____	_____	<input type="checkbox"/> CONCUR/ <input type="checkbox"/> NON-CONCUR
	Name	Signature	Date	
<u>Safety Representative:</u>	_____	_____	_____	<input type="checkbox"/> CONCUR/ <input type="checkbox"/> NON-CONCUR
	Name	Signature	Date	
Title (Member)	_____	_____	_____	<input type="checkbox"/> CONCUR/ <input type="checkbox"/> NON-CONCUR
	Name	Signature	Date	
Title (Member)	_____	_____	_____	<input type="checkbox"/> CONCUR/ <input type="checkbox"/> NON-CONCUR
	Name	Signature	Date	
Title (Member)	_____	_____	_____	<input type="checkbox"/> CONCUR/ <input type="checkbox"/> NON-CONCUR
	Name	Signature	Date	
<u>Supervisor:</u>	_____	_____	_____	<input type="checkbox"/> CONCUR/ <input type="checkbox"/> NON-CONCUR
	Name	Signature	Date	

**REVIEW:**

<u>ATA SHE Director:</u>	_____	_____	_____	<input type="checkbox"/> CONCUR/ <input type="checkbox"/> NON-CONCUR
	Name	Signature	Date	
<u>ATA Dept Director:</u>	_____	_____	_____	<input type="checkbox"/> CONCUR/ <input type="checkbox"/> NON-CONCUR
	Name	Signature	Date	
<u>ATA Chief Engineer:</u>	_____	_____	_____	<input type="checkbox"/> CONCUR/ <input type="checkbox"/> NON-CONCUR
	Name	Signature	Date	
<u>ATA OGM:</u>	_____	_____	_____	<input type="checkbox"/> CONCUR/ <input type="checkbox"/> NON-CONCUR
	Name	Signature	Date	
<u>AEDC/SE Chief:</u>	_____	_____	_____	<input type="checkbox"/> CONCUR/ <input type="checkbox"/> NON-CONCUR
	Name	Signature	Date	

## **SHE Standard A2, Mishap Investigation and Reporting**

### **Annex D Immediate Response Checklist**

#### **REPORTING EMPLOYEE:**

1. If emergency assistance is required, call 911 for AEDC Emergency services. Alert the dispatcher that you are at AEDC.
2. Assists injured personnel until help arrives.
3. Notifies supervisor.

#### **SUPERVISOR (OR DESIGNATED REPRESENTATIVE):**

1. Ensures that emergency assistance is provided.
2. Ensures that injured employee obtains prompt medical attention.
3. Upon their arrival at the scene, informs emergency services personnel of any special measures or actions peculiar to the area, which are required to make the area safe.
4. Within 15 minutes, notifies the Operations Center at 931-454-7752.
5. Takes the injured employee to Medical Aid Station if non-emergency (or to the Fire Hall if after hours).
6. Secures the scene for the mishap investigation team. Isolates the area by barricade, lockout/tagout, warning tape, posted observer, etc, and ensures area is safe. If required, secures area until released to the Safety Representative or approval to release equipment/material/facility is obtained from either the General Manager or the Safety Office.
7. Requests security support when necessary for controlling entry and provide them with a list of persons authorized to enter. If security police response is required, calls 911.
8. Reports all accidents, injuries or illnesses to contractor Safety immediately, and their director as soon as practical. During normal duty hours, notifies base operating contractor Safety at 931-454-5578 or -6758. After normal duty hours, notifies the Operations Center at 931-454-7752.
9. Initiates and follows procedure for Post-mishap Drug and Alcohol Testing (see Section 4.1.9).
10. Provides assistance as required.
11. If, at any time during the mishap investigation, evidence is discovered that suggests sabotage, immediately contacts AEDC/OSI and AEDC/SE.

#### **OPERATIONS CENTER:**

1. Notifies the affected area supervisor if not already notified.
2. Notifies Contractor and AEDC Safety Offices.  
If incident involves DoD employee injury or property damage, notifies AEDC Commander.
3. Notifies affected area Director.
4. Notifies Office of General Manager.
5. Notifies appropriate persons for drug/alcohol testing per Section 4.1.9.

