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Safety

THE US AIR FORCE MISHAP PREVENTION PROGRAM

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This instruction implements Air Force Policy Directive (AFPD) 91-2, *Safety Programs*, relevant safety portions of Department of Defense Directive (DoDD) 3100.10, *Space Policy*, DoD Instruction (DoDI) 3100.12, *Space Support*, DoDI 3200.18, *Management and Operation of the Major Range and Test Facility Base*, and the *Memorandum of Agreement between the Department of the Air Force and the Federal Aviation Administration on Safety for Space Transportation and Range Activities.* This instruction implements North Atlantic Treaty Organization (NATO) Standardization Agreements (STANAGs) 3101, *Exchange of Flight Safety Information*, and 3102, *Flight Safety Cooperation in Common Ground/Air Space*. It establishes mishap prevention program requirements, assigns responsibilities for program elements and contains program management information. It applies to all Regular Air Force, Air Force Reserve and Air National Guard (ANG) military and civilian personnel. For the purposes of this instruction, ANG and Air Force Reserve Command (AFRC) are included in all references to Major Commands (MAJCOMs). At joint bases, Air Force units will follow the requirements in this instruction, along with guidance contained within inter-service and/or inter-agency agreements. At enduring and contingency locations outside the United States, follow the requirements in this instruction so long as they do not conflict with applicable requirements from any of the following: host nation requirements made applicable by international agreement, Overseas Environmental Baseline Guidance Document standards, country-specific Final Governing Standards, Geographic Combatant Command policy, environmental annex to operational order, operational plan (OPLAN) or other operational directive. This publication may be supplemented at any level, but all direct Supplements must be routed to the OPR of this publication for coordination prior to

certification and approval. Send major command, field operating agency and direct reporting unit (MAJCOM/FOA/DRU) supplements to Air Force Safety Center (AFSEC)/SE Org Box, 9700 G Avenue, Kirtland AFB NM 87117-5670, for coordination and approval before publication. 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 AF Forms 847 from the field through the appropriate functional's chain of command. All requests for changes, interpretations or clarifications concerning this publication must be forwarded through the MAJCOM/FOA/DRU safety organization, who, in turn, as applicable, will forward to AFSEC. The authorities to waive wing/unitlevel requirements in this publication are identified with a Tier ("T-0, T-1, T-2, T-3) number following the compliance statement. See AFI 33-360, *Publications and Forms Management,* for a description of the authorities associated with Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternately, to the requestor's commander for non-tiered compliance items. Submit waiver requests for Secretary of the Air Force, Inspector General (SAF/IG) consideration through SAF/IGI. To meet the intent of AFI 33-360, e-mail finalized waivers (AF Form 679, *Air Force Publication Compliance Item Waiver Request/Approval*) to SAF/IGI (**usaf.pentagon.saf-ig.mbx.saf-igi-workflow@mail.mil**). Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) Air Force Manual (AFMAN) 33-363, *Management of Records,* and disposed of IAW Air Force Records Disposition Schedule and disposed of IAW Air Force Records Information Management System. The use of the name or mark of any specific manufacturer, commercial product, commodity, and/or service in this publication does not imply endorsement by the Air Force. This Instruction requires the collection and/or maintenance of information protected by the Privacy Act of 1974 authorized by Title 29 United States Code (USC), Section 668, *Program of Federal Agencies;* Executive Order 12196, *Occupational Safety and Health Programs for Federal Employees;* Part 1960, Title 29, Code of Federal Regulations (CFR), *Basic Program Elements for Federal Employee Occupational Safety and Health Programs and Related Matters;* Title 5 USC § 7902, *Safety Program,* and DoD Directive (DoDD) 5134.01, *Under Secretary of Defense for Acquisition, Technology and Logistics (USD(AT&L)).* All records created, collected and stored under the guidance of this instruction are subject to the provisions of the Freedom of Information Act, as authorized by Title 5 USC § 552, *Public Information; Agency Rules, Opinions, Orders, Records, and Proceedings,* and IAW DoDM 5400.07_AFMAN 33-302, *Freedom of Information Act Program.* The System of Records Notice F036 AF PC Q, Personnel Data System (PDS); F024 AF IL C Motor Vehicle Operator's Records, and F032 AF ILE, Enterprise Environmental, Safety and Occupational Health-Management Information System (EESOH-MIS) are available at: **https://dpcld.defense.gov/privacy/SORNS.aspx**.

SUMMARY OF CHANGES

This document is substantially revised and must be completely reviewed. This revision clarifies requirements of the mishap prevention program as framed within the Air Force Safety Management System. Chapter 12, *Hazard Abatement,* was consolidated with Chapter 4, *Hazard Identification and Reporting,* and renamed **Chapter 4,** *Hazard Identification, Reporting and Abatement.* **Chapter 12,** *Contract Safety, w*as added to give Air Force safety professionals more insight on the contract safety process. **Chapter 10,** *Space Safety,* incorporates substantial changes. **Chapter 1,** *Program Overview,* **Chapter 2,** *Safety Organization,* and **Chapter 11,** *System Safety*

and Safety Risk Assessments, have changes regarding space safety and/or space systems. Program management questions have been added at the end of each chapter to assist managers and supervisors in managing their programs. Attachments have been incorporated in the body of the instruction and now reside in **Chapter 13,** *Supporting Guidance,* **Chapter 14,** *Safety Training,* and **Chapter 15,** *Miscellaneous Safety Information.*

Chapter 1—PROGRAM OVERVIEW AND RESPONSIBILITIES **10**

1.1. Purpose. 10

1.2. Vision. 10

1.3. The Air Force Mishap Prevention Program. 10

1.4. Mishap Prevention Program Disciplines (Aviation, Occupational, Weapons, Space, etc.). 10

1.5. Air Force Occupational Safety and Health (AFOSH) Guidance and Applying Standards. 11

1.6. Roles and Responsibilities. 14

1.7. Waivers. 48

1.8. Military-Unique and Nonmilitary-Unique Policy. 49

Chapter 2—SAFETY ORGANIZATION **50**

2.1. Safety Staff. 50

2.2. Unit Safety Representative (USR). 55

2.3. Safety Education/Training. 55

2.4. Safety Office Vehicles and Equipment. 56

2.5. Safety Library. 57

2.6. Environment, Safety and Occupational Health Councils (ESOHC). 57

2.7. Non-USAF Councils and Committees. 58

2.8. Major Range and Test Facility Base (MRTFB) Safety Programs. 58

Chapter 3—SAFETY ASSURANCE **59**

3.1. General. 59

Table 3.1. Safety Evaluations, Assessments and Inspections. 59

3.2. Safety Evaluations. 60

3.3. Safety Program Evaluation (SPE). 60

3.4. Safety Program Assessments. 60

3.5. Annual Program Management Review (APMR). 62

3.6. Annual Safety Inspections. 62

3.7. Spot Inspections. 65

3.8. High Interest Areas. 65

3.9. Administrative Areas. 66

3.10. Special and Seasonal Inspections. 66

3.11. Staff Assistance Visits (SAV). 67

3.12. Federal/State Inspections and Investigations. 67

3.13. Contract Performance Assessment. 67

Chapter 4—HAZARD IDENTIFICATION, REPORTING AND ABATEMENT 68

4.1. Hazard Identification. 68

4.2. Reporting Criteria. 68

4.3. Hazard Reporting System. 68

4.4. Additional Reporting Procedures. 69

4.5. Air Force Form 457, Airmen Appeal Procedures. 70

4.6. Risk Reduction and Mitigation. 70

4.7. Preparation of Risk Assessments. 70

4.8. Hazard Abatement. 71

4.9. Hazard Control Hierarchy. 71

4.10. Hazard Abatement Requirements. 71

4.11. Critical/Imminent Danger Situations. 72

4.12. Posting Notification of Hazards. 72

4.13. Installation Master Hazard Abatement Plan (MHAP). 73

4.14. Funding for Hazard Abatement. 74

4.15. End of Year Annual Master Hazard Abatement Survey and Facility/Workplace Inspection Report. 74

Chapter 5—INFORMATION AND DATA ANALYSIS 76

5.1. Information Protection. 76

5.2. Recurring Publications. 76
5.3. Methods of Information Distribution. 76
5.4. Mishap Analysis Program. 77
5.5. Mishap Prevention Analysis Methods. 77
5.6. Use of Analyzed Data. 78
5.7. Air Force Combined Mishap Reduction System. 78
5.8. Organizational Safety Assessment (OSA). 79
5.9. Military Flight Operations Quality Assurance (MFOQA). 79
5.10. Airman Safety Action Program (ASAP). 79
5.11. Line Operations Safety Audit. 79
5.12. Standard Mishap Metrics. 80
5.13. Calculating Federal Employee Compensation Metric (Rate). 81
5.14. AFSAS Analysis and Query Tools. 82

Chapter 6—DEPLOYMENT AND CONTINGENCY SAFETY 83

6.1. Deployment and Contingency Safety Program. 83
6.2. Air Force Forces Chief of Safety (AFFOR/SE). 83
6.3. AFFOR Deployed Unit Safety Functions and Organizations. 84
6.4. Mishap Prevention Program. 87
6.5. Monthly, Quarterly and Annual Safety Awards. 87
6.6. AFFOR/SE Visits. 87

Chapter 7—AVIATION SAFETY 89

7.1. Program Management. 89
7.2. Plans. 89
7.3. Programs. 89
7.4. Aero Club Operations. 92
7.5. Training Meetings and Briefings. 92
7.6. Inspections/Assessments and Monitoring. 92
7.7. Airfield Maintenance, Construction and Waivers (Installation). 94

Chapter 8—OCCUPATIONAL SAFETY **96**

8.1. Program Management. 96

8.2. Assurance Requirements. 96

8.3. Installation Occupational Safety Staff Responsibilities. 96

8.4. Tenant Unit and Geographically Separated Unit Responsibilities. 99

8.5. Unit Safety Representative (USR) Responsibilities. 99

8.6. Hazard Identification and Abatement. 100

8.7. Federal/State Inspections of DoD Working Conditions and Mishap Investigations. 100

8.8. DoL Occupational Safety and Health Administration Annual Visit Summary. 100

8.9. Occupational Safety Corporate Committee. 100

Chapter 9—WEAPONS SAFETY **101**

9.1. Program Management. 101

9.2. Weapons Safety Personnel Management and Manning Plan. 101

9.3. Explosives Safety Standards. 101

9.4. Weapons Safety Personnel. 101

9.5. Weapons Safety Program Requirements. 104

9.6. Missile Safety. 104

9.7. Nuclear Surety. 104

9.8. Unit Directed Energy Safety Program Functions. 104

9.9. Munitions Rapid Response Team. 105

9.10. Department of Defense Explosives Safety Board (DDESB). 105

9.11. Weapons, Explosives and DEW Training..... 105

9.12. Weapons Safety Committees. 106

Chapter 10—SPACE SAFETY **107**

10.1. Program Management. 107

10.2. Space Safety Responsibilities. 107

10.3. Space Safety Council (SSC). 108

10.4. Space Nuclear Safety. 109

10.5. Ground Based Space System Safety. 109
10.6. Pre-Launch. 109
10.7. Launch Safety. 110
10.8. Orbital Safety. 113
Chapter 11—SYSTEM SAFETY & SAFETY RISK ASSESSMENTS 121
11.1. Overview. 121
11.2. System Safety Applied to Acquisition Activities. 122
11.3. System Safety Risk Acceptance Process 123
11.4. System Safety Groups (SSG). 124
11.5. Non-Developmental Items. 126
11.6. System Safety Engineering Analysis (SSEA). 126
11.7. Application of a Safety Risk Assessment (SRA). 126
11.8. Safety Risk Assessment Purpose and Risk Decision Authority Empowerment. 127
11.9. Core Safety Risk Assessment Principles. 128
11.10. Safety Office SRA Reviews. 130
Chapter 12—CONTRACT SAFETY 132
12.1. Contract Safety Program. 132
12.2. Contract Types. 132
Table 12.1. Contract Considerations. 132
12.3. Contractor Compliance. 133
12.4. Safety Office. 133
Chapter 13—SUPPORTING GUIDANCE 135
13.1. Air Force Safety Management System (AFSMS). 135
Figure 13.1. AFSMS Pillars. 135
Figure 13.2. AFSMS Framework. 136
Figure 13.3. The Air Force 5-Step RM Process. 137
13.2. Annual Program Management Review (APMR). 140
13.3. Federal/State Inspections of DoD Working Conditions and Mishap Investigations. 141

	13.4.	USAF Aviation Safety Equipment Database Reporting.	145
	13.5.	Mishap Response.	146
	13.6.	Job Hazard Analysis (JHA).	147
	13.7.	Risk Assessment Codes (RAC).	148
Table	13.1.	Safety and Ergonomic Hazard Risk Assessment Code Matrix.	149
	13.8.	Abatement Priority Number (APN).	149
Table	13.2.	Severity and Probability Multiplier Matrix	150
Table	13.3.	Abatement Priority Number Index.	151
	13.9.	Preparation of Safety Risk Assessments.	151
Figure	13.4.	Sample Risk Assessment Layout and Guidance.	151
	13.10.	Safety Release.	152
Figure	13.5.	Safety Release Letter (Example).	153
	13.11.	Launch Vehicle Space Debris Assessment Report (SDAR).	153
Table	13.4.	SDAR Format.	154
	13.12.	Combined Space Vehicle Space Debris Assessment Report/End-of-Life Plan (SDAR/EOLP).	157
Table	13.5.	Contents of SDAR/EOLP.	158
Chapter 14—SAFETY TRAINING			**162**
	14.1.	Job Safety Training Outline.	162
	14.2.	Continuing Education and Training Courses.	166
Table	14.1.	Continuing Career Safety Professional Development (Recommended Safety Courses).	166
Table	14.2.	Continuing Career Safety Professional Development (AFSEC Courses Awarding Continuing Education Units).	167
	14.3.	Safety Education and Training.	167
Table	14.3.	Mishap Investigation.	167
Table	14.4.	Unit Safety Representative (USR).	167
Table	14.5.	Aviation.	168
Table	14.6.	Occupational.	168
Table	14.7.	Weapons.	168

Table 14.8. Space. 168

Table 14.9. System Safety. 169

Table 14.10. Management. 169

Table 14.11. Risk Management (RM). 169

Table 14.12. Other. 169

14.4. 1S0X1 Retrainee Evaluation Process. 169

Figure 14.1. 1S0 Safety Retraining Memorandum (Example). 171

14.5. Supervisor Safety Training. 171

Chapter 15—MISCELLANEOUS SAFETY INFORMATION 173

15.1. Instructions for Completing AF Form 1118, Notice of Hazard. 173

15.2. Instructions for Completing AF Form 3, Hazard Abatement Plan. 173

15.3. Pre-Departure Travel Safety (Examples Only). 176

15.4. Air Force Off-Duty High-Risk Activities Program. 177

Attachment 1—GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION 179

Chapter 1

PROGRAM OVERVIEW AND RESPONSIBILITIES

1.1. Purpose. The purpose of the Air Force Mishap Prevention Program is to minimize the loss of Air Force resources and protect Air Force personnel from death, injuries or occupational illnesses by managing risks on and off-duty. This program is aligned with and framed using the Air Force Safety Management System as the core structure and applies to all Air Force organizations and personnel. The Air Force Safety Management System is a systematic approach to managing safety and includes the necessary organizational structures, accountabilities, policies, and procedures. The overarching mishap prevention program is system compliant with the tenants of the American National Standards Institute Z-10 and the Federal Aviation Administration, Aviation Safety Management Program, which were used as the foundational sources of the Air Force Mishap Prevention Program. The Occupational Safety and Health Administration's (OSHA) Voluntary Protection Program is recognized as a form of a Safety Management System, and is closely aligned with the Air Force Safety Management System. Units employing the Voluntary Protection Program will follow the USAF mishap prevention program guidance contained within this instruction. **(T-1)**

1.2. Vision. AFSEC's vision is to be a world leader in safety management and provide care for our Airmen, resources and our environment to meet our air, space and cyberspace missions. Accordingly, the Air Force is committed to the following three priorities:

1.2.1. Compliance. Comply with all safety and regulatory guidelines.

1.2.2. Risk Reduction. Protect our assets, personnel and material by effectively identifying and managing risks.

1.2.3. Continuous Improvement. Instill a culture that encourages and supports continuous improvement.

1.3. The Air Force Mishap Prevention Program. This instruction is the foundational guidance document for the implementation of the Air Force Mishap Prevention Program. Commanders at all levels will adhere to these requirements unless proper waivers, deviations or exemptions are approved as defined within this instruction. **(T-1)** Refer to paragraph **13.1,** *Air Force Safety Management System,* for additional guidance.

1.4. Mishap Prevention Program Disciplines (Aviation, Occupational, Weapons, Space, etc.). Each mishap prevention program discipline will direct more specific functional management responsibilities and risk management (RM) processes via AFIs, standards and manuals, as determined applicable at the various program discipline levels. **(T-1)** Air Force installation and tenant safety offices will implement these programs IAW this instruction. **(T-1)** Any inter-organization and inter-service agreements will be addressed in formal support documents. (**T-1)** Regardless of any support agreement or executive agency guidelines, requirements of this instruction must be satisfied. **(T-1)** The mishap prevention program will address:

1.4.1. Methods to target groups at increased risk for mishaps, injury or illness as directed by the commander or as indicated through hazard identification processes. **(T-1)**

1.4.2. Processes for tracking and trending hazards and incidents, as well as methods for determining program effectiveness. **(T-1)**

1.4.3. Funding for safety programs. **(T-1)**

1.4.4. Metrics for measuring effectiveness (See examples in **Chapter 5,** *Information and Data Analysis*). **(T-1)**

1.4.5. Safety goals, objectives and milestones that support Air Force established goals. **(T-1)**

1.4.6. Methods to identify and disseminate safety "best practices," "benchmarks," etc. **(T-1)**

1.5. Air Force Occupational Safety and Health (AFOSH) Guidance and Applying Standards. AFOSH guidance must be followed at all times and is the minimum guidance necessary to provide a safe and healthful work environment for all Airmen, other Department of Defense (DoD)/government personnel, and volunteers IAW Title 10 USC § 1588, *Authority to Accept Certain Voluntary Services,* working on Air Force installations. **(T-0)** Air Force activities must comply with OSHA requirements at all times unless the military-unique exemption applies according to DoDI 6055.01, *DoD Safety and Occupational Health (SOH) Program.* **(T-0)** See paragraph **1.8** for further guidance on military-unique and nonmilitary-unique policy. AFOSH requirements shall provide equal or greater protection than applicable federal regulatory standards. **(T-0)** All Air Force units must comply with applicable safety guidance during all Air Force operations. **(T-1)** The Air Force may develop supplementary or alternative guidance where inadequate or no federal regulatory standards are applicable. MAJCOMs, DRUs and FOAs may supplement AFOSH guidance when additional or more stringent safety, fire prevention or health criteria are required. When there is conflicting guidance, apply that guidance which provides the most protection. Safety offices will maintain (or have access to) a reference library to include national consensus standards and other mission-related technical and safety guidance. **(T-2)**

1.5.1. AFOSH guidance sources include:

1.5.1.1. Regulatory Federal Standards. The Air Force complies with applicable Department of Labor's (DoL) OSHA, Nuclear Regulatory Commission, the National Institute for Occupational Safety and Health (NIOSH), and Department of Transportation standards incorporating specific requirements by reference into AFOSH guidance or technical orders (TOs).

1.5.1.2. AFOSH Guidance. Air Force published guidance is located at **http://www.e-publishing.af.mil**. The Air Force publishes industrial and general occupational safety guidance as Air Force instructions and/or manuals, which implement applicable OSHA standards. When AFOSH guidance or safety criteria do not cover a situation, use non-Air Force standards including national consensus standards, professional safety and health standards, and other federal agency standards. When there is conflicting guidance, use the guidance that provides the most protection. Refer conflicts between OSHA, AFI, AFMAN, AFOSH guidelines and TOs to AF/SE through the appropriate MAJCOM/FOA/DRU safety office for resolution. **(T-1)**

1.5.1.3. TOs and manufacturers' guidance (e.g., Safety Data Sheets) for specific processes, aircraft, and equipment.

1.5.2. Joint-Use Workplaces. Personnel from different DoD Components or other federal agencies working in the same workplace shall be governed by OSHA standards and any applicable agency standards, host/tenant support agreements, joint base instructions, etc. **(T-0)**

1.5.3. Variances and Exemptions. The affected work center shall process a request for variance or exemption when it is impractical or impossible to meet code of federal regulations (CFR) or AFOSH requirements due to operational needs, mission impact or technical reasons. **(T-0)** Variances are temporary and are granted with the understanding that permanent control measures are planned and will be in place within a time period not to exceed five years. Exemptions grant permanent relief from a requirement and may be approved when the applicant can substantiate that their proposed methods, equipment or facilities protect the employee as well or better than the AFOSH requirements or applicable. AFSEC, Air Force Civil Engineering Center (AFCEC) and Air Force Medical Readiness Agency (AFMRA) may grant variances or exemptions to AFOSH and environmental requirements, and AFMAN 91-203, *Air Force Occupational Safety, Fire, and Health Standards*, guidance that are more stringent than applicable OSHA requirements. Only OSHA can grant waivers or exemptions to applicable Title 29 (OSHA) requirements, even if they are included in AFOSH guidance. AFSEC will serve as the liaison between OSHA and the Air Force when seeking OSHA safety-related waivers or exemptions. **Note:** A unit's inability to fund corrective actions does not constitute sufficient justification to request a waiver, variance or exemption. Request extensions for variances through MAJCOM/FOA/DRUs to AFSEC Occupational Safety Division (AFSEC/SEG) or AFMRA/SG3/5, as applicable, and appropriate. **(T-1)** Variance/Exemption process consists of the following steps:

1.5.3.1. Affected work center personnel shall implement interim control measures and notify the installation occupational safety (or tenant unit safety, if applicable), fire or health officials to validate the effectiveness of interim controls. **(T-0)** With effective controls in place, the work center will coordinate the variance/exemption package with installation occupational safety (or tenant unit safety, if applicable), fire and health officials. **(T-0)**

1.5.3.2. The installation safety office (or tenant unit safety, if applicable) will assemble a detailed staff package with the following attributes. **(T-1)**

1.5.3.2.1. Clearly define the safety-related variance or exemption being requested, i.e., a description of the situation identifying the AFOSH guidance/publication, paragraph and specific reason(s) compliance is not possible.

1.5.3.2.2. State the rationale why the AFOSH guidance/publication cannot be followed.

1.5.3.2.3. Provide a description and risk assessment of permanent control measures planned, implementation date, plus identify interim control measures used to protect personnel, equipment or property, or used to mitigate the risk or hazard.

1.5.3.2.4. Identify the number of personnel exposed and protected by interim control measures relative to the operation or condition on a regular basis, and any Air Force property involved.

1.5.3.2.5. A Job Hazard Analysis (JHA) will be conducted on all work processes, where appropriate, to identify potential hazards, preventative measures in procedures to mitigate the hazards and proper personal protective equipment (PPE), if required.

(T-0) Note: Prior to submitting a variance or exemption, a JHA should have been accomplished to address all potential hazards. If not accomplished, provide a reason in the variance or exemption, why a JHA was not accomplished.

1.5.3.2.6. In the case of a variance request, provide a proposed way ahead to resolve the problem, or a description of why it is believed the problem cannot be resolved.

1.5.3.2.7. In the case of an exemption request, provide the proposed methods, equipment or facilities to protect the employee as well as or better than the AFOSH guidance.

1.5.3.2.8. Propose a plan to remedy the problem.

1.5.3.2.9. Include drawings, photographs, maps, etc., to clearly and thoroughly document all of the above.

1.5.3.3. The installation safety office will forward the request to the appropriate MAJCOM safety office through appropriate command channels. **(T-1)**

1.5.3.4. Any tenant unit safety staff working a variance or exemption will coordinate the product with the installation safety office before sending it forward to the tenant unit's higher headquarters. **(T-0)**

1.5.3.5. The MAJCOM/FOA/DRU safety staff reviews and, if recommended for approval, forwards requests to AFSEC/SEG (safety-related issues), AFCEC/CC (fire prevention and facilities-related issues) or AFMRA/SG3/5 (health-related issues), as appropriate, for final approval. **Note:** Requests received without MAJCOM/FOA/DRU coordination will be returned to requestor without action.

1.5.3.6. The MAJCOM/FOA/DRU/installation occupational safety manager maintains a master file of approved variances or exemptions that apply to their MAJCOM/FOA/DRU/ installation as long as they are in effect and for one year thereafter. The safety manager distributes copies of variances and exemptions to fire protection, health and functional managers, as needed. Air Force level variances can be found at the AFSEC/SEG website: **https://cs2.eis.af.mil/sites/10178/segs/default.aspx**. Functional managers or supervisors, as appropriate, must train affected employees and employee representatives on approved variances, exemptions or any special procedures required; such training will be documented. Post copies of approved variances and exemptions in affected work areas until integrated into the Job Safety Training Outline (JSTO). **(T-0)**

1.5.4. Safety Changes to Technical Orders. Process recommended changes to TOs IAW TO 00-5-1, *Air Force Technical Order System*. Send a copy of recommended changes to Air Force Materiel Command Occupational Safety Division (AFMC/SEG) and AFSEC/SEG.

1.5.5. Changes to Directives. Submit requests for changes to occupational safety and health (OSH) guidelines in Air Force instructions through command channels to the directive OPR. Safety, fire and health reviews, as appropriate, shall be accomplished at each level of command between the requester and the directive OPR. **(T-1)** Send a copy of recommended changes to AFSEC/SEG, AFCEC/CXF, and/or AFMRA/SG3/5, as applicable. (**T-1)**

1.5.6. Occupational Health. Ensure commanders, supervisors, employees and occupational environmental health subject matter experts assess health risks in the workplace.

1.6. Roles and Responsibilities.

1.6.1. The Assistant Secretary of the Air Force for Installations, Environment, and Energy (SAF/IE).

1.6.1.1. The SAF/IE is the Department of the Air Force's Designated Agency Safety and Health Officer (DASHO). The SAF/IE delegates program responsibilities, except the DASHO duties (which are not delegable), to the Deputy Assistant Secretary for Environment, Safety, and Infrastructure (SAF/IEE).

1.6.1.2. Provides policy, guidance, direction and oversight of all matters pertaining to the formulation, review and execution of plans, policies, programs and budgets relative to the mishap prevention and Environment, Safety and Occupational Health (ESOH) programs.

1.6.1.3. Conducts Program Management Reviews of the Air Force ESOH programs, at least annually, with the Air Force Chief of Safety (AF/SE) and the Air Force Surgeon General (AF/SG). Reports the progress of the Air Force ESOH programs to the Deputy Undersecretary of Defense (Personnel and Readiness), as requested.

1.6.1.4. Establishes strategic goals and objectives, develops performance measures and assigns responsibilities in coordination with AF/SE.

1.6.1.5. Conducts Headquarters United States Air Force (HQ USAF) Environment, Safety and Occupational Health Council (ESOHC) meetings IAW AFI 90-801, *Environment, Safety, and Occupational Health Councils.*

1.6.1.6. Collects, analyzes and reports Air Force-wide performance information to Office of the Secretary of Defense IAW DoDI 6055.01, DoDI 6055.04, *DoD Traffic Safety Program,* and DoDI 6055.07, *Mishap Notification, Investigation, Reporting, and Record Keeping,* as applicable.

1.6.1.7. Establishes procedures for communication with interested external parties.

1.6.1.8. IAW Headquarters AF Mission Directive 1-18, *Assistant Secretary of the Air Force (Installations, Environment and Energy),* has authority over the Air Force Risk Management Process as described in DoDI 6055.01 and AFI 90-802, *Risk Management.*

1.6.2. The Assistant Secretary of the Air Force for Acquisition (SAF/AQ):

1.6.2.1. Establishes engineering and technical policy and procedures for SAF/AQ Programs (both acquisition and sustainment) to execute System Safety as an integrated part of the Systems Engineering efforts to manage environment, safety, and occupational health risks and requirements IAW DoDI 5000.02, *Operation of the Defense Acquisition System,* and AFI 63-101/20-101, *Integrated Life Cycle Management.*.

1.6.2.2. Coordinates guidance and federal acquisition regulations involving AFOSH matters with AF/SE, SAF/IE and AF/SG.

1.6.2.3. Ensures contracts include applicable Federal Acquisition Regulation/DoD Federal Acquisition Regulation Supplement/Air Force Federal Acquisition Regulation Supplement (FAR/DFARS/AFFARS) safety clauses.

1.6.2.4. Includes ESOH Risk Management concepts and responsibilities in the education and training of acquisition personnel.

1.6.2.5. Ensure appropriate risk acceptance authority for High-Risk system safety assessments.

1.6.2.6. Establishes engineering and technical policy and procedures for Air Force Acquisition and Sustainment, including policy and procedures for all programs to execute System Safety as an integrated part of Systems Engineering.

1.6.2.7. Performs periodic reviews of Acquisition and Sustainment programs. These include required reviews of the results of each program's ESOH Risk Management efforts. This ensures that System Safety is overseen within the context of other cost, schedule and performance issues.

1.6.2.8. Represents the Air Force in Acquisition and Sustainment Program System Safety matters with other DoD components and both Governmental and non-Governmental agencies.

1.6.2.9. Ensures program offices support and are included in system-related Class A and Class B mishap investigations to the extent necessary to analyze hazards that contributed to the accident, and provide recommendations for materiel risk mitigation measures, especially those that minimize potential human errors.

1.6.3. The Assistant Secretary of the Air Force for Financial Management and Comptroller (SAF/FM):

1.6.3.1. Determines process for Risk Assessment Code (RAC) funding visibility, priority and implementation procedures for funding the abatement of safety, fire and health hazards.

1.6.3.2. Encourages use of the RAC system on Resource Allocation Programming Information Decision System used during the corporate budgeting process.

1.6.3.3. Includes ESOH Risk Management concepts and responsibilities in the education and training of financial management/comptroller personnel.

1.6.3.4. Ensures scoring of ESOH risk data analysis for financial project management and programming.

1.6.4. The Air Force Surgeon General (AF/SG):

1.6.4.1. Establishes goals, objectives, policy and standards for occupational and environmental health.

1.6.4.2. Ensures Air Force occupational and environmental health policies meet or exceed federal regulations (CFRs) and other applicable requirements.

1.6.4.3. Develops health-related policies which support the Air Force mishap prevention program.

1.6.4.4. Develops and facilitates use of human factors standards in mishap prevention. Ensures use of tools that address human error identification and reduction related to fatigue, stress and other emotional, psychological or physiological factors.

1.6.4.5. Provides subject matter experts (SMEs) in human factors.

1.6.4.6. Through the Biomedical Sciences Corps (BSC) Associate Chief for Bioenvironmental Engineering (AFMRA/SG3PB), coordinates on installation-level proposed responses related to occupational safety and health events.

1.6.5. The Deputy Chief of Staff Logistics, Engineering, and Force Protection (AF/A4):

1.6.5.1. Ensures maintenance and logistics policy address and comply with all applicable safety and health standards.

1.6.5.2. Ensures Air Force procedures for storing, handling, using and transporting hazardous materials and disposing of wastes comply with transportation regulations, environmental statutes and occupational regulations.

1.6.5.3. Ensures civil engineering procedures, operations, technical publications and designs for new construction meet or exceed federal regulatory requirements and AFOSH guidance, as well as explosives and other safety criteria.

1.6.5.4. Ensures policy addresses and mitigates the potential for human error associated with logistics and engineering activities.

1.6.5.5. Integrates ESOH Risk Management and risk reduction into the sustainment decision-making process.

1.6.5.6. Incorporates ESOH principles in policies, procedures and training.

1.6.5.7. Determines process for RAC funding visibility, priority and implementation procedures within the Integrated Priority List corporate process for funding safety, fire and health hazards abatement.

1.6.6. The Deputy Chief of Staff, Manpower Personnel and Services (AF/A1):

1.6.6.1. Develops policy on personnel matters relating to AFOSH.

1.6.6.2. Provides guidance for commanders and supervisory personnel to meet accountability and performance requirements for the AFOSH program.

1.6.6.3. Serves as the OPR for Federal Employees' Compensation Act (FECA) at the Air Staff level.

1.6.6.4. Establishes a process through which Airmen are evaluated on Safety and Occupational Health (SOH) duties and responsibilities within the applicable appraisal system.

1.6.6.5. Provides guidance to ensure supervisory personnel appraisals address SOH conformance and reflect responsibility for the management of SOH programs in their area of responsibility. Such appraisals should specifically include an evaluation of their SOH program management performance.

1.6.6.6. Incorporates AFOSH program orientation into training programs for new civilian employees.

1.6.7. Headquarters, Air Force Directorate of Test and Evaluation (AF/TE). Provides direction and guidance to ensure test organizations assess safety standards and hazards prior to testing.

1.6.8. The Deputy Chief of Staff for Operations (AF/A3):

1.6.8.1. Develops policy and guidance for use and management of AF-operated operational ranges.

1.6.8.2. Ensures applicable environmental, safety and operation health programs and requirements are incorporated within operational range AFPDs, AFIs, and AFMANs.

1.6.9. The Air Force Chief of Safety (AF/SE):

1.6.9.1. Is the OPR for Air Force safety programs.

1.6.9.2. Directs implementation of Public Law, Executive Orders, and DoD Directives and Instructions on safety.

1.6.9.3. Directs implementation of the Air Force Mishap Prevention Program.

1.6.9.4. Emphasizes safety management strategies to drive mishap prevention program and safety management system requirements.

1.6.9.5. Provides direct liaison with MAJCOM/DRU/FOA Directors of Safety on mishap prevention program and safety management system implementation by providing training, SMEs and incorporating safety management system principles into existing training courses.

1.6.9.6. Serves as the lead agent for the overall cross-functional integration and sustainment effort of Air Force safety risk management processes and procedures IAW AFI 90-802 requirements.

1.6.9.7. Attends or delegates attendance to the Joint Service Safety Council.

1.6.9.8. Establishes and chairs or delegates chairmanship of the Air Force Senior Safety Advisory Council.

1.6.9.9. Assigns the Chief of Occupational Safety as the USAF OSHA Process Manager.

1.6.9.10. Ensures SAF/AQ program offices are included in system-related Class A and Class B mishap investigations to analyze hazards that contributed to the accident, and provides recommendations for materiel risk mitigation measures, especially those that minimize potential human errors.

1.6.10. The Air Force Safety Center, under the command of the AF/SE:

1.6.10.1. Develops, implements, oversees and funds, as appropriate, Air Force Mishap Prevention Programs within the framework of the Air Force safety management system. **(T-0)**

1.6.10.2. Develops safety programs, policies, goals and objectives, and establishes guidelines to support and assess effectiveness of the mishap prevention program. **(T-0)**

1.6.10.3. Acts as liaison for safety matters with DoD components, federal agencies and private sector groups. **(T-1)**

1.6.10.4. Prepares and publishes Air Force Instructions covering Air Force-unique operations and provides implementation guidance for applicable standards. **(T-1)**

1.6.10.5. In conjunction with AF/SG and AFCEC, develops special guidance for Air Force operations where federal regulations, AFI and AFOSH guidance is not available or is inadequate. **(T-1)**

1.6.10.6. Serves as the approving authority and repository for all safety-related variances and exemptions within the Air Force. **(T-1)**

1.6.10.7. Coordinates testing to ensure Air Force compliance with DoD Explosives Safety standards. **(T-1)**

1.6.10.8. Develops procedural rules to ensure compliance with DoD and Department of Energy (DoE) rules related to nuclear systems. **(T-1)**

1.6.10.9. Coordinates, facilitates, develops and provides safety education and training where appropriate. **(T-1)**

1.6.10.10. In coordination with MAJCOMs/DRUs/FOAs, ensures identified safety hazards and deficiencies are managed within the hazard abatement program (**Chapter 4,** *Hazard Identification, Reporting and Abatement*).

1.6.10.11. Performs safety evaluations of MAJCOMs, DRUs, and FOAs with a safety staff at least every 48 months. **(T-1)**

1.6.10.12. Collects annual OSHA 300, *Log of Work-Related Injuries and Illness,* and OSHA Form 300A, *Summary of Work-Related Injuries and Illness,* for submission to the Bureau of Labor and Statistics by 30 May each year. **(T-0)**

1.6.10.13. Manages the Air Force Combined Mishap Reduction System (AFCMRS) survey process and conducts Organizational Safety Assessments (OSA) of organizations or wings, as requested by commanders. **(T-1)**

1.6.10.14. Reviews records disposition for functional records IAW AFMAN 33-363, *Management of Records,* and 29 CFR Part 1904, *Recording and Reporting Occupational Injuries and Illnesses.* **(T-0)**

1.6.10.15. Provides and maintains a centralized suite of mishap reporting, data collection and analytical tools or resources for use at all levels of the Air Force Safety enterprise. **(T-1)**

1.6.10.16. Conducts specialized analyses and studies at the request of the Congress, Chief of Staff of the Air Force, Air Force Chief of Safety, Headquarters Air Force, and MAJCOM/DRU/FOA Commanders. **(T-0)**

1.6.10.17. Provides discipline specific subject matter experts in safety. **(T-1)**

1.6.10.18. Coordinates with applicable agencies to ensure safety requirements and issues (e.g., safety related FAR clauses) are addressed in guidance and directives. **(T-0)**

1.6.10.19. Serves as consultants on assessments, evaluations and mitigation of human factors and human performance hazards.

1.6.10.20. Performs Air Force-level trend analysis of mishaps, incidents, risk, hazards and errors, and publishes results. **(T-1)**

1.6.10.21. Serves as safety consultants for safety related investigations.

1.6.10.22. Maintains and upgrades the Air Force Safety Automated System (AFSAS) program, database and all associated information technology tools necessary for AFSAS operation and maintenance.

1.6.10.23. Serves as the lead agent for the overall cross-functional integration and sustainment effort of Air Force Risk Management processes and procedures IAW AFI 90-802.

1.6.10.24. Conducts the Air Force Senior Safety Advisory Council. **(T-1)**

1.6.10.25. Conducts the Air Force Occupational Safety Corporate Committee. **(T-1)**

1.6.10.26. Conducts the Air Force Space Safety Council. **(T-1)**

1.6.10.27. Conducts the Air Force Aviation Safety Council. **(T-1)**

1.6.10.28. Develops, implements and oversees the Air Force OSHA Process Management system for the cross-functional integration and execution of occupational safety and health events and procedures for Federal or State programs. **(T-0)** Coordinates on installation-level proposed responses related to occupational safety and health events. **(T-0)**

1.6.10.29. Develops and publishes yearly high-interest spot inspection areas (Occupational Safety Emphasis items), using five years of on-duty ground mishap data analysis as part of the Occupational Safety Annual Program Management Review. **(T-1)**

1.6.10.30. Publishes OSHA Cross-tells for each notice of violation received by an installation to share data across the Air Force and DoD to support mishap prevention and reduction efforts. **(T-1)** Cross-tells may be published to reinforce effective safety programs identified during occupational safety and health events.

1.6.10.31. Develops and coordinates System Safety policy and guidance. **(T-0)**

1.6.10.32. Evaluates safety risk assessment portions of High-Risk and Serious-Risk acceptance packages for systems safety analysis. Reviews and coordinates on the High-Risk acceptance packages before submission to SAF/AQ. **(T-1)**

1.6.10.33. Provides independent assessments and advice on overall Acquisition and Sustainment Program safety (residual hazards and associated risks) to Headquarters Air Force senior leadership, as appropriate. **(T-1)**

1.6.10.34. Participates in Headquarters Air Force (HAF)-level reviews for Acquisition and Sustainment Programs. These reviews are one of the key opportunities to influence System Safety in Acquisition and Sustainment Programs.

1.6.10.35. Represents the Air Force in system safety policy and guidance matters with other DoD components and other government and non-government agencies. **(T-1)**

1.6.10.36. Develops and implements System Safety training programs. **(T-1)**

1.6.10.37. Provides advisors and consultants to System Safety Groups. **(T-1)**

1.6.10.38. Reviews Air Force technical and management documents (capabilities management documents, program management directives, System Safety Group charters) for inclusion of appropriate safety requirements. **(T-1)**

1.6.10.39. Reviews and comments on mishap reports for technical content and lessons learned. **(T-1)**

1.6.10.40. Provides members, advisors and consultants to the Non-nuclear Munitions Safety Boards, Laser System Safety Review Board and safety study groups for terrestrial

nuclear reactors. **(T-1)** Provides a senior advisor to the chair of the US Air Force Nuclear Weapons System Safety Group. **(T-1).** Refer to AFI 91-205, *Nonnuclear Munitions Safety Board,* and AFI 91-102, *Nuclear Weapon System Safety Studies, Operational Safety Reviews, and Safety Rules.*

1.6.10.41. Evaluates the System Safety of Directed Energy Weapons needed for Air Force operations via the Directed Energy Weapons Safety Board. **(T-1)** This safety consideration is a System Safety effort which considers the Directed Energy Weapons hazard posed to Airmen and all pertinent Air Force equipment. Safety of a Directed Energy Weapon device shall be considered before purchase or during design, using AFI 91-401, *Directed Energy System Safety,* for safety design criteria.

1.6.10.42. For system-related mishaps, determines whether the Program Manager previously identified the hazards that played a role in the mishap sequence and had included those hazards in its Systems Engineering ESOH Risk Management efforts.

1.6.11. Program Executive Officers (PEOs) ensure that programs within their portfolios are integrating ESOH concerns into the overall systems engineering process using the system safety methodology in Military Standard (MIL-STD)-882E, *DoD Standard Practice for System Safety,* as required by DoDI 5000.02, *Operation of the Defense Acquisition System,* and AFI 63-101/20-101, *Integrated Life Cycle Management.* They perform periodic program and technical reviews of programs within their portfolios. These required reviews include the results of each program's System Safety and safety Risk Management efforts. This ensures that System Safety is overseen alongside other cost, schedule and performance issues. PEOs are the acceptance authorities for "Serious" program safety risks and coordinate on "High" program safety risks.

1.6.12. MAJCOM/DRU/FOA/Numbered Air Force (NAF)/Center Commanders/Directors:

1.6.12.1. Direct implementation and provide resources for the mishap prevention program. **(T-1)**

1.6.12.2. Establish and maintain a safety program that provides a safe and healthful workplace. **(T-1)** Ensure command guidelines meet or exceed applicable safety program requirements. **(T-1)**

1.6.12.3. Ensure subordinate commanders enforce compliance with occupational safety and health requirements. **(T-1)**

1.6.12.4. Ensure a process is in place for new commanders to receive training on their safety responsibilities. **(T-1)**

1.6.12.5. Ensure procedures are developed to identify command mishap trends and direct actions and resources in order to establish goals and objectives to reverse identified adverse mishap or safety program trends. **(T-1)**

1.6.12.6. Ensure safety program performance is included in rating of subordinate commanders, and senior civilian supervisory personnel's performance using guidance provided by AF/A1 as called for in paragraph **1.6.6.2** **(T-1)**

1.6.12.7. Advocate with applicable organizations for funding priorities for hazard abatement projects during the MAJCOM corporate planning, programming and budgeting process.

1.6.12.8. Coordinate safety directives, instructions and supplements with the AF Safety Center. **(T-1).** Subordinate unit supplements will be approved by their parent command. MAJCOM programming plans, safety annexes, Concept of Operations, etc., should be shared with the Safety Center and MAJCOM safety staffs as cross-feed items. When such documents impact other commands, coordination with the Safety Center is required.