#### **BASE OPERATING CONTRACTOR SAFETY OFFICE:**

1. Assists emergency services personnel as requested.
2. Assumes control of the area until the Air Force or General Manager appoints a Safety Investigation Board or until preservation of the area is no longer required.
3. Assists in determination of measures to be taken to make the area safe for entry.
4. Determines measures to be taken to preserve the scene for investigation.
5. Ensures that AEDC AF/SE Safety Office has been notified of the incident/mishap.
6. Impounds operations records, procedures, etc. and suspect property, as required



## **SHE Standard A2, Mishap Investigation and Reporting**

### **Annex F Emergency Response Procedure Handbook Instruction**

1. This standard establishes requirements for developing and maintaining emergency procedures in AEDC operational areas. These areas include operating and industrial areas test support areas, warehouse and motor pool areas.
2. The Emergency Response Procedure Handbook shall have an easily distinguishable red and white striped cover.
3. The Emergency Response Procedure Handbook shall be located in each work area supervisor's office, and in each plant/test unit control room throughout the industrial work areas.
4. Emergency procedures shall also be available to guide operators and others in emergency actions and for use by Master Work Permit issuing officials in alerting work crews to the appropriate emergency work procedures for the area in which work is to be performed.
5. The emergency procedures response actions contained in the books shall be written for the specific areas in which they are located.
6. The Emergency Response Procedure Handbook shall address proper notification, emergency responses, and emergency shutdown actions required should one of the following mishaps occur:
  - Fires/explosion
  - Mishap (Injury/Sudden Illness)
  - Mishap (Equipment/Property Damage)
  - Near Miss
  - Spills
  - Other (if applicable) area specific emergencies
7. Emergency procedures need not cover:
  - A. Operating irregularities which are dealt with in routine operating procedures.
  - B. Disasters that are sudden and extraordinary events of major proportions affecting AEDC as a whole or having potential consequences outside AEDC, such as enemy attack, bomb threat, biological weapons. Disasters are covered in the Arnold AFB Comprehensive Emergency Management Plan 10-2.
8. The following pages of this annex detail the information that should be contained in the Emergency Response Procedures”



## EMERGENCY PROCEDURE INDEX

### EMERGENCY PROCEDURE

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Mishap (Equipment/Property).....	x-2
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Near Misses.....	x-4
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Template for Area Specific Emergency .....	x-6

**FIRE/EXPLOSIONS**

<u>Responsibility</u>	<u>Action</u>
Employee Discovering Fire	<ol style="list-style-type: none"> <li>1. Activate local fire alarm, if available.</li> <li>2. <u>Call 911</u> and respond as follows: <ol style="list-style-type: none"> <li>a. Identify self.</li> <li>b. Alert the dispatcher that you are at AEDC.</li> <li>c. Describe emergency.</li> <li>d. Identify location.</li> <li>e. Provide details.</li> <li>f. Follow instructions.</li> <li>g. Stay on phone until released.</li> <li>h. Assign employee to direct emergency vehicles.</li> </ol> </li> <li>3. Assure evacuation of personnel, as needed.</li> <li>4. May use fire extinguisher on small fires, as practical.</li> </ol>
Supervisor/Coordinator/ Test Conductor	<ol style="list-style-type: none"> <li>1. Report details of the fire to the AEDC Operations Center, 931-454-7752.</li> <li>2. Assist Incident Commander as requested.</li> <li>3. Preserve the scene of the fire as may be needed for investigation.</li> <li>4. If equipment damage is involved, report bar code numbers of destroyed/damaged equipment to Property Administration.</li> <li>5. In case of an industrial security issue, notify the base operating contractor Security Officer, 931-454-5891.</li> </ol>
All Employees	<ol style="list-style-type: none"> <li>1. Evacuate area and assemble at _____.</li> <li>2. Follow instructions of Emergency Response personnel and the Incident Commander.</li> </ol>