1.6.12.9. Ensure command personnel are aware of commander's goals and related expectations for safety.

1.6.12.10. Ensure contracts include provisions requiring contractors to maintain an effective safety and health program on Air Force-owned sites that complies with applicable DoL, DoD, and Air Force safety standards. **(T-1)**

1.6.12.11. Ensure all personnel are provided requisite formal and informal training courses, educational programs and other activities to enable them to meet their respective mishap prevention responsibilities. **(T-1)**

1.6.12.12. Ensure conduct of the MAJCOM Environment, Safety and Occupational Health Council adhere to requirements of AFI 90-801.

1.6.12.13. Support and ensure installations execute cooperative efforts to reduce injuries and illnesses across the Air Force by implementing safety and occupational health management systems throughout their command.

1.6.12.14. Convene Safety Investigation Boards and receive out briefs IAW AFI 91-204, *Safety Investigations and Hazard Reporting.*

1.6.13. MAJCOM/DRU/FOA/NAF/Center Safety Staffs:

1.6.13.1. Oversee implementation of the mishap prevention program within their organization.

1.6.13.2. Evaluate management, implementation and effectiveness of the Air Force Mishap Prevention Program within the command IAW this instruction. **(T-1)**

1.6.13.2.1. Ensure the evaluation criteria includes a qualitative rating system with written criteria, to measure compliance, adequacy and effectiveness of the safety program and safety management system. **(T-1)**

1.6.13.2.2. Report results directly to MAJCOM/DRU/FOA/NAF/Center Commander/Directors. **(T-1).** Based on assessment/evaluation results, identify opportunities for continuous improvement.

1.6.13.2.3. Track program evaluation deficiencies and monitor corrective actions until closure.

1.6.13.2.4. Review and analyze applicable mishap reports from other organizations for lessons learned. **(T-1)** Distribute mishap prevention data and other safety related communications to subordinate units. **Note:** Lessons learned can be viewed via the AFSEC SharePoint®.

1.6.13.3. Assist and advise commanders and supervisors at all levels to understand their responsibility to ensure plans, procedures, facilities, equipment modifications/acquisitions,

hardware, software, and operations receive a safety review and incorporate effective risk management, hazard elimination/mitigation and mishap reduction features.

1.6.13.4. Represent the cross-functional interest of their command during applicable councils, committees, and meetings, e.g., Senior Safety Advisory Council, Occupational Safety Corporate Committee, Non-Nuclear Munitions Safety Board, Explosives Safety Committee, Flight Safety Corporate Committee, and Space Safety Council. **(T-2)**

1.6.13.5. Coordinate with appropriate staff agencies to ensure explosives site plans comply with explosives and other safety criteria. **(T-1)**

1.6.13.6. Advocate for funding of safety training for command safety personnel. Maintain a current list of safety training courses required/completed by each career safety professional, as defined by paragraph **2.1.2,** to include name of course(s), date courses completed and courses required. **(T-1)** MAJCOMs/FOAs/DRUs can delegate tracking of training.

1.6.13.7. Coordinate, facilitate, develop and provide safety education and training and required funding to assist command safety personnel in meeting their continuing education unit (CEU) requirements through various funding sources available, i.e., civilian personnel, base level civilian training, Air Force Personnel Center (AFPC), Federal Safety and Health councils, as well as organizational funding.

1.6.13.8. Evaluate local On-the-Job Training (OJT) and continuation training of safety personnel during safety program evaluations. **(T-1)**

1.6.13.9. Review all Class A and B mishap investigation reports for thoroughness and accuracy. **(T-1)** Class C and below reports may be released at the convening authority level without MAJCOM review. Ensure the findings, causes and recommendations of reports comply with the direction in AFI 91-204 and the applicable manuals: AFMAN 91-221, *Weapons Safety Investigations and Reports,* AFMAN 91-222, *Space Safety Investigations and Reports,* AFMAN 91-223, *Aviation Safety Investigations and Reports,* and AFMAN 91-224, *Ground Safety Investigations and Reports.*

1.6.13.10. Ensure a process is in place to identify, train and track training of potential safety investigation board members within the MAJCOM staff.

1.6.13.11. Ensure all personnel with access to privileged safety information receive annual training on the proper handling procedures and document the training. **(T-1) Note:** For those with AFSAS accounts, training may be recorded in their AFSAS Training Module.

1.6.13.12. Assist commanders and functional managers on implementation and integration of risk management language into command operations and instructions to include risk assessment processes.

1.6.13.13. Develop and submit supplements for organization unique AFI and AFOSH guidance to AFSEC for approval prior to publication. **(T-1)** Supplements must delineate methods for accomplishing safety program management responsibilities and should consider guidance on:

1.6.13.13.1. The process for scheduling and conducting commander-requested Staff Assistance Visits (SAVs) for subordinate units.

1.6.13.13.2. Conduct analysis at the installation level and below. Safety staffs should use available resources to identify and analyze mishap trends and guidance and present to subordinate units and commanders for mishap prevention.

1.6.13.13.3. Command mishap tracking and recommendation procedures IAW AFI 91-204.

1.6.13.13.4. Review of safety alert messages (which could come from a number of sources, e.g., manufacturers, users, Program Managers) and verify subordinate units take appropriate actions.

1.6.13.13.5. Coordinating and processing annual and recurring safety awards IAW AFMAN 36-2806, *Awards and Memorialization Program.* **(T-1)**

1.6.13.13.6. Providing command unique training to subordinate units' safety staff.

1.6.13.13.7. Responsibilities and/or expectations of the NAFs in regards to the management and implementation of the Air Force Mishap Prevention Program.

1.6.13.14. Providing MAJCOM-unique requirements to subordinate units for implementation into local Air Force Supervisor Safety Training (SST) classes.

1.6.13.15. Coordinates the cross-functional integration and execution of occupational safety and health events, responses and procedures as prescribed within this instruction. **(T-1)**

1.6.13.16. Consider designating high interest areas for spot inspections using their MAJCOM-specific mishap trends and the AFSEC Occupational Safety Emphasis Items.

1.6.13.17. Provide direction and guidance identifying documentation, by discipline, which must be uploaded in the unit's Management Internal Control Toolset (MICT). Refer to AFI 90-201, *The Air Force Inspection System,* and AFI 33-360 for additional guidance.

1.6.13.18. Review and supplement, as needed, the Occupational Safety Emphasis Items based on MAJCOM-specific mishap trends. Prescribe these emphasis items to subordinate installations for inclusion in their High Interest Spot Inspection program.

1.6.13.19. Each MAJCOM with acquisitions not accomplished by SAF/AQ programs must appoint a trained System Safety Manager to act as the point of contact to facilitate System Safety matters.

1.6.13.19.1. Specify any requirements for safety features that could reduce risk, hazards or their effects. **(T-1)** Safety personnel must identify particular safety constraints as early as possible to the Program Office, preferably as a part of a formal requirements document, endorsed by the Lead Command's proponent office for the system. **(T-1)** These System Safety constraints could affect the command mission, base locations, unique operational use, support concepts or meteorological operating environments dealing with the weapons system.

1.6.13.19.2. Participate as System Safety Group (SSG) members and System Safety Working Group (SSWG) members, as appropriate. Ensure the Programmatic Environment, Safety and Occupational Health Evaluation (PESHE) includes adequate operational safety criteria and meets the DoDI 5000.02 requirements. Ensure material

mishap recommendations are included in the Lead MAJCOM cycle and efforts/results are addressed by program offices.

1.6.13.19.3. Designate a trained focal point in the MAJCOM Safety Office responsible for System Safety advocacy for the Command. Provide AFSEC Flight Safety Division (AFSEC/SEF), AFSEC/SEG, AFMC System Safety Branch (AFMC/SES) and Air Force Space Command System Safety Branch (AFSPC/SEK) (space programs only) with the name of the focal point. **Note:** Trained focal point is someone who has completed a formal System Safety course.

1.6.13.19.4. Work closely with non-SAF/AQ program managers to facilitate the Lead Command's coordination role in the System Safety risk acceptance process. Jointly determine the overall level of risk and document the acceptance of this risk level with the appropriate authorities.

1.6.13.19.5. Use the principles of system safety to discover previously unidentified hazards and/or changes in the level of risks in fielded systems. Provide relevant information to the program manager for risk mitigation efforts.

1.6.13.20. Lead Commands will consolidate Using Command's requirements and represent these needs to program offices.

1.6.14. Air Force Materiel Command and Air Force Space Command:

1.6.14.1. Develop policy and provide guidance on applying System Safety management and engineering.

1.6.14.2. Identify and correct product safety deficiencies, give technical assistance to mishap investigation boards, and implement corrective action involving materiel safety aspects of mishap reports as required by AFI 91-204. Manage budgets provided for mishap investigation support.

1.6.14.3. Ensure system, aviation, space, occupational, directed energy, and weapons/explosives safety experts are consulted early in the life cycle of acquisition programs.

1.6.14.4. Maintain a master hazard abatement program for centrally procured systems and equipment applied to end products.

1.6.14.5. Ensure design criteria complies with commercial standards, military requirements and joint standards, as well as applicable AFOSH and/or OSHA requirements.

1.6.14.6. Periodically review design handbooks, TOs, military specifications, military standards, and Allowance Standards (AS) to ensure safety and health criteria and procedures in those documents comply with safety guidance. Ensure human factors and reduction of human error potential are factored into the system design, through the use of System Safety Groups, Human Factors review, etc., and based upon inputs from System Safety and Human Systems Integration activities.

1.6.14.7. Monitor the Government Industry Data Exchange Program, distributes information and corrective action to eliminate or reduce use of hazardous products.

1.6.14.8. Develop and encourage use of human factors standards in mishap prevention.

1.6.14.9. Ensure use of tools that address human error identification and reduction related to fatigue, stress, and other emotional, psychological or physiological factors.

1.6.14.10. Establish and maintain the Air Force's capability to support system safety efforts on major weapon system acquisitions.

1.6.14.10.1. Develop and coordinate MAJCOM centric guidance and policy for system safety.

1.6.14.10.2. Ensure program offices and the lead and using commands coordinate when modifications or changes in system use affect safety.

1.6.14.10.3. Evaluate mishaps and mishap trends to identify deficiencies that engineers and managers may have overlooked or incorrectly analyzed during system development.

1.6.14.10.4. Specifically, notify AFSEC of Program Lead System Safety Manager assignment and location.

1.6.14.10.5. Ensure level of support, training and experience of System Safety staff is appropriate for each Program.

1.6.14.10.6. Ensure all Center system safety managers annually report RM policies conforming to paragraph **11.1.3**, along with a current list of all Component Acquisition Executive (CAE)- or Program Executive Officer (PEO)-accepted risks for their programs. Provide a consolidated annual report for all programs to AF/SE and SAF/AQ.

1.6.14.10.7. Appoint a trained System Safety manager to act as the point of contact to facilitate system safety matters.

1.6.14.10.8. Air Force Materiel Command:

1.6.14.10.8.1. Ensures Centers document safety criteria and hazards identified during their efforts throughout the program life cycle. Provides support as required to ensure the responsible organizations include a safety hazard analysis with any development or modification to be evaluated, assessed or tested within AFMC and the using command.

1.6.14.10.8.2. Facilitates information exchange between AFMC Centers, HQ AFSEC and the user to maintain operational safety of AFMC managed weapon systems and end items.

1.6.14.10.8.3. Ensures AFMC/SES forwards to AFSEC/SEFE not later than 1 November in every even-numbered year, an update to the USAF Aviation Safety Equipment Database in the format described in paragraph **13.4,** *USAF Aviation Safety Equipment Database Reporting,* reflecting fleet status on the last day of the preceding fiscal year.

1.6.14.10.8.4. AFMC/SES is responsible for System Safety Engineering Analysis efforts but may delegate these as required.

1.6.14.10.8.5. AFMC/SES shall ensure each Center has a designated Center System Safety Manager (CSSM).

1.6.14.10.9. Air Force Space Command. Ensures launch and on-orbit hazards are identified. Provides input to the acquisition framework to ensure system safety is considered throughout the space system life cycle.

1.6.15. Air Education and Training Command (AETC):

1.6.15.1. Reviews new and revised technical training course specialty and job qualification training objectives and outlines to ensure safety requirements are being met.

1.6.15.2. Ensures mishap prevention programs and risk management concepts are embedded in technical training and Professional Military Education.

1.6.15.3. Incorporates AFOSH program orientation into training programs for officer and enlisted accessions and new civilian employees.

1.6.15.4. Develops and oversees safety training guidance for the development and management of formal technical training (non-flying), OJT, ancillary and additional duty training, automated training record and learning management systems, and Mission Readiness Training.

1.6.16. Program Managers organize their offices, based on system acquisition program size and complexity, to execute the system safety requirements elaborated by the DoD and Air Force in DoDI 5000.02, AFI 63-101/20-101, and MIL-STD-882E. Acquisition Category (ACAT) I Acquisition and Sustainment Program Managers integrate system safety into their program's overall Systems Engineering effort at the same level where day-to-day engineering decisions are being made. This allows System Safety professionals to most effectively influence system design.

1.6.16.1. Ensure that ESOH concerns are integrated into the overall systems engineering process using the system safety methodology in MIL-STD-882E, as required by DoDI 5000.02 and AFI 63-101/20-101. **(T-0)** The Program Manager appoints a System Safety Manager (SSM) to serve as the program focal point for the System Safety Program. **(T-0)**

1.6.16.2. Program offices must document and report status of all High-Risks and Serious-Risks as part of their risk management. **(T-1)** This information is also required to be documented in the PESHE (if a PESHE is required for the program). Applicable current High- and Serious-Risks must be presented at each Program and Technical Review. For High- and Serious-Risks, program managers must prepare a written risk decision package IAW paragraph **13.9,** *Preparation of Risk Assessments.* **(T-1)** Paragraph **13.9** is also recommended for all other risk assessments.

1.6.16.3. The Program Manager (PM) shall provide safety releases containing all identified hazards, implemented mitigation measures and accepted risks to developmental and operational testers as part of testing and fielding new or modified systems or end items prior to any test involving personnel. **(T-1).** As a minimum, the safety release will contain the information in paragraph **13.10,** *Safety Release.* **(T-1)**

1.6.17. System Safety Managers (SSMs) and System Safety Engineers (SSEs) will monitor operational experience, mission changes, environmental effects or system modifications to identify and correct hazards throughout the life cycle of a system or facility. **(T-1)** When a program (e.g., an aircraft or a space vehicle) has an embedded sub-program (e.g., an aircraft engine or hosted payload), which could create inter-related safety risk at the higher system

level, both program managers will ensure their Systems Engineering Plans include processes to identify inter-related safety risks and to integrate RM and mitigation efforts for safety risks. **(T-1)** When assigned to Program Offices, SSMs and SSEs:

1.6.17.1. Will have direct lines of communication to PMs to advise them on system safety matters. **(T-1)**

1.6.17.2. Must have introductory space safety course training when assigned to a program involved in the acquisition of a space system. **(T-1)**

1.6.17.3. Work within the Program Manager's organizational structure to perform system safety functions IAW the methodology in MIL-STD-882E. **(T-1)**

1.6.17.4. Integrate System Safety efforts with systems engineering and other functional areas within the program. **(T-1)**

1.6.17.5. Identify and assess safety hazards and risks throughout the program life.

1.6.17.6. Annually report safety RM policies, accepted risks and those that require PEO or higher action for their program to the Center System Safety Manager.

1.6.17.7. Incorporate safety requirements and design criteria into appropriate program documents. **(T-1)**

1.6.17.8. Work with Systems Engineering staff to provide System Safety risk assessments for program and technical reviews. **(T-1)**

1.6.17.9. Develop, recommend and oversee efforts to verify effectiveness of mitigation measures. **(T-1)**

1.6.17.10. Develop and implement tracking procedures for all identified hazards and mitigation measures. Document management decisions for acceptance of risks. **(T-1)**

1.6.17.11. Conduct SSGs/SSWGs meetings, when required, for their program. **(T-1)**

1.6.17.12. Prepare formal risk assessment packages for acceptance at the appropriate level IAW paragraph **13.9,** DoDI 5000.02, AFI 63-101/20-101 and MIL-STD-882E. **(T-0)**

1.6.17.13. Ensure System Safety requirements are clearly defined and presented to the appropriate decision authorities for integration into the Systems Engineering process for their program. **(T-1)**

1.6.17.14. As part of the preparations for fielding new or modified systems, ensure Air Force Operational Test Evaluation Center (AFOTEC), using commands and Air Force Sustainment Center Chief of Safety (AFSC/SE), as well as other validated stakeholders, are provided with a listing of all High- and Serious-Risks (and Low- and Medium-Risk on specific request), their mitigation measures, as well as risk assessment and acceptance documentation. **(T-1)**

1.6.17.15. SSMs shall participate in Configuration Control Boards (CCBs), deficiency review boards, Integrated Test Team, and other meetings where system safety concerns may be addressed. **(T-1)**

1.6.18. When assigned as a Center System Safety Manager (CSSM):

1.6.18.1. AFMC and AFSPC Centers will have a trained full-time CSSM in the center safety office, unless waived by MAJCOM System Safety Functional. **(T-1)** The CSSM should be level II acquisition certified.

1.6.18.2. If a center has a full-time system safety staff, the chief of this staff will be the CSSM. **(T-1)**

1.6.18.3. CSSMs should be members of applicable center senior engineering venues such as Acquisition Strategy Panel, to remain informed of top-level issues and provide cross-tell.

1.6.18.4. CSSMs or their designated staff members will be members or advisors of SSGs and Mishap Review Panels and CCBs. **(T-1) Note:** Full-time SSMs may represent system safety in lieu of the CSSM on program-unique CCBs, Mishap Review Panels and SSGs.

1.6.18.5. CSSMs will conduct annual meetings with all center system safety personnel to cover refresher training, cross-tell items, and new developments in system safety. **(T-1)**

1.6.18.6. The CSSM will coordinate on the safety portion of the PESHE for programs managed at the Center. **(T-1)**

1.6.18.7. CSSMs must provide annual overviews to the MAJCOM/SE and AF/SE on the safety RM policies and status of all risks requiring PEO or CAE action for all programs managed at their Center. **(T-1)**

1.6.18.8. Promote standardization through the cross-flow of best practices.

1.6.19. When assigned to Lead/Using Command, System Safety Officers, Managers and engineers:

1.6.19.1. Must be familiar with System Safety policy and guidance. **(T-1)**

1.6.19.2. Support the Initial Capabilities Document, Capability Development Document and Capability Production Document development effort IAW AFPD 90-8, *Environment, Safety, and Occupational Health Management and Risk Management.* Safety personnel must work with the Environmental and Bioenvironmental Engineering (BE) staffs to identify ESOH constraints as early as possible to prevent adverse impacts on command mission, base locations, operational use, support concepts or meteorological operating environments associated with systems.

1.6.19.3. Assist in coordinating user concurrence for safety risk acceptance decisions.

1.6.19.4. Interpret hazard data provided by the program manager for the system users.

1.6.20. Test Organizations. During both development and operational test and evaluation, test organizations will review and validate program office risk assessments for hazards that were not eliminated through redesign. **(T-1)** The test organizations will provide the using commands with their recommendations on program office risk assessments. **(T-1)** The test organizations and AFOTEC will provide to the program office a summary of the test hazards and the mitigating actions for all serious and high test hazards. **(T-1)**

1.6.21. Installation Commander:

1.6.21.1. Directs implementation and provides resources for the mishap prevention program. **(T-1)**

1.6.21.2. Provides safe and healthful workplaces for all installation personnel. **(T-0)**

1.6.21.3. Ensures leadership at all levels enforces safety and occupational health standards. **(T-1)** Based on assessment/evaluation results, identifies continuous improvement opportunities, goals and objectives via the Annual Program Management Review (APMR).

1.6.21.4. Promotes safety and occupational health awareness (e.g., culture, environment and atmosphere) and enforce personal accountability. **(T-2)**

1.6.21.5. Promotes and supports Airmen participation in safety and health program activities.

1.6.21.6. Provides incentives to Airmen for participation in Airmen-led safety and health program activities. **(T-3)** Refer to AFI 65-601V1, *Budget Guidance and Procedures,* for guidance regarding promotional or incentive gifts and awards, including exceptions.

1.6.21.7. Develops and implements safety and health programs and risk management processes that integrate hazard reduction and safety policy into on and off-duty operations and activities. **(T-1)**

1.6.21.8. Serves as chairperson of the ESOHC. **(T-1)** Refer to AFI 90-801 for additional information and guidance.

1.6.21.9. Reviews interim control measures and establishes funding priorities for master hazard abatement projects. **(T-2)**

1.6.21.10. Ensures safety and occupational health program requirements and mishap prevention are part of the measurement of group/squadron commanders and senior civilian supervisory personnel's performance appraisals using guidance provided by AF/A1. **(T-0)**

1.6.21.11. Minimizes assigning full-time safety personnel additional duties not directly associated with duties described in 91-series directives and their supplements. **Note:** This expectation should be applied to all safety offices, installation or tenant.

1.6.21.12. Ensures functional managers and supervisors (rather than the safety staff) take actions to mitigate hazards and reduce risk. **(T-2)**

1.6.21.13. Integrates safety and occupational health into all operations and missions of the installation's organizations. **(T-1)**

1.6.21.14. Emphasizes risk management and personal accountability. **(T-2)**

1.6.21.15. Ensures the installation safety office has established written procedures to define how to support OSHA representative(s) during official installation visits or inquiries. These procedures will be approved by the installation commander. **(T-1)**

1.6.21.16. Publishes guidance informing command personnel of expectations for safety and occupational health. **(T-1)**

1.6.21.17. Ensures commanders, functional managers, and requirements generators work with their responsible contracting and safety office to ensure all contracts require contractors and subcontractors (e.g., contract aircraft maintenance and grounds maintenance) to provide a contractor safety and health plan (as required) to the contracting office. **(T-1)** Additionally, promptly reports pertinent facts regarding mishaps involving

government personnel or property incidental to work performed as part of the Statement of Work that occur on or off an Air Force installation IAW AFI 91-204. **(T-1)**

1.6.21.18. Provides adequate funding and support for safety and occupational health program (e.g., funding for required safety training). **(T-1)** See 29 CFR § 1960.7, *Financial Management.*

1.6.21.19. Ensures an APMR is accomplished by the safety office IAW this instruction to determine Air Force Safety Management System (AFSMS) effectiveness and to make necessary changes to the future program elements as a means of continual improvement. **(T-1)**

1.6.21.20. Ensures safety personnel are properly trained to the appropriate level for deployment prior to being deployed.

1.6.21.21. Will review the annual calendar year (CY) OSHA 300 and sign the OSHA Form 300A for the OSHA establishment code related to their organization and delineated in AFSAS, no later than 31 January each year for posting by 1 February. **(T-0)** This task may be delegated to the vice commander or executive director. **Note:** Tenant units on Air Force installations with full-time qualified safety personnel except those defined in paragraph **1.6.22.5** will be responsible for producing their own OSHA 300 and 300A to include posting of the form. Codify this responsibility in the related host/tenant support agreement. **(T-1)** At all joint bases, this responsibility will be codified in the formal Inter-Service Memorandum of Agreement (MOA). **(T-1)** Any tenant unit safety staff generating their own OSHA 300 and 300A will send a courtesy copy to the installation safety office**. (T-1)**

1.6.21.22. Serves as chairperson for OSHA visit meetings to the installation. **(T-2)** This may be delegated to the vice commander or Chief of Safety. Ensures proper coordination and is the final signature on official responses from the installation to OSHA. **(T-1)** The final signature may be delegated no lower than the vice commander.

1.6.21.23. Convenes safety investigations IAW AFI 91-204. **(T-1)** The commander may appoint all personnel in their safety office as Investigating Officers for Class C – E events, to be detailed to specific investigations by the Chief of Safety. Commander appointments should be in writing when possible.

1.6.21.24. Promotes a Just Culture which provides Airmen an environment where they can report hazards, near misses, work-related injuries, and illnesses without fear of reprisal. **(T-1)**

1.6.22. Installation Safety Office:

1.6.22.1. Oversees implementation of the mishap prevention program. **(T-2)**

1.6.22.2. Advises commanders, functional managers, supervisors, and employees on safety matters. **(T-1)**

1.6.22.3. Provides safety office member as an active participant of the FECA working group, if one is held at the installation. **(T-2)** Lends support to specific issues and assists with problem solving at other base meetings, e.g., Aerospace Medicine Council, Occupational and Environmental Health Working Group, Sports Council, etc.

1.6.22.4. Manages proactive on and off-duty safety programs, focusing on identifying and mitigating latent conditions, which are deficiencies within the organization or supervision negatively affecting job performance, hazards or mishap outcome. **(T-2)**

1.6.22.5. Conducts safety program assessments and inspections of their command subordinate units, both local and geographically separated. **(T-1)** Conducts the annual safety inspection of tenant units without a full time safety staff or as otherwise specified IAW Support Agreements. **(T-1)** The tenant unit inspection will include a validation of job safety training and documentation at least every two years. Tracks open findings and discrepancies until closure. **(T-1) Note:** Installation will not perform safety program assessments or inspections of tenant organizations with full-time safety staff, unless otherwise specified in host/tenant support agreement. **(T-1).** HAF, MAJCOM, AFOTEC, NAF and Center safety offices are not configured as a traditional safety office IAW the latest version of the Air Force Manpower Standard (AFMS) and are, therefore, treated as a tenant unit without an assigned safety staff. They will follow the installation program unless otherwise specified in a host/tenant support agreement. **(T-1)** Special consideration may be needed for Guard or Reserve safety offices with only traditional Guardsmen or Reservists.

1.6.22.6. Ensures appropriate assignment of OPRs or Offices of Collateral Responsibility for mishap recommendations and that they are notified and actively manage the recommendations through closure, providing status updates as outlined in AFI 91-204. **(T-1)**

1.6.22.7. Manages installation master hazard abatement program. Assigns RACs to safety hazards and coordinates with health and fire protection officials when required. **(T-1)**

1.6.22.8. Processes hazard reports and manages the hazard reporting process. **(T-1)**

1.6.22.9. Conducts safety education programs and provides assistance to supervisors in developing Job Safety Training Outlines (JSTOs) and Job Hazard Analyses (JHAs). Completes Part 4 of AF Form 1754, *Job Capability and Safety Analysis*, when submitted by Medical Treatment Facility (MTF). **(T-1)**

1.6.22.10. Reviews airfield waiver packages, to include airfield construction phasing/safety plans. **(T-2)**

1.6.22.11. Oversees Bird/Wildlife Aircraft Strike Hazard (BASH) programs in coordination with Airfield Manager, flying operations and civil engineering. **(T-1)**

1.6.22.12. Ensures mishaps are properly investigated and reported IAW AFI 91-204 and discipline specific manuals (e.g., AFMANs 91-221, 222, 223, 224). **Exception:** Tenant units with full-time safety staff will investigate and report mishaps for their unit. **(T-1)** Assigns safety office personnel to specific Class C-E mishap investigations when the commander has appointed those personnel as the investigating officer.

1.6.22.13. Ensures all personnel with access to privileged safety information receive annual training on the proper handling procedures and documents the training. **(T-1)** For those with AFSAS accounts, training may be recorded in their AFSAS Training Module.

1.6.22.14. Maintains a list of potential Safety Investigation Board (SIB) members who have completed the formal training requirements according to AFI 91-204 and discipline

specific manuals (e.g., AFMANs 91-221, 222, 223, 224), and provides a copy to MAJCOM/SE when requested, through the NAF or Center safety office, as applicable. In addition, maintains a list of potential medical consultants for SIBs such as Psychologists, Flight Surgeons, and Aerospace and Operational Physiologists (AOP)/Aerospace and Operational Physiology Technicians who have completed Aircraft Mishap Investigation and Prevention (AMIP), Aircraft Mishap Investigation Course (AMIC) or the Mishap Investigation Non-Aviation (MINA) course. **(T-2)**

1.6.22.15. Provides identified potential Interim Safety Board (ISB) and SIB members training annually on the basics of mishap investigation. **(T-1) Note:** This requirement is applicable to AFRC units who have identified individuals as potential ISB members or have established ISB support responsibilities through MOA/Memorandum of Understanding (MOU). This annual training is also required for Psychologists, Flight Surgeons, and Aerospace and Operational Physiologists/Aerospace and Operational Physiology Technicians, who have completed at least one of the following courses: AMIP, AMIC or MINA. **(T-1)**

1.6.22.16. Develops and coordinates the Mishap Response Plan, addressing all disciplines, in conjunction with Installation Emergency Manager for integration with the overall Installation Emergency Management Plan. **(T-1)** The plan will define roles, responsibilities and notification requirements for leadership and all involved agencies. **(T-1)** Reviews other emergency plans and procedures to include, but not limited to: SAFE HAVEN, SAFE PARKING, Hazardous Material (HAZMAT) and disaster response required by AFI 10-2501, *Air Force Emergency Management Program.* Ensures safety concerns, procedures, notification, etc., are addressed. The Installation Emergency Management Plan should include elements of and reference existing plans concerning the following (paragraph **13.5,** *Mishap Response*):

1.6.22.16.1. Disaster response required by AFI 10-2501.

1.6.22.16.2. HAZMAT response required by AFI 10-2501.

1.6.22.16.3. Response to aircraft in-flight and ground emergencies.

1.6.22.16.4. Response to severe weather watches and warnings.

1.6.22.16.5. Crash recovery plans.

1.6.22.16.6. Notifying and convening investigation boards.

1.6.22.16.7. Procedures for missing aircraft.

1.6.22.16.8. Procedures and training for extracting crewmembers from local and common transient aircraft.

1.6.22.17. Provides mishap prevention and education material to subordinate and tenant units. **(T-1)**

1.6.22.18. Accomplishes explosives siting requirements according to AFMAN 91-201, *Explosives Safety Standards*. Conducts review of base comprehensive plan map in conjunction with Civil Engineering (CE). **(T-1)**

1.6.22.19. Assists responsible commanders and supervisors to ensure plans, procedures, facility and equipment modifications/acquisitions, hardware, software and operations

receive a safety review based on RM and hazard elimination/mitigation. **Note:** Safety staff qualifications may preclude hardware and software safety reviews. **(T-2)**

1.6.22.20. Functions as the primary point of contact and process manager for all OSHA related activities. **(T-2)** This includes cross-functional management of all federal and state OSHA visits to the installation, OSHA requests for self-investigations/inspections, and recordkeeping responsibilities, to include Employees' Compensation Operations and Management Portal. Assigns roles to OSHA cross-functional representatives as needed, including tenant unit safety office when the OSHA event involves the tenant unit. **(T-2)** Upon request from OSHA, provide copies of AF Forms 978, *Supervisor's Preliminary Mishap/Incident Report*, and/or OSHA Rapid Response Reports. **(T-0)** Refer to paragraph **13.3,** *Federal/State Inspections of DoD Working Conditions and Mishap Investigations,* for additional information.

1.6.22.21. In collaboration with Bioenvironmental Engineering (BE), assists the contracting officer through the Multi-Functional Team (MFT) as needed to ensure that the contractor safety and health plan includes all required elements identified in the Performance-Based Work Statement. The contractor is directly responsible for complying with federal and state OSHA standards for its employees. **(T-1)**

1.6.22.22. Administers the Safety Awards Program IAW AFMAN 36-2806 to ensure proper recognition of personnel. **(T-2)**

1.6.22.23. Create annual program management review report. See paragraph **3.5** and paragraph **13.2,** *Annual Program Management Review,* of this instruction. **(T-1)**

1.6.22.24. Documents duties delegated among installation and tenants in a MOA or similar formal document, with tenant/joint base organizations' responsibilities spelled out. **(T-2)**

1.6.22.25. Employs the Occupational Safety Manager to act as initial Evaluating Agent during the 1S0X1 retraining evaluation process. Refer to paragraph **14.4**, 1*S0X1 Retrainee Evaluation Process.*

1.6.22.26. Supports installation planning and execution of Air Force Open Houses as described in AFI 10-1004, *Conducting Air Force Open Houses.* **(T-2)**

1.6.22.27. Installation safety offices may not impose installation command-unique requirements on tenant units unless specified in the applicable support agreement. Tenant USAF units without full-time safety authorizations receive the same safety services as installation subordinate units. (**Note:** HAF, MAJCOM, AFOTEC and NAF safety offices are not configured as a traditional safety office IAW latest AFMS and are, therefore, treated as a tenant unit without an assigned safety staff. They will follow the installation program unless otherwise specified in a host/tenant support agreement.) **(T-1)** Support Agreements will identify and delineate responsibilities. Non-USAF tenant units may be provided safety services based on support agreements IAW DoDI 4000.19, *Support Agreements,* and AFI 25-201, *Intra-Service, Intra-Agency, and Inter- Agency Support Agreements Procedures.* **Note:** Installations may require reimbursement for services provided.

1.6.23. Installation Contracting Office:

1.6.23.1. Directs implementation and provides resources to support the installation contracting role within the mishap prevention program. **(T-2)**

1.6.23.2. Ensures provisions for safety clauses are included in the contract solicitation IAW FAR/DFARS/AFFARS, including the Air Force Federal Acquisition Regulation Supplement Clause 5352.223-9001, *Health and Safety on Government Installations.* **(T-0)**

1.6.23.3. Ensures contractor's past performance in safety is a consideration during the selection process for those contractors whose employees are expected to work on a government installation(s) more than 1,000 hours per quarter (this may include a comparison of the contractor's three year total recordable incident rate and three year days away, restricted and/or transfer case incident rate to the most recently published Bureau of Labor Statistics national average for the specific National American Industry Classification System or other similar information). **(T-2)**

1.6.24. Installation Medical Wing/Group Commanders:

1.6.24.1. Direct implementation and provide resources to support the installation medical role within the mishap prevention program. **(T-1)**

1.6.24.2. Ensure comprehensive and coordinated occupational and environmental health surveillance and education programs are established and implemented. **(T-1)**

1.6.24.3. Ensure patient safety programs are developed and fully implemented in compliance with DoDM 6025.13-R, *Medical Quality Assurance (MQA) and Clinical Quality Management in the Military Health System (MHS)*, AFI 44-119, *Medical Quality Operations*, and appropriate civilian standards. **(T-0)**

1.6.24.4. Ensure timely notification to the installation safety office, or other safety office(s) per support agreements, for any injury producing events that occurred to military members (on-duty and off-duty), and DoD civilians on-duty IAW AFI 44-102, *Medical Care Management*. At a minimum, the following medical information will be released to fulfill requirements for OSHA injury reporting as defined in 29 CFR Part 1904:

1.6.24.4.1. Name of the injured individual. **(T-0)**

1.6.24.4.2. Organization. **(T-0)**

1.6.24.4.3. Date of injury. **(T-0)**

1.6.24.4.4. Date of treatment. **(T-0)**

1.6.24.4.5. Diagnosis of injury, a brief description of the nature of the injury. (Use latest version of International Classification of Disease codes). **(T-0)**

1.6.24.4.6. Severity of injury, whether the treatment given was greater than first aid (as defined by 29 CFR 1904.7 (b) (5) (i)), if the individual was placed on quarters (and how long) and if the individual was hospitalized and the estimated hospital duration **(T-0)**

1.6.24.5. Consistent with AFI 41-200, *Health Insurance Portability and Accountability Act (HIPAA)*, medical information will be released to safety personnel for military members treated in the MTF for on-duty or off-duty injuries, and for civilian members treated in the MTF for on-duty injuries. **(T-0)**

1.6.24.6. When the MTF discovers that injured individuals (military on-duty or off-duty and civilian on-duty) are seen at a civilian hospital or clinic, as much injury information

listed above that is obtained will be reported to safety. **(T-0)** IAW DoDM 6025.18, *Implementation of the Health Insurance Portability and Accountability Act (HIPAA) Privacy Rule in DoD Health Care Programs*, all disclosures to the safety office must be documented by the MTF and kept by the MTF for a period of six years. **(T-0)**

1.6.24.7. MTF Covered Entities should develop local policy in coordination with their assigned Medical Law Consultant.

1.6.24.8. Ensure occupational illnesses are thoroughly investigated and reported using the Occupational Illness Module and AFSAS. **(T-1)**

1.6.24.9. As applicable, ensures the Bioenvironmental Engineer or Public Health officer, attends all federal/state official in-briefs and out-briefs, accompanies officials during all health-related inspections/investigations.

1.6.24.10. The Chief of Aerospace Medicine (SGP) or Occupational Medicine physician:

1.6.24.10.1. Provides oversight for the occupational health program and ensures medically appropriate risk assessment and medical surveillance activities are conducted IAW AFI 48-101, *Aerospace Medicine Enterprise*, AFI 48-145, *Occupational and Environmental Health Program*, DoD 6055.05-M, *Occupational Medical Examinations and Surveillance Manual*, and 5 CFR Part 339, *Medical Qualification Determinations.* **(T-0)**

1.6.24.10.2. Provides consultative services on occupational and environmental health and safety issues that affect the framework of the AFSMS. **(T-2)**

1.6.24.10.3. Provides urgent clinical services for occupational injuries and occupational illnesses in DoD civilian employees. Performs routine surveillance, periodic evaluation, fitness for duty evaluations, pre-placement evaluations and disability evaluations IAW AFI 48-101, AFI 48-145, DoD 6055.05-M and 5 CFR Part 339. **(T-0)**

1.6.24.10.4. Maintains a list of Flight Surgeons who are potential medical officers on ISBs or SIBs and track the dates of the AMIP training and previous SIB experience. **(T-1)** In addition, tracks Psychologists, and Aerospace and Operational Physiologists/Aerospace and Operational Physiology Technicians, who have completed AMIP, AMIC, MINA or Aviation Safety Program Management (ASPM) courses. Provides a list to installation Chief of Safety, MAJCOM/SGP, and appropriate agencies. **(T-1)** Ensures Flight Surgeons, trained Psychologists, Aerospace and Operational Physiologists, and Aerospace and Operational Physiology Technicians are trained annually on the basics of mishap investigation and privilege by the installation safety staff or flight safety officer (FSO). **(T-2)**

1.6.24.10.5. Attends the FECA Working Group, if one is held at the installation. Medical participation in FECA program will be IAW DoDI 1400.25-V810, *DoD Civilian Personnel Management System: Injury Compensation.* Participates in military and civilian lost work/duty time initiatives. **(T-1)**

1.6.24.10.6. Accomplishes additional occupational health and safety responsibilities as delineated in AFI 48-101. **(T-2)**

1.6.24.11. Flight Surgeons/Aerospace and Operational Physiologists (AOP)/ Aerospace and Operational Physiologists Technicians.

1.6.24.11.1. Direct implementation and provide resources to support the installation medical role within the mishap prevention program. **(T-2)**

1.6.24.11.2. Provide human performance and human factors analysis on identified hazards and evaluate controls to reduce or mitigate risks. **(T-2)**

1.6.24.11.3. Support the wing's aircrew flight equipment and flying safety programs. **(T-2)**

1.6.24.11.4. Assist in targeted occupational safety improvements, training of safety staff and unit safety representatives in human factors and human factors hazard mitigation strategies. **(T-1)** Provide consultant services for safety activities and investigations. **(T-1)**

1.6.24.11.5. Support wing RM, crew resource management, and maintenance resource management programs to optimize war fighter performance and safety in the operational environment. **(T-2)**

1.6.24.11.6. Act as Human Systems Integration consultants for aircraft, space, weapons and Warfare Centers at the wing level. **(T-2)**

1.6.24.11.7. Provide ISB/SIB members for military mishaps IAW AFI 91-204 and its related AF Manuals. **(T-1)**

1.6.24.12. Bioenvironmental Engineering (BE):

1.6.24.12.1. Manages the occupational and environmental health surveillance programs IAW AFI 48-145 and AFMAN 48-146, *Occupational and Environmental Health Program Management*. Identify health-related deficiencies and assign health-related RACs. **(T-1)**

1.6.24.12.2. Conducts occupational and environmental health evaluations and health risk assessments of workplaces, maintains survey reports, as required (IAW DoDI 6055.05, *Occupational and Environmental Health*), and provides access to all documents at request by the employee, supervisor or union representative as permitted by governance such as the Privacy Act, Freedom of Information Act, etc. **(T-0)**

1.6.24.12.3. Performs health risk assessments and notifies the applicable safety office of assigned health RACs 1-3. **(T-1)**

1.6.24.12.4. Maintains access to pertinent health-related OSHA standards/ guidelines, Air Force requirements, and other OSHA guidelines pertaining to occupational health. **(T-0)**

1.6.24.12.5. Attends all federal/state official (Federal OSHA, State OSHA, NIOSH, Environmental Protection Agency, etc.) in-briefs and out-briefs, accompanies inspectors during all health-related inspections/investigations. As applicable, the Bioenvironmental Engineer, provides occupational health subject matter expertise consultation to a unit receiving a OSHA Notice of Unsafe or Unhealthful Working Conditions. **(T-2)**

1.6.24.12.6. Determines the need for and adequacy of occupational health-related personal protective equipment (PPE), engineering controls, substitution and administrative controls to reduce exposures. **(T-1)**

1.6.24.12.7. Maintains the ability to provide Safety Data Sheets upon request for all hazardous materials used in the industrial workplaces on the installation. **(T-1)**

1.6.24.12.8. Provides radiological protection program management as the installation radiation safety officer, when appointed, IAW AFI 48-148, *Ionizing Radiation Protection.* **(T-1)**

1.6.24.12.9. As needed, provides a representative to the FECA Working Group to offer BE-rated expertise. **(T-2) Note:** At non-collocated AFRC installations BE is the full-time BE/Public Health Office that is aligned under the Mission Support Group. At collocated AFRC Wings/Groups, where regular Air Force is host and AFRC units are tenant, BE is aligned under the regular Air Force Military Treatment Facility (MTF). A Host/Tenant Support Agreement between the regular Air Force installation and AFRC tenant shall outline support provided by the regular Air Force BE Flight to AFRC units.