**MISHAP (EQUIPMENT/PROPERTY)**

<u>Responsibility</u>	<u>Action</u>
Employee Witnessing Mishap	<ol style="list-style-type: none"> <li>1. If emergency response (fire; police) is needed, call 911 and respond as follows:               <ol style="list-style-type: none"> <li>a. Identify self.</li> <li>b. Alert the dispatcher that you are at AEDC.</li> <li>c. Describe emergency.</li> <li>d. Identify location.</li> <li>e. Provide details.</li> <li>f. Follow instructions.</li> <li>g. Stay on phone until released.</li> <li>h. Assign employee to direct emergency vehicles.</li> </ol> </li> <li>2. Assure evacuation of personnel, as needed.</li> <li>3. Notify Supervisor</li> </ol>
Supervisor	<ol style="list-style-type: none"> <li>1. Initiate equipment shutdown, as appropriate.</li> <li>2. Call the AEDC Operations Center 931-454-7752 and report mishap details.</li> <li>3. If Security Police are needed, call 931-454-5662.</li> <li>4. In case of an industrial security issue, notify the base operating contractor Security Officer, 931-454-5891.</li> <li>5. Assist the Incident Commander as requested.</li> <li>6. Preserve and secure the scene for the post-mishap investigation team. Isolate the area by barricade, posted observer, etc, and ensure area is safe (lockout/tagout, warning tape, posted observer to warn personnel of hazards, etc.).</li> <li>7. If equipment damage is involved, report bar code numbers of any destroyed/damaged equipment to Property Administration.</li> <li>8. Assign employee to direct emergency vehicles.</li> </ol>
All Employees	<ol style="list-style-type: none"> <li>1. Evacuate area and assemble at _____ in the event of fire or at direction of Supervisor or the Incident Commander.</li> <li>2. Follow instructions of Emergency Response personnel and Incident Commander.</li> </ol>

**MISHAP (INJURY/SUDDEN ILLNESS)**

<u>Responsibility</u>	<u>Action</u>
Employee Witnessing Mishap	<ol style="list-style-type: none"> <li>1. Seek first aid for injured person(s). If ambulance is needed, call 911 and respond as follows:               <ol style="list-style-type: none"> <li>a. Identify self.</li> <li>b. Describe emergency.</li> <li>c. Identify location; alert the dispatcher that you are at AEDC.</li> <li>d. Provide details.</li> <li>e. Follow instructions.</li> <li>f. Stay on phone until released.</li> <li>g. Assign employee to direct emergency vehicles.</li> </ol> </li> <li>2. Notify Supervisor</li> </ol>
Supervisor	<ol style="list-style-type: none"> <li>1. Initiate equipment shutdown, as appropriate.</li> <li>2. Ensure that medical care (first aid) for injuries is initiated.</li> <li>3. Call the AEDC Operations Center 931-454-7752 and report details of the mishap.</li> <li>4. Take the injured employee to Medical Aid Station if non-emergency.</li> <li>5. If Security Police are needed, call 911.</li> <li>6. In case of an industrial security issue, notify the base operating contractor Security Officer, 931-454-5891.</li> <li>7. Immediately report all accidents, injuries or illnesses to Contractor Safety or AEDC/SE (as appropriate), and to his or her director as soon as practical.</li> <li>8. Assist the Incident Commander as requested.</li> <li>9. Preserve and secure the scene for post-mishap investigation team. Isolate the area by barricade, posted observer, etc, and ensure area is safe (lockout/tagout, warning tape, posted observer to warn personnel of hazards, etc.).</li> <li>10. Assign employee to direct emergency vehicles.</li> <li>11. If personal injury or fatality is involved, completes Report of Occupational Injury or Illness Form GC-1446.</li> </ol>
All Employees	Follow instructions of Emergency Response personnel and the Incident Commander.