1.6.24.12.10. Identifies and manages health-related RACs using the Defense Occupational and Environmental Health Readiness System while also meeting the requirements of the installation master hazard abatement plan process procedures. **(T-1)**

1.6.24.13. Public Health:

1.6.24.13.1. Communicates occupational health education requirements and available resources to supervisors. Responsible as the initial point of contact for occupational medical monitoring. **(T-1)**

1.6.24.13.2. Reports cases of occupational illness to the installation occupational safety office through AFSAS. **(T-1)**

1.6.24.13.3. Investigates and reports occupational illness IAW AFI 91-204. **(T-1)**

1.6.24.13.4. Provides a representative to actively participate in the FECA working group (if one exists) and the ESOHC to provide consultation on epidemiology, occupational illnesses, and other occupational health program areas. **(T-1)**

1.6.24.13.5. Attends all federal/state official in-briefs and out-briefs, accompanies officials during all health-related inspections/investigations. As applicable, the Public Health officer provides occupational health subject matter expertise consultation to a unit receiving a OSHA Notice of Unsafe or Unhealthful Working Conditions. **(T-2)**

1.6.24.14. Psychologists who are AMIP, AMIC or ASPM trained or have completed a post-doctoral fellowship in operational psychology will work in conjunction with Flight Surgeons to provide consultant services on human factors investigations and analysis of military aircraft mishaps. **(T-2)**

1.6.25. Installation Civil Engineer:

1.6.25.1. Directs implementation and provides resources in support of the civil engineering role within the mishap prevention program. **(T-1)**

1.6.25.2. Provides cost data and status information on hazard abatement actions associated with real property facilities and real property installed equipment. **(T-2)** Coordinates corrective actions with the applicable installation and/or tenant unit safety office. **(T-2)**

1.6.25.3. Coordinates siting and construction plans with the installation safety office and ensure explosives site plans have been approved before beginning construction as required in AFMAN 91-201. **(T-1)**

1.6.25.4. Ensures an environmental review and coordinates new construction, facility modification projects or work request documents with installation safety, fire protection, environmental management, and BE offices. **(T-2)** Also, ensures they are included in associated project approval, design review meetings and acceptance inspections. **(T-2)**

1.6.25.5. Notifies safety, environmental management, BE and fire protection offices of major base maintenance projects, e.g., digging permits, road markings, welding projects outside the CE shops. **(T-2)**

1.6.25.6. Ensures RACs are incorporated into project prioritization for corrective actions. **(T-2)**

1.6.25.7. Coordinates airfield waiver packages with airfield manager, installation or applicable safety office, and installation commander. **(T-2)**

1.6.25.8. Performs fire investigations IAW DoDI 6055.07 and AFI 91-204. **(T-0)**

1.6.25.9. Provides traffic engineering expertise. **(T-2)**

1.6.25.10. Teams with the MFT to ensure contractor operations are compliant with safety and health requirements of the contract. **(T-2)**

1.6.25.11. Provides a foundation informational map and facility data (common installation picture and real property inventory) for safety offices to apply and publish their unique map(s). Any changes to common installation picture or real property inventory data must be coordinated with the installation safety office. **(T-1)**

1.6.25.12. Attends all federal/state official in-briefs and out-briefs, accompanies officials during all fire-related inspections/investigations. As applicable, the Fire Department provides subject matter expertise consultation to a unit receiving a OSHA Notice of Unsafe or Unhealthful Working Conditions. **(T-2)**

1.6.26. Installation Security Forces Commander.

1.6.26.1. Directs implementation and provides resources to support the security forces role within mishap prevention program. **(T-1)**

1.6.26.2. Provides the Chief of Safety and/or Occupational Safety Manager (OSM) a copy of Security Forces (SF) blotter entries involving injury or death resulting from a mishap, motor vehicle mishaps (government or private motor vehicle), property damage as a result of a mishap, and any others as deemed appropriate by the SF commander. **(T-1)** Provides completed investigation reports when requested by the Chief of Safety or OSM. Blotter entries may be retrieved electronically or through the appropriate SF office after they have been processed.

1.6.26.3. Notifies command post of all safety related issues as determined in a locally devised installation notification matrix. **(T-1)**

1.6.26.4. Upon request from Chief of Safety or occupational safety (installation or tenant unit), coordinates with local or state law enforcement to obtain off-base traffic accident reports and/or data. **(T-1)**

1.6.26.4.1. Traffic accident reports may include vehicle accident involving death or serious injury to a military member, DoD civilian or dependent of regular Air Force member.

1.6.26.4.2. Traffic accident data may include areas which are identified as high traffic incident areas or areas which travel is deemed unsafe (as deemed by the installation commander) under certain conditions.

1.6.27. Commanders other than the installation commander:

1.6.27.1. Direct implementation and provide resources for the mishap prevention program. **(T-1)**

1.6.27.2. Implement a safety and health program in their unit or area of responsibility. Where commanders are not authorized full-time safety personnel, they will appoint a primary and alternate Unit Safety Representative (USR) to assist them in implementing their safety program. **(T-1)** Notify the installation safety office, in writing, of the appointment of USRs in order to schedule USRs for training. **(T-1)**

1.6.27.3. Ensure safety and health training, to include risk management, is provided to all personnel based on requirements from regulatory guidance, and the specific needs of the organization. **(T-1)**

1.6.27.4. Implement and use RM principles at all levels within the unit. **(T-2)**

1.6.27.5. Ensure a proactive mishap prevention program is implemented to include procurement and proper use of PPE, and facility compliance with AFOSH guidance and OSHA standards. **Note:** Overseas installations will also need to consider host nation standards. **(T-0)**

1.6.27.6. Ensure hazard abatement actions needed to control identified hazards are implemented and follow-up actions are complete. Update fire, safety and BE offices, as appropriate, on abatement actions every 180 days until the hazard(s) is abated. **(T-1)**

1.6.27.7. Ensure request for equipment, products and services using purchase orders and/or Government Purchase Card are reviewed for potential safety and health impact IAW AFI 64-117, *Air Force Government-Wide Purchase Card (GPC) Program*, and AFI 32-7086, *Hazardous Materials Management*. **Note:** Ensure government purchase card program addresses requirement to coordinate purchase of hazardous chemicals, munitions and industry equipment through the installation safety office. **(T-2)**

1.6.27.8. Establish a management strategy integrating safety and health into all operations and missions and ensure functional managers and supervisors take actions to mitigate hazards and reduce risk. **(T-1)**

1.6.27.9. Ensure all personnel are briefed on the findings and recommendations contained in occupational and environmental health risk assessments and reports. **(T-0)** A copy of the

survey report will be posted in a conspicuous location in the workplace for a period of 10 days after receipt to allow all employees free access to the findings. **(T-0)** These reports will be maintained on file in the workplace for a minimum of two years. **(T-0)**

1.6.27.10. Provide the opportunity for Airmen to participate in safety and health program activities and/or committees. **(T-1)**

1.6.27.11. Communicate safety and health expectations to personnel in their command and hold them accountable for compliance with applicable standards. **(T-1)**

1.6.27.12. Encouraged to establish an off-duty High Risk Activities Program to ensure personnel participating or planning to participate in high-risk activities take appropriate safety measures to reduce the likelihood of their involvement in a mishap. High risk activities are defined in **Attachment 1,** while paragraph **15.4,** *Air Force Off-Duty High Risk Activities Program,* contains sample guidance for those units that may adopt the optional program. **Note:** MAJCOMs can define their own list of high risk activities. Briefings may be documented on AF Form 4391, *High Risk Activities Worksheet.* If commanders or supervisors at any level choose to make this program mandatory it will apply only to regular Air Force personnel.

1.6.27.13. Appoint Motorcycle Safety Representatives IAW AFI 91-207, *The US Air Force Traffic Safety Program*. **(T-1)**

1.6.27.14. Should ensure their safety office, if authorized one, accomplishes an APMR IAW this instruction.

1.6.27.15. Ensure applicable OSH guidance for the workplace and operations are available to personnel. **(T-2)**

1.6.27.16. Ensure their unit complies with the installation safety office procedures for OSHA related events on the installation. **(T-2)**

1.6.27.17. Ensure representation at all unit/organization related federal/state official in-briefs and out-briefs, during all inspections/investigations. Ensure a unit receiving an OSHA Notice of Unsafe or Unhealthful Working Conditions consults with the applicable subject matter expert and crafts any related correspondence to OSHA in preparation for the Installation Commander's endorsement and release.

1.6.27.18. Commanders of Operational Units.

1.6.27.18.1. Support, as appropriate, participation in SSGs and SSWG meetings to identify risks and hazards.

1.6.27.18.2. Coordinate issues affection System Safety with the MAJCOM Representatives, the Program Office, the System Safety Group, and AFSEC as appropriate.

1.6.27.18.3. Ensure the unit risk management effort uses Program Manager's System Safety hazard information in its risk assessments, as appropriate.

1.6.28. Work Center/Shop Supervisors:

1.6.28.1. Direct implementation and provide resources for the mishap prevention program **(T-0)**

1.6.28.2. Understand and enforce the safety and health standards that apply to their areas, operations and operations involving their subordinates. **(T-0)** Demonstrate knowledge of their roles and responsibilities with relation to risk management and mishap prevention. **(T-0)**

1.6.28.3. Shall not require personnel to work in environments and conditions hazardous to their safety or health without first providing adequate elimination, substitution, engineering controls, administrative controls, and/or PPE. **(T-0)**

1.6.28.4. Shall provide safe working conditions by:

1.6.28.4.1. Ensuring required guards, interlocks, enclosures, other protective equipment and tools are provided, used, properly maintained, and inspected daily prior to use. **(T-0)**

1.6.28.4.2. Providing required safety related training. **(T-0)**

1.6.28.4.3. Providing proper required PPE. **(T-0)**

1.6.28.4.4. Exercising control over job tasks to ensure personnel follow all precautions and safety measures, including the proper use of PPE. **(T-0)**

1.6.28.4.5. Taking immediate action to correct any violation of safety rules observed or reported to them. **(T-0)**

1.6.28.4.6. Ensuring actions are taken to promptly eliminate hazards and correct deficiencies, and ensure any hazards identified by an AF Form 1118, *Notice of Hazard*, are added to the JSTO and employees are trained on the interim control measures and documented IAW paragraph **14.1,** *Job Safety Training Outline (JSTO).* **(T-1)**

1.6.28.5. Use risk management techniques to analyze work environment and job tasks for hazards. Conduct a Deliberate Risk Assessment or JHA of job tasks as required to determine potential hazards for each work task. It shall be accomplished when new equipment is installed, equipment is modified/relocated or new procedures are implemented in critical or hazardous operations **(T-1)** Refer to paragraph **13.6,** *Job Hazard Analysis (JHA)*, for additional guidance.

1.6.28.6. Ensure employees exposed or potentially exposed to hazardous chemicals or materials are trained on the hazards of those chemicals and materials per AFI 90-821, *Hazard Communication*, including information from the Safety Data Sheet for each chemical or material used. **(T-0)** BE and installation occupational safety office shall be consulted for selection of PPE. In addition, ensure work center/shop is authorized to be used IAW AFI 32-7086. **(T-0)**

1.6.28.7. Develop a work center-specific JSTO based on paragraph **14.1** on safety, fire protection/prevention and health requirements. **(T-0)** Documents will be maintained and centrally located, readily available to supervisor and individual. **(T-0)** The mandatory items can be documented as one item, i.e., course code for JSTO mandatory training. Job specific items and any additional training identified in a BE survey will be documented individually, as appropriate. **(T-0)**

1.6.28.7.1. Methods of documentation may include, but are not limited to, the AF Form 55, *Employee Safety and Health Record*, electronic mediums such as AFFORMs/MAF

LOG C2/G081 or locally developed products. If the AF Form 55 is mandated for use as the training documentation device, the entity that mandated the form usage will prescribe the requirement in writing to include entries that require signatures, e.g., HAZCOM, respirator, powered industrial trucks, lockout/tagout, fall protection, confined spaces, radiation safety, laser safety, etc. **(T-0) Note:** Training requirements vary, i.e., some documents may require the signature of the supervisor or the person who conducted the training, while other documents may require the initials of the individual (trainee) and trainer/supervisor.

1.6.28.7.2. Documentation will contain the following minimum data: trainee name (last, first, middle initial), type of training and date of training. **(T-1)** Neither the trainer nor trainee signature is required unless specified in writing by the applicable chain of authority. **Note:** If the Maintenance Information System cannot support minimum documentation requirements, then it is not suitable as a documentation product.

1.6.28.8. Provide and document work area specific safety, fire protection and health OJT to all DoD employees and volunteers before assigning them duty tasks requiring this training. **(T-0)** This includes OSHA, AFOSH directives, AFPDs, AFIs, AFMANs, etc. Review JSTO annually, update and retrain employees when new tasks or equipment are added, or when existing tasks change, whichever comes first. **(T-0)**

1.6.28.8.1. The home station supervisor shall ensure a copy of the documented training is sent with the deploying personnel and the deployed supervisor shall collect the documentation from the deployed individual. **(T-1)**

1.6.28.8.2. Ensure subordinates receive a safety briefing from the temporary duty (TDY) locations safety staff on known hazards associated with TDY locations. **(T-1)** Provide and document job safety training at the TDY locations as specified in paragraph **1.6.28.13** **(T-1)** The TDY supervisor will ensure the individual is provided a copy of the documented training to return to the home station supervisor. **(T-1)**

1.6.28.9. Planned workloads will be assigned to qualified employees ensuring they understand the work to be completed along with the potential hazards and abatement for those hazards. **(T-0)**

1.6.28.10. Report all mishaps that occur on-duty and all off-duty mishaps involving assigned military personnel, and related subsequent Airmen absences to the supporting safety office IAW AFI 91-204**. (T-0)** The AF Form 978 will be used to document Ground, Motor Vehicle and Afloat mishaps to the Unit Commander and the Installation Safety Office. **(T-1)** Use of the AF Form 978 for mishap reporting within the Aviation, Weapons, and Space disciplines is optional. For appropriated and Non-Appropriated Fund Air Force employee occupational injuries and illnesses, supervisors will complete the required Compensation Act/Longshore (CA/LS) forms IAW the servicing civilian personnel office or Non-Appropriated Fund Human Resources Office processes. **(T-0)**

1.6.28.11. Ensure AF Form 1118 issued by qualified safety, fire protection or BE officials is posted to alert personnel to the hazardous conditions and interim control measures. **(T-1)**

1.6.28.12. Accomplish Air Force Supervisor Safety Training. **(T-1)**

1.6.28.12.1. Attend Supervisor Safety Training course as scheduled by applicable safety office. **(T-1)**

1.6.28.12.2. Prior to attending, supervisors will complete the Supervisor Safety Training computer-based training located on Air Force Distributed Learning Service (ADLS) and bring their completion certificate to the classroom portion of the course. **(T-1)**

1.6.28.13. Consider providing an interactive pre-departure safety briefing to all active duty regular Air Force military personnel, reserve component personnel in a duty status and civilian personnel performing official duties scheduled for travel outside the local area. Refer to paragraph **15.3,** *Pre-Departure Travel Safety (Examples Only)*, for recommended guidance.

1.6.28.14. Conduct and document monthly spot inspections of their work areas IAW paragraph **3.7** of this instruction. **(T-1)**

1.6.28.15. Upon notification that a military employee is pregnant, direct the employee to report to Public Health immediately in order to ensure they receive appropriate education. **(T-1)**

1.6.28.15.1. Ensure a workplace evaluation is scheduled and completed. **(T-1)**

1.6.28.15.2. Advise pregnant civilian employees of the same opportunities so they may choose to take advantage of the program, if desired. **(T-1)**

1.6.28.16. Provide employees an environment where they can report work-related injuries and illnesses without fear of reprisal. **(T-0)**

1.6.28.17. Will encourage and support employee participation in safety and health program activities and/or committees. **(T-1).**

1.6.28.18. Ensure personnel requiring occupational health medical examinations attend scheduled medical appointments. **(T-0)**

1.6.28.19. Ensure safety program requirements are part of measurement of non-supervisory personnel's performance appraisals using guidance provided by AF/A1. **(T-1)**

1.6.28.20. Ensure applicable OSH guidance for the workplace and operations are available to personnel. **(T-1)** Supervisors at Outside Continental United States locations shall ensure applicable host-nation safety guidance is available. **(T-1) Note:** Electronic or paper products are acceptable.

1.6.28.21. Complete an OSHA Rapid Response Report when requested by safety staff and return to safety office by their suspense date. **(T-1)** See paragraph **13.3**

1.6.28.22. When delegated by unit commander, attends all work center related federal/state official in-briefs and out-briefs, accompanies officials during all inspections/investigations and ensures a work center receiving a OSHA Notice of Unsafe or Unhealthful Working Conditions crafts any related correspondence to OSHA in preparation for the installation Commander's endorsement and release. **(T-1) Note:** Also, when delegated by unit commander, ensures a work center receiving a OSHA Notice of Unsafe or Unhealthful Working Conditions consults with applicable subject matter expert(s). **(T-1)**

1.6.29. Airmen. An all-encompassing term used to indicate all Department of the Air Force members, both uniformed military and DoD civilian employees working for the Air Force. Airmen shall:

1.6.29.1. Comply with all occupational safety and health instructions, guidance, technical orders, job guides and operating procedures. **(T-0)**

1.6.29.2. Apply RM principles in both on-duty and off-duty activities to enhance the safety and well-being of themselves and other personnel. **(T-1)**

1.6.29.3. Assess personal safety and the safety of surrounding employees while performing assigned tasks as well as off-duty activities. **(T-0)**

1.6.29.4. Identify and report hazardous conditions that place personnel or property at risk to supervision, facility manager, USR, or safety office, without fear of coercion, discrimination or reprisal. **(T-0)** Use the AF Form 457, *USAF Hazard Report*, or Airman Safety Action Program, as appropriate. **(T-1)**

1.6.29.5. Promptly report personal injury, property damage, near misses and any suspected exposure to biological, chemical or nuclear hazardous materials to their supervisor without fear of coercion, discrimination or reprisal, i.e., occupational illness and on-duty injury to DoD military and civilian personnel, and off-duty injury to DoD military personnel. **(T-1)**

1.6.29.6. Immediately report to their supervisor if they believe that they have a physical or mental condition that they feel may impact safe job performance. **(T-1)**

1.6.29.7. Use prescribed PPE for job tasks to include inspecting and maintaining it IAW applicable guidance. **(T-0)**

1.6.29.8. Ensure required guards, interlocks, and enclosures are in place and properly used. **(T-1)**

1.6.29.9. Comply with required medical surveillance examinations. **(T-1)**

1.6.29.10. Military members will immediately notify their primary care managers of a known pregnancy and make an appointment with Public Health to initiate a workplace evaluation for exposures that may be hazardous to the fetus and determination of work restrictions. **(T-1)**

1.6.29.10.1. Government civilian employees are encouraged to notify their supervisor of a known pregnancy and to make an appointment with Public Health for a workplace evaluation, but are not required to do so.

1.6.29.10.2. Any employee with questions regarding how their worksite exposures can affect immediate family members (e.g., spouse, children) should contact Public Health.

1.6.29.11. DoD personnel must be protected from coercion, discrimination, or reprisals for participation in the safety and occupational health program IAW DoDI 6055.01. **(T-0)**

1.6.29.12. Use official on-duty time to take part in safety activities. **(T-1)**

1.6.29.13. Hand-carry or electronically transfer safety training documentation, provided by their supervisor, to the new supervisor when deploying or transferring to another government position/location. **(T-1) Note:** Upon separation or retirement from

government service the employee is entitled to copies of their safety training documentation.

1.6.29.14. Refer to this chapter and **Chapters 2,** *Safety Organization,* **3,** *Safety Assurance,* **4,** *Hazard Identification, Reporting and Abatement,* **5,** *Information and Data Analysis,* **13,** *Supporting Guidance,* **14,** *Safety Training,* and **15,** *Miscellaneous Safety Information,* for additional guidance.

1.6.30. The Air Force Civil Engineering Center (AFCEC):

1.6.30.1. Ensures agency/center support for occupational safety and health-related events. **(T-1)**

1.6.30.2. Ensures Air Force fire, and safety policies meet, exceed or receive proper waiver, deviation, or exemption authority, as applicable, to federal regulatory standards, MIL-STD 3007G, *Standard Practice Unified Facilities Criteria, Facilities Criteria and Unified Facilities Guide Specifications,* DoD Unified Facility Criteria (**www.wbdg.org**), National Fire Protection Association, and/or other applicable agency requirements. **(T-0)**

1.6.30.3. Coordinates on installation-level proposed responses related to occupational safety and health events. **(T-1)**

1.6.30.4. Adopts national consensus standards and develops impending guidance for standards developed by consensus code/standard bodies such as the International Code Council and the National Fire Protection Association.

1.6.31. Headquarters, United States Air Force, The Air Force Judge Advocate (AF/JA), primarily through the Air Force Safety Center Legal Office (AFSEC/JA) and the Air Force Legal Operations Agency Environmental Law and Litigation Division (AFLOA/JACE):

1.6.31.1. Ensures Air Force guidance meets or exceeds OSHA and other applicable agency requirements.

1.6.31.2. Ensures Air Force correspondence to agencies such as OSHA are in compliance with established legal and regulatory requirements.

1.6.32. Installation Legal Office. Ensure a legal representative attends all federal/state official out-briefs, and reviews all correspondence to OSHA for installation Commander's endorsement and release after full coordination as specified within this instruction. **(T-1)** The installation safety office may request a legal representative to attend in-briefs, as needed.

1.6.33. Acquisition and Sustainment Program Managers. The designated acquisition individual (per DoDD 5000.01, *The Defense Acquisition System*) with responsibility for and authority to accomplish program objectives for development, production, and sustainment to meet the user's operational needs. This term is used interchangeably with Program Manager. Refer to this chapter and **Chapter 11,** *System Safety and Safety Risk Assessments,* for additional guidance.

1.6.34. Additional Duty Flight Safety Officer. Additional duty flight safety officers are assigned to the AEW/AEG safety offices. They are responsible for managing the flight safety program for the expeditionary wing. Refer to this chapter and **Chapters 2,** *Safety Organization,* **3,** *Safety Assurance,* **6,** *Deployment and Contingency Safety,* and **7,** *Aviation Safety,* for additional guidance.

1.6.35. Additional Duty Weapons Safety Representative (ADWSR). A person assigned to a unit who is responsible for the additional duties that may include explosives safety, missile safety, nuclear surety and directed energy safety. The ADWSR coordinates with the installation safety office on these matters. Refer to this **Chapters 2**, **3**, **6** and **9,** *Weapons Safety,* for additional guidance.

1.6.36. Career Field Manager. The chief master sergeant at Headquarters, Air Force Safety Center, is responsible for organizing and managing the Safety career field. They will use the Enlisted Development Team (EDT) to execute the progression, succession planning to ensure there are sufficient personnel, and skill sets available to accomplish the mission. Refer to **Chapter 2** for additional guidance.

1.6.37. Career Safety Professional. Career safety professionals include all Air Force enlisted safety career field personnel holding the Air Force Specialty Code (AFSC) of 1S0 and those civilians in the safety career field GS-0018, Occupational Safety and Health Manager or Specialist; GS-0019, Safety Technician; GS-0017, Weapons Safety Manager or Specialist; GS-1815, Air Safety Investigator; and GS-0803, Safety Engineer. Refer to this chapter and **Chapters 2**, **3**, **5**, **7**, **8,** *Occupational Safety,* and **14.**

1.6.38. Chief of Safety (COS). The COS (or Director in a civilian-led unit or MAJCOM/FOA/DRU) manages the commander's safety program, which may include flight, occupational, space, system and weapons safety disciplines. Refer to this chapter and **Chapters 2** – **4**, **6** – **9**, **10,** *Space Safety,* **11, 12,** *Contract Safety,* and **14** for additional guidance.

1.6.39. Commander. Commanders hold the authority and responsibility to act and to lead their units to accomplish the mission. They can hold positions at the MAJCOM/DRU/FOA/NAF/Center/Directors, wing, group and squadron levels. Commanders must apply good risk management, accept risk and manage resources to adjust the timing, quality and quantity of their support to meet the requirements of the supported commander. They provide leadership emphasis to all safety disciplines. Refer to this chapter and **Chapters 2** – **15** for additional guidance.

1.6.40. Component Acquisition Executive. A Component Acquisition Executive (CAE) is a single official within a DoD component that is responsible for all acquisition functions within that component. This individual serves as the risk decision authority for high risks. This term is interchangeable with Service Acquisition Executive. Refer to this chapter and **Chapter 11** for additional guidance.

1.6.41. Employee. The term Employee applies to all DoD civilian and military personnel, and Department of the Air Force military personnel. This may also include Personal Services Contractors (defined in **Attachment 1,** Terms. Refer to this chapter and **Chapters 1**, **3**, **4**, **8**, **12**, **14** and **15** for additional guidance.

1.6.42. Enlisted Development Team (EDT). This team will vector the 1S0 career field. They will provide recommendations for training, education and experience requirements for the most critical safety duty positions. Refer to **Chapter 2** for additional guidance.

1.6.43. Flight Safety Manager (FSM). FSMs are civilians assigned to perform flight safety officer duties. They manage flight safety programs for the Director/Chief of Safety and the commander. Refer to this chapter and **Chapters 2**, **3** and **7** for additional guidance.

1.6.44. Flight Safety Non-Commissioned Officer (FSNCO). Full-time FSNCOs are assigned to positions authorized by the Unit Manning Document. Their primary duty will focus on aviation maintenance safety. Refer to **Chapters 2**, **3** and **7** for additional guidance.

1.6.45. Flight Safety Officer (FSO). Full-time FSOs are assigned to positions authorized by the Unit Manning Document at the wing level or above. They are responsible for managing the flight safety program for the Chief of Safety and the commander. Refer to this chapter and **Chapters 2**, **3**, **7** and **13** for additional guidance.

1.6.46. Milestone Decision Authority. - The designated individual (per DODD 5000.01) with overall responsibility for a program. The MDA has the authority to approve entry of an acquisition program into the next phase of the acquisition process and is accountable for cost, schedule, and performance reporting to higher authority, including Congressional reporting. Refer to **Chapter 11** for additional guidance.

1.6.47. Non-typical Safety Staffs. Since their duties and responsibilities are those of the senior safety advisor within their organization, they will report to their commander/director as they manage the commander's mishap prevention program. Refer to **Chapter 2** for additional guidance.

1.6.48. Occupational Safety Manager (OSM). The OSM manages the occupational safety program for the Director/Chief of Safety and the commander (e.g., installation, center, NAF/MAJCOM/FOA/DRU commanders). Refer to this chapter and **Chapters 2** – **6**, **8** and **12** – **14.**

1.6.49. Program Manager. - The designated acquisition individual with responsibility for and authority to accomplish program objectives for development, production, and sustainment to meet the user's operational needs. This term is used interchangeably with Acquisition and Sustainment Program Manager. Refer to this chapter, and **Chapters 11** and **13** for additional guidance.

1.6.50. Safety Staff. Assigned safety professionals that are qualified to perform safety discipline duties. Qualified safety professional's work in the safety office and manage the commander's safety program. They ensure Air Force units understand and comply with all safety requirements and standards. All safety disciplines will oversee the implementation of the mishap prevention program. Refer to this chapter and **Chapters 2** – **14** for additional guidance.

1.6.51. Satellite Anomaly Resolution Team. Group established to resolve a spacecraft anomaly with the primary purpose of returning an on-orbit satellite to operations. Refer to **Chapter 10** for additional guidance.

1.6.52. Service Acquisition Executive. Service Acquisition Executive (SAE) is a single official within a DoD service that is responsible for all acquisition functions within that service. This individual serves as the risk decision authority for high risks. This term is interchangeable with Component Acquisition Executive. Refer to this chapter and **Chapter 11** for additional guidance.

1.6.53. Space Safety Manager. Personnel assigned to a space mishap prevention or mishap investigation role. Refer to **Chapters 2** and **10** for additional guidance.

1.6.54. Squadron Assigned Flight Safety Officer. Squadron assigned FSOs are assigned to flying squadrons that do not have full-time positions by the Unit Manning Document. The primary duty of the squadron-level FSO is to manage the squadron's internal flight safety program as directed by the squadron commander. Refer to this chapter and **Chapters 2**, **3** and **7** for additional guidance.

1.6.55. Supervisor. Supervisors whether officer, civilian or enlisted have a specific responsibility to ensure assigned members comply with safety guidance and standards in this instruction and correct them when they deviate. Refer to this chapter and **Chapters 1** – **9** and **12** – **15** for additional guidance.

1.6.56. System Safety Manager. The assigned individual responsible for the application of engineering and management principles, criteria and techniques throughout all phases of the system life-cycle to optimize safety within the constraints of operational effectiveness, time and cost. Refer to this chapter and **Chapters 2**, **10**, **11**, **13** and **14** for additional guidance.

1.6.57. System Safety Officer. This is a general term for a person (military or civilian) working at a Lead MAJCOM (as defined in AFPD 10-9, *Lead Command Designation and Responsibilities for Weapon Systems*) or operational command who represents the operational community in system safety matters. Refer to this chapter and **Chapters 2**, **11** and **13** for additional guidance.

1.6.58. Technology Executive Officer (TEO). The individual dedicated to executive management and supervision of the Air Force Science and Technology portfolio, analogous to a Program Executive Officer. The TEO shall be appointed and assigned by, and is accountable to, the Air Force Service Acquisition Executive. Refer to **Chapter 11** for additional guidance.

1.6.59. Unit Motorcycle Safety Representative. Unit motorcycle safety representative responsibilities are defined in AFI 91-207.

1.6.60. Unit Safety Representative (USR). A person assigned to a unit who is responsible for the additional duty safety responsibilities. May be a representative of flight, occupational or weapons safety, and may include a more specific title such as additional duty weapons safety representative or squadron assigned flight safety officer, etc. Refer to **Chapters 2**, **3**, **6** – **9**, **13** and **14** for additional guidance.

1.6.61. Weapons Safety Manager (WSM). The WSM manages explosives safety programs to ensure Air Force and tenant units understand and comply with explosives safety, missile safety, nuclear surety and directed energy safety standards. Refer to this chapter and **Chapters 2**, **3**, **6**, **9**, **13** and **14** for additional guidance.

1.7. Waivers.

1.7.1. Waivers to safety explosive requirements will be processed IAW AFMAN 91-201. **(T-1)**

1.7.2. Each commander/director will keep, at a minimum, the previous commander's/director's waivers/deviation/exemption on file. **(T-1)**

1.7.3. Each commander/director will reevaluate risk throughout the waiver/deviation/exemption period and adjust risk controls as necessary. **(T-1)**

1.7.4. Each applicable Safety Office shall brief previously approved and active safety waivers, deviations or exemptions to incoming commanders, system program managers, and Chiefs of Safety within 90 days of assignment. **(T-1)**

1.8. Military-Unique and Nonmilitary-Unique Policy. The Air Force policy is to comply with AFOSH, OSHA, DoD and other non-DoD regulatory safety and health standards and guidance as provided under federal law and IAW DoD policy with respect to military-unique and nonmilitary-unique workplaces, operations, equipment and systems.

1.8.1. Military-Unique. 29 CFR Part 1960, *Basic Program Elements for Federal Employee OSHA*, DoDI 6055.01 and **Attachment 1** for additional guidance and information regarding military-unique.

1.8.1.1. The Air Force shall apply AFOSH, OSHA, DoD and other non-DoD regulatory safety and health standards and guidance to military-unique workplaces, operations, equipment and systems in whole or in part, insofar as practicable. These standards shall apply unless AFSEC or Air Force Medical Readiness Agency/SG3P (AFMRA/SG3P) coordinates on a variance or exemption with a recommendation of an approval/disapproval for the risk acceptance authority.

1.8.1.2. Air Force commanders who oversee workplaces, operations, equipment or systems in question, will employ the guidance in 29 CFR Part 1960, DoDI 6055.01, and this instruction when making military-unique determinations. **(T-0)** These process procedures will be codified via technical orders, job guides, operations orders, a Job Hazard Analysis or some other means to address residual hazards and alternative protective measures. **(T-0)**

1.8.2. Nonmilitary-Unique. Air Force personnel and units shall comply with OSHA, DoD, AFOSH, and other non-DoD regulatory safety and health standards and guidance with respect to nonmilitary-unique workplaces, operations, equipment and systems, regardless of whether work is performed by military or civilian personnel. **(T-0)** Refer to DoDI 6055.01 and **Attachment 1** for additional guidance and information regarding nonmilitary-unique.

Chapter 2

SAFETY ORGANIZATION

2.1. Safety Staff. All safety disciplines will be consolidated under a single Director or Chief of Safety, as applicable. Full-time safety personnel must be trained and qualified to manage safety programs. **(T-0)** Use the Air Force Manpower Standard (AFMS) 11H100 (**https://cs2.eis.af.mil/sites/11190/AFMDandAFMS/AFMS/Forms/FAC1stFAC2nd.aspx**) to determine the size of the safety staff. ARC units use applicable Command Manpower Standards or Guides to determine safety staff size. All safety manpower requests or changes will be coordinated with the MAJCOM/SE and (for Regular AF requests/changes only) AFSEC Career Field Manager (AFSEC/CFM) before submission to the local management engineering team. **(T-1)** Manpower variances can be submitted for safety staffs that conduct special programs IAW AFMS 11H100. **Note:** The unit involved, the MAJCOM safety office and the applicable manpower staffs collaboratively determine the size of safety staffs for Joint Bases and other non-host units excluded by AFMS 11H100. **(T-2)**

2.1.1. Chief of Safety (COS). The Chief of Safety (or Director in a civilian-led unit or MAJCOM/FOA/DRU) reports directly to the commander and manages the mishap prevention program for the commander (e.g., installation, center, NAF/MAJCOM/FOA/DRU commanders). The COS must be qualified in a primary mission weapons system of the unit, if one exists, or if the COS is a civilian position, have a Safety Officer who is qualified in a primary mission weapon system (except AFSPC). **(T-1)** Civilian COS must meet the qualification standards for Occupational and Health professional stated in the Office of Personnel Management (OPM) classification series (GS-0018 or GS-0803). **(T-0).** MAJCOM/FOA/DRU Directors of Safety will have previous safety experience (except AFSPC). **(T-1)** The AFRC equivalent to the above are Chiefs of Safety which are 2181-series (pilot)/2183-series (navigator) civilians.

2.1.1.1. When the COS is either Regular Air Force or Air Force Reserve (not applicable to Air National Guard wing), he/she will be appointed on a memorandum signed by the unit commander and be selected from a current or previous Squadron Commander/Director of Operations/Chief of Safety list, or be a former Squadron Commander. **(T-2)**

2.1.1.2. Assigned individuals must complete the Chief of Safety Course (WCIP05B) within 90 days of assuming the Chief of Safety position. **(T-1)** Air Force Reserve and ANG Chief of Safety may substitute the Air Reserve Component Chief of Safety course (ARCCOS101) and should make every effort to complete the requirement within 90 days of assuming the Chief of Safety position. **Note:** In no case will Air Force Reserve and ANG components exceed a 180 day limit. Waiver authority for this requirement will be AFSEC. **(T-1)**

2.1.1.3. Assigned individuals must be available to serve as COS for a minimum of one year after completion of training. **(T-1)**

2.1.2. Career Safety Professional. The Air Force has an enlisted safety career field (Air Force Specialty Code (AFSC) 1S0X1) and a civilian safety career field (GS-0018, Occupational Safety and Health Manager or Specialist; GS-0019, Safety Technician; GS-0017, Weapons Safety Manager or Specialist; GS-1815, Air Safety Investigator; and GS-0803, Safety

Engineer). These career safety personnel are assigned to positions authorized by the Unit Manning Document. The safety career field is addressed in AFI 36-2101, *Classifying Military Personnel (Officer and Enlisted),* and described in the Air Force Enlisted Classification Directory. The civilian safety career program is described in AFMAN 36-606, *Civilian Career Management and Development.*

2.1.2.1. Professional Continuing Education and Training. Full-time safety professionals working in authorized occupational safety positions as depicted in the Unit Manning Document, must complete at least three safety-related CEUs per year. **(T-2)** For courses with no assigned CEU value, one CEU is the equivalent of ten hours of course participation. **Note:** This also applies to persons such as over-hires, career-broadeners, interns or similar positions working within occupational safety. Other full-time safety professionals in weapons, space and flight safety disciplines should consider similar continuing education to remain up to date in their specialty. MAJCOM/SEs or their designee may grant waivers for this requirement for reasons to include personnel on extended deployments, manning shortfalls and funding limitations. The wing or below chief of safety will document specific circumstances and conditions when this training requirement cannot be met and is not covered under a MAJCOM level waiver. **(T-2)**

2.1.2.1.1. Professional continuing education and training is not the same as qualification training where an individual could be decertified, downgraded or unable to deploy, etc., if not trained to a specific level. The purpose of continuing education and training is to help safety professionals expand their knowledge base and stay informed on the latest technical and behavioral developments in the field of safety.

2.1.2.1.2. College, OPM and other safety professional development courses that do not award CEUs, e.g., on-line training, seminars, webinars may be used to satisfy this requirement, if approved by the MAJCOM/SEs or their designee.

2.1.2.2. **Chapter 14** contains a partial list of recommended safety courses that safety professionals should consider when meeting CEU requirements. Additionally, **Table 14.2** contains a list of AFSEC courses that will satisfy CEU requirements. Safety managers will plan, program and budget for safety resources (e.g., to include sufficient safety training to meet CEU requirements).

2.1.2.3. The award of Special Experience Identifier (SEI) 430 “Master Safety Professional” requires the following requirements to be met:

2.1.2.3.1. Completion of an Associate’s Degree or higher in Safety.

2.1.2.3.2. Mishap Investigation Non-Aviation (MINA) course (Course Code: WCIP 059). **Note:** MINA is the preferred course; however, Introduction to Mishap Investigation is a suitable substitute if personnel are unable to attend the MINA course.

2.1.2.3.3. Complete the Safety Managers Course.

2.1.2.3.4. Five (5) years in the Safety career field.

2.1.2.3.5. One or more certifications from recognized and accredited national/international organizations.

2.1.2.3.6. Supervisor and MAJCOM Functional Manager recommendation.

2.1.2.4. Ensure safety and health personnel are properly trained. 29 CFR § 1960.56, *Training of Safety and Health Specialists*, DoDI 6055.01, 29 CFR § 1960.7, *Financial Management*, AFI 36-401, *Civilian Training, Education, and Professional Development*, and AFI 36-2651, *Air Force Training Program*, discuss responsibilities for funding and ensuring safety and health personnel are trained to function effectively as safety and health advisors to commanders and management officials. **(T-0)**

2.1.2.5. The 1S0 AFSC vectors Senior Non-Commissioned Officers (SNCOs) through the Enlisted Development Team (EDT) construct. The 1S0 EDT outlines the training, education and experience requirements for the most critical Safety duty positions, and provides recommendations for the best qualified SNCOs into key developmental and key leadership positions at the unit, MAJCOM and HQ AF level. SNCOs are vectored on a periodic basis according to the most current EDT Charter is on the Career Field Manager page located on the AFSEC/SEG SharePoint® site (**https://cs2.eis.af.mil/sites/10178/Pages/SEGHomeV2.aspx**). The EDT Charter and vectored position list are reviewed annually and available at the above link. All eligible SNCOs will route a worksheet to the EDT as directed by the EDT Chair. **(T-1)** MAJCOM Functional Managers determine vectored positions with the concurrence of the EDT Chair. Out-of-cycle EDTs will be conducted at the discretion of the EDT Chair to provide opportunity to eligible candidates during supplemental promotion boards or when individual's records change. **(T-1)**

2.1.3. Occupational Safety Manager (OSM). The OSM manages the occupational safety program for the Director/Chief of Safety and the commander (e.g., installation, center, NAF/MAJCOM/FOA/DRU commanders). **(T-1)** The OSM must be fully qualified to advise and execute decisions on safety matters for the primary mission of the unit. **(T-1)** The OSM should complete the Safety Manager Course (AFSEC Course WCIP05D) prior to assuming an OSM position. If this is not possible they will complete the course within one year of assuming the OSM position. **(T-1) Note:** Previous courses such as the Senior Safety Professional's Course or the Occupational Safety Manager's Course meet this requirement.

2.1.4. Flight Safety Officer (FSO). FSOs in higher headquarters positions will be rated officers or prior rated officers with experience in headquarters managed mission aircraft (not applicable [N/A] for Flight Safety Managers). FSOs/Flight Safety Managers manage flight safety programs for Director/Chief of Safety and the commander, e.g., installation, Center, NAF/MAJCOM/FOA/DRU commanders. **(T-1)** FSOs at squadron and installation-level must be current in a unit mission aircraft (N/A for Flight Safety Managers). Once trained, individuals will fill the position for a minimum of 12 months unless waived by the MAJCOM/FOA/DRU SE. **(T-1)** Flight Safety Managers will not be assigned to fill FSO billets on bases where there are primary active flying missions and only one FSO billet. **(T-1) Note:** This requirement does not apply to deployed operations. **(T-2)**

2.1.4.1. Full-time FSOs (squadron level, wing level and above) must complete the Aircraft Mishap Investigation Course (AMIC, WCIP05A) and Aviation Safety Program Management course (ASPM, WCIP09B), AFSEC-certified MAJCOM equivalent courses have completed the legacy FSO course. This training should be completed within 90 days of appointment, but must be completed no later than 180 days from appointment. **(T-2).** AFRC and ANG FSOs may fulfill this requirement by attending AMIC (WCIP05A) and

the Air National Guard Chief of Safety/Air Reserve Component Chief of Safety course (ARCCOS101).

2.1.4.2. Commanders of flying squadrons without an authorized FSO will appoint a Squadron Assigned Flight Safety Officer as an additional duty. **(T-3)**

2.1.4.3. Squadron Assigned Flight Safety Officers should attend the ASPM course and/or AMIC course in conjunction with MAJCOM/FOA/DRU supplemental training.

2.1.5. Flight Safety Noncommissioned Officer (FSNCO). The FSNCO is an integral part of the flight safety program. Their primary duties will focus on aviation maintenance safety. **(T-3)** Individuals selected to fill the position will be, as a minimum, a technical sergeant or civilian equivalent, GS-0018 or GS-0803, with maintenance experience on a unit-assigned aircraft type but no less than a 7-level with two years' experience as a 7-level. **(T-2)** Primary consideration will be to select individuals in the 2A37X (tactical aircraft maintenance) or 2A57X (aircraft maintenance) career fields. Selecting from other 2A – AFSCs is acceptable with a minimum of two years flightline experience in the unit assigned aircraft. Refer to AFRC and ANG supplements to this AFI for Air Reserve Component (ARC) FSNCO and Flight Safety Manager manning descriptions.

2.1.5.1. Individuals will complete the FSNCO course (L3AZR1S071-0S5A), or AFSEC-certified MAJCOM equivalent course, and attend the AMIC (WCIP05A) within 120 days of appointment. **(T-1).**

2.1.5.2. The FSNCO will be assigned the Special Experience Identifier (SEI) code of 307 and AFPC personnel records will assign a code 39 to ensure they serve in this capacity for a minimum of two years. **(T-1)** Designated individuals must meet criteria IAW AFI 36-2101. **(T-1)**

2.1.6. Weapons Safety Managers. Full-time Weapon Safety Managers are assigned to positions authorized by the Unit Manning Document.

2.1.6.1. Weapons Safety Managers must be qualified in their AFSC 2WXXX, 2MXXX, or OPM 017/018 or 803 standards and should have experience in the maintenance or operation of nuclear weapons, missiles or non-nuclear munitions. Airmen selected as Weapon Safety Managers will be at least a 7-level in their Air Force Specialty Code. **(T-2)**

2.1.6.2. Full-time Weapon Safety Managers and Air Reserve Component Weapons Safety Managers in UTC positions must complete the Weapons Safety Course (L3AZR2W071-0C2A) within six months of appointment. **(T-2)**

2.1.6.3. Upon completion of training course L3AZR2W071-0C2A and six months in the Weapons Safety position, the COS will ensure the individual is awarded special experience identifier (SEI) 375 and a two-year assignment deferment is initiated if the individual is satisfactorily accomplishing Weapons Safety tasks (Assignment deferment is not applicable for Air Reserve Component personnel). **(T-3)** It is desirable that individuals not deploy in Weapons Safety Manager positions prior to six months satisfactory experience in Weapons Safety tasks (Chiefs of Safety will make final deployment determinations based on proven duty performance). **(T-3)**

2.1.7. System Safety Officers, Managers and Engineers. According to their particular job requirements, individuals in System Safety positions will complete a MAJCOM-approved System Safety Course within 120 days of assignment. **(T-1)** Safety offices must document reasons for assigned individuals who have not completed training within 120 days of assignment. **(T-1)**

2.1.8. Space Safety Manager. These positions can be filled by a System Safety Manager, Mission Safety Manager, Mission Flight Control Manager, Launch Safety Manager, Orbital Safety Manager and/or Ground Based Space System Manager, as applicable to the program's mission. These individuals will be trained in space mishap prevention and/or investigations, as applicable to their assigned duties, within 120 days (or at the first available course). **(T-1)** Assigned Space Safety personnel (military and government civilians) shall receive initial and annual training in all applicable aspects of Space Safety according to the unit's specific operations (e.g., risk analysis and management, system safety, space environment hazards, testing, and conjunction assessment), tailored to the person's assigned tasks and positions. **(T-1)** Space Safety personnel will complete the Air Force Space Safety Fundamentals located on the AFSEC/SES SharePoint® at **https://cs2.eis.af.mil/sites/11007/ses/default.aspx**. **(T-1)** Any AFSEC or National Aeronautics and Space Administration (NASA) provided mishap investigation course is suitable.

2.1.8.1. As appropriate for the assigned mission, each wing (or equivalent) will have at least one Space Safety Manager for each program. **(T-2)** These individuals may be assigned to subordinate units. With approval from the MAJCOM/NAF/Center Safety Office, these positions may be assigned as an additional duty or multiple programs may be covered by the same Space Safety Manager.

2.1.8.2. Safety Offices must document reasons for assigned individuals who have not completed training within 120 days (or first available course) of assignment. **(T-1)**

2.1.8.3. Organizations acquiring, testing and/or operating space systems must have the following, as applicable:

2.1.8.3.1. At a minimum, wing-level organization conducting operational space or space test missions shall have a Chief of Safety. **(T-3)**

2.1.8.3.2. Each wing-level space organization shall assign a Space Safety Manager for each subordinate unit. **(T-3)** In addition, each space system program office must have a Space Safety Manager. **(T-3)**

2.1.9. Non-Typical Safety Staffs. Throughout the Air Force there are an assorted number of one-deep safety positions and other small atypical safety staffs which are centric in nature to a specific safety function – occupational safety, lab safety, hospital safety, etc. These may exist at FOAs, Groups (CE, Medical, etc.) or other organizational levels outside of or below a standard wing organization. They may reside as an installation or tenant unit function on an installation. Individuals assigned to these positions, or those similar in nature, fulfill the role and responsibility of keeping their respective Commanders/Directors informed of safety issues and executing the mishap prevention program for their Commander. Since their duties and responsibilities are those of the senior safety advisor within their organization, they will report to their Commander/Director as they manage the commander's mishap prevention program.

(T-1) This is consistent with the principles set forth in AFI 38-101, *Manpower and Organization.*

2.2. Unit Safety Representative (USR). Each unit will have a primary and alternate USR. **(T-1)** Additionally each unit will have a primary and alternate Additional Duty Weapons Safety Representative and Squadron Assigned Flight Safety Officer, as applicable. **(T-2)** When possible, these individuals will have one-year retainability in the assigned additional duty position. Each installation safety discipline or assigned safety staff (if different than the installation safety office) will train their respective USRs within 30 working days after receipt of appointment letter. **(T-2)** Air Reserve Component primary and alternate USR will complete initial training within two unit training assemblies of appointment. **(T-2) Note:** Units with full-time safety personnel are not required to have a USR.

2.2.1. Organizations may augment the primary and alternate safety representatives using a "team concept" by adding representatives at the flight level (or equivalent organizational levels). However, the primary and alternate representation will serve as the primary points of contact for all unit safety issues. **(T-2)** If the team concept is used, each member, beyond the primary and alternate, will be trained by the organization for their responsibilities. **(T-2)**

2.2.2. For specific USR responsibilities, see the discipline-specific chapters. USRs will, as a minimum:

2.2.2.1. Advise the commander on safety matters, including latent conditions, which are deficiencies within the organization or supervision negatively affecting job performance, hazards or mishap outcome. **(T-2)**

2.2.2.2. Conduct and document spot inspections in conjunction with facility managers when possible and IAW paragraph **3.7** **(T-2)**

2.2.2.3. Assist unit personnel with mishap reporting requirements. **(T-1)** Assist unit commander and supervisors in mishap investigation when required to include OSHA's Rapid Response Report. **(T-2)**

2.2.2.4. Assist supervisors who develop Job Safety Training Outlines and Job Hazard Analysis. **(T-2)**

2.2.2.5. Conduct and document safety briefings and provide unit personnel with educational safety materials. **(T-2)**

2.2.2.6. Assist the unit commander and supervisors with hazard abatement processes. **(T-2)**

2.2.2.7. Facilitate the inspection and assessment process for their unit and accompany safety office personnel on the formal inspection and assessment. **(T-2)**

2.3. Safety Education/Training. Education and training prepares Airmen to meet their safety and health responsibilities. Each installation shall develop, implement and integrate safety guidelines and standards into existing local level training programs. **(T-1)** Commanders will promote safety awareness at all appropriate venues such as commander calls, holiday safety briefings and other events or functions. **(T-2)**

2.3.1. Commander Orientation/Immersion. The Chief of Safety will provide face-to-face training on the safety and health of the organization to new commanders within their

organizational chain within 60 days of their arrival or appointment. **(T-1)** It is recommended the Chief of Safety include their safety discipline managers, as applicable, for these training events. Air Reserve Components will complete this requirement within 90 days (3 Unit Training Assemblies). **(T-1)** Telephonic training is satisfactory for units that support commanders at operating locations away from the Chief of Safety's home base. In the absence of the Chief of Safety, their deputy will fulfill this requirement. **(T-2)** The training will be documented and include, but is not limited to the following items:

2.3.1.1. Launch vehicle operations and concerns (if applicable). **(T-1)**

2.3.1.2. Safety responsibilities. **(T-1)**

2.3.1.3. Last annual inspection/assessment/evaluation results and open recommendations, unabated hazards and master hazard abatement plan. **(T-1)**

2.3.1.4. Unit specific mishap rates, trends and open mishap recommendations. **(T-1)**

2.3.1.5. Special interest issues (e.g., motorcycle safety/motorcycle unit tracking tool, high risk activities, Annual Program Management Review). **(T-1)**

2.3.1.6. Hazards posed by explosives activities. Refer to paragraph **9.4** for additional information. **(T-1)**

2.3.1.7. Airfield operations and concerns. **(T-1)**

2.3.1.8. Safety Awards Program. (AFMAN 36-2806). **(T-1)**

2.3.1.9. Air Force Combined Mishap Reduction System (AFCMRS). **(T-1)** Website: **https://www.afcmrs.org**.

2.3.1.10. OSHA activities to include Voluntary Protection Program participation, if applicable, and expectations required in response to OSHA visits. **(T-0)** Ensure MAJCOM and AFSEC coordination in the process. **(T-1)**

2.3.1.11. Proactive safety programs (Airman Safety Action Program, Military Flight Operations Quality Assurance, Line Operations Safety Audit, and Organizational Safety Assessments). **(T-1)**

2.3.1.12. Approved and active safety waivers, deviations or exemptions. **(T-1)**

2.3.2. Supervisor Safety Training. For requirements, refer to paragraph **14.5**

2.3.3. Safety, Fire Protection and Health Training. Supervisors will develop a Job Safety Training Outline specifically tailored to address safety, fire protection and health concerns of the work environment. **(T-0)** The outline will encompass both safety awareness and job specific safety training topics. **(T-0)** See mandatory training requirements in paragraph **14.1**

2.4. Safety Office Vehicles and Equipment. The following information should be used when establishing equipment requirements.

2.4.1. Vehicles and Communication. Safety disciplines must be mobile to accomplish their program responsibilities on and off the installation to include mishap response. **(T-1)** In units with flying, missile, and range operations and units with installation base responsibilities who support these activities or as designated by the installation commander, the safety staff must have the immediate use of a two-way radio (ultra-high frequency/very high frequency)-

equipped 4-wheel drive vehicle capable of transporting a minimum of four people and their associated mishap investigation equipment. **(T-1)** Any radio net, appropriate to the mission, that allows the vehicle to move freely around the airfield or missile complex is acceptable.

2.4.2. Allowance Standards (AS). The following AS prescribe the equipment items and quantities required to perform safety missions, functions, and duties. The standards can be found at **https://dpassupport.golearnportal.org/**.

2.4.3. Mishap Investigation Kits. Each MAJCOM/FOA/DRU determines the minimum contents of investigation kits for their safety offices to maintain and have available to meet initial response and ISB requirements for flight, ground, weapons, and space mishaps. **(T-2)** Safety offices will have available all items required to conduct a safety investigation IAW AFI 91-204 to include interview forms with appropriate disclaimers. **(T-2)** Coordinate the medical member investigation content requirements of the kit with the medical treatment facility. Mishap investigation kits are optional for AFRC units.

2.5. Safety Library. Air Force safety offices will establish a library with publications that specifically apply to the safety program. **(T-1)** Electronic access through the internet meets the intent of this requirement; maintain hard copies of publications that are not available electronically. The library will include as a minimum:

2.5.1. DoD Safety standards and handbooks and applicable host country's governing safety standards, rules and regulations. **(T-1)**

2.5.2. Air Force policy directives, instructions, pamphlets, manuals and appropriate technical orders. **(T-1)**

2.5.3. Applicable (based on organizational mission) OSHA, Air Force Safety and Health guidance/standards, National Fire Protection Association, American National Standard Institute standards and other national consensus standards, e.g., Compressed Gas Association, Pressure Vessel and Boilermaker, etc. **(T-1)**

2.5.4. MAJCOMs/FOAs/DRUs will provide a means to disseminate command-specific safety information to subordinate units. **(T-1)**

2.6. Environment, Safety and Occupational Health Councils (ESOHC). For council requirements see AFI 90-801. **Note:** Aviation Safety trends and analysis may instead be addressed through more appropriate forums, i.e., Airfield Operations Board, Bird Hazard Working Group, Quarterly Flight Safety Meeting, Foreign Object Damage Prevention Committee, etc.

2.6.1. While AFI 90-801 governs the rules regarding the conduct of ESOHCs, the ESOHC Chair may charter an ESOHC Safety Sub-Group to ensure full review and oversight of all safety related matters.

2.6.1.1. If established, Safety Sub-Groups will be chaired by the commander or commander's designee and will convene at the commander's discretion. **(T-2)** The Safety Sub-Group will be represented at a minimum by group and squadron commanders from the installation base, representatives from each 2-letter office and commanders (or their designee) from tenant organizations, unless exempted by the installation. **(T-3)** Union representatives will be invited to participate. **(T-1)**

2.6.1.2. The safety staff will make all Safety Sub-Group arrangements; develop the agenda and distribute it in advance; and record and publish council meeting minutes. **(T-1)** The

Safety Sub-Group agenda and minutes will consider safety-related items addressed in the previous ESOHC and the meeting outcomes will be added to the agenda and proceedings of the following ESOHC. **(T-1)** The chief of safety will ensure the minutes are prepared within 30 days following a Safety Sub-Group meeting. **(T-1)** The Sub-Group chair will approve the minutes and all Sub-Group members will be furnished a copy. **(T-1)** OPRs will be identified for items requiring action. **(T-1)**

2.6.2. AFI 90-801 identifies topics that can be addressed, as appropriate, at the ESOHC. Hazard report analysis will include AF Forms 457, AFSAS-generated Hazard reports and Hazardous Air Traffic Reports. **(T-1)**

2.7. Non-USAF Councils and Committees. Air Force safety staffs should support federal, state, and local safety councils and committees through attendance and participation at scheduled meetings.

2.8. Major Range and Test Facility Base (MRTFB) Safety Programs. MAJCOMs will establish safety policy for MRTFB and other range activities. The overall goal of the range safety program is to ensure safety consistent with operational requirements, which includes preventing test objects, space launch vehicles or their hazardous effects from violating established limits. Units operating any range facility or conducting "range activities" as defined by AFMAN 13-212V1, *Range Planning and Operations*, shall establish a range safety program to ensure public safety and protection of government resources and personnel. **(T-1)** The installation commander of the unit operating the range is considered the Range Operating Authority. Under the direction of the MAJCOM concerned, the Range Operating Authority will:

2.8.1. Appoint a Range Safety Officer. Range Safety Officers appointed to the Range Operating Authority typically monitor daily activity and implement the safety program. Range safety duties vary from installation-level program management (Range Safety Officer assigned to the installation/wing) to on-site safety oversight performed by the Range Safety Officer, Range Control Officer or activity manager during execution.

2.8.2. Institute a Risk Management program that quantifies risk and sets requirements for risk acceptance. High residual risk range events are typically accepted by the installation commander or Range Operating Authority. MAJCOM/A3 and SE will establish guidance regarding high risk activities. Approval authorities in coordination with the installation safety office may issue local operating instructions for select or repetitious activities.

2.8.3. Determine safety requirements and ensure all range users are in compliance.

2.8.4. Establish allowable occupational and flight safety conditions and take appropriate action to ensure that test articles do not violate the conditions. Where reliability of the test object is not established, appropriate measures should be taken to ensure it will not endanger the public or their property.

2.8.5. Ensure weapon, non-ionizing and ionizing radiation safety footprints exist for all aircraft, weapons, radars, telemetry, radioactive material and tactics (including those from other services and countries) authorized for a given target and event on the range.

2.8.6. The installation safety office assists the Range Operating Authority with the development and publication of a standardized safety and Risk Management program. An installation-level Range Safety Officer may be appointed within the safety office.

Chapter 3

SAFETY ASSURANCE

3.1. General. Under the AFSMS, safety assurance is largely achieved through safety program evaluations, assessments and inspections that measure program compliance, conformance, and effectiveness of Department of Labor, Department of Defense, and Air Force Mishap Prevention Program requirements. See **Table 3.1** for a summary of minimum evaluation, assessment and inspection requirements.

Table 3.1. Safety Evaluations, Assessments and Inspections.

Level	Frequency	Type	By	Note
MAJCOM/DRU/FOA	48 Months	Safety Evaluation	AFSEC	
NAF/Center/Wing	36 Months	Safety Program Evaluation	MAJCOM/DRU/ FOA	1
Squadron, Standalone Group, and DoD Schools	24/12 Months	Program Assessment & Safety Inspection	Wing/Group SE	2, 3
Wing and below	Monthly	Spot	Wing/Group/ Squadron SE/Safety Representative/ Supervisor	
Wing and below	Monthly	High Interest	Wing/Group SE	
Wing and below	Varies	Special and Seasonal	Wing/Group SE	

Note 1: Conducted IAW this instruction, these Program Evaluations will be conducted for wing, wing-equivalent or higher with an assigned safety staff. **(T-1) Exception:** Air National Guard will complete this requirement not to exceed 48 month frequency. **(T-1)**

Note 2: Program Assessments are specified at a 24-month frequency, while safety inspections are at a 12-month frequency. Safety program assessments and inspections should be combined when conducted the same year to reduce the footprint within the affected organization.

Note 3: IAW DoD 1342.6-M, *Administrative and Logistic Responsibilities for DoD Dependents Schools*, (August 1995) before the start of the school year, an inspection by qualified facility, physical security, safety, sanitation, bioenvironmental, and fire protection specialists to identify all facilities deficiencies and requirements and their relative priority for repair or maintenance. Additionally, In January, an inspection by qualified facility, physical security, safety, sanitation, bioenvironmental, and fire protection specialists to identify all facilities deficiencies and requirements and their relative priority for accomplishment. The second physical security inspection in January

is not required for those schools located on military installations protected by positive entry control procedures.

3.2. Safety Evaluations. AFSEC will conduct safety evaluations of MAJCOM/DRUs/FOAs with a Headquarters safety staff at intervals not to exceed 48 months. **(T-0)** Waiver requests for deviation from the 48 month evaluation requirement from MAJCOMs/DRUs/FOAs will be processed through AFSEC, who, in turn, will process to SAF/IE to USD (P-R). **(T-0)** These evaluations are conducted IAW DoDIs, AFIs, OSHA Standards and federal law. At the direction of the AF/SE, they will be rated with a two-tier (Satisfactory/Unsatisfactory) grading criteria.

3.2.1. The focus of these evaluations is to ensure MAJCOM/SE program management compliance and oversight of subordinate organizations' safety programs are effective. The evaluation provides the MAJCOM/CC/CV an independent perspective of the effectiveness and efficiency of the evaluated organization's safety program.

3.2.2. A written report will be prepared for each evaluation and sent to the commander and the safety staff of the MAJCOM being evaluated. **(T-1)** This report will contain a statement to declare the mishap prevention program conformance and effectiveness under the systemic processes of the AFSMS was either Satisfactory or Unsatisfactory.

3.3. Safety Program Evaluation (SPE). Either independently, or in conjunction with a Unit Effectiveness Inspection, qualified safety personnel from MAJCOMs/FOAs/DRUs must evaluate the safety program of each organization at wing (or wing-equivalent level), as appropriate, and higher. **(T-1)** The evaluations will be accomplished every 36 months. **(T-1)** Safety staffs will develop evaluation checklists to assess compliance and performance of core program elements. **(T-1)** Safety staffs-developed checklists will be reviewed at least annually for accuracy and relevancy. **(T-1)** The SPE checklist items include, but are not limited to the Annual Program Management Review, trends in MICT, mishap trends, results of OSHA inspections, local training of safety personnel during program evaluations, to include OJT master training plan for assigned 1S0s, and results of any commander-requested safety staff assistance visits that were conducted since the last safety program evaluation. Safety will prepare a comprehensive report on the status of the Commander's safety program, inclusive of all safety disciplines evaluated and will attach this report as an addendum to the IG report or an independent report as called for by MAJCOM/FOA/DRU procedures. **(T-1)** The report will contain a statement to declare the mishap prevention program conformance and effectiveness under the systemic processes of the AFSMS was either met and effective, met but needs minor improvement(s), met but needs significant improvement(s), or was not effective. **(T-1)**

3.4. Safety Program Assessments. Qualified safety personnel assess the safety program of each standalone group and squadron on the installation every 24 months as a minimum. **(T-1)**

3.4.1. The assessment will cover all applicable safety disciplines. **(T-1)** Safety staffs will conduct multi-discipline (e.g., Aviation, Occupational, etc.) assessments, when feasible. **(T-1)** Safety assessments address the areas of commander and supervisory support, compliance with program directives and the effectiveness of mishap prevention programs (performance). Assessments may be conducted in conjunction with the annual safety inspection. Assessments may include safety related data found in the Commander's Inspection Program IAW AFI 90-

201, *The Air Force Inspection System*. **Exception:** For subordinate Geographically Separated Units, Detachments or Operating Locations, recommend on-site safety program management assessment be accomplished at intervals not to exceed 24 months. MAJCOM/SEs may allow a virtual assessment in lieu of on-site visits.

3.4.2. The Safety Program Assessment is not an IG-led process, but is core to the safety program and authorized in AFI 90-201. Commanders and Chiefs of Safety are encouraged to use information from the Commander's Inspection Program as part of the assessment. Details of the Commander's Inspection Program are in AFI 90-201. Results of the most recent Safety Program Assessments should be summarized and included as part of the APMR.

3.4.3. Provide an out-brief to the commander within three work days and a formal written report to the squadron/unit commander within 15 work days after completion of assessment. **(T-2)** When either of these timeframes cannot be met, the safety staff will create a memorandum for record justifying the delay. **(T-2)** The assessment report may be combined with the annual inspection report. This report must contain:

3.4.3.1. A statement declaring the mishap prevention program conformance and effectiveness under the systemic processes of the AFSMS was either met and effective, met but needs minor improvement(s), met but needs significant improvement(s), or was not effective. **(T-1)**

3.4.3.2. Unit assessed. **(T-1)**

3.4.3.3. Date of assessment. **(T-1)**

3.4.3.4. Management and supervisory support for safety. **(T-1)**

3.4.3.5. Mishap experience and trends. **(T-1)**

3.4.3.6. Compliance with safety program directives. **(T-1)**

3.4.3.7. Description of any program deficiencies or policy shortfalls and references. **(T-1)**

3.4.3.8. Recommendations for improvement/compliance. **(T-1)**

3.4.4. Safety staffs will develop assessment checklists to assess compliance and performance of core program elements. **(T-1)** Safety office-developed checklists will be reviewed at least annually for accuracy and relevancy, and dated accordingly. **(T-1)** Conduct assessments with prior notice. **(T-1)** Existing MICT self-assessment communicators may be used in the assessment process. As a minimum, assessments will include the following program elements as applicable:

3.4.4.1. Fall Protection. **(T-1)**

3.4.4.2. Hazardous Energy Control Program. **(T-1)**

3.4.4.3. Confined Space Program. **(T-1)**

3.4.4.4. USR compliance with roles and responsibilities. **(T-1)**

3.4.4.5. Motorcycle Safety Representative compliance with roles and responsibilities. **(T-1)**

3.4.4.6. Completion of SST by new supervisors. **(T-1)**

3.4.4.7. Traffic safety training IAW AFI 91-207. **(T-1)**

3.4.4.8. Hazard reporting procedures. **(T-1)**

3.4.4.9. Mishap response and reporting procedures. **(T-1)**

3.4.4.10. Safety promotion support. **(T-1)**

3.4.4.11. Use of Risk Management/Training. **(T-1)**

3.4.4.12. Training, care and use of PPE. **(T-1)**

3.4.4.13. Currency of JSTO content, to include but not limited to JHAs and hazards (AF Forms 1118, *Notice of Hazard*, AF Form 3, *Hazard Abatement Plan*, etc.). **(T-1)**

3.4.5. When prescribed by MAJCOM safety guidance, subordinate safety staffs will upload documentation in unit MICT (or hyperlink to suitable electronic medium, such as SharePoint®) to permit oversight of assessments by the MAJCOM. **(T-2)**

3.4.6. Follow-up Procedures and Actions. The assessed unit will submit to the safety staff corrective actions taken/planned. **(T-1)** The safety staff ensures these reports along with the unit's corrective actions are staffed through the installation commander as their policy prescribes. Safety personnel will track and monitor the status of all open assessment findings until closed. Procedures shall be established to document and follow-up on the correction of hazards/deficiencies identified during assessments not to exceed 180 days (see spot inspection follow-up and/or hazard abatement program). **(T-1)**

3.5. Annual Program Management Review (APMR). Refer to paragraph **13.2** for APMR content. The management review provides leadership and applicable process owners a strategic and critical evaluation of the conformance and effectiveness of the Mishap Prevention Program and an opportunity to recommend improvements. Each safety office at the HAF/MAJCOM/Wing is responsible for completing an APMR. **(T-1)** The APMR will include appropriate data from all safety disciplines. **(T-1)** Results of the annual APMR inform the commander on the health and effectiveness of the organization's safety program and will contain a statement declaring the mishap prevention program conformance and effectiveness under the systemic processes of the AFSMS was either, met and effective, met but needs minor improvement(s), met but needs significant improvement(s), or was not effective. **(T-1)** Results and action items from this review shall be documented, prioritized, communicated to affected organizations and tracked to completion. **(T-1)** The Director/Chief of Safety will brief their commander on the results of the APMR. **(T-1)** Each Wing safety office below the MAJCOM/FOA/DRU level will forward their report to the next higher level safety office by 15 November. **(T-1**) MAJCOM/FOA/DRU SE offices will submit their APMR to AF/SE via email to **usaf.pentagon.af-se.mbx.af-se-workflow@mail.mil** by 15 January. **(T-1)** AF/SE will consolidate MAJCOM/FOA/DRU APMRs into an AF-level APMR for submission to SAF/IEE. **(T-1)**

3.6. Annual Safety Inspections. Safety inspections as required by public law (29 CFR Part 1960, *Occupational Safety and Health Administration*), DoDI 6055.01 and this instruction help identify hazards and measure compliance with applicable safety guidance and standards. The annual safety inspection is not an IG-led inspection, but part of core safety duties and can only be accomplished by a qualified safety professional.

3.6.1. Scope. At least annually (12 month cycle), qualified safety personnel shall inspect every installation workplace/facility where Airmen are regularly employed at fixed installations. **(T-0)** Workplace/facility inspections shall include reviews of inspection documentation for

equipment and real property, i.e., Air Force Technical Order (AFTO) Form 244, *Industrial/Support Equipment Record,* hoist weight testing, etc. **(T-1)** Inspections are to be conducted more frequently based on factors such as the exposure to and potential severity of hazards, actual accident experience, special emphasis programs, changes in the organization's staffing or workplaces or other events that increase risk in the workplace. Procedures shall be established to document and follow-up on the correction of hazards/deficiencies identified during inspections. **(T-1)** Follow-ups will be completed within 30, 60, 90 days or other specified timeframe(s) not to exceed 180 days (see spot inspection follow-up and/or hazard abatement program). **(T-1)**

Note 1: Inspections of workplaces and operations in contractor facilities (Government-Owned Contractor Operated or contractor owned/operated) where fewer than 25 AF personnel are employed shall be at the discretion of the Chief of Safety, based on existing conditions and potential risks. **(T-1)** Assist the contract management multi-functional team, upon request, to resolve any issues related to the safety of the contractor's facilities. **Note 2:** Use of CE's Facility Listing can provide a baseline for identification of workplace/facilities on an installation however, their listing may include areas such as unoccupied/condemned buildings, slated for demolition, flagpoles, and foundation slabs, which may not be considered facilities for safety purposes. OSMs may adjust their listing of facilities accordingly.

3.6.1.1. Facility, workplace and operational inspections. The safety manager will ensure safety personnel are properly qualified and/or have been task certified to perform all aspects of the inspection, and all facilities assigned to the unit are inspected/documented. **(T-0)** The inspection report will identify all workplaces and facilities inspected regardless of whether there were findings or not. **(T-1)**

3.6.1.2. All hazards identified during the inspections will be assigned a RAC. **(T-1)** The safety staff conducting the inspection will assist the responsible supervisor in developing hazard mitigation and abatement actions. **(T-1)** Program management deficiencies identified during the inspections will be assigned a deficiency designator of Critical, Significant or Minor instead of assigning a RAC. **(T-1)** Inspection findings will be recorded and tracked through closure. **(T-1)**

3.6.1.3. Checklists will be used to help identify hazards, deficiencies and other work-related violations. **(T-1)** The safety staff will ensure checklists are available to all applicable organizations. **(T-1)** Safety office-developed checklists will be reviewed at least annually for accuracy and relevancy. **(T-1)** Method of documentation of the review is determined by the safety staff.

3.6.1.4. The installation safety staff inspects units that do not have an authorized full-time safety position in a particular discipline. **Exception:** The installation safety staff inspects HAF, MAJCOM, NAF and AFOTEC safety offices as specified in paragraph **1.6.22.5** Host/tenant/associate support agreements will define who will conduct inspections.

3.6.1.5. Geographically separated units with full-time safety personnel will inspect workplaces annually and keep a copy of the report on file until the next annual inspection. **(T-1)** For geographically separated units without a full-time safety staff, the installation safety office will conduct the annual workplace's inspection (unless a support agreement specifies otherwise) and forwards a copy of the report to the geographically separated unit and the geographically separated units parent organization. **(T-1)**

3.6.1.6. Tenant/Associate units with a full-time safety staff (by discipline) will conduct annual inspections/assessments and will provide a copy of their inspection report to the installation safety office except as exempted in paragraph **1.6.22.5** **(T-1)**

3.6.1.7. Inspect at least 20 percent of unmanned missile and space launch facilities once a year. **(T-1)** Select these launch work areas to ensure that a representative segment of the unit's assets are inspected annually. Inspections must be scheduled to ensure all launch work areas will be inspected over a 5-year cycle. **(T-1)**

3.6.2. Procedures. Safety staffs will conduct multi-discipline (e.g., Aviation, Occupational, etc.) inspections when feasible. **(T-1)** The safety staff will develop and publish an annual fiscal year inspection schedule and distribute to units, to include local union(s) and Wing IG gatekeepers, no later than 15 September for the upcoming fiscal year. **(T-1)** When possible, these may be conducted as part of the Wing's Commander's Inspection Program.

3.6.2.1. Inspectors must consult with workplace personnel and their union representatives on matters affecting their safety and health and give them the opportunity to identify unsafe and unhealthful working conditions, equipment and practices. **(T-0)** Upon request, conduct such consultations privately and do not identify employees who want to remain anonymous.

3.6.2.2. Provide an out-brief to the commander within three work days and a formal written report to the squadron/unit commander within 15 work days after completion of inspection. **(T-1)** When either of these timeframes cannot be met, the safety staff will create a memorandum for record justifying the delay. **(T-1)** Ensure these reports along with the unit's corrective actions are staffed through the installation commander as their policy prescribes. When the installation base safety office conducts inspections of tenant units, the installation base safety office will send a copy of the report to the parent safety office. **(T-1)** Formal inspection reports must contain:

3.6.2.2.1. The unit, activity or work areas inspected. **(T-1)**

3.6.2.2.2. The date of the inspection. **(T-1)**

3.6.2.2.3. Facilities and/or work areas inspected. **(T-1)**

3.6.2.2.4. Description of any hazards, deficiencies or unsafe work practices with risk assessment code and deficiency designator (as applicable) and references. **(T-1) Note:** When there is an OSHA reference for the non-compliance, that reference will be used. Safety staffs may also use AFI references to further support non-compliance.

3.6.2.2.5. Causes of deficiencies and hazards noted, if known. **(T-1)**

3.6.2.2.6. Recommendations for improvement/compliance. **(T-1)**

3.6.2.2.7. Instructions for follow-up actions such as requiring units to provide monthly updates on open items until closure. **(T-1)**

3.6.2.3. Follow-up procedures and actions. The inspected unit will submit to the safety staff corrective actions taken. **(T-1)** Safety personnel will track and monitor the status of all open inspection findings until closed. **(T-1)** Use spot inspections and follow-up reporting to ensure corrective action(s) are taken and hazards are mitigated/abated. **(T-1)** All hazards identified during inspections will be managed IAW **Chapter 4**. **(T-1)**

3.7. Spot Inspections. Work center/shop supervisors, USRs and safety personnel will perform spot inspections to check the day-to-day safety and health of an organization, work center, facility, etc. **(T-2)** Work center/shop supervisors, USRs, squadron assigned flight safety officers and Additional Duty Weapons Safety Representatives will conduct and document monthly spot inspections. **(T-2)** See discipline specific chapters for additional operations and areas that need to be inspected or monitored.

3.7.1. The Chief of Safety will ensure coverage of on-duty and off-duty activities that occur on, or are controlled by the installation. **(T-2)**

3.7.2. Ensure appropriate follow-up actions (not to exceed 180 days) are conducted and documented until findings are closed. **(T-2)** Documentation of spot inspections by safety staffs will include the following:

3.7.2.1. The organization, unit, activity or work area inspected. **(T-2)**

3.7.2.2. The date and time of the inspection. **(T-2)**

3.7.2.3. The inspector's name and their organization or office symbol. **(T-2)**

3.7.2.4. A brief description of the areas, equipment or processes/procedures reviewed as well as observations (may also include positive findings), hazards or unsafe work practices. **(T-2)** When qualified safety personnel identify hazards or deficiencies, assign RACs or deficiency codes, as prescribed by this instruction. **(T-2)**

3.7.2.5. Causes of deficiencies and hazards, as noted. **(T-2)**

3.7.2.6. Recommendations for corrective action. **(T-2)**

3.7.2.7. Name and phone number and/or e-mail address of responsible person. **(T-2)**

3.7.2.8. Ensure appropriate follow-up actions (not to exceed 180 days) are conducted and documented until findings are closed. **(T-2)**

3.7.3. Work center/shop supervisors and USRs will ensure appropriate follow-up actions (every 30 days) are conducted and documented until findings are closed. **(T-1)** Documentation of spot inspections will include the following as a minimum. Local safety staffs may prescribe additional items. Local safety staffs may prescribe additional items.

3.7.3.1. The activity or work area inspected. **(T-2)**

3.7.3.2. The date and time of the inspection. **(T-2)**

3.7.3.3. The name of the person conducting the spot inspection. **(T-2)**

3.7.3.4. A brief description of the area, equipment or process/procedure reviewed as well as observations of hazards, deficiencies or unsafe work practices. **(T-2)** The description may also include positive findings.

3.7.3.5. The applicable RAC or deficiency code, if assigned by a qualified fire, safety or health person after contact by the USR or supervisor. **(T-2)**

3.7.3.6. Corrective action taken or planned. **(T-2)**

3.8. High Interest Areas. High interest areas are those areas having the greatest risk to life or property, have experienced repeated mishaps or in the judgment of the wing commander and/or safety office require added monitoring. While designation should usually be based on trends,

analysis or command interest, they can also be work areas or operations that need additional attention or inspections because of increased mishap potential due to the nature of the work performed, physical conditions or type of materials handled. High interest areas, if identified, will be designated by the Chief of Safety in writing. **(T-1)** Identified High Interest Inspections will be accomplished and documented at least monthly. **(T-1)** In addition to local and MAJCOM identified High Interest Areas, consider incorporating the AFSEC designated Occupational Safety Emphasis Items. Documentation of High Interest Area inspections will be IAW paragraph **3.7.2** **(T-1)**

3.9. Administrative Areas. A task-qualified USR may conduct inspections of administrative work areas (not permissible for entire facility inspections, which include dock areas, mechanical rooms, storage, etc.) when the safety staff determines the mishap potential is minimal. The applicable occupational safety staff develops specific provisions to ensure the USR has sufficient documented training and/or experience in the safety hazards of the administrative area to recognize and evaluate those particular hazards and to suggest general abatement procedures, as required by 29 CFR § 1960.25, *Qualifications of Safety and Health Inspectors and Agency Inspections*. **(T-0)** Any specific provisions beyond what may already be addressed in the required USR training may be added to that training process. Periodic over-the-shoulder assessments of these USR responsibilities will be accomplished and documented. **(T-1)**

3.10. Special and Seasonal Inspections. Inspections are conducted to ensure work and recreational environments are safe and healthy.

3.10.1. Special inspections include seasonal, targeted mishap preventive activities, special events and mission readiness operations/exercises. Special inspections will be conducted of installation child development centers and playgrounds that are part of real property. **(T-1)** Playground inspections, special or seasonal, conducted by the safety office, Family Support Squadron (FSS) personnel or CES personnel will be accomplished using the most current version Consumer Product Safety Commission Public Playground Safety Handbook. **(T-1)**

3.10.1.1. Installation safety offices will conduct the annual unannounced comprehensive safety inspections of all child and youth facilities, Family Child Care (FCC) Administration and at least 10 percent or no fewer than three FCC homes located in government housing. **(T-0) Note:** This excludes all privatized housing.

3.10.1.2. Installation safety offices will train applicable FCC personnel (Child and Youth Services Flight Chiefs, Child Development Center Directors, Airmen and Family Services Flight Chiefs, etc.) in hazard recognition to conduct all other FCC Home safety inspections to include new applicants, renewals, comprehensive, and multidisciplinary as required in DoDI 6060.02, *Child Development Programs (CDPs).* **(T-0)**

3.10.1.3. Any facility inspection performed under this paragraph does not need to be re-inspected as part of the annual safety inspection called for by paragraph **3.6** The annual inspection report called for by paragraph **3.6** will contain a memo indicating these facilities were completed as part of the inspections under AFI 34-144, *Child and Youth Programs.* **(T-1)**

3.10.2. Seasonal inspections will be conducted of recreational areas (e.g., sports fields, swimming pools, camp grounds, and recreational vehicle parks and other recreational areas). FSS will coordinate with the safety staff to jointly conduct pre-season inspections of seasonal areas belonging to FSS. **(T-1)**

3.11. Staff Assistance Visits (SAV). The purpose of the SAV program is to help develop solutions, not to inspect or evaluate, and to provide observations and recommendations for improvement. SAVs may be conducted at any level at any time, but only when requested by the commander who is receiving the SAV. The SAV Team Chief will produce and deliver a written report to the commander. **(T-2)** Do not require replies unless an action started during the visit needs monitoring by the higher headquarters safety staff or requires further staff action above the level of the visited unit.

3.12. Federal/State Inspections and Investigations. Federal/state officials may conduct inspections/investigations of nonmilitary-unique workplaces and operations where Air Force civilian personnel work (inspections may be unannounced). Refer to paragraph **13.3** for specific requirements.

3.13. Contract Performance Assessment. Installation or tenant unit safety offices, as applicable, will assist the MFT in validating that contractors are meeting the safety requirements of the contract. If the installation is pursuing Voluntary Protection Program certification, the contracting officer is responsible for notifying in writing, contractors who are performing work on the installation. **(T-2)**

3.13.1. The MFT will ensure contractors perform IAW the terms and conditions of the contract. **(T-1)** Discrepancies will be reported to the MFT via Contracting Office Representative (COR). **(T-1)** Commanders will ensure CORs that are required to monitor safety requirements are trained in the recognition of hazardous conditions/environments, the use of safety and health standards, and in other areas of safety, as necessary. **(T-1)** The appropriate safety office will assist commanders and CORs in specialized safety training requirements to ensure the COR is properly trained to provide oversight of the contract. **(T-2)**

3.13.2. Airmen who note potential safety violation(s) will report the hazard to the COR. **(T-1)** CORs notify the multi-functional team, and initiate the appropriate actions related to violations. Unless there is critical/imminent danger, Airmen should avoid reporting safety violations directly to the contractor, but should immediately report observed violations to the contracting officer or the installation safety office.

3.13.3. Inspection of Contractor Work Areas and Government-Owned Contractor Operated Work Areas. When Airmen conduct safety inspections in contractor work areas their primary concern is the potential risks to Airmen and government property. Hazardous conditions or violations of safety standards will be reported to the contracting officer, the responsible commander or to the installation safety office. **(T-1) Note:** Inspections of workplaces and operations in contractor installations where fewer than 25 DoD personnel are employed shall be at the COS's discretion, based on existing conditions and potential risks. **(T-2)**

3.13.3.1. Government-Owned Contractor Operated explosives activities must comply with the applicable portions of DoDM 4145.26, *DoD Contractor's Safety Manual for Ammunition and Explosives,* to assure safety of the activity and the prevention of mishaps. **(T-0)**

3.13.3.2. The requirements documents will specify compliance with appropriate provisions of Defense Explosives Safety Regulation (DESR) 6055.09, Volume 1, *General Explosives Safety Information and Requirements,* AFMAN 91-201, and this instruction. **(T-0)**

Chapter 4

HAZARD IDENTIFICATION, REPORTING AND ABATEMENT

4.1. Hazard Identification. Mishap prevention depends on personnel identifying, reporting and correcting hazards promptly and efficiently. Managers or supervisors will not allow coercion, discrimination or reprisal against an employee who exercises their right to report hazards. **(T-0)** Reports can be submitted anonymously.

4.2. Reporting Criteria. Submit hazard reports unless personnel can take corrective action under this instruction or any of these Air Force publications:

4.2.1. AFI 11-215, *USAF Flight Manuals Program (FMP).*

4.2.2. AFI 51-1101, *The Air Force Procurement Fraud Remedies Program*.

4.2.3. AFI 91-204, *Safety Investigations and Hazard Reporting*.

4.2.4. TO 00-5-1, *Air Force Technical Order System*.

4.2.5. TO 00-35D-54, *USAF Deficiency Reporting, Investigation and Resolution*.

4.3. Hazard Reporting System. Commanders must ensure an AF Form 457, *USAF Hazard Report,* or equivalent product is readily available to all personnel. **(T-1)** The AF Form 457 and its related process requirements meets the 29 CFR Part 1960 mandate for an employee hazard reporting system. Additionally, hazards may be submitted using the Airman Safety Action Program (ASAP) and MAJCOM specific hazard reporting forms. Readily available is defined as not being under lock and key or only accessible through electronic means when a member does not have immediate access to a government computer. Personnel have the option to submit hazard reports anonymously, to the responsible supervisor, or to the local safety office. To preserve easy access to the hazard report and anonymity when desired, commanders will consider posting the AF Form 457 in commonly visited areas like break rooms, training rooms, and debrief rooms, as well as safety bulletin boards. Any person assigned, attached or under contract to the Air Force may report a hazard. A hazard report may be submitted on any event that includes hazards, errors, unsafe procedures, practices or conditions that affects flight, occupational, weapons, systems or space safety. This process is not designed for readdressing hazards that are already being managed for abatement through another process such as a CE work request, job order, project or mishap investigation.

4.3.1. Refer to AFI 91-225, *Safety Programs,* for detailed guidance on ASAP's roles and responsibilities.

4.3.2. If the hazard presents critical/imminent danger, the supervisor or individual responsible for that area will take immediate action to mitigate or eliminate the hazard to protect personnel or property. **(T-0)**

4.3.3. Report hazards that cannot be eliminated immediately to the installation safety office via AF Form 457, telephone, e-mail, in person or ASAP (**https://asap.safety.af.mil**). **(T-1)** All reported hazards will be documented, processed, and maintained on file according to records disposition requirements. **(T-1)**

4.3.4. For Air Force Form 457 submissions, the Chief of Safety, in consultation with their safety staff, will determine the appropriate safety, fire or health discipline to investigate the

reported hazard. **(T-1)** The assigned investigator will investigate the reported hazard within one (1) duty day for critical/imminent danger situations, and three (3) work days for potentially serious situations and 10 work days for lesser conditions. The investigator discusses the reported hazard with the member who submitted the report (if known), the responsible supervisor or manager and other parties involved to validate the hazard and determine the best interim control and corrective action. **(T-1)**

4.3.5. If the hazard is validated:

4.3.5.1. The investigator assigns a control number, a RAC as appropriate and monitors all corrective actions until complete. **(T-1)**

4.3.5.2. The investigator completes the Form 457, Part II, *Investigation of Hazard, Actions Taken to Mitigate or Abate Hazard,* within 10 working days and returns the report to the safety office for monitoring. **(T-1)**

4.3.5.3. The OPR completes Part II, *Investigation of Hazard, Actions Taken to Mitigate or Abate Hazard,* within 10 working days and returns the report to the safety office for monitoring. **(T-1)**

4.3.5.4. The investigator informs the originator (if known) in writing about the corrective action or plans and conducts follow-up reviews until the action is completed. The investigator informs the originator, (if known), about the completed action within 10 workdays after the report is closed. If the originator is not known, inform the supervisor or manager of corrective actions. **(T-1)**

4.3.5.5. If the response is not satisfactory to the originator, the originator should resubmit the report and follow procedures in paragraph **4.5**

4.3.5.6. Validated hazards that result in an assignment of a RAC may be closed and corrective action monitored through the hazard abatement process. **Note:** Transference of tracking from the hazard reporting program to the master hazard abatement program or the RAC 4 and 5 mechanism does not relieve the investigator of the responsibilities called for in paragraph **4.3.4.4**

4.4. Additional Reporting Procedures. Transient personnel unable to report a hazard at a base where it is found should submit the AF Form 457 to the next Air Force base they visit, or to the safety office at their home base. The receiving safety office will send the report to the responsible installation safety office. **(T-1)** These types of reports may be submitted via ASAP.

4.4.1. The safety office sends reported hazards that cannot be corrected at the local level to the agencies that can take appropriate action. **(T-1)**

4.4.2. Tenant personnel send hazard reports involving activities for which the installation is responsible to the installation safety office for processing. **(T-1)**

4.4.3. Hazard reports requiring urgent action will be transmitted by the most expeditionary communication means available (overnight mail, official government e-mail, telephone). **(T-1)**

4.4.4. Persons identifying hazards involving weather forecasting must submit hazard reports as soon as possible to ensure that records are not destroyed. **(T-1)** Promptly advise the appropriate agency providing weather forecasting services, i.e., installation weather

flight/detachment supporting operational weather squadron, of their intention to submit a hazard report. Aircrews should consider using a Hazardous Air Traffic Report or ASAP.