## NEAR MISSES

<u>Responsibility</u>	<u>Action</u>
Employee Witnessing Near Miss	<ol style="list-style-type: none"> <li>1. Notify Supervisor.</li> <li>2. Take action to ensure safety of himself and co-workers (i.e. shut off power; call 911 for emergency response); prevent entry into the area if conditions warrant). Alert dispatcher that the emergency is at AEDC.</li> <li>3. Assure evacuation of personnel, as needed.</li> </ol>
Supervisor	<ol style="list-style-type: none"> <li>1. Initiate equipment shutdown, as appropriate.</li> <li>2. Report Near Miss details to the AEDC Operations Center, 931-454-7752.</li> <li>3. If Security Police are needed, call 931-454-5662.</li> <li>4. In case of an industrial security issue, notify the base operating contractor Security Officer, 931-454-5891.</li> <li>5. Preserve and secure the scene for post-mishap investigation team. Isolate area by barricade, posted observer, etc, and ensure area is safe (lockout/tagout, warning tape, posted observer to warn personnel of hazards, etc.).</li> <li>6. Assign employee to direct emergency vehicles.</li> </ol>
All Employees	<ol style="list-style-type: none"> <li>1. Evacuate area and assemble at _____ in event of a fire or at the direction of supervision or the Incident Commander.</li> <li>2. Follow instructions of Emergency Response personnel and the Incident Commander.</li> </ol>

## SPILLS

<u>Responsibility</u>	<u>Action</u>
Employee Discovering Spill/Sheen	<ol style="list-style-type: none"> <li>1. Take action to ensure safety of himself and co-workers [i.e. shut off power, call 911 for emergency response, prevent entry into the area if conditions warrant]. Inform dispatcher that the emergency is at AEDC.</li> <li>2. <b>If safe</b>, take immediate action or assigns employees to stop the spill at its source, contains or recovers the spilled material, and prevents it from reaching drains, ditches, and/or surface streams. <b>NOTE:</b> Initial spill response actions are only considered safe if the action does not represent a risk to the individual's health or safety. <i>Initial responders must know the physical and health hazards associated with the spilled material and take all appropriate countermeasures such as use of appropriate personal protective equipment.</i> If the spilled material cannot be identified, the hazards are unknown, or the hazards cannot be mitigated, isolation of the area and notification to the Operations Center are the only appropriate actions.</li> <li>3. Assure evacuation of personnel, as needed.</li> <li>4. Notify Supervisor.</li> </ol>
Supervisor	<ol style="list-style-type: none"> <li>1. Notify the AEDC Operations Center 931-454-7752 and report details of the spill.</li> <li>2. Follow instructions contained in SHE Std E17, Oil and Hazardous Substance Spill Response.</li> <li>3. Initiate equipment shutdown, as appropriate.</li> </ol>
All Employees	<ol style="list-style-type: none"> <li>1. Evacuate area and assemble at _____ at the direction of Supervisor or Incident Commander.</li> <li>2. Follow instructions of Emergency Response personnel and Incident Commander.</li> </ol>
Special Area Instructions Examples	<ol style="list-style-type: none"> <li>1. Verify that building vent fans are operating.</li> <li>2. Close outside doors and verify that Air Side to Test Side are closed.</li> </ol>