4.4.5. Installation safety staffs will send reported hazards that involve other military services, foreign nations or other agencies outside the Air Force to AFSEC/SE, 9700 G Ave SE, Kirtland AFB, NM 87117-5670, or through e-mail at **CD.AFSC@us.af.mil,** and to the affected Air Force units and their chain of command as information addressees. **(T-1)** Upon receipt, AFSEC will maintain tracking and subsequent closing action of the report and will report results to both the sending and affected unit. **(T-1)**

4.5. Air Force Form 457, Airmen Appeal Procedures. If the submitter is dissatisfied with actions taken on a hazard report, they should resubmit the report to the appropriate installation safety, fire protection or health, and request the alleged hazard be reinvestigated. Reports can be submitted anonymously. The safety, fire and/or health representative must respond within 10 work days. **(T-1)** If the submitter is still dissatisfied, they may appeal to a higher level of safety, fire protection or health office in the following sequence:

4.5.1. Intermediate headquarters.

4.5.2. MAJCOM headquarters**.**

4.5.3. AFSEC/SEG (safety hazards), AFCEC/CXF (fire hazards) or AFMRA/SG3 (health hazards).

4.5.4. Assistant Secretary of the Air Force for Installations, Environment and Energy (SAF/IE). This is the final Air Force review for reports that originate at installations in foreign countries, from military personnel or involve military-unique operations or equipment.

4.5.5. Higher level appeals must be addressed promptly and a reply sent to the employee within 20 calendar days. **(T-1)** If a reply is not received within 20 calendar days or if the employee is dissatisfied with the reply, they may appeal to the next higher level. Each reply to an appeal will advise the employee of this right and will include the office symbol and address of the next higher level of appeal. If requested, the appropriate agency will assist the employee in obtaining technical information for clarification or for processing the appeal.

4.5.6. Civilian employees may submit appeals directly to the Office of Federal Agency Safety Programs, Occupational Safety and Health Administration, US Department of Labor. However, the procedures outlined in the paragraphs above are encouraged as the most expeditious means of correcting hazardous conditions.

4.5.7. The procedures outlined above do not prevent the use of agency or negotiated grievance procedures.

4.6. Risk Reduction and Mitigation. Commanders and supervisors at all levels are expected to determine the level of acceptable risk required to preserve assets and safeguard health and welfare. They should incorporate RM into daily activities, on-duty and off-duty, IAW AFI 90-802, *Risk Management.*

4.7. Preparation of Risk Assessments. See AFMAN 48-146, *Occupational & Environmental Health Program Management,* and AFPAM 90-803, *Risk Management (RM) Guidelines and Tools,* for additional and detailed guidance on preparation of risk assessments.

4.8. Hazard Abatement. The purpose of the hazard abatement program is to eliminate, control or limit exposure of personnel to hazardous conditions. It provides senior leaders, functional managers, supervisors and employees with a risk-based systemic process for identifying hazard mitigation and elimination strategies for hazards in all workplaces and operations. Additionally, it provides a tracking system for hazards from identification through closure.

4.8.1. Responsibilities.

4.8.1.1. Each installation establishes a program to abate hazards based on a priority system. **(T-1)**

4.8.1.2. Commanders, supervisors and employees at all levels are responsible for abating hazardous conditions.

4.8.1.3. Commanders protect national resources, both human and material, and have the responsibility to take action in implementing safety measures.

4.8.1.4. Functional managers correct hazards in their areas of responsibility. **(T-1)**

4.8.1.5. The safety office helps commanders assess and prioritize abatement actions and provide the commander with follow-up support until the hazard is eliminated.

4.8.1.6. Send projects beyond the capability of local commanders to the parent MAJCOM/FOA/DRU. **(T-1)**

4.8.2. Planning and Engineering. Use RM processes during the planning, design and execution phases to identify and eliminate hazards as early as possible when they will have the least cost and operational impact on the program. Continually review plans, specifications and drawings to identify and eliminate hazards until the equipment or workplace is operating with acceptable risk levels. **(T-1)** Reevaluate risk assessments when any factor applied in the decision-making process changes. **(T-1)**

4.8.3. Procedural Actions. Develop procedures or restrictions to minimize risk if planning or engineering actions cannot be used to eliminate hazards. **(T-1)** If necessary, impose restrictions such as operational limits, frequent inspections, protective equipment or stopping the operation until corrective action is taken.

4.9. Hazard Control Hierarchy. See AFMAN 48-146 and AFPAM 90-803 for additional and detailed guidance.

4.10. Hazard Abatement Requirements. To abate hazardous conditions:

4.10.1. Abate hazards in military-unique equipment and processes through established systems for modification and upgrade (e.g., Product Quality Deficiency Reporting Program [T.O. 00-35D-54,], and Flight Manual Changes [AFI 11-215]). **(T-1)** Additionally, when possible, use the same criteria specified in paragraphs **4.10.2.1** – **4.10.4.7**

4.10.2. Hazard abatement in nonmilitary-unique workplaces must:

4.10.2.1. Abate RACs 1, 2 and 3 hazards as soon as possible. **(T-1)**

4.10.2.2. Identify abatement actions for RACs 4 and 5 hazards as soon as possible. **(T-1)**

4.10.3. Select an abatement method and, if possible, interim control measures based on the hierarchy outlined in paragraph **4.9** **Note:** Assigned RAC will remain until completely abated even though interim control measures are in effect. **(T-1)**

4.10.4. Other factors that affect decisions on abatement actions are:

4.10.4.1. Impact to mission.

4.10.4.2. Technical feasibility and cost of available options.

4.10.4.3. Number of personnel exposed and length of time exposed.

4.10.4.4. Previous mishap experience.

4.10.4.5. Future use of workplaces or equipment.

4.10.4.6. Alternative methods to control the hazard or protect personnel.

4.10.4.7. Interim control measures in effect.

4.10.5. Paragraphs **13.7**, **13.8**, **15.1** and **15.2** provide additional instructions for assigning RACs, determining abatement priority numbers, and completing AF Form 3 and AF Form 1118.

4.11. Critical/Imminent Danger Situations. Anyone identifying a critical/imminent danger situation will immediately bring it to the attention of the commander and supervisor in charge. **(T-1).** Commanders or supervisors must take immediate action to eliminate or control the hazard or cease operations and withdraw exposed personnel until the hazard is mitigated or the elevated risk is accepted at the appropriate level. **(T-1)**

4.12. Posting Notification of Hazards. The fire, safety or health officials will complete the AF Form 1118 identifying RAC 1, 2 and 3 hazards IAW paragraph **15.1** and forward to the supervisor for posting not later than the end of the next duty day. **(T-1)** The control number for the AF Form 1118 will be assigned by the installation wing safety office. **(T-1)** This will ensure the control number is compatible with the associated AF Form 3, *Hazard Abatement Plan,* should it become required. A copy of the AF Form 1118 will be sent to the installation wing safety office by the office assigning the RAC. **(T-1)** Supervisors must alert all affected employees and contractors of the hazardous condition, any interim control measures and permanent corrective actions underway or programmed. **(T-1)** Supervisors post the AF Form 1118 in the workplace immediately upon receipt. AF Form 979, *Danger Tag*, may be used for this purpose on equipment. Refer to AFMAN 91-203 for additional guidance.

4.12.1. Location. Post AF Form 1118 on, at or as near as possible to the hazard. However, where the nature of the hazard or workplace is such that this is not practical, post notices in a prominent place where all employees can see them. The workplace supervisor must ensure the posted AF Form 1118 is maintained in good condition and employees are kept informed of any changes. **(T-1)** If adverse conditions are present, enclose the notice in a suitable protective cover. **(T-1)**

4.12.2. Removal. The issuing office will be the authority to remove a posted AF Form 1118. **(T-1)** Removal of notices will only occur after the hazard has been corrected, or three (3) working days (excluding weekends and federal holidays), whichever is later, following validation by the issuing authority. **(T-0)**

4.13. Installation Master Hazard Abatement Plan (MHAP). Commanders/Functional Managers will ensure all identified RAC 1, 2 and 3 hazards are entered into the formal installation MHAP, if not abated within 30 calendar days. **(T-1)**

4.13.1. Those RAC 1, 2 or 3 hazards will be entered on an AF Form 3 IAW paragraph **15.2** **(T-1)** Safety, fire or health officials assist functional managers in preparation of the AF Form 3. Commander/functional manager approves, signs and send the AF Form 3 to the installation safety office. **(T-1)**

4.13.2. The installation safety staff will maintain the installation MHAP. **(T-1).** The MHAP will consist of the following as a minimum:

4.13.2.1. A fiscal year log of all RAC 1, 2, and 3 items. **(T-1)**

4.13.2.2. A complete set of AF Form 3s and AF Form 1118s from across the installation. **(T-1)**

4.13.2.3. Other related or supporting documentation. **(T-1)**

4.13.2.4. The signed approval called for in paragraph **4.13.5** or a cross reference to the appropriate ESOHC minutes if the option is used to track commander approval via the ESOHC. **(T-1)**

4.13.3. Squadron commanders or functional managers will conduct a semiannual review of AF Form 3 pertaining to their areas of responsibilities and reflect that review in Block 38 of the AF Form 3. **(T-1)**

4.13.3.1. Commanders/functional managers notify the safety personnel of any changes in hazard abatement status and annotate changes on the AF Form 3.

4.13.3.2. Squadron commanders or functional managers will conduct a semiannual review of AF Forms 3 pertaining to their areas of responsibilities and reflect that review in Part IV--Semi-Annual Review Records of the AF Form 3. **(T-1)**

4.13.3.3. Completed hazard abatement projects must be certified by the appropriate agency; safety, fire, or health, to ensure the hazard was abated properly. **(T-1)** Certification in this particular instance means the appropriate official has performed a site visit to verify the hazard has been fully abated.

4.13.4. The ESOHC will review open MHAP items at least once a year. **(T-1)** They will address project delays and other problems during each ESOHC. **(T-1)** The ESOHC minutes will reflect the review and delays or problems respectively. **(T-1)**

4.13.5. Annually, the Chief of Safety will send a copy of the MHAP to the installation commander for review and approval of priorities for projects. **(T-1)** The copy sent to the commander will include a cover letter addressing the purpose of the review and description of the request for the commander's review and signature. **(T-1)** The package will include a list of all open plan entries and those closed since the last annual review. **(T-1)** The open list will be prioritized by RAC and abatement priority number. **(T-1)** See paragraph **13.8** **Note:** Locations utilizing the AF and MAJCOM/FOA/DRU level Risk models which are included in scheduled Facilities Boards and ESOHC meet the intent of this paragraph and that of paragraph **4.13.2.4**

4.13.6. The installation safety office will make the MHAP available for review locally by representatives of recognized employee organizations, if such organizations exist. **(T-1)**

4.13.7. MAJCOM/FOA/DRU occupational safety personnel will send copies of AF Forms 3 received from subordinate installations or units to AFSEC/SEG and AFMRA/SG3P or AFCEC/CXF, if appropriate, when MAJCOM funding authority for abatement action is exceeded. **(T-1)**

4.13.8. RAC 4 and 5 hazards are not part of the installation MHAP. Safety staffs, including tenant units, will track RAC 4 and 5 hazards not to exceed 180 days until closed. **(T-1)** Refer to paragraph **3.6.1** for more information. AF Form 3 or AF Form 1118 is optional for RACs 4 and 5. MAJCOM/FOA/DRU may delineate additional tracking requirements.

4.13.9. Once a hazard is transferred to the MHAP (RACs 1 – 3) or the RAC 4 and 5 tracking mechanism, close out applicable source hazard report or inspection report. **(T-1)**

4.14. Funding for Hazard Abatement. Funding for hazard abatement projects should be entered into the Planning, Programming and Budget process. Hazard abatement projects should compete for the necessary funds within the planning, programming, and budgeting system framework.

4.14.1. Incorporate safety, fire and health requirements into repair and construction projects. **(T-1)** For projects that exceed local funding authority, follow requirements in AFI 32-1021, *Planning and Programming Military Construction (MILCON) Projects*, or AFI 32-1032, *Planning and Programming Appropriated Fund Maintenance, Repair, and Construction Projects*, as applicable, and submit projects to the parent MAJCOM for prioritization and subsequent completion for funding. Identify the portion of project cost attributable to hazard abatement. **(T-1)**

4.14.2. CE provides actual cost data for abatement of hazards in workplaces and real property installed equipment to the functional manager. The functional manager consolidates the information and sends it to the installation safety staff at least once a year for centralized reporting.

4.15. End of Year Annual Master Hazard Abatement Survey and Facility/Workplace Inspection Report. At the beginning of each fiscal year, AFSEC/SEG will send a data call for end of year hazard abatement and facility/workplace inspection information. **(T-0)**

4.15.1. This data call will be sent to each MAJCOM/FOA/DRU for subsequent distribution to their subordinate units. **(T-1)** The report template is available on the AFSEC SharePoint® site.

4.15.2. Each installation safety manager obtains and maintains the data called for in the report.

4.15.3. MAJCOMs/FOAs/DRUs will compile all subordinate units' results and submit to AFSEC within required suspense date. **(T-1)** FOAs/DRUs are exempt from submitting a report, if their hazard abatement and facility/workplace inspection data is reported by their installation safety office.

4.15.4. At joint bases where the Air Force is not the lead, the Air Force safety office will complete the report to reflect only AF-specific hazards and facilities owned by the AF, where annual facility/workplace safety inspections are performed. **(T-1)**

4.15.5. Refer to paragraph **3.6.1** to define the facilities/workplaces each safety staff is responsible for inspecting. This could include, but is not limited to, electrical vaults, pump houses, hard stands, wash racks, guard towers, etc. The local OSM will act as the decision

authority for situations where uncertainty exists with regards to facility/workplace inclusion in this data call. **(T-1)**

4.15.6. Installations not completing 100 percent facility inspections will provide justification in their report to indicate factors preventing the completion of these required inspections along with planned corrective actions to ensure full compliance with the inspection requirements. **(T-1)**

Chapter 5

INFORMATION AND DATA ANALYSIS

5.1. Information Protection. Safety investigation reports contain privileged safety information and are for mishap prevention purposes only; they are not releasable outside of safety channels. Portions of such reports, though, contain factual, non-privileged information, which may be released to the public, as well as information that is not releasable to the public. For example, information that is For Official Use Only, may be restricted from public release by the Freedom of Information Act (5 USC § 552), the Privacy Act (5 USC § 552a), Health Insurance Portability and Accountability Act (Public Law 104-191, 21 August 1996), Arms Export Control Act (Title 22, USC § 2751 [Chapter 39]), Export Administration Act of 1979 (Title 50, USC § 2401), and other pertinent laws, regulations and policies. See DoDI 6055.19, *Aviation Hazard Identification and Risk Assessment Programs (AHIRAPs)*, and AFI 91-225, *Safety Programs*, for program details and personnel protections against adverse actions as a result of Military Flight Operations Quality Assurance (MFOQA) information. Requests for release of non-privileged information in safety reports or databases, AFSEC/JA is the release authority for requests from outside the Air Force; AFSEC leadership or chiefs of safety are the release authority for mishap prevention requests within the Air Force organizations.

5.2. Recurring Publications. The goal of these publications is to prevent mishaps by providing educational information and insights. These publications discuss topics like standards implementation as well as establishment/maintenance of nuclear surety, environment, safety and occupational health programs. The OPR for each publication will determine content and frequency. AFSEC/SEF posts monthly Blue Four News on the Air Force Safety Automated System (AFSAS) website, summarizing the previous month's Class A and B aviation mishaps. This summary contains privileged information and will be protected IAW AFI 91-204.

5.2.1. AFSEC/SE will issue recurring publications pertaining to the Air Force mishap prevention program. **(T-1)**

5.2.2. MAJCOM Publications. MAJCOMs/FOAs/DRUs will utilize a variety of media and mediums to disseminate command-specific safety information to subordinate units.

5.2.3. Periodic Summaries. AFSEC sends periodic mishap summaries to the MAJCOM/FOA/DRU safety staffs. These summaries include recent mishap experience, mishap statistics, analyses of current problem areas and proposed changes in safety policy. These summaries will be disseminated, as appropriate, to subordinate organizations for mishap prevention purposes.

5.3. Methods of Information Distribution. Select an appropriate distribution method by considering content, time available and audience. Each safety office will determine the appropriate distribution methods for privileged and non-privileged safety information for their subordinate organizations. Suggested methods of distribution of privileged and non-privileged safety information, see below:

5.3.1. Privileged Safety Information. Requires appropriate screening of attendees, marking of materials and reminders of the privileged nature of the information.

5.3.1.1. Safety meetings.

5.3.1.2. Supervisor safety briefings.

5.3.2. Non-privileged safety information.

5.3.2.1. Safety meetings.

5.3.2.2. Supervisor safety briefings.

5.3.2.3. Base newspapers and bulletins.

5.3.2.4. Safety publications.

5.3.2.5. AFSEC or MAJCOM/FOA/DRU publications.

5.3.2.6. Electronic means via e-mail, web page or video.

5.3.3. Forward reports of Air Force mishaps as directed by AFI 91-204. Some of these reports may contain recommendations requiring urgent action requirements by AF agencies. Treat these mishap reports as urgent action notices.

5.3.4. Urgent action notices will be forwarded to AFSEC through the Air Force Service Watch Center (AFSWC) at DSN 227-6103 or **usaf.pentagon.af-a3.mbx.afwatch@mail.mil**. **(T-1)** AFSEC will distribute these notices to safety offices through electronic distribution as appropriate to organizations with applicable guidance/instructions. **(T-1)**

5.4. Mishap Analysis Program. In order to reduce mishaps, Commanders and Chiefs of Safety need to know the types of mishaps and mishap rates, and number of mishaps that occur in their command. Once the type and number are identified, commanders can take risk mitigation actions based on sound mishap analysis. This historical look-back approach should be complemented by a proactive, forward looking mishap prevention plan based on pre-identified hazards that haven't yet caused a mishap.

5.4.1. MAJCOM/FOA/DRU and wing safety staffs will:

5.4.1.1. Conduct an annual analysis and develop specific actions to reverse adverse trends. **(T-1)** Analysis should target specific problem areas with recommendations for commander approval and appropriate actions. This analysis complements the data required in paragraph **13.2**

5.4.1.2. Identify successes, problem areas and trends to measure safety program effectiveness and guide prevention actions. **(T-1)**

5.4.2. AFSEC will perform an annual Air Force-level trend analysis and publish results. **(T-1)**

5.5. Mishap Prevention Analysis Methods. There are several ways to approach analysis of mishap data and proactive information for mishap prevention purposes. Program analysis functions are to target, monitor and/or study.

5.5.1. Target Approach. This approach is similar to the study method below. After determining causes of mishaps, recommendations are developed and prioritized based on the frequency and severity. Corrective actions are directed at the activities and mechanisms that result in the greatest number of injuries.

5.5.2. Study Approach. This is a detailed examination of a specific problem area through the use of a systematic process. A study should follow a systematic process. It typically follows

the format of the Scientific Method. The researcher first drafts a problem statement that clearly defines the goals of the study. For example, a suitably specific research question might be, "Determine a trend in the frequency of X and identify possible explanations for this trend." The researcher then conducts background research to identify factors and data relevant to the problem. Then the researcher drafts an objective statement that describes the problem and limits the study (the hypothesis or purpose). An example is "X is increasing because of Y." Then the researcher develops a plan on how these factors and data are going to be collected, tabulated, compared, plotted and analyzed (methods). Finally, the data is collected and analyzed and results reported confirming or denying the hypotheses. Conclusions and implications regarding application of the results of the study are the most important outcome of the study.

5.5.3. Additional Analysis Categories. In this method, the safety staff selects categories of raw data and reviews them regularly in the form of tabulations or rates. The object is to identify trends and problem areas. Selection of the areas to be monitored depends on the available data and the needs of the organization. Mishap reports are a good place to start, but other areas should not be overlooked. Some other categories that may be appropriate for analysis are:

5.5.3.1. Hazardous Air Traffic Reports.

5.5.3.2. Deficiency Reports.

5.5.3.3. Inspection/Evaluation/Assessment Reports.

5.5.3.4. Foreign Object Damage Reports.

5.5.3.5. First-Aid Cases.

5.5.3.6. Maintenance Logs or Reports.

5.5.3.7. Hazard Reports.

5.5.3.8. Airman Safety Action Program (ASAP).

5.5.3.9. Military Flight Operations Quality Assurance (MFOQA) Analyses.

5.5.3.10. Line Operations Safety Audit Reports.

5.5.3.11. Air Force Combined Mishap Reduction System Surveys (AFCMRS).

5.5.3.12. Organizational Safety Assessments (OSAs).

5.6. Use of Analyzed Data. The purpose of analysis is to help prevent mishaps and present conclusions drawn in a useful format that can be applied to prevention programs. Once corrective actions are taken, follow-up analysis may be required to determine effectiveness.

5.7. Air Force Combined Mishap Reduction System. AFCMRS provides any commander with an anonymous, no-cost, web-based safety culture survey designed for operators, maintainers, support personnel, medical personnel and headquarters staff. An additional survey assesses motor vehicle safety within a unit. Results are available immediately upon survey completion and commanders receive a telephonic debrief to explain the data and to explain how to utilize the AFCMRS analytic tools. Commanders may request AFCMRS survey at **https://www.afcmrs.org/** or by contacting the AFSEC Human Factors Division (AFSEC/SEH): DSN 246-6097, Commercial (505) 846-6097.

5.8. Organizational Safety Assessment (OSA). An OSA is a customized, in-depth, proactive mishap prevention tool that aids commanders in risk assessment and safety decision making. The program focuses on operations, maintenance and support functions with a direct impact on safety across the entire organization. The OSA team is comprised of safety professionals and subject matter experts who conduct in-person surveys and in-person interviews of all members within the installation organization. The focus of the assessment is on the organization's safety culture and additional related topics specifically identified by the requesting commander. Commanders may request an OSA through AFSEC/SEH. If approved by AF/SE, AFSEC/SEH will conduct the OSA and provide an immediate out-brief to the requesting commander. Contact AFSEC/SEH: DSN 263-3513 or Commercial 505-853-3513, for information.

5.9. Military Flight Operations Quality Assurance (MFOQA). The Air Force MFOQA Program is a proactive aviation safety initiative that analyzes routine flight data to detect, measure and mitigate mishap precursors while protecting crew identity.

5.9.1. Currently, the MFOQA Program uses former Air Force instructor pilots under contract with the Safety Center to analyze the flight data and produce monthly reports for aircrew, operational leaders and safety officers. The MFOQA analysts study the aggregate data to establish a baseline of normal flight operations, detect trends toward operational limits, and examine exceedances of preset parameters. The result of such analyses allows leaders to intervene to correct adverse mission and safety trends before they lead to mishaps. Subsequent analyses of the same data allow leaders to objectively measure whether the corrective action was effective.

5.9.2. Commanders and safety professionals can utilize MFOQA to validate effectiveness of tactics, training and procedures by measuring what actually happens out in the system; compare actual versus calculated aircraft performance data; obtain insight on how effectively flights are following mission profiles; learn where unstable approaches and go-arounds are most likely to occur; detect exact parts of profiles where over/under-loads, over-speeds, and over-temps are most likely to occur; measure variations in mission accomplishment within pre-established limits in order to optimize processes; and assess whether a procedural change has had a positive or negative effect on operations. Anyone with a common access card can view aggregate fleet-wide MFOQA analysis in the pubs and reference section of AFSAS at **https://afsas.safety.af.mil**. Also, safety professionals and leaders can request customized analyses that lend specific insights into their operations. Contact AFSEC/SEF at **afsec.prosef@kirtland.af.mil**.

5.10. Airman Safety Action Program (ASAP). ASAP is a voluntary, web-based capability to report errors and hazards by Airmen in all functional areas. It facilitates hazard submission via personal or government electronic devices, and provides means to view and analyze submissions within AFSAS. ASAP also provides leadership with evidence of risk that may otherwise be invisible, so that risk management actions can be taken to improve safety. Submit reports at **https://asap.safety.af.mil**.

5.11. Line Operations Safety Audit. The Air Force Line Operations Safety Audit Program is a non-punitive, unobtrusive, peer-to-peer observation program that collects safety-related flight data during normal operations in order to assess safety margins and improvement measures.

5.11.1. Line Operations Safety Audit is designed to provide early warnings of developing safety problems. The program works by selecting and training highly qualified crewmembers

to ride on jump seats during routine flights to record the threats encountered by aircrew, the types of errors committed and how the crews managed those threats and errors in order to maintain safety. How crews manage threats and errors provides excellent insights into training and organizational culture. Line Operations Safety Audit observers also study Crew Resource Management performance and perform a carefully structured interview to collect aircrew to improve mission and safety.

5.11.2. Line Operations Safety Audit can be used by commanders and safety professionals to systematically and scientifically identify the strengths and weaknesses of normal operations, decrease the frequency of undesirable events, assess the quality and usability of procedures, detect inappropriate techniques, identify design issues with automation as evidenced through mode errors and aircrew use, and detect normalization of deviance in the form of workarounds and shortcuts used by aircrew, air traffic controllers and dispatchers.

5.12. Standard Mishap Metrics. Mishap metrics (calculated as a number of events against some kind of exposure) are an effective way to compare the actions and accomplishments of the unit. Consideration must be given to the differences in operations, environment, equipment or other variables when comparing organizations or MAJCOMs/FOAs/DRUs. The metrics used by the safety community to this point have focused on results – the number of mishaps experienced over time relative to exposure. AFSEC uses standardized rates for metrics below:

5.12.1. Aviation Mishaps.

5.12.1.1. Total USAF Aviation Class A/B Metric. This metric identifies the number of USAF aviation mishaps (to include flight, flight-related, and aircraft ground operations) and mishap rates per 100,000 flying hours. The Class A/B rate is calculated as the total number of Class A/B mishaps multiplied by 100,000 flying hours divided by the total number of flying hours.

5.12.1.2. USAF Class A Aviation Flight Mishap Metric. This metric identifies the number of USAF Class A aircraft flight mishaps per 100,000 flying hours.

5.12.1.3. Aviation-Related Fatalities Metric. This metric identifies the number of fatalities due to USAF aviation mishaps and mishap rates per 100,000 flying hours.

5.12.1.4. Destroyed USAF Aircraft Metric. This metric identifies the number of destroyed USAF aircraft due to aviation mishaps and mishap rates per 100,000 flying hours.

5.12.1.5. USAF Unmanned (Remotely Piloted Aircraft [RPA], Unmanned Aerial System [UAS], etc.) A/B Metric. This metric identifies the number of USAF mishaps and mishap rate per 100,000 flying hours.

5.12.2. Class A & B Weapons Metric. This metric identifies the total Class A and B weapons mishaps.

5.12.3. Class A & B Space Metric. This metric identifies the total Class A and B Space mishaps.

5.12.4. Ground Mishaps.

5.12.4.1. On-duty Ground Metric (Rate). This metric applies to both military and civilian personnel and is used to identify the number of mishaps, fatalities or injuries experienced by military and civilian personnel while on-duty per 100,000 personnel per fiscal year

(FY). To calculate daily, monthly or yearly on-duty rates, multiply the total number of military and civilian mishap, fatalities or injuries by 100,000 personnel divided by the military and civilian strength. **Note:** AFSEC calculates daily and yearly statistics based upon AFPC/Air Reserve Personnel Center (ARPC) strength numbers.

5.12.4.2. Off-Duty Ground Metric (Rate). This metric applies only to military personnel and is used to identify the number of mishaps, fatalities or injuries experienced by off-duty military personnel per 100,000 personnel per year. To calculate daily, monthly or yearly off-duty rates, multiply the total number of military mishap, fatalities or injuries x 100,000 personnel divided by the military strength. **Note:** AFSEC calculates daily and yearly statistics based upon AFPC/ARPC strength numbers.

5.12.4.3. Private Motor Vehicle Off-duty Metric (Rate). This metric applies only to military personnel and is used to identify the number of off-duty private motor vehicle fatalities experienced by off-duty military personnel per 100,000 personnel.

5.12.4.4. Total Recordable Incident Rate (TRIR). This metric applies only to civilian personnel and is used to identify the total number of recordable (Class A, B, C, and D) civilian injuries and illness cases per 100 full-time employees that a site has experienced per year. The TRIR is calculated as follows: TRIR = (Total number of injuries x 200,000)/Number of man-hours worked. Rationale: The 200,000 hours are based on 100 full-time employees working 40 hours per week, 50 weeks each year (100 x 40 hours per week x 50 weeks). Total man hours worked equals the personnel strength x 40 hours per week x 50 weeks per year plus overtime hours worked. **Note:** Actual hours to include overtime should be used for computing civilian hours worked.

5.12.4.5. Days Away, Restricted, and/or Transfer (DART) Case Incidence Rate. This metric applies only to civilian personnel and is used to identify the total number of recordable civilian injuries and illness cases per 100 full-time employees resulting in *days away from work, restricted work activity, and/or job transfer* that a site has experienced in a given time frame. The DART is calculated as follows: DART = (Total incidents resulting in days away, restricted work or transfer x 200,000)/Number of man-hours worked. Rationale: The 200,000 hours are based on 100 full-time employees working 40 hours per week, 50 weeks each year (100 x 40 hours per week x 50 weeks). Total man hours worked equals the personnel strength x 40 hours per week x 50 weeks per year plus overtime hours worked. **Note:** Actual hours to include overtime should be used for computing civilian hours worked.

5.12.4.6. To compare the unit's TRIR and DART rates go to the Bureau of Labor Statistics website at **http://www.osha.gov/oshstats/work.html** for national averages.

5.13. Calculating Federal Employee Compensation Metric (Rate). This metric applies only to civilian personnel. These rates are related to civilian claims that result for on-duty civilian mishaps per 200,000 hours of exposure. To calculate the rates, multiply the number of civilian compensation claims by 200,000 hours divided by civilian strength multiplied by 2,000 hours plus overtime hours, e.g., (Total number of civilian compensation claims x 200,000)/Number of man-hours worked. Rationale: The 2,000 hours equates to 40 hours per week x 50 weeks per year. **Note:** This formula is also used to calculate the Non-Appropriated Fund employee compensation rates.

5.14. AFSAS Analysis and Query Tools.

5.14.1. AFSAS Data Extraction Tool (DET). The DET was developed to supply AFSAS users with a quick and easy tool for obtaining historical mishap data. The DET generally meets the majority of requests for raw data, with the added capability to extract the data to either MS-Excel, HTML or MS-Word.

5.14.2. AFSAS Advanced Query Tool. AFSAS Advanced Query Tool is a Business Intelligence capability that provides users a repository of ready-to-go reports, formatted to define requirements. Reports found within the repository were developed to fulfill the requirements of Air Force safety personnel to generate periodic dashboard-like briefings to senior leadership. Typically, these reports have specific, repetitive data and presentation requirements that change very little over time.

5.14.2.1. AFSAS Advanced Query Tool reports retrieve data directly from AFSAS and other systems automatically, on a daily basis, leaving safety professionals more time to focus on other important tasks other than building repetitive briefings.

5.14.2.2. Additionally, the Tool offers an advance query tool called Query Studio which offers users the ability to create simple queries, but with greater options to conform data into charts and graphs for presentations from the DET.

Chapter 6

DEPLOYMENT AND CONTINGENCY SAFETY

6.1. Deployment and Contingency Safety Program. The purpose of this chapter is to provide Commander, Air Force Forces (COMAFFOR) and Air Force Forces (AFFOR) a tool to preserve combat capability and manage risk to US based and deployed Air Force units supporting US homeland and worldwide contingency operations. The rotational nature of forces within an Area of Responsibility (AOR) necessitates an active program and commander involvement at all levels. Pre-planning, training, and preparation prior to deployments are essential to mission success.

6.1.1. Objectives:

6.1.1.1. Provide timely and accurate safety information to commanders.

6.1.1.2. Enhance deployed unit mishap prevention programs.

6.1.1.3. Recommend required mishap mitigation measures.

6.1.2. No aspect of this chapter is intended to conflict with existing AFPDs, AFIs or Tactics, Techniques and Procedures. It is intended to clarify the duties and responsibilities of the COMAFFOR, AFFOR and deployed Air Force Safety office in the context of a unique deployment environment. In the event that this instruction conflicts with safety guidelines set forth by AOR governing/executive agency, apply safety requirements consistent with paragraph **1.5.3** The requirements of the Deployed and Contingency Safety Program apply to all AFFOR assigned/gained/aligned units for the duration of their assignment or deployment. In specific areas where guidance is lacking in this instruction, good judgment and thorough communication throughout the chain of command must prevail.

6.1.3. Bare Base Safety.

6.1.3.1. Risk Management. While establishing bare base and short term operations, the single most important action a deployed chief of safety can take is real-time risk management. Specific programs as listed in this instruction will be implemented as resources are available to establish and maintain them. Once in place, sustainment ops commanders, supervisors and functional managers at all levels will develop and implement safety, RM and health programs that integrate hazard reduction and safety policy into all on-duty and off-duty operations and activities. **(T-2)**

6.1.3.2. Key Programs. Bare base safety priorities must include a Spot Inspection Program (ensures safety is in the work areas), the Unit Safety Representative program (conduit for information to and from the unit), and Mishap Response Plans. **(T-1)** As the location matures, the commander must evaluate the need for additional programs. **(T-2)**

6.2. Air Force Forces Chief of Safety (AFFOR/SE).

6.2.1. AFFOR/SE elements will forward deploy as needed within the AOR in support of Air Expeditionary Force tasking, Operational Plans (OPLANS), contingency operations, theater engagement or to perform assessments.

6.2.2. AFFOR/SE Responsibilities:

6.2.2.1. Guide the execution of the AFFOR Safety Program within the AOR.

6.2.2.2. Coordinate manpower requirements for staff safety functions in the AOR.

6.2.2.3. Coordinate and execute the AFFOR Hazard Review Board.

6.2.2.4. Coordinate with the COMAFFOR, Geographic Combatant Commands (GCC) and other Component Commands of the GCC, Host Nations, sister services, MAJCOMs/NAFs, other governmental agencies and non-governmental agencies on safety-specific theater issues and safety investigations.

6.2.2.5. Author AOR OPLAN annexes, as required.

6.2.2.6. Conduct semi-annual evaluations to ensure continuity of AFFOR-gained units, observe execution of unit safety programs and provide feedback, as necessary.

6.3. AFFOR Deployed Unit Safety Functions and Organizations. AFFOR deployed safety offices will establish and maintain all required mishap prevention programs as addressed in this instruction and applicable AOR procedures. **(T-1)** AFFOR/SE will provide guidance and assistance as necessary.

6.3.1. Scope. Most units are composed of an Air Expeditionary Wing (AEW) or Air Expeditionary Group (AEG), associated flying squadrons, maintenance units and mission support units. Where there is no parent AEW or AEG, squadrons/detachments will assume duties listed below, where applicable.

6.3.2. Air Expeditionary Wing/Group/Squadron Commander Responsibilities:

6.3.2.1. Coordinate/liaise with AFFOR/SE on requested manpower changes. **(T-2)**

6.3.2.2. Provide guidance to the assigned safety staff on performing safety duties. **(T-2)**

6.3.2.3. Expeditionary Squadron Commanders will appoint a USR for occupational safety. **(T-1)** Designate, by signed memo, USRs to the AEW/AEG safety office prior to departure of the current USR or within two weeks of arrival of new appointee. Newly appointed USRs must coordinate with the AEW/AEG Safety Office for training so that training may be accomplished within seven days of appointment notification. **(T-2)**

6.3.2.4. Expeditionary flying Squadron Commanders will designate, by signed memo, an Additional Duty Flight Safety Officer to the AEW/AEG safety office prior to departure of the current Additional Duty Flight Safety Officer or within two weeks of individual's arrival. **(T-1)** Additional Duty Flight Safety Officer should attend the Aviation Safety Program Manager (ASPM) or AFSEC-certified MAJCOM equivalent courses.

6.3.2.5. At operating locations where the unit stores, handles or transports explosives, the expeditionary unit commanders will designate, by signed memo, an Additional Duty Weapons Safety Representative to the AEW/AEG safety office prior to departure of the current Additional Duty Weapons Safety Representative or within two weeks of arrival, if possible. **(T-1)** Newly appointed Additional Duty Weapons Safety Representatives must coordinate with the AEW/AEG Safety Office for training so that training may be accomplished within seven days of appointment notification. **(T-2)**

6.3.3. Operating Location and Deployed Safety Office Responsibilities.

6.3.3.1. US homeland based Operating Locations and detachments supporting AFFOR AOR missions continue to employ safety program elements IAW their respective

MAJCOM/FOA/DRU directives. US homeland based AFFOR assigned/gained unit safety offices shall incorporate AFFOR/SE coordination into their programs as determined applicable by AFFOR/SE. **(T-2)**

6.3.3.2. Utilize the semi-annual ESOH Council to review recent safety events, items on the master hazard abatement plan, hazard reports, SAV results, mishap experience and weapons and flight-related issues of concern. **(T-2)** If an ESOH Council is not conducted at a specific location, establish a semi-annual safety council to perform these tasks.

6.3.3.3. Subject to any GCC limitations, attempt to meet at least bi-monthly with host nation air force or local airfield authority counterparts concerning safety issues. Document meetings, or attempts, in writing and include agenda, attendees, discussion summary, agreements, recommendations, action items and proposed date of next meeting. **(T-2)**

6.3.3.4. Maintain a Mishap Response Plan (separately or as part of the Installation Emergency Management Plan) reflecting working relationships with local and installation Agencies. **(T-2)** Mishap Response Plan will be employed and evaluated during Installation Major Accident Response Exercises. **(T-2)** This activity should include all disciplines of safety, if possible.

6.3.3.5. All identified hazards will be tracked IAW **Chapter 4,** *Hazard Identification, Reporting and Abatement.* **(T-1)** Forward all hazard abatement issues that require Higher Headquarters funding or involvement to AFFOR/SE for dissemination outside the AOR. **(T-1).** In addition to established MAJCOM hazard abatement processes, US based organizations supporting an AFFOR/AOR forward hazard abatement issues affecting AOR mission accomplishment to AFFOR/SE for additional coordination within the Combatant Command. **(T-1)**

6.3.3.6. Work with contracting officials to review procedures for procurement requests prior to purchase via the Government Purchase Card and AF Form 9, *Request for Purchase,* **Chapter 12,** *Contract Safety,* to assist purchase agents with procurement of items and equipment that meet or exceed safety requirements, depending on the location.

6.3.3.7. Continuity Books. Each safety office will maintain comprehensive continuity book covering all duties required of the safety staff. **(T-2)** The continuity books will contain at a minimum: End of Tour reports, Rotational Safety Councils, Confined Space Program team meetings, Flight Safety meetings, Airfield Operations Board meetings, and USR meetings. **(T-2)**

6.3.3.8. End of Tour Reports. All individuals deployed into safety positions will submit end of tour comments to the deployed Chief of Safety. **(T-2)** All deployed Chiefs of Safety will consolidate inputs from each safety discipline and submit a written report to AFFOR/SE before the completion of their deployment and maintain a copy in their continuity book. **(T-2)** This report should focus on lessons learned, positive and negative. Activities, actions and duties performed while deployed may be included but the primary focus of the report is to improve the Deployed Safety Program. These reports will be posted in the Air Force Joint Lessons Learned Information System Document Library (**https://www.jllis.mil**) and forwarded or made available to other organizations (e.g. AFSEC, MAJCOMs/FOAs/DRUs, NAFs and wings), as appropriate. **(T-2)**

6.3.3.9. Weapons Safety.

6.3.3.9.1. Explosives Site Planning. Site Planning will be accomplished IAW AFMAN 91-201, *Explosives Safety Standards.* **(T-1)** AFFOR Weapons Safety Division (AFFOR/SEW) is the MAJCOM-level coordination authority for deployed AOR base explosives site planning involving Air Force munitions assets. AFFOR Chief of Weapons (AFFOR/SEW) will coordinate/liaise on similar issues in other AORs in order to keep COMAFFOR appraised of issues which may affect AFFOR combat capability. **(T-1)**

6.3.3.9.2. Deployed Weapons Safety Managers are responsible for initiating action for the explosives site planning of potential explosives sites at their base. Deployed Weapons Safety Managers will direct any problems involving explosives site planning to AFFOR/SEW. **(T-1)** AFFOR/SEW will review all AOR explosives site plans and provide guidance/technical assistance to theater operating location Weapon Safety Managers. **(T-1)** Final approval must go through appropriate agencies as identified in AFMAN 91-201. **(T-1)**

6.3.3.9.3. Units that handle less than 1,000 rounds of small arms ammunition, and are not licensed, are not required to assign an Additional Duty Weapons Safety Representative. Supervisors are responsible to monitor activities of these units.

6.3.3.9.4. Radiation Hazard Zones. Ensure Radiation Hazard Zones are established with the focus on personnel, electro-explosive devices and petroleum, oils and lubricants. Ensure interoperability with other systems deployed to the same location. Refer to AFI 48-109, *Electromagnetic Field Radiation (EMFR) Occupational and Environmental Health Program*, AFI 48-139, *Laser and Optical Radiation Protection Program*, AFI 91-208, *Hazards of Electromagnetic Radiation to Ordnance (HERO) Certification and Management*, and AFMAN 91-201 for additional information. **(T-1)**

6.3.3.10. Occupational Safety Managers (OSMs) are responsible for:

6.3.3.10.1. Providing safety briefings for the Personnel Support for Contingency Operations office's RIGHT START or equivalent program. The safety briefing will address safety conditions/issues specific to that particular base/environment. **(T-1)**

6.3.3.10.2. Safety inspections, annual, spot, special, and high interest, will be conducted IAW **Chapter 4**. **(T-1)**

6.3.3.10.3. Review designs and plans for projects and construction, coordinating with AFFOR/SEW and AFFOR/SEF, as applicable. **(T-2)**

6.3.3.11. Space Safety. For operationally deployed space assets, system-related safety issues will be directed through Wing Safety (or equivalent), NAF/Center Safety, MAJCOM Safety and AFSEC/SES. **(T-1)** Wing or equivalent-level safety offices responsible for deployed assets are responsible for the following:

6.3.3.11.1. Directed Energy Systems. Ensure all directed energy systems are directed away from aircraft traffic patterns and personnel. Ensure coordination with local air traffic control to avoid development of flight patterns that may impinge upon Directed Energy clear zones. Directed energy systems aimed above the horizon must interface with the Laser Clearinghouse IAW DoDI 3100.11, *Management of Laser Illumination of Objects in Space*. **(T-0)**

6.3.3.11.2. Frequency Management. Deploying units contact a Spectrum Manager at the squadron, wing or installation, who, in turn, will contact the MAJCOM and AFFOR frequency managers prior to their unit's arrival at the operating location to de-conflict potential interference issues. **(T-1).** Upon arrival, deploying units contact the local frequency manager to follow up on any changes which may have occurred while en route. Ensure compliance with the published Joint Restricted Frequency List. **(T-0)**

6.3.3.12. Deployed Supervisor. Ensure subordinates receive a safety briefing from the deployed location safety staff on known hazards associated with deployed locations. **(T-1)** Provide and document job safety training at deployed locations as specified in paragraph **1.6.28.13** **(T-1)** The deployed supervisor will ensure the individual is provided a copy of the documented training to return to the home station supervisor. **(T-1)**

6.4. Mishap Prevention Program. AFFOR deployed safety offices will establish and maintain all required mishap prevention programs as addressed in this instruction and applicable AOR procedures. **(T-1)** AFFOR/SE will provide guidance and assistance as necessary.

6.4.1. Mishap Investigation. In general, COMAFFOR is not the convening authority for mishaps in the AOR. Convening authority falls to the home station MAJCOM/FOA/DRU IAW AFI 91-204. The convening authority may contact the COMAFFOR and/or AFFOR/SE to request local deployed safety office SIB support beyond ISB responsibilities, provided the deployed commander and AFFOR/SE support the request. Mishap investigations should be accomplished IAW AFI 91-204 with the following caveats:

6.4.1.1. Aviation. The COMAFFOR is the convening authority for all Class E and Hazard-BASH, Controlled Movement Area Violations (CMAVs), Hazardous Air Traffic Reports (HATRs), Class E and Hazard Laser events, and appropriate hazards to promote location-dependent trending and intervention.

6.4.1.2. Ground. The COMAFFOR is the convening authority for mishaps related to War Readiness Materiel assets or injury/death of an AOR permanent change of station member.

6.4.1.3. Explosives. The COMAFFOR is the convening authority for all munitions mishaps that don't involve improper weapons activation (not actuated from weapon/aircraft). For events involving accidental or improper weapons activation (misfire, jamming, etc.), the home station MAJCOM/FOA/DRU of the person/aircraft is convening authority.

6.4.2. Mishap Notification Procedures. AFFOR/SE will be notified immediately of any Class A or Class B mishaps and included as an addressee on all safety reports, e-mails and messages concerning events that involve USAF assets in or supporting contingency operations in the AOR **(T-2)** In the event of a Class A or Class B aviation, ground or weapons mishap, AFFOR/SE will be the primary coordinator with MAJCOM/FOA/DRU convening authorities and the Air Force Safety Center. **(T-1)**

6.5. Monthly, Quarterly and Annual Safety Awards. Deployed individuals and units are eligible for MAJCOM/FOA/DRU and AF-level safety awards. Refer to AFMAN 36-2806, *Awards and Memorialization Program,* for additional information regarding AF-level safety awards.

6.6. AFFOR/SE Visits. AFFOR/SE will conduct semi-annual visits to AOR Operating Locations and deployed units. **(T-2)** Additionally, AFFOR safety will conduct interim visits as

requested by AEW/AEG commanders. **(T-2)** Due to the cyclical nature of deployed personnel, these visits are an important tool to reinforce safety presence with the subordinate units. SAVs will focus on areas requested by the AEW/AEG safety office or as determined by AFFOR/SE, based on previous program evaluation (PE) reports and other correspondence.

Chapter 7

AVIATION SAFETY

7.1. Program Management. Each unit conducting or supporting flight operations, to include small unmanned aircraft systems operations, must have an aviation safety program. The Chief of Safety or senior installation safety representative will ensure an active safety presence at the installation through the plans, programs and training responsibilities outlined below. **(T-1)**

7.1.1. The installation safety office is responsible for the base aviation safety program.

7.1.2. Tenant units coordinate their flight safety programs with the installation to avoid duplication. If the installation does not have an FSO allocation, the largest tenant with an allocation manages the base flight safety program. If neither the installation nor the tenant has an FSO allocation, flight safety responsibilities revert to the installation Chief of Safety.

7.2. Plans. The FSO/Flight Safety Manager/FSNCO should help develop and review appropriate emergency response plans and coordinate on any other installation plans involving flight safety or aircraft emergencies. These plans will include but are not limited to:

7.2.1. Installation Emergency Management Plan. **(T-3)** The COS is responsible for ensuring that units develop an aviation specific portion of the Installation Emergency Management Plan. The Chief of Safety ensures the plan defines roles, responsibilities and notification requirements for leadership and all involved agencies. The Installation Emergency Management Plan should include elements of or a reference to existing plans concerning the disaster response required by AFI 10-2501, *Air Force Emergency Management Program*.

7.2.2. Bird/Wildlife Aircraft Strike Hazard (BASH) Plan. **(T-1)** The installation safety office, or assigned tenant unit with a flying mission, will establish the BASH plan, to include, defining the nature and extent of wildlife hazards and implementation of the plan. **(T-2)**

7.2.2.1. BASH Plan implementation must be consistent with all program requirements IAW AFI 91-212, *Bird/wildlife Aircraft Strike Hazard (BASH) Management*.

7.2.2.2. BASH plans for Outside Continental United States (OCONUS) locations should include environmental considerations included in the Status of Forces Agreement, and, when available, input from local, regional or governmental environment and wildlife personnel.

7.3. Programs. The COS will ensure the following programs are established, maintained and reviewed at least annually. **(T-1)**

7.3.1. BASH Program. Refer to AFI 91-212 for the responsibilities for establishing and administering the Air Force BASH Program.

7.3.2. Hazardous Air Traffic Reporting (HATR) Program. HATR information is vital to Air Force flight safety. Use of information taken from these reports is for mishap prevention, not intended to initiate disciplinary actions. HATR information is not privileged information and is releasable outside Air Force channels. The AF Form 651, *Hazardous Air Traffic Report (HATR)*, should not include identities or personal information. Responsibilities for establishing and administering the HATR program include:

7.3.2.1. Unit commanders will ensure AF Form 651 and AF Form 457, *USAF Hazard Report*, are available to aircrews at base operations facilities, flying squadron operations offices, in trip kits and USAF Air Traffic Control (ATC) facilities. **(T-3)** Commanders must emphasize the importance of identifying hazardous situations and direct the filing of appropriate HATR events as a method of preventing future mishaps. **(T-3)**

7.3.2.2. Unit safety offices will investigate high accident potentials (HAPs) and HATRs IAW AFI 91-204 and AFMAN 91-223**. (T-3)** The FSO or Flight Safety Manager will ensure HATR reporting procedures and requirements are briefed at least annually to aircrew and ATC personnel. Refer to AFMAN 91-223 for reporting requirements.

7.3.3. Midair Collision Avoidance (MACA) Program. Units with flying programs must establish a written MACA program. **(T-2)** The unit safety office is responsible for its creation, documentation and upkeep. **(T-3)** The FSO/Flight Safety Manager works closely with the Operations Group-determined OPR and other interested parties such as the Airfield Operations Flight Commander, the airspace manager, local Fixed Base Operators, Aircraft Owners and Pilots Association, and the local Flight Standards District Officer, to establish a comprehensive MACA program. Use the resources and services of the Federal Aviation Administration (FAA) Flight Standards District Officer accident prevention specialists. Tailor the MACA program to meet local needs. As a minimum, the FSO/Flight Safety Manager will coordinate with appropriate agencies to accomplish these key objectives:

7.3.3.1. Ensure the free flow of MACA information between installation and tenant organizations, effective communication between base, local military aviation units, local airport managers, fixed base operators, and local small unmanned aircraft systems operators and actively support the HATR Program. Actively engage and acquaint the local flying public and all military units that use the local airspace with configurations, speeds, and altitudes of routine operations in the vicinity. The FSO/FSM should schedule MACA meetings during a time that allows maximum participation of both civilian and military personnel.

7.3.3.2. Evaluate the midair collision potential with civilian operators and work with operators of nearby airfields to reduce risk and minimize the hazards. **(T-3)** Evaluate the midair collision potential with small unmanned aircraft systems and work with small unmanned aircraft systems operators to reduce risk and minimize the hazards. **(T-3)**

7.3.3.3. Develop a MACA pamphlet. **(T-3)** The MACA pamphlet is an installation-wing responsibility. Tenant units will provide MDS-specific information as required and will coordinate on the installation-wing pamphlet. **(T-3)** Overseas locations should consider publishing the pamphlet in the host country's language along with English. Provide educational programs/publications to general aviation servicing facilities to increase the use of available radar services among civil aircraft. Develop appropriate maps and graphics showing the base radar services and routes. **(T-3)** Distribute the maps to all civil airfield managers, fixed base operators, military base operations, airports, local small unmanned aircraft systems operators, including hobby shops and model aircraft clubs, and other flying operations that use the surrounding airspace. **(T-3)**

7.3.3.4. Units may combine MACA programs with other military organizations in a 50-mile range of their base. **(T-3)** This will require more coordination efforts but will result in a better product to be used by the area's civilian population.

7.3.4. Awards Program. Ensure proper recognition of personnel through the Air Force Safety Awards Program as outlined in AFMAN 36-2806. **(T-3)**

7.3.5. Operational/Training Squadron Flight Safety Program. The squadron commander will maintain overall supervision of the flight safety program. **(T-3)** The squadron assigned flight safety officer represents an extension of the wing flight safety program at the squadron level. In addition to managing the squadron flight safety program, these individuals are still responsible for carrying out all normal wing safety duties as requested by Wing Chief of Safety. Units possessing aircraft with enlisted crew positions should also consider appointing an enlisted crewmember as additional duty flight safety NCO to assist in the flight safety program. The squadron commander will ensure that the following actions are accomplished by the squadron assigned flight safety officers:

7.3.5.1. Upon appointment, contact the wing safety office for required training. **(T-3)**

7.3.5.2. Administer the unit safety program using this instruction as a guide and management tool. **(T-3)**

7.3.5.3. Disseminate flight safety information to unit crewmembers. **(T-3)**

7.3.5.4. Forward all flying safety matters of significance, which cannot be corrected at unit level through the unit commander to the COS. **(T-3)**

7.3.5.5. Assist in conducting wing safety spot inspections as requested and conduct unit self-inspections. **(T-3)**

7.3.5.6. Ensure a current file of applicable safety directives, to include this instruction, AFI 91-204, AFMAN 91-223 and AFI 91-212 are maintained by the unit. **(T-3)**

7.3.5.7. Maintain Volume V of the squadron Flight Crew Information File IAW AFI 11-202, Volume 2, *Aircrew Standardization/Evaluation Program,* if applicable. **(T-3)** Use of Volume V is optional IAW AFI 11-202, Volume 2. If Volume V is utilized, procedures will be implemented to ensure all aircrews review Volume V. **(T-3)**

7.3.5.8. Maintain unit safety bulletin boards. **(T-3)**

7.3.6. Data-centric Proactive Safety Programs. Chiefs of Safety and unit-level staffs will use MFOQA, ASAP and Line Operations Safety Audit proactive safety as correlated data streams for hazard identification and risk mitigation to prevent mishaps and accomplish the mission. **(T-2)** Proactive safety programs enable leaders, safety professionals, aircrews and support personnel to achieve efficiencies in maintenance, operations, safety, tactics and training. These programs affect positive change in the Air Force by engendering a culture where personnel are willing to identify hazards and errors, not cover them up. Refer to paragraphs **5.10** – **5.12** for a more detailed description of MFOQA, ASAP and Line Operations Safety Audit. Refer to AFI 91-225, *Safety Programs,* for how all proactive safety programs are conducted in a Just Culture.

7.3.7. Small Unmanned Aircraft Systems Flight Safety Program. Units conducting Small Unmanned Aircraft System Operations are typically not designated as Flying Squadrons (i.e., Maintenance, Public Affairs, CE, Security Forces or small flying units), however, they will comply with the following:

7.3.7.1. Will have an Squadron Assigned Flight Safety Officer/Flight Safety Manager assigned as an additional duty with responsibilities identified in paragraphs **7.3.5.1** through **7.3.5.8,** or may have the responsibilities of the Squadron Assigned Flight Safety Officer shared with another unit on base. **(T-3)**

7.3.7.2. Units up to the Wing level will designate a primary and alternate System Expert Small Unmanned Aircraft Systems Officer for each UAS operated by the unit, for the purpose of mishap investigations. **(T-3)**

7.3.7.3. At least one squadron assigned flight safety officer/Flight Safety Manager on a base supporting small unmanned aircraft systems will be ASPM and AMIC trained. **(T-3)**

7.3.7.4. Small unmanned aircraft systems operations must still adhere to requirements of this chapter. **(T-3)**

7.4. Aero Club Operations. The installation unit commander appoints an FSO as a safety advisor to the base Aero Club. **(T-3)** If the installation unit does not have an assigned FSO, the commander will obtain the assistance of a tenant unit FSO to provide safety assistance to the Aero Club. **(T-3)** The installation safety office may investigate Aero Club mishaps IAW AFI 91-204. However, the National Transportation Safety Board or host nation civil aviation authority has primary responsibility for investigating and reporting. Refer to AFI 34-101, *Air Force Morale, Welfare, and Recreation (MWR) Programs and Use Eligibility*, for further guidance on Aero Club support. The wing safety advisor should attend the monthly aero club safety meetings.

7.5. Training Meetings and Briefings. The COS will ensure the following:

7.5.1. Each flying unit will conduct quarterly aircrew flying safety meetings. **(T-3)** This requirement is fulfilled whether conducted as a unit or wing. Topics covered should include unit mishaps, MDS-specific trend analysis, local flying hazards (e.g., airspace, aerodrome), seasonal concerns (weather), human factors to include annual fatigue management and awareness training given by Aerospace Physiology or Aerospace Medicine, etc.

7.5.2. Maintenance units receive timely briefings on maintenance-related mishaps and trends relevant to the unit's mission/MDS. **(T-3)**

7.5.3. Airfield Operations personnel receive timely briefings on HATR and CMAV related events and trends. **(T-3)**

7.5.4. Interim Safety Board Training**.** The FSO/Flight Safety Manager conducts annual training for unit personnel identified to serve as interim safety board members in conjunction with or for the safety office. **(T-3)** This requirement is not applicable for AFRC. ISB composition is identified in AFMAN 91-223.

7.5.5. Other Activities Related to Flight Safety. The FSO/Flight Safety Manager/FSNCO or their designated representative, will attend Airfield Operations Board meetings, Foreign Object Damage Prevention Committee meetings and Standardization/Evaluation and Training review meetings. **(T-3)**

7.6. Inspections/Assessments and Monitoring.

7.6.1. Flight Safety personnel will conduct assessments/inspections of all assigned (installation) flying units' flight safety programs for compliance with USAF and wing safety requirements IAW **Table 3.1** **(T-3)** Assessments/inspections of tenant unit flying safety

programs will only be accomplished as stated in base support agreements. **(T-3).** The tenant's higher headquarters assesses the tenant's internal program. **(T-3)** Refer to **Chapter 3,** *Safety Assurance*, for additional guidance.

7.6.2. USAF Hazard Reporting. The FSO or Flight Safety Manager investigates reported flight-related hazards according to **Chapter 4.**

7.6.3. Flight Safety personnel (to include FSNCO and squadron assigned flight safety officer) will inspect, assess and monitor flight-related workplaces, operations and support IAW **Chapter 3** criteria. With the assistance of Occupational Safety, assign RACs to weapons safety hazards **(T-2)** Potential spot inspection/monitoring areas include, but are not limited to:

7.6.3.1. Airfield. Installation has responsibility for entire airfield. Tenant units need only inspect/monitor unit-specific ramps and taxiways. **Note:** May be accomplished in conjunction with activities prescribed in AFI 13-204V2, *Airfield Operations Standardization and Evaluations*, and AFI 13-204V3, *Airfield Operations Procedures and Programs*.

7.6.3.1.1. High-interest areas.

7.6.3.1.2. Ramps and runways, including taxiways, overruns, stressed pavement areas and unstressed pavement areas immediately next to runways.

7.6.3.1.3. Engine-run areas, including engine exhaust standoff distances and condition of pavement to prevent Foreign Object Damage.

7.6.3.1.4. Lighting systems, including runway lights, approach, taxiway, and ramp lights and vehicle control lights.

7.6.3.1.5. Barriers and arresting gear.

7.6.3.1.6. Airfield obstructions, including obstacles on approach paths.

7.6.3.1.7. Airfield markings, including runway markings, distance markings, taxi lines, etc.

7.6.3.1.8. Airfield signs, include distance remaining, instrument hold, visual flight rules hold, taxiway guidance, etc.

7.6.3.1.9. Vehicle traffic control on or around the airfield and parking areas.

7.6.3.1.10. Airfield vegetation and drainage.

7.6.3.1.11. Wildlife hazards present on the airfield.

7.6.3.2. Operations and Maintenance.

7.6.3.2.1. Supervisor of flying program.

7.6.3.2.2. Runway supervision program.

7.6.3.2.3. Emergency-response equipment, including crash-rescue vehicles, ambulances, communications and crash-recovery equipment.

7.6.3.2.4. Bird/Wildlife strike reporting.

7.6.3.2.5. Aircraft marshaling, fueling and towing procedures.

7.6.3.2.6. Foreign object damage-control program, control equipment and procedures.

7.6.3.2.7. Aero Club operations.

7.6.3.2.8. Aircraft generations, engine start and launch exercises.

7.6.3.2.9. Post-flight maintenance debriefing procedures.

7.6.3.2.10. Unit and transient (installation only) maintenance operations.

7.6.3.2.11. Product Quality Deficiency Reporting System.

7.6.3.2.12. Flight safety information use in maintenance training flight.

7.6.3.2.13. Maintenance engine-run training procedures.

7.6.3.2.14. Snow removal plans and operations, if applicable.

7.6.3.2.15. Deicing training for aircrew and maintenance, to include flightline-deicing procedures.

7.6.3.2.16. Low-level routes, weapons ranges and drop zones.

7.6.3.2.17. Functional check flight procedures.

7.6.3.2.18. Assigned and attached unit's flight workplaces, briefings and meetings.

7.6.3.2.19. Life-support workplaces and training programs.

7.6.3.2.20. Egress training.

7.7. Airfield Maintenance, Construction and Waivers (Installation). COS or designated SE representative monitors routine airfield maintenance and major construction projects. (**Note:** Ensure any conversations with the contractors concerning safety-related matters are not construed as contract changes). On major construction projects, the Chief of Safety or designated SE representative reviews the initial plan and follow-on plans for compliance with AFI 32-1023, *Designing and Constructing Military Construction Projects*, UFC 3-260-01, *Airfield and Heliport Planning and Design*, and attends the pre-construction conference or briefing to consider if it will affect unit operations. **Note:** At OCONUS locations, plans shall be IAW Status of Forces Agreement, Host Nation Funded Construction Agreement and Bilateral Infrastructure Agreement. **(T-3)**

7.7.1. Chief of Safety will participate in annual Airfield Manager's review of airfield waivers per AFI 13-204V3. **(T-3)**

7.7.2. When able, the Chief of Safety should participate in risk analysis of items needing waivers and work to eliminate those items. Consider these factors:

7.7.2.1. The inspection of areas before use.

7.7.2.2. The impact of maintenance and construction on daily flying schedule and emergency situations.

7.7.2.3. The communications between the tower and contractor, and the availability of the contracting agent.

7.7.2.4. Controlling vehicular traffic on the airfield and designating haul routes for contractor trucks.

7.7.2.5. Briefing pilots and transient aircrews with updated information.

7.7.2.6. Establishing the minimum allowable distance between equipment and the runway.

7.7.2.7. Marking obstructions, controlling foreign objects and assigning hearing protection.

7.7.2.8. Explosives safety criteria.

7.7.2.9. The potential impact of construction on wildlife hazards to airfield operations.

Chapter 8

OCCUPATIONAL SAFETY

8.1. Program Management. This chapter contains the minimum requirements for safety offices at all command levels. Occupational safety mishap prevention efforts include both on-duty and off-duty activities.

8.1.1. Each installation occupational safety manager will implement and manage a base-wide occupational safety program IAW applicable AFPD/AFI/AFMAN 90- and 91-series guidance, and other applicable regulatory guidance. **(T-1)** Newly assigned occupational safety managers will conduct and document an occupational safety program self-assessment within 90 days of taking the position. **(T-1)**

8.1.2. Installation safety offices may not impose host command-unique requirements on tenant units unless specified in the support agreement. Tenant USAF units without full-time qualified safety authorizations receive the same safety services as installation subordinate units. (**Note:** HAF, MAJCOM, AFOTEC and NAF safety offices are not configured as a traditional safety office IAW AFMS 11H100 and are, therefore, treated as a tenant unit without an assigned safety staff. They will follow the host program unless specified in a host tenant support agreement.) Support Agreements will identify and delineate responsibilities. IAW DoDI 4000.19, *Support Agreements,* and AFI 25-201, *Intra-Service, Intra-Agency, and Inter- Agency Support Agreements Procedures,* non-USAF tenant units may be provided safety services based on support agreements (host may require reimbursement for services provided). **(T-2)** Wing subordinate units and tenant organizations will implement a program that supports the installation program as defined within the host/tenant support agreements, when applicable. **(T-1)**

8.1.3. One-deep safety positions will develop and maintain complete and thorough continuity folders covering all duties required by their positions. **(T-1)**

8.2. Assurance Requirements. Occupational safety personnel will conduct inspections and assessments of all assigned units. **(T-1)** Refer to **Chapter 3**, *Safety Assurance,* for inspection and assessment guidance.

8.3. Installation Occupational Safety Staff Responsibilities. The installation Occupational Safety staff will manage:

8.3.1. Ensure all managers, supervisors, and employees are trained to identify, evaluate, and control workplace hazards. **(T-1)** Assist supervisors in developing and maintaining Job Hazard Analysis(es), and setting up programs to ensure organizational compliance with OSHA, DoD, and Air Force safety requirements. **Note:** Overseas installations will consider application of installation nation standards as well. **(T-1)**

8.3.2. Investigate and report all events IAW AFI 91-204, *Safety Investigations and Reports,* and AFMAN 91-224, *Ground Safety Investigations and Reports*. **(T-1)**

8.3.3. Will work cooperatively with other installation functions to include but not limited to tenant units safety staff, BE, CE, Security Forces, Personnel, Contracting, Logistics Readiness Squadron, Force Support Squadron, Public Health, Installation Occupational and

Environmental Medicine Consultant, FES Flight, and Aerospace and Operational Physiology Technician personnel to provide an effective occupational safety program. **(T-2)**

8.3.3.1. Coordinate with installation LRS to obtain GOV damage/mishap/abuse reports to evaluate and determine mishap reporting criteria. **(T-2)**

8.3.3.2. Coordinate with the installation Judge Advocate to obtain data on tort claims that reached Class D or higher threshold value. **(T-2)**

8.3.3.3. Coordinate with the installation contracting office to obtain data on contractor mishaps involving government losses that reached Class D or higher threshold value. **(T-2)**

8.3.4. Monitor on-base sports facilities and activities. **(T-2)**

8.3.5. Implement a traffic safety program IAW AFI 91-207, *US Air Force Traffic Safety Program.* **(T-1)** Joint bases will follow the established Memorandum of Agreement. **(T-0)**

8.3.6. Review and recommend for approval, as appropriate, the use of new hazardous materials IAW AFI 32-7086, *Hazardous Materials Management.* **(T-1)** Coordinate on updates of the installation's hazardous materials Authorized User List when requested by the installation Environmental Management office under the installation Hazardous Materials Management Program. **(T-1)**

8.3.7. Review CE work requests, project designs, and specifications for safety criteria. **(T-1)**

8.3.8. Provide technical safety consultation services to all base activities and promote on-duty and off-duty safety awareness. **(T-2)**

8.3.9. Budget for training safety professionals, safety educational materials, and safety promotional campaigns. **(T-1)** Refer to AFI 65-601V1, *Budget Guidance and Procedures,* for more information.

8.3.10. Work with contracting officials and unit purchasing personnel to ensure requests for equipment, products, and services using purchase orders and/or Government Purchase Card are reviewed for potential safety and health impact IAW AFI 64-117, *Air Force Government-Wide Purchase Card (GPC) Program,* AFI 32-7086, and **Chapter 12,** *Contract Safety.* **(T-1)**

8.3.11. Assist tenant units without full-time safety personnel with ground event reporting procedures and requirements IAW established applicable host/tenant support agreements. **(T-2)**

8.3.12. Coordinate Department of the Air Force civilian and Non-Appropriated Fund civilian mishap investigation information through the appropriate channels, and provide a representative to actively participate in the Federal Employee Compensation Act Working Group, if one is held at the installation level. **(T-0)**

8.3.13. Maintain records of reportable and recordable events IAW 29 CFR 1904, *Recording and Reporting Occupational Injuries and Illnesses,* DoDI 6055.07, *Mishap Notification, Investigation, Reporting, and Record Keeping,* AFI 91-204, AFMAN 91-224, and AFMAN 33-363, *Management of Records.* **(T-0)**

8.3.14. Maintain a master list or file of approved safety, fire protection, and occupational health variances or exemptions to AFMAN 91-203 and any variances to AFOSH requirements

that apply to the installation. **(T-1)** The current approved variances/exemptions are available at the AFSEC/SEG SharePoint® website: **https://cs2.eis.af.mil/sites/10178/SEGS/Pages/SEGSHome.aspx.**

8.3.15. Responsible for developing and implementing an OSHA Reception and Action Plan. This plan will address actions to implement prior to, during, and after an OSHA event. **(T-0)** This includes official OSHA representative installation visits and OSHA requests for self-investigation/inspection. These procedures will address all requirements called for in paragraph **13.3** and those contained within DoDI 6055.01, Enclosure 3. **(T-0)**

8.3.16. Assist in the development and review of emergency response plans and procedures for handling events such as, but not limited to ground and aircraft emergencies, toxic spills, ventilation malfunctions, cleanup operations, and emergency egress. **(T-1)** These areas of review include:

8.3.16.1. Disaster response required by AFI 10-2501.

8.3.16.2. HAZMAT response required by AFI 10-2501.

8.3.16.3. Response to severe weather warnings.

8.3.16.4. Crash recovery plans.

8.3.16.5. Notifying and convening Interim Safety Boards (ISBs) for ground-related mishaps.

8.3.17. Provide fully qualified occupational safety personnel in support of Air Expeditionary Force deployment tasks. **(T-1)** Occupational safety managers will know the current deployment status of all assigned military personnel and ensure the proper status information is provided for the Airman Readiness Tool Report. **(T-1)**

8.3.17.1. To ensure personnel are competent with occupational safety program responsibilities, the individual's supervisor or occupational safety manager will conduct a review of all appropriate skill level core tasks with individuals prior to their deployment. **(T-1)**

8.3.17.2. Individuals who do not meet required core tasks for appropriate skill level requirements will be required to receive appropriate training from their supervisor, OSM, or other recognized source prior to deployment. **(T-1)**

8.3.18. Ensure qualified and proficient Occupational Safety (1S0/0018) personnel conduct the Air Force Supervisor Safety Training (SST) that incorporates MAJCOM/FOA/DRU and organization/installation unique requirements, if any, into the core curriculum. **(T-1)** Group or Wing-level tenants with an assigned safety staff will conduct their own SST to ensure their assigned personnel are trained in their MAJCOM/FOA/DRU program specifics unless otherwise specified in host/tenant support agreements. **(T-1)**

8.3.19. Assist COS in new commander safety orientations/immersion when occupational safety interest are present in the organization. **(T-1)**

8.3.20. Administer the occupational safety awards program IAW AFMAN 36-2806. **(T-1)**

8.3.21. Ensure newly assigned USRs are trained within 30 working days after receipt of appointment letter. **(T-2)** Air Reserve Component primary and alternate USR will complete initial training within two unit training assemblies of appointment. **(T-2)**

8.3.21.1. USRs will receive localized training based on USAF, MAJCOM/FOA/DRU, and installation-specific requirements. **(T-1)**

8.3.21.2. Deployed USRs will complete the USR Training Course located on ADLS within three calendar days of the safety office receiving notification of appointment. **(T-2)** Upon completion of the computer based training, ensure a copy of the training certificate is provided to the safety office. **(T-1)** The supporting occupational safety office will provide localized training within seven calendar days of receipt of appointment letter. **(T-1)**

8.3.22. Evaluate and process safety related hazard reports, to include ASAP generated reports, and maintain a master hazard report log. **(T-1)**

8.4. Tenant Unit and Geographically Separated Unit Responsibilities. The tenant's higher headquarters will perform assessments of the tenant's internal program IAW **Chapter 3**. **(T-1)**

8.4.1. Tenant and Geographically Separated Units without full-time safety staff will appoint an occupational USR IAW paragraph **2.2** and comply with the responsibilities outlined in paragraphs **2.2** and **8.5,** and any applicable formal support agreements. **(T-1)**

8.4.2. Tenant units with authorized qualified safety personnel carry out all program elements not performed by the installation and conduct their assessments, inspections and mishap investigations IAW a host/tenant support agreement. The host/tenant support agreement will specify those responsibilities from paragraph **8.3** that have been agreed to. **(T-2)**

8.5. Unit Safety Representative (USR) Responsibilities. In additional to paragraph **2.2,** USRs will:

8.5.1. Advise the commander on safety related matters at least on a quarterly basis or more frequently as necessary and document key elements briefed. **(T-2)**

8.5.2. Assist supervisors and unit personnel in the hazard abatement process. **(T-1)**

8.5.3. Ensure mishap notification procedures are established in the unit and assist installation safety, unit commander, and supervisors with mishap investigations. **(T-1)**

8.5.4. Disseminate safety educational materials within the unit. **(T-1)**

8.5.5. Conducts spot inspections IAW paragraph **3.7.3** **(T-1)**

8.5.6. Comply with the safety program requirements to include attending USR meetings. **(T-1)**

8.5.7. Post AFVA 91-209, *Air Force Occupational Safety and Health Program*, in a conspicuous location readily accessible to all employees and applicants for employment. **(T-1)**

8.5.8. Provide their safety office with a current listing of all facilities owned/used by their unit for safety inspection purposes. **(T-1)**

8.5.9. Provide a Rapid Response Report for OSHA when requested by the safety office. **(T-1)**

8.6. Hazard Identification and Abatement. The installation occupational safety office will:

8.6.1. Assign RACs to safety hazards and deficiencies, as applicable, and coordinate with health and fire protection officials when it involves their area of expertise. **(T-1)** For additional instruction for assigning RACs, see paragraphs **13.7**, **13.8**, **15.1** and **15.2** **Note:** Tenant unit occupational safety staffs are permitted to assign RACs, but will coordinate RACs 1-3 with the installation occupational safety office to ensure the RACs are managed accordingly in the master hazard abatement plan. **(T-1)**

8.6.2. Complete abatement priority number when required to assist in establishing funding priorities. **(T-1)**

8.6.3. Maintain the installation master hazard abatement plan, including AF Form 3, *Hazard Abatement Plan*, covering safety, fire, and health hazards. **(T-0) Note:** Assignment of RACs for fire and health hazard(s) is the responsibility of the fire department and medical officials respectively. Fire safety deficiencies will not be included in the master hazard abatement plan as they are managed IAW AFI 32-10141, *Planning and Programming Fire Safety Deficiency Correction Projects.*

8.7. Federal/State Inspections of DoD Working Conditions and Mishap Investigations. For guidance related to federal/state Events, refer to paragraph **13.3**

8.8. DoL Occupational Safety and Health Administration Annual Visit Summary. AFSEC/SEG will use the procedures and information attained through the AFSAS OSHA Events Module to identify trends, corporate-wide issues, and complete the annual report required by the DoL. **(T-0)**

8.9. Occupational Safety Corporate Committee. The Occupational Safety Corporate Committee is a forum conducted at the direction of the AF Chief of Safety. The forum meets at least semi-annually to address issues of interest to the AF occupational safety community. The committee membership includes, AFSEC and MAJCOM/FOA/DRU occupational safety managers. The charter is posted on Air Force Occupational Safety SharePoint® website (**https://cs2.eis.af.mil/sites/10178/**).

Chapter 9

WEAPONS SAFETY

9.1. Program Management. The Weapons Safety program comprises four disciplines: Explosives Safety, Missile Safety, Nuclear Surety and Directed Energy Weapon (DEW) safety.

9.1.1. Units at and above squadron level with an explosives, missile, nuclear or directed energy weapons mission must have a weapons safety program**. (T-2)**

9.1.2. The installation safety office coordinates weapons safety for the entire installation. Tenant units implement mission unique mishap prevention programs where the installation does not have a mission in that area. Tenant units must coordinate, through an MOA or MOU, any additional program functions with the installation to avoid duplication and clearly delineate responsibility. **(T-3)**

9.1.3. Where the host owns the mission, the tenant organization is subject to the host's MAJCOM requirements.

9.2. Weapons Safety Personnel Management and Manning Plan. Weapons Safety personnel are normally from the 2WXXX or 2MXXX career fields. Civilian personnel with the appropriate series (0018, 0017) experience in the safety career program may be used in all positions that do not have a military necessity. It is the responsibility of the Chief of Safety to recruit, train and staff the Weapons Safety function. **(T-2)**

9.2.1. MAJCOM Chief of Weapons Safety must have munitions, missile or nuclear weapons experience.

9.2.2. Individuals will be scheduled for formal Weapons Safety Management Course L3AZR2W071-0C2A within 90 days of assuming weapons safety position and complete the course within six months of being assigned. MAJCOMs must ensure all weapons safety personnel in their command are properly trained. Additional nuclear surety training requirements are listed in AFI 91-101, *Air Force Nuclear Weapons Surety Program.*

9.2.3. Upon completion of training course L3AZR2W071-0C2A and six months in the Weapons Safety position, the Chief of Safety will ensure the individual is awarded special experience identifier (SEI) 375 and a two-year assignment deferment is initiated if the individual is satisfactorily accomplishing Weapons Safety tasks. **(T-3) Note:** Assignment deferment is not applicable for ANG or AFRC personnel.

9.2.4. Based on mission needs, Weapons Safety personnel are highly encouraged to attend the following courses: Mishap Investigation Non-Aviation (MINA), Introduction to Mishap Investigation, AMMO-47 Lightning Protection for Air Force Facilities, and AMMO-65 DoD Contractor’s Explosives Safety Standards.

9.3. Explosives Safety Standards. Air Force explosives safety standards are in AFMAN 91-201, *Explosives Safety Standards*. Criteria for specific explosives are specified in technical publications and other standard publications, such as command and local directives.

9.4. Weapons Safety Personnel. Manage Weapons Safety program to ensure Air Force units understand and comply with all explosives, missile, nuclear surety and directed energy safety standards.

9.4.1. Review waivers, exemptions and deviations from established explosives safety criteria and advise commanders of the increased damage potential these exceptions allow. **(T-1)**

9.4.2. Ensure units identify and integrate compensatory measures into locally written procedures. **(T-2)**

9.4.3. Assist units in performing a risk assessment for explosives operations according to applicable directives. **(T-2)**

9.4.4. Coordinate on all local written procedures affecting weapons safety and perform annual review. **(T-2)**

9.4.5. Remain aware of planning and activities on the installation that affect weapons safety. The Weapon Safety Manager must conduct and maintain documentation of initial and annual reviews on munitions-related written instructions, explosives test plans, deployment plans, OPLANs, operational orders and local directives involving the storage, handling and inspection of nuclear weapons, missiles, explosives or directed energy weapons. **(T-2)** Copies of reviewed documentation must be maintained by safety office. **(T-2)** Archived/inactive test plans, safety appendices or written procedures do not require annual review unless reactivated.

9.4.6. Advise each new wing and group level commander responsible for an explosive safety program within 60 days of appointment on applicable waivers, exemptions, deviations and compensatory measures as well as the associated risk for each. Commanders below group level will be briefed by appointed Additional Duty Weapons Safety Representatives, when appropriate. **(T-2)**

9.4.7. Participate in mishap prevention and Risk Management determination in the following areas:

9.4.7.1. Maintenance, storage, alert, research and developmental test, and operating locations. **(T-2)**

9.4.7.2. Flight line explosives operations. **(T-2)**

9.4.7.3. Operational procedures for aircraft carrying hazardous materials. **(T-2)**

9.4.7.4. Explosives Ordnance Disposal proficiency/demolition ranges. **(T-2)**

9.4.7.5. Nuclear surety elements. (See AFI 91-101). **(T-2)**

9.4.7.6. Munitions Material Handling Equipment quality assurance programs. **(T-2)**

9.4.7.7. Weapon systems maintenance. **(T-2)**

9.4.7.8. Weapon systems modifications, special exercises and test programs. **(T-2)**

9.4.7.9. Planning for contingencies. **(T-2)**

9.4.7.10. Concurrent Servicing Operations. **(T-2)**

9.4.7.11. Licensed locations. **(T-2)**

9.4.7.12. Installation support (Continental United States only) for Department of Energy (DoE) shipments (SAFE HAVEN). (See AFMAN 91-201). **(T-2)**

9.4.7.13. Weapons safety training for unit personnel. **(T-2)**

9.4.7.14. Weapons test review process, if applicable. **(T-2)**

9.4.7.15. Explosives movement route. **(T-2)**

9.4.7.16. Hot Cargo Pads and Inspection Points/Secure Holding Location for Explosives-Loaded Commercial Vehicles. **(T-2)**

9.4.7.17. Management, storage and disposition of Materials Potentially Presenting an Explosives Hazard. **(T-2)**

9.4.7.18. Aerial port explosives operations. **(T-2)**

9.4.7.19. Small arms ranges. **(T-2)**

9.4.7.20. Field training exercise areas where explosives are used. **(T-2)**

9.4.7.21. Missile Alert Facilities and Launch Facilities. **(T-2)**

9.4.8. Annually review installation explosives location map and provide changes and corrections to CE. Review must be documented and maintained by the safety office. CE published maps should be coordinated with logistics, operations and safety. The reviews can be documented on separate logs and will include but not be limited to the following applicable areas:

9.4.8.1. Explosives safety "clear zones" required around each location based on approved site plans.

9.4.8.2. Primary and alternate explosives movement routes through the installation.

9.4.8.3. Authorized flight line locations for conducting explosives operations to include concurrent servicing operations activities, explosives aircraft cargo on or off loading, and combat aircraft explosives loading.

9.4.8.4. Locations for handling hung ordnance and gun-clearing operations.

9.4.8.5. Arm and de-arm areas.

9.4.8.6. Explosives support workplaces, such as flightline munitions holding areas.

9.4.8.7. Base explosives prohibited zones (see AFMAN 91-201 and UFC 3-260-01). **Note:** At OCONUS locations, consideration must be given to Status of Forces Agreements, Host Nation Funded Construction Agreements and Bilateral Infrastructure Agreements.

9.4.8.8. Vehicle inspection points and suspect vehicle areas.

9.4.8.9. Parking spots for aircraft loaded with munitions or explosives identified in AFMAN 91-201.

9.4.8.10. DEW operations, including potential electromagnetic radiation hazard zones, and maintenance location hazard zones that could affect munitions operations. After 100 percent evaluation, plot only those zones that actually impact munitions operations to include primary and alternate explosive routes. Identify hazardous DEW effects to potential explosive sites, including ordnance and fuel. The review must be documented and maintained by Weapons Safety. **(T-2)** The reviews can be documented on separate logs.

9.4.8.11. Explosives Ordnance Disposal range(s).

9.4.8.12. Base weapons range(s).

9.4.8.13. Restrictive easement(s).

9.4.9. With the assistance of Occupational Safety, assign RACs to weapons safety hazards **(T-2)**

9.5. Weapons Safety Program Requirements. Units that maintain explosives must:

9.5.1. With the assistance of the installation CE and Safety offices, submit explosives site plans IAW AFMAN 91-201. The installation safety office is the OPR for all explosives site plans. **(T-2)**

9.5.2. Request a license for facilities that store small quantities of explosives according to AFMAN 91-201. **(T-2)**

9.5.3. Review and help develop plans and procedures for handling emergencies to include, but not limited to, SAFE HAVEN, HAZMAT response, AFI 10-2501 or UFC 3-260-01, and when required by law (e.g., Clean Air Act; Environmental Planning Community Right To Know Act; secure explosives holding areas IAW the Defense Travel Regulation, Part II, Chapter 25), or accidental release RM programs for explosives. **Note:** At OCONUS locations, consideration must be given to Status of Forces Agreements, Host Nation Funded Construction Agreements and Bilateral Infrastructure Agreements. **(T-2)**

9.5.4. Ensure the Weapons Safety Manager attend pre-construction meetings hosted by the Installation Community Planner and Airfield Manager. **(T-2) Note:** Weapons Safety Manager must be a coordination member on any construction that affects explosives clear zones, weapons or airfield operations. **(T-2)**

9.6. Missile Safety. Missile systems are ground-launched or air-launched and do not include unpiloted drones or remotely piloted vehicles. The aerospace vehicle, ground support and operational equipment, personnel, and the operational environment are all sources of mishaps. Missile launch operations will comply with DoDD 3200.11, *Major Range and Test Facility Base (MRTFB)*, DoDI 3200.18, *Management and Operation of the Major Range and Test Facility Base*, AFI 99-103, *Capabilities-Based Test and Evaluation*, and AFMAN 13-212V1, *Range Planning and Operations*, safety requirements as described in **Chapters 1** and **2,** and will be conducted from a MRTFB range. **(T-1)**

9.7. Nuclear Surety. The goal of the Air Force Nuclear Weapons Surety Program is to incorporate maximum nuclear surety, consistent with operational requirements, from weapon system development through dismantlement. Refer to AFI 91-101 for nuclear surety program requirements, policies on nuclear safety design certification, and AFI 63-125, *Nuclear Certification Program*, for the process for nuclear certification, to include design and operational certification of nuclear weapon systems.

9.8. Unit Directed Energy Safety Program Functions. Directed Energy Safety program requirements are broken down into two categories, weapons and non-weapon systems. Hazards presented by a directed energy system are intrinsic properties of the system and not a function of any distinction as a weapon system. However, there are different programmatic requirements based upon a system's operational use.

9.8.1. For operational units with non-weapon directed energy systems, the unit will execute occupational health and safety plans based upon the hazard(s) (e.g., laser and/or electromagnetic frequency radiation) of the directed energy system IAW the installation Laser Safety Officer, Installation Occupational and Environmental Medicine Consultant, BE, and/or

Public Health per AFI 48-139, *Laser and Optical Radiation Protection*, AFI 48-109, *Electromagnetic Field Radiation (EMFR) Occupational and Environmental Health Program*, and AFI 48-127, *Occupational Noise and Hearing Conservation Program*, respectively. **(T-1)**

9.8.2. For installations with directed energy weapons, base/wing Weapons Safety personnel will review directed energy weapon safety programs at least annually for each type of directed energy weapon system operated by the installation's units IAW this Instruction. **(T-1)**

9.8.3. In coordination with base/wing safety personnel, operational units will evaluate and document unit radio frequency weapons, laser weapons, and other directed energy systems for operational compatibility with ordnance, electronics, and fuel storage likely to be in the operating and maintenance environment of the directed energy system IAW DoDI 3222.03, *DoD Electromagnetic Environmental Effects (E3) Program*, AFMAN 91-201, and this instruction. **(T-0)**

9.9. Munitions Rapid Response Team. Hill AFB's Munitions Rapid Response Team is manned with personnel knowledgeable in conventional munitions areas. This team is available to support MAJCOMs and units whenever they have a conventional weapons mishap or problem. They can be activated to respond within 24 to 48 hours. Refer to paragraph **13.5** for specific guidance.

9.10. Department of Defense Explosives Safety Board (DDESB). The DDESB is a joint board of the DoD. It is subject to the direction, authority and control of the Secretary of Defense, under the Deputy Under Secretary of Defense (Environmental Security).

9.10.1. The board consists of a chairperson and an officer (O-6/GS-15 or above) from each of the military departments. In addition, each military department must designate an alternate. Within the Air Force, AF/SE provides the primary and alternate members.

9.10.2. The DDESB establishes DoD explosives safety policy and is responsible for the DoD Explosives Safety Management Program (ESMP). DDESB conducts Component-level programmatic evaluations according to DoDI 6055.16, *Explosives Safety Management Program*, which requires the Secretaries of the Military Departments to establish, resource, implement and maintain effective DoD Component-level ESMPs. Each year DDESB evaluates one of the Military Departments ESMPs. This is a top to bottom review (HAF, MAJCOM, NAF and installation) of the Services' explosives safety program.

9.11. Weapons, Explosives and DEW Training.

9.11.1. The MAJCOM/DRU/FOA weapons safety office must provide MAJCOM/Center-unique Weapons Safety Manager training to their NAF- and installation-level weapons safety personnel. Training should include all MAJCOM specific requirements and known challenges to increase effectiveness of newly assigned personnel.

9.11.2. The installation Weapons Safety Manager provides weapons safety training to all appointed Additional Duty Weapons Safety Representatives on their responsibilities and program management. **(T-2)** Additional Duty Weapons Safety Representatives are required to be trained within 30 working days of appointment, with recurring training as determined by the MAJCOM. Air Reserve Component primary and alternate Additional Duty Weapons Safety Representative will complete initial training within two unit training assemblies of appointment.