**AREA-SPECIFIC EMERGENCY – Describe**

<u>Responsibility</u>	<u>Action</u>
Employee Discovering Emergency	<ol style="list-style-type: none"> <li>1. Take action to ensure safety of himself and co-workers [i.e. shuts off power, call 911 for emergency response, prevent entry into the area if conditions warrant]. If on a cell phone tell the operator that you are at AEDC.</li> <li>2. <b>If safe</b>, take immediate action or assigns employees to mitigate the emergency at its source.</li> <li>3. Assure evacuation of personnel, as needed.</li> <li>4. Notify Supervisor.</li> <li>5. <i>Describe other steps necessary for employees to take.</i></li> </ol>
Supervisor	<ol style="list-style-type: none"> <li>1. Notify the AEDC Operations Center 931-454-7752 and report details of the emergency.</li> <li>2. Follow instructions contained in appropriate SHE Standard.</li> <li>3. Initiate equipment shutdown, as appropriate.</li> <li>4. <i>Describe other steps necessary for Supervisor to take.</i></li> </ol>
All Employees	<ol style="list-style-type: none"> <li>1. Evacuate area and assemble at _____ at the direction of Supervisor or Incident Commander.</li> <li>2. Follow instructions of Emergency Response personnel and Incident Commander.</li> </ol>
Special Area Instructions Examples	<ol style="list-style-type: none"> <li>1. Verify that building vent fans are operating.</li> <li>2. Close outside doors and verify that Air Side to Test Side are closed.</li> </ol>

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# A321-0801-XSP A2 Mishap Investigation and Reporting Supplement

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This supplement has been approved for the NFAC Site.

**Review:** This supplement will be reviewed and updated using the same cycle as AEDC Safety, Health, and Environmental (SHE) Standard A2 Mishap Investigation and Reporting.

**References:** AEDC SHE Standard A2 Mishap Investigation and Reporting  
AFI 91-204 Safety Investigations and Reports

**Scope:**

NFAC investigation and reporting responsibilities are divided due to the mix of DoD/Air Force and contractor personnel. In general, the Air Force is primarily responsible for investigation of injury/illness to DoD/Air Force personnel and Class A and B property damage mishaps. The contractor is responsible for investigation of injury/illness to contractor personnel and property damage below Class B. The AEDC Commander or Chief of Safety (AEDC/SE) may otherwise delegate responsibility for investigations as deemed necessary.

This supplement applies to all personnel conducting operations, maintenance, testing and support at NFAC, NASA AMES.

**NFAC Worksite Application:**

Mishaps resulting in property damage shall be reported to AEDC Op Center, AEDC Safety (AEDC/SE) and/or ATA Safety by telephone by the NFAC Safety Engineer or an alternate if unavailable as soon as possible: All mishaps are to be investigated. Also, all events involving a fatality, permanent partial disability, or hospitalization of **one** or more people, HAP, radioactive source damage or failure, incident involving explosives, release resulting in actual or potential damage to the environment, are to be investigated.

NFAC Safety will perform an investigation into the mishap and submit a "Quick Look" Report to the AEDC/ATA Safety. A draft with preliminary findings will be submitted within 48 hours with a completed/final due within 7 days. If that timeline cannot be accomplished, ATA Safety/AEDC Safety shall be notified.

All Investigation procedures will follow the SHE Mishap Investigation and Reporting A2 standard.

I. NFAC Site Management shall:

The DoD Manager or the Contactor Site Manager may appoint a full investigation, tailored investigation or single investigator for Class C incidents or below. When the causes and preventive actions are evident at the onset of the investigation, or the mishap is not technically complex, the convening authority may appoint a single investigator.

II. NFAC Supervisors and Test Director shall

1. Ensure the proper emergency response preparedness is implemented for the type of mishap.
  - a. Medical Care
  - b. Spill Response
  - c. Securing Equipment (LOTO)
2. Notify the Safety Engineer verbally (direct or by phone) immediately.
3. Secure the mishap scene to preserve evidence.

III. NFAC Safety Engineer/Management Designee shall

1. Assist emergency services/responders.
2. Control of the Mishap Scene.



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## A321-0801-XSP A2 Mishap Investigation and Reporting Supplement

3. Determine action(s) to make the scene area safe for entry.
4. Impound operations records, procedures, etc. and suspected property as required.
5. The Safety Engineer shall report the accident, injury or illness to the General Manager and Corporate Safety as soon as practical, where additional determinations of follow-up actions and the investigation process will be made. The Safety Engineer may assume duties of the convening authority in certain cases.

#### IV. NFAC Staff shall

1. Follow this supplement.
2. Secure the scene after first emergency first responders have terminated their activities.