9.11.3. Weapons safety, Additional Duty Weapons Safety Representative or designated representative conducts explosives safety training, which augments the job training provided by the supervisor. **(T-2)** The installation weapons safety staff evaluates and monitors this training, approves lesson plans and reviews them annually. **(T-2)** All personnel (supervisory and non-supervisory) who operate, handle, transport, maintain, load or dispose of missiles, explosives or nuclear weapons must receive initial explosives safety training before performing any of these tasks. **(T-2)** All personnel tasked to work on aircraft configured with explosives/ordnance will receive training that includes how to identify an armed aircraft and a familiarization of the hazards involved when working on or around explosives loaded aircraft, ensure initial explosives safety training is provided before performing any of these tasks. **(T-2)** Recurring training must be provided not later than the end of the 15th month following initial training. **(T-2) Exception:** Personnel who store and/or handle only the following are exempt from initial and refresher explosives safety training.

9.11.3.1. Small arms ammunition, including cartridge-actuated tools in quantity-distance hazard class/division 1.4.

9.11.3.2. Document destroyers.

9.11.3.3. Small tear gas items, such as grenades.

9.11.3.4. Aircraft, vehicle and facility fire extinguisher cartridges.

9.11.3.5. Other hazard class/division 1.4 items in their packaged configuration only. Personnel who will unpack and handle unpackaged items other than the exceptions listed above still require training.

9.11.4. Personnel conducting or directly supporting DEW operations, maintenance, testing or training must receive training prior to use, within 30 days of assignment to unit, and every 24 months thereafter. **(T-3)**

9.11.5. Aircrew personnel trained per AFI 11-series (Flying Operations) guidance are exempt from initial and refresher explosives safety training.

9.12. Weapons Safety Committees. These committees include the Explosives Safety Committee, the Non-Nuclear Munitions Safety Board, the Nuclear Weapons System Safety Group and the Directed Energy Weapons Safety Board. The committees are chaired by an AFSEC/SEW representative and are composed of the chiefs of weapons safety or their MAJCOM representatives. These committees discuss matters of mutual concern that cross MAJCOM lines.

Chapter 10

SPACE SAFETY

10.1. Program Management. This chapter contains requirements for space safety offices at all command levels. Units conducting space-related missions must have a comprehensive Space Safety Program designed to improve operational effectiveness by identifying, managing and mitigating hazards, reducing mishaps, supporting mission assurance, and incorporating mishap prevention guidance across the life cycle of space systems and their unique support equipment. **(T-1)**

10.1.1. This includes design, system development, software safety, system safety, integration, testing, pre-launch, launch operations, range operations, space nuclear systems, orbital operations, reentry operations, and ground-based space systems.

10.1.2. Applicability. All Air Force organizations that develop, test, or operate any space system, or who provide launch/range services for space systems shall comply with this instruction. **(T-1)** This includes space systems under development, research and development systems, experimental systems, systems undergoing testing, operational systems, and systems at end-of-life. This chapter is applicable to the entire segment portion of the Space mission (e.g., systems architecting and design, manufacturing, launching, manufacturing, and operations through disposal) under Air Force control. Organizations designing and operating Air Force hosted payloads on non-Air Force satellite vehicles shall comply with this chapter for portions within their control. **(T-3)**

10.2. Space Safety Responsibilities. This section addresses the space safety responsibilities of wing and directorate-level organizations within the Air Force and those of mission partners outside of the Air Force. It also lays out responsibilities with regards to space waivers.

10.2.1. Wing/Directorate-level Organization Responsibilities. Organizations that acquire, maintain, upgrade, test, operate, and/or dispose of space systems shall coordinate with the NAF/Center Safety Office to implement a Space Safety Program. **(T-3)** At a minimum, the Wing/Directorate Safety Office shall:

10.2.1.1. Keep the Wing/Directorate Commander apprised of Space Safety issues. **(T-3)**

10.2.1.2. Ensure subordinate units execute Space Safety Programs, provide oversight to local Space Safety Programs, and train to ensure compliance with formal guidance. **(T-3)**

10.2.1.3. Ensure each subordinate unit has at least one trained Space Safety Manager appropriate to their mission. **(T-3)**

10.2.1.4. Manage, as applicable, the Launch/Range, Orbital, Ground-Based, or System Safety Program for the commander/director. **(T-3)**

10.2.2. Waivers Responsibilities.

10.2.2.1. By 1 October each year provide AFSEC/SES with all MAJCOM Commander approved and active space waivers to this publication.

10.2.2.2. The wing/center COS and System Safety Manager shall review all space safety waiver requests. **(T-3)**

10.2.2.3. MAJCOM's subordinate units (e.g., wings, centers, NAFs) shall provide the MAJCOM/SE copies of all dispositioned space safety waivers. **(T-2)**

10.2.2.4. MAJCOM safety offices shall provide copies of all dispositioned space safety waivers to other supporting or supported MAJCOM's safety offices.

10.2.3. Mission Partner Responsibilities. All organizations with participation from external mission partners with space safety considerations should establish MOAs or MOUs with those organizations. **Note:** Consult with NAF safety staff and MAJCOM/SE, as appropriate.

10.2.3.1. Such MOAs and MOUs should consider the following:

10.2.3.1.1. Each organization's responsibilities and requirements with regard to space safety mishap prevention.

10.2.3.1.2. Understanding and implementation of space safety requirements and policies of affected organizations.

10.2.3.1.3. Address which Space Safety policies apply to Air Force personnel assigned to non-Air Force organizations (e.g., National Reconnaissance Office, FAA, NASA).

10.2.3.1.4. The participating organizations' responsibilities to determine the lead agency, with respect to risk management approval authority.

10.2.3.2. When external organizations share launch services on Air Force launches, MOAs and MOUs with those organizations shall include responsibilities to provide a do-no-harm and National Space Policy compliance certification from a proper the applicable U.S. Government Department or Agency approval authority to include, but not limited to compliance with U.S. National Space Policy. **(T-2)**. The Air Force shall not launch any space vehicle which has not been certified as compliant with the National Space Policy, unless a waiver to the National Space Policy has been obtained. **(T-0).**

10.3. Space Safety Council (SSC). Assists the AF/SE or designated representative in providing oversight responsibilities on matters concerning safe operations in the space environment (and related mission areas) through effective governance and management. The SSC also serves to improve space safety effectiveness and advocate for the consistent application of DoD, civil, commercial, academic and international standards or practice across the space enterprise.

10.3.1. AFSEC/SES chairs the SSC and Air Force Space Command Director of Safety (AFSPC/SE) serves as vice-chair. The SSC has a composition of MAJCOMs/DRUs/organizations with space missions that affect Air Force operations.

10.3.2. The SSC convenes at least twice per year, and:

10.3.2.1. Recommends DoD/Federal and Air Force safety policy.

10.3.2.2. Prepares and monitors DoD/Federal and Air Force directives and/or instructions concerning Space Safety issues.

10.3.2.3. Promotes Space Safety initiatives for DoD/Federal space flight using Air Force resources.

10.3.2.4. Recommends, prepares, monitors, and promotes policies, directives, and/or instructions for commercial Space Safety, especially those associated with Air Force resources.

10.3.2.5. Maximizes collaboration with organizational Space Safety Offices.

10.3.2.6. Discusses Space Safety issues.

10.4. Space Nuclear Safety. Programs that use radioactive material and nuclear power systems in space shall follow AFMAN 91-110, *Nuclear Safety Review and Launch Approval for Space or Missile Use of Radioactive Material and Nuclear Systems*, for safety requirements, review processes, and approval processes. **(T-1)**

10.5. Ground Based Space System Safety.

10.5.1. Organizations which operate ground-based space systems, including unique space support equipment as well as space-related systems that do not directly support launch operations or on-orbit satellite operations shall establish a space safety program to address the unique ground based space safety aspects of the organization's mission. **(T-1)**

10.5.2. Radio Frequency Deconfliction. Organizations shall take special care not to produce unintended effects during operations. **(T-3)** Refer to Space Instruction 534-15, *Risk Management and Radio Frequency Deconfliction for Space Control Activities*, for further information.

10.5.3. Testing. Organizations with ground based space systems which will undergo testing shall have documented test program validation (to include procedures discipline, readiness reviews, and test execution risk management) and configuration control processes. **(T-3)**

10.6. Pre-Launch. This section outlines safety responsibilities and tasks for pre-launch. Pre-launch activities includes the design, development, and procurement acquisition stages and processing of space systems at the launch site.

10.6.1. Safety Responsibilities.

10.6.1.1. Different aspects of pre-launch safety may be the responsibility of different authorities. For example, the protection of a system's equipment from hazards may be the responsibility of the program office Director while the protection of the public from a space program's ground and/or flight hazards may be the primary responsibility of the Wing Commander.

10.6.1.2. The Wing Commander shall ensure range users comply with Air Force pre-launch/range safety requirements levied upon them as a condition of Air Force range use. **(T-3)**

10.6.1.3. The Wing Commander is responsible to ensure that pre-launch activities do not unreasonably endanger the health and safety of the public, mission essential personnel, and neighboring operations personnel, while providing for ground resource protection.

10.6.1.4. Responsibilities for pre-launch safety for FAA-licensed operations from AF ranges shall be established in agreements between commercial launch providers and the AF. **(T-3)**

10.6.1.5. Safety responsibility for pre-launch site processing is normally the responsibility of the program office PM or equivalent acquiring the system/services when occurring at a location outside of the launch site. The launch wing safety office normally has safety responsibility for pre-launch processing occurring on AF range property.

10.6.2. Pre-Launch Safety Activities.

10.6.2.1. Plan and execute the transportation of high-value and/or hazardous space systems to minimize hazards posed to and by the space system IAW Department of Transportation, state, local, and other applicable transportation requirements. **(T-1)** The responsible program office PM shall develop and approve a transportation plan (or equivalent document) for transportation from the factory to the operational site or range. **(T-3)** The receiving Wing Commander and program office PM, if any, shall coordinate on the plan. **(T-3)**

10.6.2.2. Appropriate Readiness Reviews shall occur before initiating final countdown so that the wing commander has assurance of launch safety and the readiness of all personnel and systems involved. **(T-3).**

10.7. Launch Safety.

10.7.1. This section outlines safety responsibilities and tasks for launch operations (to include return of launch vehicle stages/components to the launch site or other site), and the reentry of launch vehicle components. For on-orbit disposal safety responsibilities, requirements for spacecraft or launch vehicle components that achieve or remain in orbit, see paragraph **10.8**

10.7.2. Safety Responsibilities.

10.7.2.1. The Wing Commander is responsible to ensure that launch activities do not unreasonably endanger the health and safety of the public, launch area personnel, and other mission support personnel, while providing for ground resource protection. This responsibility for personnel and public safety extends from liftoff to orbital insertion, or from liftoff to sub-orbital impact. It includes jettisoned launch vehicle components, debris released prior to orbital insertion, and any controlled landing systems such as fly-back stages and recovering space vehicles to a launch/landing site.

10.7.2.2. The Wing Commander shall ensure range users comply with Air Force launch/range safety requirements levied upon them as a condition of Air Force range use. **(T-3)**

10.7.2.3. The AF will accept FAA licensing decisions/approvals for commercially licensed missions. The Secretary of Transportation has a statutory responsibility for all aspects of launch safety as required by Title 51 U.S. Code, *National and Commercial Space Programs.* This responsibility is executed through the FAA's Office of Commercial Space Transportation. Use established agreements for safety processes.

10.7.2.4. For all non-licensed launches and landings at Air Force ranges, including test and evaluation and DoD/civil space missions, the Air Force has responsibility for ensuring public health and safety and the protection of resources.

10.7.2.5. Use of Air Force safety standards or services is not required for FAA-licensed launches. If FAA-licensed launch providers choose to use Air Force services they will engage the owning wing through established processes.

10.7.3. Launch Mishap Prevention Program. The launch/recovery site commander shall perform review, and approve all risk analyses associated with launch/landing on the range. **(T-3)** The following outlines acceptable risk levels for hazards during the launch phase for launch

vehicles, jettisoned components, controlled landings to a launch and landing site, and for suborbital missions.

10.7.3.1. Personnel Risk. The risk to the general public, launch essential personnel, and neighboring operations personnel shall use criteria thresholds listed in Range Commanders Council (RCC) 321, *Common Risk Criteria Standards for National Test Ranges.* **(T-3)**

10.7.3.2. Critical Asset Risk. The probability of impact to critical assets shall not exceed 1×10^{-3}. **(T-3)** More stringent criteria may be applied as deemed necessary by the Wing Commander to protect assets critical to national security.

10.7.3.3. Launch Collision Avoidance (COLA) and Launch Conjunction Assessment (CA). Non-FAA licensed launches from Air Force ranges and all Air Force controlled launches from any range shall accomplish Launch COLA procedures accounting for all launched objects (e.g., booster segments, payloads, jettisoned components, and debris) with an altitude capability equal to or greater than 150 km. **(T-3)**

10.7.3.3.1. Launch operators/range users shall provide the launch wings and the 18th Space Control Squadron with planned flight profile data for all space launch vehicle and jettisoned components (to include upper stages pre-programmed for a controlled reentry, up until atmospheric reentry). **(T-3)** This data shall be provided to the 18th Space Control Squadron IAW the timelines referenced on **https://www.space-track.org/auth/login** website and the 18SPC Launch Conjunction Assessment Request Form 22. **(T-3)**

10.7.3.3.2. Wing Commanders shall establish and enforce launch window hold periods, based on the Launch conjunction assessments computed by the 18th Space Control Squadron against catalogued objects. **(T-3)** For Air Force launches from non-Air Force ranges, the senior Air Force representative involved with the launch assumes responsibility of Launch COLA risk management.

10.7.3.3.3. Timeframe. Launch COLA shall cover the period of time from when launched objects achieve an altitude equal to or greater than 150 km, until location uncertainty makes performing a pre-launch safety COLA infeasible, or until the suborbital or reentry components descend to less than 150 km. **(T-3)** The propagation of uncertainties in precise launch time, variability of delta V magnitude and direction, and growth rate should be considered in determining when Launch COLA becomes infeasible.

10.7.3.3.4. There is currently a gap between the end of the Launch COLA and the time when 18th Space Control Squadron can establish, or receive from a payload operator, reliable orbital data on launched objects, plus the time when an active asset can respond to an 18th Space Control Squadron conjunction assessment. This is known as the "COLA gap." For missions where a pre-programmed controlled reentry occurs, any portion of the mission after the end of the launch COLA is contained in the COLA gap. Programs should use industry best practices to mitigate the COLA gap risk to Human Space Flight objects. Examples of these practices are but not limited to, nodal separation and in-track screening, probability density model, and radial and argument of latitude screening.

10.7.3.3.5. Launch window hold periods. Determine the launch window hold periods based on one or a combination of the following methodologies and criteria:

10.7.3.3.5.1. The probability of collision between the launch components and a Human Spaceflight objects shall not exceed 1×10^{-6} (one in one million). The probability of collision between the launch components and Non-Human Spaceflight objects (to include active satellites and orbital debris) shall not exceed 10×10^{-6} (ten in one million). **(T-3)**

10.7.3.3.5.2. The safe separation distance for Human Space Flight objects shall consist of either ellipsoidal miss distance volumes with semi-axes of 200 km in-track, 100 km cross-track, or 100 km radial; or spherical volumes with a radius of 200 km. **(T-3)** The safe separation distance for non-Human Space Flight objects shall consist of three-sigma ellipsoidal miss distance volumes calculated from the covariance data. Where the covariance data are not available, utilize a spherical miss distance volume with a radius of 25 km for active satellites and 2.5 km for debris. **(T-3)**

10.7.3.3.6. Timeline. CA results for launch decision shall be computed no more than 24 hours prior to the end of the launch window. This requirement does not preclude early launch screenings, nor screenings within 24 hours when updates are warranted to account for significant updates to tracking or trajectory data. **(T-3)**

10.7.3.3.7. Control of Errant or Non-Nominal Vehicle Flight. The Wing Commander shall approve the methodology for controlling erratic vehicle flight while managing risks to the public and foreign countries for all vehicles launched from or onto Air Force ranges. **(T-3)**

10.7.3.3.8. The range shall coordinate with the FAA to ensure timely notification of any expected air traffic hazard associated with range activities. **(T-3)** To prevent increased risk to public safety in the event of a mishap, the range shall immediately inform the FAA of the affected airspace (impact on volume/duration). **(T-3)** Similarly, the range shall coordinate with the US Coast Guard to ensure timely notification of potentially hazarded ship traffic and in the event of mishap, inform the US Coast Guard of the affected sea area and duration of navigable waters. **(T-3)**

10.7.4. Space Debris. All launch vehicles (or components) shall be managed (mitigate and control) for potential space debris generation. **(T-0)** For the launch vehicle, debris mitigation practices shall be incorporated throughout system development, operations and end of life. **(T-0)** The launch vehicle shall be assessed for compliance with the National Space Policy, DoDI 3100.12, *Space Support,* and this instruction for generation of space debris during all mission phases. **(T-0)**

10.7.4.1. For launch vehicles, Orbital Debris Mitigation Standard Practices requirements shall be addressed as part of the Mission Architecture Options determination during Material Solutions Analysis phase of DoDI 5000.02, *Operation of the Defense Acquisition System,* or equivalent phase for non-DoD 5000.02 activities, documented in the Analysis of Alternatives report, or equivalent, and included as a compliance document in the development of the program/project statement of work for release of the request for proposal. **(T-1)**

10.7.4.2. Space systems not meeting the National Space Policy will follow the AF/A3 Exception to Policy process for a Secretary of Defense waiver. Accepted operational or acquisition safety risk assessments shall be included in the Exception to Policy package. **(T-1)** Risk acceptance assessments should be completed as early as possible based on determining a hazard exists, and prior to seeking approval with Exception to Policy packages.

10.7.5. Launch Vehicle End of Life Requirements.

10.7.5.1. Any launch vehicle component that achieves orbit will undergo passivation and disposal procedures as outlined in paragraph **10.8** **(T-1)**

10.7.5.2. Reentry hazards posed by expended launch vehicles or other jettisoned components that achieve orbit shall be in the analysis and risk budgets of the disposal and end of life phase. **(T-3)** Refer to DoDI 3100.12 for additional guidance.

10.7.5.3. For reentries of launch vehicle objects or recovery of objects jettisoned during ascent, the acquisition organization shall develop disposal recovery plans which include adequate steps to mitigate known hazards during recovery operations. **(T-3)**

10.8. Orbital Safety.

10.8.1. Scope and responsibility.

10.8.1.1. All organizations with Satellite Control Authority or that test or operate any space system (including satellites, payloads, and experimental systems) designed to complete one or more revolutions in Earth orbit, shall establish an Orbital Safety Program appropriate to the level of effort commensurate with organizational scope of operations**.** **(T-2)** The Orbital Safety Program shall span the on-orbit testing, operations and end-of-life actions. **(T-2)**

10.8.1.2. Units shall appoint Space Safety Managers for each Space Safety Program to manage the Satellite Control Authority's Orbital Safety Program. **(T-3)** Space Safety Managers shall:

10.8.1.2.1. Participate in all Operations Review Panel (ORP), Operational Review Board (ORB), Satellite Anomaly Resolution Team (SART) and similar or equivalent processes to observe trends and provide input on Space Safety related issues. **(T-3)**

10.8.1.2.2. Obtain and review ORP/ORB/SART minutes and information on orbital anomalies and events of significance to their program office and MAJCOM safety office for the purpose of trend tracking mishap prevention, and reporting. **(T-3)** If this information is classified, report and handle via appropriate classified channels.

10.8.1.2.3. Verify that routine, contingency, test, operations, experimental, and any other applicable procedures take no unnecessary risk, consistent with cost effectiveness and mission requirements. **(T-3)**

10.8.1.2.4. Participate in both routine operations and spacecraft anomaly recovery actions in order to gain experience and help prevent future anomalies. **(T-3)**

10.8.1.2.5. Tailor local Space Safety training for operations and operational test personnel for greater applicability to the assigned mission and conditions. **(T-3)**

10.8.1.2.6. Assist operations/operational test personnel in complying with Space Safety guidelines. **(T-3)**

10.8.1.2.7. Advise the unit commander on risks to the mission by monitoring things such as crew rest, training, system modifications, and any other aspect of operations. **(T-3)**

10.8.1.2.8. Participate in Systems Safety Working Groups to voice operations concerns relative to systems design decisions. **(T-3)**

10.8.1.2.9. Report safety related issues to the wing safety office. **(T-1)**

10.8.2. Orbital Anomaly Response.

10.8.2.1. To ensure proactive mishap prevention, organizations shall notify their Space Safety Manager of all anomalies. **(T-3)**

10.8.2.2. Refer to AFI 91-204 and AFMAN 91-222, *Space Safety Investigations and Reports*, for specific anomaly reporting criteria.

10.8.2.3. Unit commanders shall ensure Space Safety Managers are full members on all Anomaly Resolution Teams, Engineering Review Boards, Operational Review Boards, and/or similar constructs, and shall receive invitation to participate in all supporting events. **(T-3)**

10.8.2.4. Reporting. Organizations shall process the relevant findings and recommendations from anomaly resolutions through safety channels, in addition to normal reporting channels, to ensure proactive mishap prevention. **(T-2)**

10.8.3. Space Debris.

10.8.3.1. All spacecraft and launch vehicles (or components) that expect to achieve orbit shall be managed (mitigate and control) for potential space debris generation. **(T-0)** For spacecraft and launch vehicle, debris mitigation practices shall be incorporated throughout system development, operations, and end of life. **(T-0)** The spacecraft and launch vehicles shall be assessed for compliance with the US National Space Policy, DoDI 3100.12 and this instruction for generation of space debris during all mission phases. **(T-0)**

10.8.3.1.1. For spacecraft and launch vehicles, Orbital Debris Mitigation Standard Practices requirements shall be addressed as part of the Mission Architecture Options determination during Material Solutions Analysis phase of DoDI 5000.02, or equivalent phase for non-DoD 5000.02 activities, documented in the Analysis of Alternatives report, or equivalent, and included as a compliance document in the development of the program/project statement of work for release of the request for proposal. **(T-3)**

10.8.3.1.2. Spacecraft and launch vehicles not meeting Orbital Debris Mitigation Standard Practices will follow the AF/A3 Exception to Policy process for a Secretary of Defense exception. Safety risk assessments related to the noncompliance shall be included in the Exception to Policy package. **(T-1)** Risk acceptance assessments should be completed as early as possible based on determining a hazard exists, and prior to seeking approval with Exception to Policy packages.

10.8.3.2. Space Debris Assessment Report.

10.8.3.2.1. For all Air Force owned objects launched into space, the launch vehicle PM and the spacecraft PM shall prepare and deliver applicable space debris assessments, per the format and content defined in paragraph **13.11,** *Launch Vehicle Space Debris Assessment Report (SDAR),* and paragraph **13.12,** *Combined Space Vehicle Space Debris Assessment Report/End of Life Plan (SDAR/EOLP)***. (T-2)** Air Force owned hosted payloads are not required to develop a Space Debris Assessment Report, unless specifically required by the hosting spacecraft.

10.8.3.2.2. The Launch Vehicle Space Debris Assessment Report (paragraph **13.11**) shall address space debris associated with the launch vehicle. **(T-2)**

10.8.3.2.3. Spacecraft PMs shall combine the Spacecraft Space Debris Assessment Report with the Spacecraft End of Life Plan and deliver this per the format and content defined in paragraph **13.12 (T-2)**

10.8.3.2.4. The Space Debris Assessment Report shall include an assessment of debris generation risk during launch, on-orbit operations, and end of life disposal, and assess compliance with the Orbital Debris Mitigation Standard Practices. **(T-2)**

10.8.3.2.5. The space debris assessment shall specifically note requirements not met because of an overriding conflict with mission requirements or a prohibitive cost impact, along with the appropriate rationale and justification. **(T-2)**

10.8.3.3. Assessment of Debris Released During Normal Operations.

10.8.3.3.1. Operational or mission-related debris includes debris released during normal space operations (e.g., sensor covers, tie-down straps, explosive bolt fragments). It does not include slag ejected during the burning of a solid rocket motor or liquids dispersed from a spacecraft.

10.8.3.3.2. Total object-time of debris in Low Earth Orbit. **(T-3)** For missions leaving debris in orbits passing through Low Earth Orbit, the total object-time of debris larger than five millimeters (5mm) in any dimension shall not exceed 25 years per object and 100 object-years per mission. **(T-3)** The object-time of debris is calculated as the sum of time spent in Low Earth Orbit for all mission debris objects (below 2000 km altitude). Refer to NASA-STD-8719.14B, *Process for Limiting Orbital Debris,* for calculation of total object time. **(T-3)**

10.8.3.4. Assessment of Debris Generated by Accidental Explosions.

10.8.3.4.1. The program office PM for each spacecraft or launch vehicle shall demonstrate via failure mode and effects analyses (or equivalent) that the integrated probability of explosion for all failure modes (excluding collisions) is less than $1x10^{-3}$ (one in one thousand). **(T-3)**

10.8.3.4.2. The probability shall be met for all separate spacecraft and launch vehicle orbital stages during all phases of operations, and during the remaining orbital lifetime after disposal. **(T-3)**

10.8.3.4.3. The maximum time period for the assessment of this probability of explosion is 200 years. Reference NASA-STD-8719.14B.

10.8.3.5. Assessment of Debris Generated by Intentional Breakups.

10.8.3.5.1. Program offices and/or operators shall assess and limit the effect of intentional breakups of spacecraft and launch vehicle orbital stages on other users of space. **(T-2)**

10.8.3.5.2. Planned explosions or intentional collisions shall occur at altitudes such that, for orbital debris fragments larger than 10 cm, the object-time product does not exceed 100 object-years. **(T-1).** No debris larger than 1 mm shall remain in Earth orbit longer than one year. Reference NASA-STD-8719.14B. **(T-1)**

10.8.3.5.3. Immediately before a planned explosion or intentional collision, the probability of related debris larger than 1 mm colliding with any active spacecraft within 24 hours of the breakup shall not exceed $1x10^{-6}$ (one in one million). Reference NASA-STD-8719.14B. **(T-1)**

10.8.3.6. Assessment of Debris Generated by On-orbit Collisions.

10.8.3.6.1. Collisions with Large Objects.

10.8.3.6.1.1. Program office PMs shall demonstrate that, during the orbital lifetime of each spacecraft or launch vehicle component, the probability of accidental collision with space objects larger than 10 cm in diameter does not exceed 1×10^{-3} (one in one thousand). **(T-3)** For the assessment of collision probability, the orbital lifetime is defined as the time from end of launch collision avoidance to atmospheric reentry. The maximum time period for assessment is 200 years.

10.8.3.6.1.2. The reduction in probability of collision achieved by on-orbit collision avoidance performed by the spacecraft or launch vehicle component (i.e., for the system which the Space Debris Assessment Report is assessing) may be included in this assessment. When this reduction in probability is utilized, then the safety hazard risk assessment is based upon this reduction of probability.

10.8.3.6.2. Collisions with Small Objects. Program office PMs shall demonstrate that, during the mission of the space system, the probability of accidental collision with objects (including space debris and meteoroids) sufficient to prevent post-mission disposal is less than $1x10^{-2}$ (one in one hundred). Refer to NASA-STD-8719.14B for additional guidance. **(T-3)**

10.8.4. Conjunction Assessment and Collision Avoidance.

10.8.4.1. The Wing commander shall have and approve a conjunction assessment/collision avoidance process commensurate with the scope and effort of the operational mission. **(T-3)** The program begins following separation of the last launch vehicle component and shall continue through decommissioning, end-of-life disposal, or reentry. **(T-3)**

10.8.4.2. Orbital objects which are cataloged by the 18th Space Control Squadron but are not expected to remain on orbit long enough for orbital CA processes to be reliable (e.g. upper stages with pre-programmed reentry burns), should follow paragraph **10.7.3.3** (Launch COLA processes).

10.8.4.3. All Air Force launch and orbital space systems shall use 18th Space Control Squadron-generated CA data to inform safety COLA risk decisions. **(T-3)**

10.8.4.4. Organization with Satellite Control Authority of active on orbit spacecraft shall:

10.8.4.4.1. Have a process to receive conjunction assessment results at least every 24 hours. **(T-3)**

10.8.4.4.2. For orbital vehicles capable of controlling or altering their orbital parameters, the following collision risk levels and collision risk acceptance thresholds apply.

10.8.4.4.2.1. The probability of collision at any individual conjunction with a Human Spaceflight object shall not exceed 1×10^{-6} (one in one million). **(T-3)**

10.8.4.4.2.2. The probability of collision at any individual conjunction with other active Non-Human Spaceflight satellites shall not exceed 10×10^{-6} (ten in one million). **(T-3)**

10.8.4.4.2.3. The approved COLA process shall identify collision risk levels and collision risk acceptance thresholds for all other objects. **(T-3)**

10.8.4.5. Conduct collision avoidance to pre-screen planned maneuver vectors, to include operational, end of life, and controlled reentry burns. **(T-3)**

10.8.4.6. Proximity Operations.

10.8.4.6.1. Organizations executing proximity operations shall develop procedures to avoid unintended spacecraft-to-spacecraft contact (e.g., planning an orbit with a non-intersecting natural motion circumnavigation), unnecessary debris generation, or contamination of sensitive equipment, e.g., from spacecraft thruster firings, other off-gassing. **(T-3)**

10.8.4.6.2. Organizations shall notify 18th Space Control Squadron of their close proximity operations and any special support requirements. **(T-3)**

10.8.4.6.3. The approved COLA process shall identify collision risk levels and collision risk acceptance thresholds for all other objects. **(T-3)**

10.8.5. End-of-Life Actions.

10.8.5.1. All spacecraft and orbital launch vehicle components shall undergo passivation and disposal at End of Life. **(T-0)**

10.8.5.2. End of Life passivation and disposal shall comply with the National Space Policy and Orbital Debris Mitigation Standard Practices. **(T-0)**

10.8.5.3. Spacecraft End of Life Plan. All test, experimental, or operational orbital space systems shall develop End of Life Plans. **(T-2)**

10.8.5.3.1. Spacecraft PMs shall prepare, update, and deliver a pre-launch combined Space Debris Assessment Report and End of Life Plan to the operator(s) using a format and content outlined in paragraph **13.12** for the configuration of the space vehicle anticipated at end of life. **(T-2)**

10.8.5.3.2. Launch vehicle PMs shall ensure the launch vehicle Space Debris Assessment Report contains any orbital launch vehicle component End of Life Plan information. **(T-2)**

10.8.5.3.3. All organizations with satellite control authority shall update the end of life plan throughout orbital operations IAW paragraph **13.12** **(T-2)**

10.8.5.4. Reliability of post-mission end of life operations.

10.8.5.4.1. The probability of successful disposal shall be no less than 0.90 at end of life for reentry within 25 years, orbital storage disposal, or for direct retrieval. **(T-3)**

10.8.5.4.2. Programs shall ensure that all post-mission end of life operations incorporate designs and plans to meet this requirement. **(T-3)**

10.8.5.4.3. This calculation builds from an initial pre-launch assessment of the ability to execute end of life actions, and shall undergo re-assessment during the orbital operations phase as needed to address degrading health of spacecraft systems and increasing uncertainty in knowledge of remaining propellant. **(T-3)**

10.8.5.5. Disposal. Organizations with Satellite Control Authority shall dispose of orbital objects via atmospheric reentry within 25 years, orbital storage disposal, or direct retrieval. **(T-0)**

10.8.5.5.1. The preferred disposal option is atmospheric reentry.

10.8.5.5.2. For uncontrolled and controlled atmospheric reentry, the hazard threshold for kinetic energy of individual surviving inert debris objects shall be 15 Joules. Debris objects with kinetic energy less than this hazard threshold do not contribute to casualty expectation. Refer to NASA-STD-8719B for additional guidance.

10.8.5.5.3. Direct retrieval strategies shall comply with all disposal requirements in this instruction. **(T-1)**

10.8.5.5.4. To ensure that all disposal orbit parameters are met, the final disposal operation shall account for any induced ΔV due to depletion burns/venting. **(T-3)**

10.8.5.6. Passivation.

10.8.5.6.1. During space system design and development, the PM shall identify sources or potential sources of stored energy and develop a plan for depleting or safing all these sources at end of life. **(T-2)** The PM shall include a description of the passivation procedure in the Space Debris Assessment Report, and if applicable, the End of Life Plan. **(T-2)** This description shall also provide a notional timeline of when the procedures will take place. **(T-2)**

10.8.5.6.2. Sealed heat pipes and passive nutation dampers need not undergo depressurization at end of life.

10.8.5.6.3. Batteries.

10.8.5.6.3.1. Battery charging lines shall undergo de-activation. **(T-3)** If this is impractical, the batteries shall be left with a permanent electrical drain to prevent recharging. **(T-3)**

10.8.5.6.3.2. If possible, pressurized batteries shall undergo depressurization at end of life. **(T-3)**

10.8.5.6.3.3. Structurally, a two-fault tolerant battery casing design is preferred.

10.8.5.6.4. Self-destruct systems shall be incorporate designs to prevent unintentional destruction due to inadvertent commands, thermal heating, radio frequency interference, and/or internal hazards such as software and hardware faults. **(T-1)**

10.8.6. Orbital Reentry and Recovery.

10.8.6.1. For recovery of orbital vehicles, the operator and landing/recovery site commander or equivalent is responsible for all mission segments under their control. This includes reentry risks to the general public, landing recovery area personnel, other mission support personnel, and site facilities. Reentry safety begins with the final commitment to re-enter the atmosphere (i.e., the final command that initiates or enables the entry and landing sequence) and ends when all components associated with the reentry come to rest on the Earth and safing actions are complete.

10.8.6.2. Reentry/Recovery of Spacecraft. The landing/recovery site commander shall perform, review, and approve all risk analyses associated with each reentry event onto the range. **(T-3)** The following outline acceptable risk levels for hazards associated with reentry/recovery from orbit at ranges.

10.8.6.2.1. Personnel Risk. The risk to the general public, launch essential personnel, and neighboring operations personnel shall use criteria thresholds listed in Range Commanders Council (RCC) 321, Common Risk Criteria Standards for National Test Ranges. **(T-3)**

10.8.6.2.2. Critical Asset Risk. The probability of impact to critical assets listed below applies to all launches. The risk to critical assets shall not exceed 1×10^{-3}. More stringent criteria may be applied as deemed necessary by the Wing Commander to protect assets critical to national security. **(T-3)**

10.8.6.2.3. Control of Errant or Non-nominal Vehicle Flight. The Wing Commander shall approve the methodology for controlling erratic vehicle flight while managing risks to the public and foreign countries for all vehicles returning to ranges. **(T-3)**

10.8.6.2.4. The reentry/recovery site commander or equivalent has the authority to approve or deny the initiation of de-orbit. This includes the planned nominal and contingency sites.

10.8.6.3. The Wing Commander who has the last opportunity to control the reentry phase of flight shall implement the CA/COLA process for the reentry phase of flight IAW existing local CA processes for orbital operations until the reentry vehicle descends to less than 150 km or where location uncertainty makes performing a safety COLA infeasible, whichever occurs first. **(T-3)** The Wing Commander shall implement reentry holds to prevent collisions with any cataloged orbiting objects. **(T-3)**

10.8.6.4. It is United States policy to recover identifiable debris when it lands in foreign territory or the United States. Typically, the applicable acquisition organization is responsible for Air Force owned objects/assets and shall determine recovery requirements. **(T-3)** Develop written recovery procedures that include notification to HQ Air Force, DoD, the State Department and other appropriate organizations through the MAJCOM Headquarters when recovery is an option in foreign territory. Recovery procedures shall

include provisions for safing the objects in the event hazards remain after landing or impact. **(T-3)**

10.8.6.5. Prior to launch, the launching agency shall provide the appropriate land and recovery site with anomaly/contingency response plans, as well as debris and object recovery plans. **(T-3)**

Chapter 11

SYSTEM SAFETY & SAFETY RISK ASSESSMENTS

11.1. Overview. This chapter establishes policy requirements for Safety personnel in support of System Safety. System Safety is the application of engineering and management principles, criteria and techniques to achieve acceptable risk within the constraints of operational effectiveness and suitability, time and cost throughout all phases of the system life cycle. This chapter also defines how Safety personnel and organizations interact, influence and advise the other Air Force communities that are corporately responsible for System Safety in the Air Force. System acquisition and sustainment programs are subject to the mandatory policy and guidance described in paragraph **11.1.3** System safety principles are used to manage safety risks across many functional disciplines within the AF and form the basis for risk management.

11.1.1. System Safety must be a planned, integrated, comprehensive effort employing both engineering and management resources. Effective System Safety efforts depend on clearly defined safety objectives and system performance requirements. System Safety objectives shall include, but not be limited to, prevention or mitigation of all reportable mishaps that may be associated with a system's use and function throughout its life cycle. Losses of systems, mission degradation, cost and schedule impacts shall be considered. The intent is not to duplicate work performed by related or other functional disciplines, but to ensure it is done in a systematic manner that addresses and manages mishap risk.

11.1.2. IAW MIL-STD-882E, *DoD Standard Practice for System Safety,* System Safety efforts consist of eight essential elements that PMs will document and periodically review:

11.1.2.1. Documenting the system safety approach. **(T-1)**

11.1.2.2. Hazard identification and analysis over the system life cycle. **(T-1)**

11.1.2.3. Assessment of risk, expressed as severity and probability of consequences. **(T-1)**

11.1.2.4. Identification and assessment of potential risk mitigation measures. **(T-1)**

11.1.2.5. Implementation of measures to reduce risks to acceptable levels. **(T-1)**

11.1.2.6. Verification of risk reduction. **(T-1)**

11.1.2.7. Acceptance of risks by appropriate authorities. **(T-1)**

11.1.2.8. Tracking of hazards and risks throughout the system life cycle. **(T-1)**

11.1.3. Acquisition and sustainment communities implement system safety as an integral part of a Program Office's systems engineering activity as outlined in AFI 63-101/20-101, *Integrated Life Cycle Management.*

11.1.4. PMs organize their offices, based on system acquisition program size and complexity, to execute the system safety requirements elaborated by the DoD and Air Force in DoDI 5000.02, AFI 63-101/20-101 and MIL- STD-882E. Acquisition and Sustainment Program Managers integrate system safety into their program's overall Systems Engineering effort at the same level where day-to-day engineering decisions are made. This allows System Safety professionals to most effectively influence system design.

11.1.5. Within the System Safety Program, acquisition and sustainment programs must document and periodically review:

11.1.5.1. System Hazard Tracking Logs. **(T-1)** These logs shall communicate sufficient information to identify and track the status of each hazard. **(T-1)** To ensure appropriate management attention, the status of hazards is required to be presented at program and technical reviews. The System Safety effort supports program and technical reviews with current information of all hazards. Hazard tracking logs shall contain the minimum fields required by MIL-STD-882E. **(T-0)**

11.1.5.2. System Safety Risk Decisions:

11.1.5.2.1. Risk Mitigation. Programs shall use the system safety design order of precedence defined in MIL-STD-882E. **(T-1)**

11.1.5.2.2. Risk Acceptance. **(T-1)** Every hazard that cannot be eliminated must be mitigated to an acceptable level and formally accepted by the appropriate level of leadership as specified in DoDI 5000.02 and AFI 63-101/20-101. **(T-1)**

11.2. System Safety Applied to Acquisition Activities.

11.2.1. CAE-PEO(TEO)-PM Structured Programs. System Safety Programs based on a governing CAE-PEO (Technology Executive Officer [TEO])-PM structure. Such programs include ACAT, Business Acquisition Category (BCAT), Joint Urgent Operational Need (JUON), Urgent Operational Need (UON) programs as defined in AFI 63-101/20-101. The System Safety Risk Acceptance Authorities are the CAE; within the Air Force, the Service Acquisition Executive (SAE); SAF/AQ for High System Safety risks; the PEO(TEO) for Serious System Safety risks; and the PM for Medium and Low System Safety risks. These authorities may not be delegated.

11.2.2. Middle Tiered Acquisition. The below guidance is applicable to those acquisition activities following the rapid acquisition processes and/or being conducted at one of the Air Force's Rapid Capability Offices.

11.2.2.1. CAE-PEO(TEO)-PM structured Middle-Tiered-Acquisition programs: The System Safety Risk Acceptance Authorities are the Component Acquisition Executive (CAE); within the Air Force, the Service Acquisition Executive (SAE); SAF/AQ for High System Safety risks; the PEO(TEO) for Serious System Safety risks; and the PM for Medium and Low System Safety risks. These authorities may not be delegated.

11.2.2.2. All Middle Tiered Acquisition activities, to include rapid prototyping, procurement, and fielding activities, shall have a system safety program as defined in MIL-STD-882E paragraphs 3 and 4, as a minimum. **(T-3)**

11.2.2.3. Programs shall document their risk management process within their Systems Engineering Plan. **(T-1)** If a Systems Engineering Plan is not being used for the program, then programs shall document their risk management process within their PESHE. **(T-1)** It is recommended to follow MIL-STD-882E for this process.

11.2.2.4. Programs shall appoint an appropriately trained system safety manager to facilitate system safety matters. **(T-3)** Appropriate training is considered completion of a formal System Safety training course.

11.2.2.5. Programs shall maintain a hazard tracking system for all program related system safety risks. **(T-1)** It is recommended to follow MIL-STD-882E for this process.

11.2.2.6. Programs are recommended to conduct System Safety Groups IAW paragraph **11.4** System Safety Group membership should consist of the program manager, chief engineer, user representative, operational test representative, AF Safety Center representative, and, if applicable, the acquisition command representative.

11.2.3. System Safety Programs Not Adhering to a PEO(TEO) Structure. Other than CAE-PEO(TEO)-PM structured programs: The System Safety Risk Acceptance Authorities are the AFMC/CC or AFSPC/CC as applicable for high System Safety risks; the Center/CC for Serious System Safety risks; and the PM for Medium and Low System Safety risks. These authorities may not be delegated.

11.3. System Safety Risk Acceptance Process

11.3.1. For hazards determined to have a High or Serious level of System Safety risk, programs shall prepare a System Safety Risk Assessment IAW paragraph **13.9**

11.3.2. Designated System Safety Risk Acceptance Authorities must formally accept System Safety risks prior to exposing people, equipment, or the environment to known system-related hazards at any point in the system's life cycle.

11.3.3. Program risk acceptance packages are only necessary for those risks that are inside the design/specification/requirement envelope. Those outside the envelope are handled by the user's/operator's risk management process.

11.3.4. High System Safety Risk Acceptance.

11.3.4.1. CAE-PEO(TEO)-PM Structured Programs. High System Safety risk assessments shall be coordinated with lead Acquisition MAJCOM, Center/SE (for non-space programs), Air Force Life Cycle Management Center Engineering Office (AFLCMC/EN) for non-space technical review, the lead MAJCOM/CC (delegable to CV, CD or SE), PEO and AF/SE before submission for acceptance by the CAE.

11.3.4.2. Other than CAE-PEO(TEO)-PM structured programs: High System Safety risk assessments shall be coordinated with lead Acquisition MAJCOM, Center/SE (for non-space programs), AFLCMC/EN (for non-space technical review), the lead MAJCOM/CC (delegable to CV, CD or SE), Center CC, and AF/SE before submission for acceptance by AFMC/CC or AFSPC/CC as applicable.

11.3.5. Serious System Safety Risk Acceptance.

11.3.5.1. CAE-PEO(TEO)-PM structured programs: Serious System Safety risk assessments shall be coordinated with lead Acquisition MAJCOM, Center/SE (for non-space programs), AFLCMC/EZ (for airworthiness), the lead MAJCOM/A3/A4/SE and HQ AFSEC before submission for acceptance by the PEO. **(T-1)**

11.3.5.2. Other than CAE-PEO(TEO)-PM structured programs: Serious System Safety risk assessments shall be coordinated with lead Acquisition MAJCOM, center/SE (for non-space programs), AFLCMC/EN (for non-technical review), the lead MAJCOM/A3/A4/SE and AFSEC before submission for acceptance by the Center/CC. **(T-1)**

11.3.6. CAE-PEO(TEO)-PM and Other than CAE-PEO(TEO)-PM structured programs: Medium and Low System Safety risks are accepted by the Program/Project Manager.

11.3.7. High and Serious System Safety Risk Reacceptance: High and Serious System Safety risk assessments/acceptances are valid for four years at which time they must be re-accomplished. **(T-1)**

11.3.7.1. Re-accomplish means update the System Safety risk assessment using the latest information, re-coordinate it and reaccept the System Safety risk as if it were being addressed for the first time. **(T-1)**

11.3.7.2. When the High or Serious System Safety risk acceptance authority is replaced, the new System Safety risk acceptance authority must be notified on the prior assessment/acceptance within 60 working days. **(T-1)**

11.3.7.3. This action does not restart or extend the duration of acceptance or the four-year validation period.

11.3.7.4. When High and Serious System Safety risks are downgraded, a new risk assessment shall be prepared IAW paragraph **13.9,** coordinated with the offices required for the original level of risk and approved by the original System Safety risk acceptance authority.

11.4. System Safety Groups (SSG). SSGs are the organized committee of system safety stakeholders that augment/assist the program office system safety function. In addition to the day-to-day systems engineering and system safety activities, program offices should use SSGs to collect and cross feed user inputs/insights into the program's System Safety efforts and to provide all a view of all safety issues currently in work. SSG members are detailed in paragraph **11.4.3.1**

11.4.1. All Acquisition Category I (ACAT I) aircraft, weapons and space programs on the Acquisition Master List (AML) are required to conduct SSGs. Programs for subordinate systems used on aircraft or space systems shall address system safety issues within the SSG associated with the aircraft or space systems in which they are to be integrated, and are not required to have their own, separate SSGs. **(T-1)** Separate SSGs are not typically required for programs covered under AFI 91-205, *Nonnuclear Munitions Safety Board*, or AFI 91-401*Directed Energy Weapon Safety.* SSGs are optional for all other programs not previously addressed. AFSEC will maintain a list of aircraft and space programs that conduct SSGs. **(T-1)**

11.4.2. The program manager, deputy program manager or chief engineer chairs the SSG. SSG meetings are held at least annually as scheduled by the chair. In addition, any member of the SSG may request the chair call a meeting. The SSG Chair with concurrence of the PEO can postpone the SSG, but the SSG Chair must report on status of all safety modifications/Engineering Change Proposals (ECPs)/Time Compliance Technical Orders (TCTOs), open SSG action items, and High and Serious risks to the SSG Members with the postponement notice. The next SSG cannot be more than 24 months after the last SSG. Each SSG meeting will address the following as appropriate:

11.4.2.1. Program status. **(T-1)**

11.4.2.2. Fleet safety assessment. **(T-1)**

11.4.2.3. Analyses of major safety design trade-offs and modifications. Analysis will include risk hazard indices, proposed corrective actions and their effect and status. **(T-1)**

11.4.2.4. Status of planned, pending, active and disapproved safety modifications. Paragraph **13.9** has guidelines and considerations for modification planning and risk assessment. **(T-1)**

11.4.2.5. Safety investigation recommendations affecting the system. A discussion of High Accident Potential (HAP) reports that have occurred since the last meeting. **(T-1)**

11.4.2.6. User/operator issues. **(T-1)**

11.4.2.7. Safety risk mitigation options. **(T-1)**

11.4.2.8. Unmitigated hazards. **(T-1)**

11.4.2.9. System Safety program scope, including contractual requirements and deliverable System Safety data. **(T-1)**

11.4.2.10. Overall safety assessments, especially before milestone reviews. **(T-1)**

11.4.2.11. Major modifications or engineering change proposals. **(T-1)**

11.4.2.12. The need to establish SSWGs as necessary to work detailed System Safety issues. **(T-1)**

11.4.2.13. Making safety recommendations during design, development, test, operations, sustainment and disposal. **(T-1)** Assign risk indices to each discussion/action item as appropriate.

11.4.2.14. Aircraft Information Program status to emphasize the collection and analysis of safety data. **(T-1)**

11.4.3. The SSG System Safety Manager develops and coordinates the SSG charter. **(T-1)** The SSG charter will address the purpose and scope, mandatory membership, operating procedures and administration of the group. All mandatory members must commit to supporting SSG meetings and must sign the charter. **(T-1)** SSG membership consists of:

11.4.3.1. Minimum mandatory SSG members including the Chairperson (Program Manager, Deputy or Chief Engineer), Program SSM, AFSPC/SE (for space systems), AFMC/SES (for non-space ACAT 1 programs), the Lead MAJCOM safety office, Lead Operational and Developmental Test Agencies, and the Lead MAJCOM user representative. **(T-1)**

11.4.3.2. Minimum mandatory SSG advisors including the Center System Safety Manager, AFSEC and AFMC/SE (for non-space systems other than ACAT 1). **(T-1)**

11.4.3.3. Additional SSG members or advisors may include SAF/AQRE, the contractor system safety manager, program engineering staff (as needed based on issues at hand), Space Launch Ranges, National Guard/Air Force Reserve representatives, and other DoD and industry organizations (as appropriate) as determined by mandatory members. **(T-1)**

11.4.4. Within 30 working days, SSG meeting minutes shall be sent to all members, advisors, SAF/AQR, and AFMC Directorate of Engineering (AFMC/EN) or Space Missile Center

Directorate of Engineering (SMC/EN), as applicable. MAJCOM/SEF will ensure SSG meeting minutes are distributed to affected NAF and Wing Flight Safety representatives.

11.4.5. SSG recommendations that require capability changes or materiel modifications by the program office must be validated and documented IAW the process and criteria outlined in AFI 10-601, *Operational Capability Requirements Development* .

11.5. Non-Developmental Items. Program managers and purchasing activities/procuring agencies are required to conduct a System Safety analysis appropriate for the system or item. For non-developmental items, the analysis should review usage history, verify intended use similarities, evaluate differences, and plan for adequate safety evaluation for all Air Force-unique modifications or changes in use. This System Safety review should be accomplished by the procuring/buying agency that is in the best position to assess the intended use and necessary modification. For example, Federal Aviation Regulation (FAR) certification requirements are incrementally implemented and may not apply to all models or year groups of similar aircraft. Operations from military fields and or with military support equipment provide unique hazard opportunities that may not have been considered in the original design.

11.6. System Safety Engineering Analysis (SSEA). The SSEA program evaluates new operations that are currently prohibited due to the perceived risks (e.g., aircraft hot refueling, concurrent servicing operations, concurrent servicing operations supporting combat sortie generation and wet wing/rapid defueling operations). Based upon the successful demonstration and evaluation, approval may be granted to use the operation/procedures.

11.6.1. SSEA of a proposed operation is performed by a highly qualified team under controlled conditions. The team conducts actual demonstrations and analysis of the operation to validate overall risk assessment and recommend actions. The SSEA team is normally chaired by the AFLCMC System Safety Office and includes experts from AFMC/SES, AFSEC/SEF/SEG, and the developing/supporting and operational commands, and any other technical experts (as needed) as determined by the SSEA Chair. At the discretion of the SSEA Team Chief, Low-Risk SSEAs may be done via the in-house “tabletop” method without a demonstration.

11.6.2. A using command requests a SSEA in writing to AFLCMC/SES and informs HQ AFSEC and AFMC/SES. Requests must include:

11.6.2.1. A complete description of the proposed operation. **(T-1)**

11.6.2.2. Justification for accepting the increased risk. **(T-1)**

11.6.2.3. Recommended location and dates for the SSEA demonstrations. **(T-1)**

11.6.2.4. Identification of other DoD, Government or foreign agencies that might be involved. **(T-1)**

11.6.3. The SSEA team reports the results of the analysis, including operational concepts, system descriptions, risk assessments, hazard analyses, descriptions of the demonstrations and conclusions and recommendations to the requester. **(T-1)**

11.7. Application of a Safety Risk Assessment (SRA).

11.7.1. A formal SRA is a decision-making tool that may be required to communicate and document key elements of safety risk management processes. In acquisition programs, System

Safety processes are used to develop risk data and determine decision authorities; that information is then used in an SRA for decision-making. An SRA is usually associated with a non-conformity, abnormality, inability to demonstrate compliance with requirements or regulations, a previously unforeseen condition that creates a potentially hazardous environment, intended operations outside of known or approved environments, intent to operate equipment that has exceeded design service limits or that has not been maintained IAW standards or requirements, or when failures, mishaps or unexpected issues have indicated that previous assessments or expectations may be incorrect or incomplete. SRAs may also be used to evaluate new and innovative activities that could result in accidental losses and/or injuries. Paragraph **13.9** provides a sample SRA layout.

11.7.2. An SRA may be used as part of the in-depth deliberative risk management planning outlined in AFI 90-802, *Risk Management*; to support safety risk management decisions within acquisition and sustainment life cycle management processes carried out under DoDI 5000.02 and AFI 63-101/20-101 or DoDD 5030.61, *DoD Airworthiness Policy*, and AFI 62-601, *USAF Airworthiness*, and other internal guidance; as well as deliberative operational risk decisions, mishap recommendation closure decisions and other contemplative evaluations of safety risk where foreseen hazards require mitigation or formal risk acceptance.

11.7.3. When an SRA is required by Air Force instructions or policy, or an SRA is needed for technical, operational, airworthiness, acquisition or other purposes, a process must be developed that fulfills the core SRA principles described in this Chapter. Other instructions may prescribe detailed provisions for applying these principles in a specific manner. **(T-1)**

11.7.4. An SRA is generally the summary document for a package of materials that provides supporting details for the assessment and a decision. Do not rely upon information presented to the decision-maker separately. The SRA may be prepared on a Staff Summary Sheet that includes the core SRA principles or a separate SRA form may be prescribed. The SRA combined with supporting documents forms an SRA package that must sufficiently document all aspects pertinent to the decision regarding the mission or activity, involved systems, identified hazard(s), risk calculations, data sources and the mitigation options considered. **(T-2)**

11.8. Safety Risk Assessment Purpose and Risk Decision Authority Empowerment.

11.8.1. SRA packages are prepared to facilitate decisions on whether to accept safety risks, or mitigate them to reduce the predicted consequences. The primary purpose of an SRA is to ensure the Risk Decision Authority (RDA) has adequate information on potential adverse safety consequences, mitigations and alternatives to make an informed risk management decision.

11.8.2. A secondary purpose of an SRA package is to document the safety risk decision process and the factors that were known or presumed at the time of the decision. The documentation may be used to support leadership oversight, to inform the successor RDA or others who may inherit the accepted risks, and to provide a basis for preparing future SRA packages for required periodic revalidation.

11.8.3. While some guidance refers to the RDA as a Risk Acceptance Authority, it is essential that an RDA has the authority to direct and fund risk mitigation alternatives in addition to accepting risks without mitigation. The RDA must be in a position to balance safety risks with

potential mission, operational, programmatic and other benefits. In acquisition and sustainment programs, the RDA must also be in a position to evaluate impacts on costs, schedules and other risks. **(T-1)**

11.9. Core Safety Risk Assessment Principles. An SRA must include the following seven key elements: (**Note:** Additional information may be required for specific decision purposes.)

11.9.1. Hazard description. **(T-1)** An SRA must include a statement of the hazard, along with an explanation of the associated mission, operation or system that creates or warrants the exposure to the hazard. **(T-1)** The counter-balancing benefits of the activity should be described in overview in the SRA, with additional details provided in the SRA package supporting documents.

11.9.2. Level of Risk. **(T-1)** An SRA must include an assessment of the potential adverse consequences that could realistically result from exposure to the identified hazard. **(T-1)** Risk level is expressed in terms of severity of consequences and probability of consequences. Estimate the probabilities for the most severe credible adverse consequences that may be realized, expressed in terms of losses per operational event or time period. When a hazard has potential to result in multiple consequences of different severities, assess the probability for each and include the consequence with the most severe net losses for an exposure period along with other consequences that produce losses within an order of magnitude of those losses during the exposure period. Potential losses suffered, as well as potential losses imposed upon others, must be addressed. The potential adverse consequences must include all entities exposed to the hazard, including damage to equipment and environmental damage as required by AFI 32-7020, *The Environmental Restoration Program*, and injuries or death of operators, participants and uninvolved parties. **(T-1)**

11.9.2.1. Consequences are generally expressed in terms of the number and cost of equipment losses and the number of injuries or deaths. A monetized aggregate total for both losses and injuries/deaths may be used by applying valuations for injury costs and the OSHA Value of Statistical Life adjusted to current-year dollars for fatalities. Such aggregated costs can be useful in evaluating the cost of mitigations against the cost of consequences. AFI 91-204 provides guidance on calculating Air Force mishap losses. Alternative methods of valuation may be used if they more accurately describe the consequences, but rationale must be provided.

11.9.2.2. Consequences and probability may be combined and expressed as a risk level (sometimes referred to as a Hazard Risk Index, Risk-Hazard Index or RAC). Risk levels are primarily used to determine an RDA or evaluation process and may also be used to characterize a degree of danger. They should are not be used as the sole consideration for risk acceptance decisions because they fail to reflect the critical element of exposure, which ultimately determines is a key element in determining projected losses.

11.9.3. Exposure Period. **(T-1)** If RDA approval is sought for a limited period or a limited number of exposures, define that exposure period and use it for projected loss calculations. An exposure period is usually the time until risk mitigations are expected to be incorporated or hazard exposure otherwise ends, but may be for the life cycle of a system if no practical mitigations are identified. **(T-1)**

11.9.3.1. Where RDA approvals are sought for the life cycle of a system, establish a process for periodic re-accomplishment of the SRA, which will validate previous assumptions using accrued data and reassess potential mitigations considering technological advances and process changes. **(T-1)** State the date when re-accomplishment is required in the SRA. **(T-1)**

11.9.3.2. When an RDA accepts risk for the life cycle of a system, establish a process to provide accepted risk information to RDA successors or persons assuming similar levels of responsibility for the system. **(T-2)**

11.9.4. Projected Losses. **(T-1)** Provide statistical calculations for the losses projected to occur during the exposure period for which the RDA is making a decision. **(T-1)** State the losses on an annual basis and for the entire exposure period. **(T-1)** Show the calculation of projected losses that will occur during the period of exposure (typically the period for which approval is sought), as well as losses extrapolated across the lifetime of the system or foreseeable activity. **(T-1)** Projected losses mathematically express consequences and probability combined with exposure. To determine projected losses, multiply the losses per period or event (as used to determine risk level) by the number of periods or events for which risk acceptance is being considered. **(T-1)**

11.9.4.1. Include a calculation for projected losses across the lifetime of the system or foreseeable activity if risk were to continue at the same level without mitigation, to provide perspective on the need for mitigation. **(T-2)**

11.9.4.2. If safety risk acceptance is sought for an exposure period equal to the life cycle of a system, include a calculation for projected losses that will occur prior to the next periodic reassessment. **(T-2)**

11.9.4.3. If an SRA is prepared to address a non-conformity or non-compliance in a system, include all projected losses that are expected to result, both those suffered within that system and those imposed on other involved systems, personnel and entities. **(T-1)** This is required because only the RDA for the non-conforming or non-compliant system will have the authority and means to correct the shortfalls and mitigate the resultant safety risks.

11.9.4.4. For the purposes of an SRA, when multiple potential adverse consequences are evaluated (e.g., both Catastrophic and Critical severity outcomes), projected losses do not need to be included for outcomes with loss projections substantially lower than the most severe projected loss, unless the uncertainty is large or the less-severe outcomes are particularly relevant.

11.9.5. Mitigation Options. **(T-1)** Describe available or obtainable mitigation options, including expected effectiveness and resultant reduction in projected losses, along with impacts to cost, schedule, mission accomplishment and other important factors. **(T-1)** Mitigation options usually include an evaluation of the consequences with no mitigation as well as an evaluation of not conducting the operation or activity that requires exposure to the hazard, and may include transfer of mission responsibility to other entities. Consider and evaluate mitigations that include reducing exposure, redesign of systems, protective devices to reduce severity of consequences, warnings, training, restrictions and limitations. **(T-1)** Include a recommendation for the RDA. **(T-1)**

11.9.6. User and Stakeholder Views. **(T-1)** Provide the RDA a summary of the views of organizations responsible for users and interacting organizations that may experience potentially significant losses of assets or injuries to their personnel due to their exposure to the risks. **(T-1)** Other organizations may be required to prepare another SRA for a different RDA if hazard exposure may produce elevated risk levels for other entities. Address such situations as stakeholder views. Also provide the evaluation of reviewing safety organizations when such a review has been obtained or is required by policy. **(T-1)**

11.9.7. Document the Risk Decision Authority (RDA) Authority and Decision. **(T-1)**

11.9.7.1. In the SRA package, cite the policy that designates the RDA based upon the level of projected losses, level of risk, or other institutionalized responsibility. **(T-1)** The RDA (also referred to as Risk Acceptance Authority) must be empowered to direct mitigation measures and/or operational restrictions that reduce safety risk, as well as accepting risks or prohibiting exposure to the hazard. While risk level may be used for identifying an RDA, the actual risk decision must be based upon projected losses to ensure risk exposure period is considered. Document the decision of the RDA and any directed mitigations or limitations. **(T-1)**

11.9.7.2. Many acquisition programs (and MIL-STD-882E) use risk level to establish RDAs, without considering the exposure to the risks; however, the preferred method for identifying an RDA is to use projected loss thresholds with higher annual loss projections requiring higher leadership levels as decision authorities. **Note:** For example, Wing Commanders could be empowered to accept projected losses up to $100 million per year, MAJCOM commanders could accept projected losses up to $1 billion per year, and SECAF acceptance could be required for projected losses above that level.

11.10. Safety Office SRA Reviews. When organizational policy directs a review of SRA packages by AF/SE, AFSEC or other safety offices, those reviews will be completed before the SRA package is presented to the RDA for a decision. **(T-1)** Include the results of safety office reviews in the user and stakeholder views presented to the RDA in the SRA package. **(T-1)** Safety reviews of SRA packages will include:

11.10.1. An evaluation of the hazard description to ensure it is accurate and comprehensive. **(T-1)**

11.10.2. A review of calculations for risk levels and an assessment of the validity and accuracy of the data used as a basis for the calculations. **(T-1)** Safety reviews may recommend additional data, data sources or subject matter experts that should be used to improve confidence in the conclusions.

11.10.3. A review of the basis for qualitative risk assessments to determine if any data in the SRA is inappropriate for the assessment, or if additional applicable historical data is available in safety databases. **(T-1)** Safety offices may identify comparative assessments for similar operations or activities and provide information on historical acceptance for similar levels of risk.

11.10.4. Validation for projected losses calculations in the SRA, research into mishap data and/or expert opinions that may verify or refute the reasonableness of the assumptions made. **(T-1)**

11.10.5. Periodic reassessments. **(T-1)** Programs requiring an SRA must provide a timeframe of validity, after which an SRA must be re-accomplished, to include briefing and documenting RDA decisions and risk re-acceptance. **(T-1)** SRAs should also be considered invalid and re-accomplished if a mishap event or history of events demonstrate assumptions or supporting data in the SRA package are found to be significantly inaccurate, or when technology or improved operational practices provide viable new mitigations for safety risk.

Chapter 12

CONTRACT SAFETY

12.1. Contract Safety Program. The purpose of this chapter is to provide guidance on the responsibilities of the applicable safety office in the contracting process; with the overarching goal of protecting government personnel, equipment, facilities and mission from hazards posed by contractor operations. It is imperative that safety involvement begins early in the process to prevent hazardous conditions from developing or costly changes to the contract after implementation. **Note:** This chapter will be supplemented as needed by MAJCOMs and installations to ensure proper safety criteria is defined and adhered to in all AF acquisitions and/or AF procured contracts. **(T-1)**

12.2. Contract Types. The majority of contracts fall in two broad categories: services (includes construction) and commodity (supply) contracts. See **Table 12.1** for a list of possible issues to consider when dealing with contracts and subsequent design and review processes.

12.2.1. Service Contracts. Under a service contract, the Air Force pays a civilian company to perform a service. Service contracts generally include, but are not limited to, custodial services, ground maintenance operation of government-owned equipment, housekeeping services, etc. Construction contracts include new facilities, additions to existing facilities or modifications to existing facilities. The requesting organization will submit an AF Form 332, *Base Civil Engineer Work Request*, when required, defining facility criteria and needs to the installation CE office. **(T-2).** Construction contract reviews by safety personnel should begin at preplanning conferences, continue through design reviews, preconstruction conferences and facility acceptance inspections.

12.2.2. Commodity (Supply) Contracts. Commodity contracts are normally used for the local procurement of items not available through the AF or General Services Administration (GSA) supply systems. These contracts may include rental or leased equipment obtained for specific purposes. Installation organizations regularly initiate procurement actions for items or equipment that may not be designed, manufactured, installed or used according to safety criteria. Items in the Air Force or General Services Administration supply system are evaluated for safety and normally meet minimum standards.

12.2.3. The organization/user will coordinate AF Forms 9, *Request for Purchase*, and other purchase requests with the applicable safety staff before sending them to the contracting office unless locally established exemptions exist. **(T-3)**

Table 12.1. Contract Considerations.

Services and Construction Contracts.
Are there safety requirements required for the unit personnel? If so, what are the safety requirements, and who is responsible to ensure these requirements are met?
Will the service contract place unit personnel at risk of potential hazards, to include safety issues, such as slips, trips or falls, or HAZMAT? If so, does the contractor ensure supervisors of exposed personnel are made aware of the hazards?
Are flightline safety requirements briefed to contractors who work there?
Are contractors who work within explosive arcs, munitions, or weapons storage areas briefed on safety requirements?

Are contractors briefed on unit emergency procedures?
Do contractors adhere to federal or state safety training requirements that may be specified within the contract?
Are contractors made aware of how to contact emergency personnel on the installation?
What type of facility and occupancy (administrative, industrial, combination) will be constructed or modified?
What is the proposed number of personnel who will occupy the facility?
What is the specific use of the facility, i.e., aircraft maintenance hangar, industrial shop for welding or brazing, corrosion control facility or administrative building?
Is the equipment within the contract government owned/provided? If government owned are related safety standards included in the contract?
What are the potential hazards for the proposed operation of the facility?
Can potential hazards be eliminated or engineered out in the development phase of the construction contract?
Is the facility equipped with adequate ramps for handicap personnel that meet the requirements of the American Disabilities Act (ADA)?
Ensure adequate parking for personnel.
Ensure adequate handicapped spaces are identified and applicable signage is applied.
Have traffic safety concerns been addressed?
Does the new facility or facility modification affect weapons or flight safety requirements?
Does the facility meet National Fire Protection Association life safety code?
Are Small UAS use to support Operations.
Commodity Contracts.
Are AF Form 9 purchases reviewed for safety concerns/implications prior to being sent to the installation contracting office?
Are GPC purchases, not GSA-approved, reviewed to meet safety requirements?
Does the safety office review contracts/purchases that specify certain required and/or optional safety features for tools and equipment?
Are contracts reviewed for specific uses, e.g., explosion-proof equipment for hazardous locations?
Note: This list is not all-inclusive. Ideally, these questions would be addressed during the development phase of the contract.

12.3. Contractor Compliance. Contractors are responsible for complying with federal and state occupational safety and health standards for their employees, except where the Air Force contractually agreed to assume responsibility. Further detail can be found in DoDI 6055.01, Enclosure 5.

12.4. Safety Office. Safety personnel will:

12.4.1. Ensure the appropriate safety staff is included during the development of any contractual or government purchase card requirement and/or project processes to include safety requirements in the Performance-Based Work Statement or Statement of Work. **(T-1)**

12.4.2. Coordinate with the installation contracting office to ensure notification of the safety staff for relevant conferences, meetings, inspections and applicable designs reviews, e.g., blueprints, Computer-Aided Designs, etc. **(T-1)** The safety staff will participate as part of the

Multi-Functional Team (MFT), when prescribed by AFI 64-102, *Operational Contracting Program,* and AFI 63-138, *Acquisition of Services.* **(T-1)**

12.4.3. Ensure the requesting activities/organization communicates specific requirements outlined in operating directives or technical orders, to include operation plans, training needs, storage needs, traffic considerations, etc. **(T-1)**

12.4.4. Visit the proposed project location or facility during the site selection process, if needed. **(T-1)**

12.4.5. Review contractor safety plans to ensure materials used or operations conducted do not endanger public safety and government personnel or property. **(T-1)**

12.4.6. Not take actions that would put them in direct control of a worksite owned or controlled solely by a contractor or contract personnel. **(T-0)**

12.4.7. Report observed safety violations to the contracting officer or their representative. **(T-1)** In cases of observed critical and/or imminent danger safety personnel will take action to stop the operation and immediately contact the contracting officer. **(T-1)**

12.4.8. Consider host nation and OSHA or the national consensus standards of the United States (e.g., National Fire Protection Association and National Electrical Codes) when Statement of Work or Performance-Based Work Statement are developed for contract work outside the jurisdiction of the United States.

Chapter 13

SUPPORTING GUIDANCE

13.1. Air Force Safety Management System (AFSMS).

13.1.1. Purpose. AFSMS utilizes the four pillars (depicted in **Figure 13.1**) and the AFSMS framework (**Figure 13.2**) to structure the AF mishap prevention program. Activities associated with each pillar set policy, identify and mitigate hazards and risk, and reduce the occurrence and cost of injuries, illnesses, fatalities and property damage. Managing mishap prevention activities requires goal setting, planning, executing and measuring performance utilizing continuous improvement processes through the Plan-Do-Check-Act (PDCA) model as described in paragraph **13.1.4**

Figure 13.1. AFSMS Pillars.

13.1.2. Leadership implements the mishap prevention program by providing guidance and goals, establishing safety responsibility and accountability, applying risk management to all activities, and promoting the program throughout the organization. The result is a program designed to prevent mishaps, safeguard Airmen, protect resources and preserve combat readiness.

13.1.3. AFSMS Framework.

13.1.3.1. Policy and Leadership. Safety policy provides a structure for building a sound and proactive mishap prevention program. Active leadership involvement in the implementation and execution of the system supported at all levels of command is critical. The following are descriptions and examples of safety policies, leadership engagement and Airmen participation.

13.1.3.1.1. Safety policy is the foundation for the SMS framework of requirements and expectations. The structure is built of AF mishap prevention programs and activities that support the AF safety mission, vision, goals and objectives.

13.1.3.1.2. Leaders have overall responsibility for safe operations and must clearly establish safety responsibility and accountability throughout the organization, communicating their commitment to the safety and health of our Airmen. Safety staffs at all levels assist commanders with the integration and implementation of safety management elements into organizational activities.

13.1.3.1.2.1. Leaders set safety policies and goals and lead SMS implementation, communicating safety management throughout the organization by identifying and controlling safety risk, applying management principles and promoting a strong safety culture.

13.1.3.1.2.2. Leadership engagement includes: publicly committing to and taking responsibility for a safe working environment for all personnel; directing the organization to implement and maintain a mishap prevention program that includes appropriate authority and accountability levels; communicating the safety policy to all Airmen; and holding Airmen at all levels accountable for effective program implementation.

13.1.3.1.3. Airmen Participation. Organizational leadership shall establish and implement processes to ensure effective participation by its Airmen at all levels. **(T-1)** Proper use of the AFSMS elements enhances Airmen engagement and system effectiveness and drives continuous improvement. Organizational leadership will: encourage and support Airmen participation in the mishap prevention program, safety committees, and safety briefings; educate Airmen on the goals of safety-related inspections, risk assessments, and job safety analyses and how to accomplish them; and encourage Airmen to communicate safety concerns to leadership via hazard reports and other safety feedback mechanisms. **(T-1)**

Figure 13.2. AFSMS Framework.

13.1.3.2. Risk Management (RM). Risk management is the key to mishap prevention. The Air Force's five-step Deliberate RM process (see **Figure 13.3**) is the core of the Air Force's safety and mishap prevention program. Utilize RM to the maximum extent possible to

identify and assess hazards, develop and implement mitigating controls, and monitor and analyze the controls to assess their effectiveness. More details are available in AFI 90-802, *Risk Management,* and AFPAM 90-803, *Risk Management (RM) Guidelines and Tools.*

Figure 13.3. The Air Force 5-Step RM Process.

13.1.3.3. Assurance. Safety assurance is how commanders determine the elements of the mishap prevention program are implemented, and guides continuous improvement efforts. The assurance functions of evaluation, monitor, and review measure whether organizations conform to standards and are making progress toward established goals.

13.1.3.3.1. Evaluation. Evaluate system conformance and effectiveness through monitoring, measurements, inspections, assessments, evaluations, and mishap, near miss, and hazard investigations. Corrective action must be taken when non-conformance with system processes or execution is identified. **(T-1)**

13.1.3.3.1.1. Evaluation of safety assurance processes concentrates on validating, through collection and analysis of objective evidence(i.e., documents, records, metrics, inspection, evaluation), that operation, process, or system expectations are met or exceeded. These processes focus on compliance and conformance with the mishap prevention program, and that desired effectiveness results are achieved.

13.1.3.3.1.2. Safety assurance data is obtained from numerous sources, including continuous program monitoring/measurement, self-inspection, independent internal process/program evaluation, external inspection/evaluation (Unit Effectiveness Inspection [UEI], Management Inspection [MI], etc.), safety investigation and internal reporting systems (Hazard Reports, Airman Safety Action Program [ASAP] Reports, Military Flight Operations Quality Assurance (military FOQA) reports, Management Internal Control Toolset [MICT], etc.). **(T-1)** Ensure acquired data is actionable and adequately measures operations, program processes, and/or system performance. **(T-1)**

13.1.3.3.2. Monitoring. Commanders determine whether the system is performing effectively and meeting regulatory requirements by monitoring the status of corrective

and preventive actions, injury/illness metrics, findings of safety investigations (including hazards and near misses), inspections, assessments, audits, effectiveness measures and trend analysis. **(T-2)** To be effective, monitoring should ensure the necessary information is available for leadership to evaluate the continuing suitability, adequacy, and effectiveness of the mishap prevention program, which then helps commanders set continuous improvement targets.

13.1.3.3.3. Leadership Review (Annual Program Management Review [APMR]). This review allows leadership and applicable process owners to conduct a strategic and tactical critical evaluation of the conformance and effectiveness of the mishap prevention program and AFSMS framework. Results, recommendations, and action items from this review shall be documented, prioritized, communicated to affected organizations and tracked to completion. **(T-1)** See paragraph **13.2** Following the APMR, communicate expectations to each Airman, and incorporate these expectations into actionable tasks with clear deliverables and estimated completion dates. Additionally, revise program and/or system requirements, as needed.

13.1.3.3.4. Additional safety assurance considerations:

13.1.3.3.4.1. Design Review and Management of Change. Identify and take appropriate steps to prevent or otherwise control hazards at the design and redesign stages using tools found in the System Safety and RM processes. Commanders, supervisors and planners will utilize change management tools to assess and address change-induced risks associated with operations and contingencies. **(T-2)**

13.1.3.3.4.2. Procurement. Identify and evaluate potential hazards prior to purchasing products, goods and/or services. Ensure procedures and requirements are communicated to suppliers and service providers.

13.1.3.3.4.3. Contracts. As appropriate, include safety program requirements and processes in the Performance-Based Work Statement (PWS) for contracted work.

13.1.3.3.4.4. Emergency Preparedness. Periodically evaluate plans IAW AFI 10-2501, *Air Force Emergency Management Program.*

13.1.3.3.4.5. Early Intervention of Hazards. Participate in existing Air Force proactive safety programs, such as Air Force Combined Mishap Reduction System (AFCMRS) and ASAP, that provide early identification and intervention for hazards. Use such programs to identify, measure and mitigate hazards; revisit existing risk controls; and determine the effectiveness of newly implemented risk mitigations. Traditional mishap investigation data sources, i.e., Air Force Safety Automated System (AFSAS), and proactive safety data sources, e.g., Military Flight Operations Quality Assurance (MFOQA), are available to measure the risk hazards pose to operations, and the efficacy of mitigation controls.

13.1.3.3.4.6. Consultation. Safety professionals provide consultation services regarding all aspects of safety. This includes by request, through assurance processes and/or any other opportunities.

13.1.3.3.4.7. Resourcing. Programming resources for safety management to include manning, promotion and education, hazard abatement, etc.

13.1.3.4. Promotion, Training and Education. Ensure Airmen are provided safety awareness information, organizations have embedded ongoing training into the mishap prevention program, organizations have implemented effective risk control measures, and that Airmen are actively engaged in the mishap prevention program. **(T-1)**

13.1.3.4.1. Airmen and contractors shall know the mishap prevention program requirements that apply to their daily duties. This includes understanding hazard identification, control and reporting procedures, and where and how they can participate in the mishap prevention program. **(T-0)** Records of training are generated and maintained as directed by this instruction and other guidance.

13.1.3.4.2. The ideal context for maximizing mishap reduction through the AFSMS should be defined as an Informed Safety Culture, comprised of a Just Culture, Reporting Culture, Learning Culture and Flexible Culture. Commanders and leaders throughout the organization promote and enforce these aspects.

13.1.3.4.2.1. The foundation of an Informed Culture is a Just Culture, which encourages personnel to provide safety-related information without fear of reprisal. Leaders establish a Just Culture environment by encouraging hazard and error reporting for safety analysis and mishap prevention purposes. At the same time, they must understand and promote the idea that more can be learned through full reporting and detailed investigation of safety issues than by assigning blame and punishment. Leaders must also establish clear guidelines on acceptable and unacceptable behavior. Commanders may not use safety investigation reports for any purpose except mishap prevention, while other investigations (e.g., Commander-Directed Investigation) may be used as a basis for command disciplinary action, as appropriate.

13.1.3.4.2.2. The value of a Reporting Culture should be continuously promoted and reinforced by leadership actions, not only in soliciting information on hazards and threats to safety, but also in taking action. Addressing hazards is critical to a healthy Reporting Culture, as Airmen will stop reporting if they feel their concerns are not taken seriously.

13.1.3.4.2.3. A Learning Culture exists when the organization is not afraid to change direction, processes, or way of doing business simply because it's always been done that way. Leaders endorse a Learning Culture by showing a willingness to change procedures and practices based on uncovered hazards and mistakes.

13.1.3.4.2.4. A Flexible Culture is continuously promoted and reinforced by leadership actions throughout organizations by empowering personnel to recommend procedural and behavioral changes to manage risk.

13.1.4. Continuous Improvement. The AFSMS implements and supports a continuous improvement process by creating the framework to review safety conformance and effectiveness. It creates deliberate opportunities to refine and refocus suboptimal elements as trends develop, interventions are successful or fail, or new technology is introduced. While **Figure 13.2** depicts continuous improvement under the Assurance pillar, there is, in fact, a benefit of continuous improvement through execution of the mishap prevention program using all pillars of the AFSMS. Leaders from the squadron to the headquarters will use the PDCA

methodology to ensure that continuous improvement is being accomplished. **(T-1)** PDCA is an iterative four-step management method used for the control and continuous improvement of processes and products.

13.1.4.1. Plan. Establish the objectives and desired end state. Study programmatic shortfalls, emerging trends and/or changing conditions. Outline possible countermeasures and the necessary policy, programs, processes and actions necessary to deliver results IAW the expected outcome (the target or goals). By establishing output expectations, the completeness and accuracy of the specification becomes a part of the targeted improvement.

13.1.4.2. Do. Implement the plan, execute the process and make the product. Collect data for charting and analysis in the following "CHECK" and "ACT" steps.

13.1.4.3. Check. Study the actual results (measured and collected in "DO" above) and compare against the expected results (targets or goals from the "PLAN") to ascertain any differences. Look for deviations in implementation from the "PLAN" and "DO" parts of the cycle that may have affected execution. Charting data can make it much easier to see trends over several PDCA cycles and convert the collected data into information. Information is what you need for the next step, "ACT."

13.1.5. Act. Request corrective actions on significant differences between actual and planned results. Analyze the differences to determine their root causes. Determine where to apply changes that will include improvement of the process or product. **(T-1)** At the conclusion of the reviews in this part of the cycle, there should be evidence of the future direction of the mishap prevention program and any needed changes to the policy, priorities, objectives, resources or other program elements.

13.2. Annual Program Management Review (APMR).

13.2.1. Annually reviewing safety programs and analyzing results is essential to successful execution of the mishap prevention program under the Safety Management System (SMS). This analysis and resulting adjustments to the safety program should improve the program processes and procedures, reduce risk exposure, and consequently, decrease the frequency and/or severity of mishaps. The APMR provides senior leaders with a clear picture of the effectiveness of their safety function as well as its impact on the mission of the organization. The review will contain a statement declaring the mishap prevention program conformance and effectiveness under the systemic processes of the AFSMS was either met and effective, met but needs minor improvement(s), met but needs significant improvement(s), or was not effective. **(T-1)**

13.2.2. Minimum Required Elements of the APMR, as applicable: (**Note:** These elements are designed to preserve consistency across the safety enterprise.)

13.2.2.1. Executive Summary. A brief overview of how the organization's activities fit into the SMS concept and structure. **(T-1)**

13.2.2.2. Safety goals, objectives, and priorities for the next fiscal year. **(T-1)**

13.2.2.3. Analysis of the prior fiscal year's safety goals, objectives and priorities; identify areas of success and areas needing additional work. **(T-1)**

13.2.2.4. Mishap reduction progress. Include at least five years of data in the applicable categories. **(T-1) Note:** The Business Intelligence Tool of AFSAS will format/provide these slides at the MAJCOM, NAF, Wing and Squadron levels. **(T-1)**

13.2.2.5. Review of findings, recommendations (closed and new), and trends. **(T-1)**

13.2.2.6. Review results, deficiencies and corrective actions from CCIP and UEI reports conducted IAW AFI 90-201. **(T-1)**

13.2.2.7. Effectiveness of safety processes. Address both successes and failures of the safety processes in order to identify areas for improvement, where applicable. **(T-1)**

13.2.2.8. Review of Master Hazard Abatement plans and Open Risk Assessment Codes.

13.2.2.9. Continuous Improvement. **(T-1)**

13.2.2.10. Reference links to safety division related annexes, tabs, attachments or other products containing greater detailed breakdown of relative data. **(T-1)**

13.2.2.11. Signature of Commander (Installation/NAF/MAJCOM, as appropriate). May be delegated no lower than vice or deputy commander, or executive director. **(T-1)**

13.3. Federal/State Inspections of DoD Working Conditions and Mishap Investigations. Refer to DoDI 6055.01, *DoD Safety and Occupational Health (SOH) Program*, for additional information on announced or unannounced inspections, federal/state official access, opening and closing conferences, resolving conflicts and hazard abatement. OSHA inspection procedures for federal agency workplaces are provided in OSHA's Field Operations Manual. The current OSHA Field Operations Manual is located on the AF Occupational Safety SharePoint® website: (**https://cs2.eis.af.mil/sites/10178/**). **Note**: State OSHA officials, operating under a federally-approved plan and subject to the terms of any variance, tolerance or exemption granted by the DoL, may enforce state OSHA standards in workplaces. Verify with the base legal office to determine which areas of the installation falls under state versus exclusive federal jurisdiction. **(T-1)**

13.3.1. Federal/state officials may conduct, as part of their evaluation program, annual targeted inspections or program assistance visits of AF installations based on the comparative incidence of worker compensation claims. Federal/state officials may also request installations perform self-investigations and self-inspections on a case-by-case basis. Installation commanders, through execution of a locally approved OSHA Reception and Action Plan (example located on the AF Occupational Safety SharePoint® website: (**https://cs2.eis.af.mil/sites/10178/**), will:

13.3.1.1. Ensure Security Forces are provided a letter of instruction outlining notification procedures to the installation safety office upon federal/state official(s) arrival at the gate. **(T-2)**

13.3.1.2. Without delay, ensure the federal/state official(s) are met by a member of the installation safety office and escorted to where an opening conference will be conducted during normal duty hours. **(T-0)**

13.3.1.3. Host an opening conference with federal/state officials. **(T-2)** The installation safety office will notify their CC/CV, JA and IG of federal/state official's arrival. **(T-2)** Notify BEE, FES, PH, Civilian Personnel Office, Contracting Office, tenant unit safety

offices, labor representatives, and other agencies as required based upon the federal/state official's stated purpose of the visit. **(T-2)**

13.3.1.4. A safety representative and/or other functional representative (e.g., FES, BEE, PH, etc.) will escort the federal/state official to other parts of the installation after the opening conference. **(T-2)** When federal/state officials require entry to a classified or restricted area, the official will meet established security requirements for the area. **(T-1)**

13.3.1.5. Provide upon request, access to available safety, fire protection and health information in workplaces, unless prohibited by this instruction or other AFI guidance. **(T-1)** Access to privileged safety information is prohibited by DoDI 6055.07 and AFI 91-204. Federal/state officials may review non-privileged portions of mishap/incident reports in the workplace during the course of their investigation. Do not release "For Official Use Only" marked reports or materials to federal/state officials. Federal/state officials requesting access to additional information and records may obtain the information IAW the provision of DoDI 6055.01 and AFI 91-204.

13.3.1.6. Provide photographic or video support, if required. Videos or photographs taken on installations fall under the exclusive control of the installation commander. AF officials may review photographs and videos before release if they suspect possible disclosure of classified or proprietary information without the review. During federal/state inspections or investigations, take (or obtain from officials) photos of identified physical hazards/discrepancies which may result in an OSHA Notice of Unsafe or Unhealthful Working Conditions.

13.3.1.7. Host a closing conference with the federal/state officials and invite required agencies to attend. **(T-0)** If significant hazards or deficiencies are identified or problems occur during a federal/state inspection or investigation, notify the MAJCOM/FOA/DRU safety staff. **(T-1)** The MAJCOM/FOA/DRU will in turn immediately notify AFSEC/SEG.

13.3.1.8. Treat OSHA Notice of Unsafe or Unhealthful Working Conditions in the same manner as a fire, safety or health AF inspection report. **(T-1)** Evaluate and assign a RAC to each hazard identified by OSHA personnel. **(T-1) Note:** DoD agencies (i.e., DeCA, AAFES, etc.) are responsible for resolving issues related to OSHA Notice of Unsafe or Unhealthful Working conditions or requests for delays, variations, tolerances or exemptions of applicable safety and health standards.

13.3.1.9. Ensure appropriate members of the fire, safety or health offices verify federal/state inspection results, including all testing. **(T-1)** AF tests or sampling for future testing should be accomplished at the same time and at the same location as the federal/state testing, if possible.

13.3.1.10. Upon completion of the federal/state visit, health and fire officials, as applicable, shall coordinate responses to federal/state visits and OSHA Notice of Unsafe or Unhealthful Working Conditions with the installation safety office. **(T-1)**

13.3.2. Contractor Operations.

13.3.2.1. Within the 50 states and US territories, AF contractors operating from AF or privately-owned workplaces located on or off AF installations are subject to enforcement authority by federal and state safety and health officials. Authorized safety officials from

states without OSHA-approved safety and health plans may, subject to the exceptions in this instruction, exercise jurisdiction over contractor operations. At overseas locations, local government agencies may conduct inspections of contractor workplaces or operations as stipulated in status of forces or country-to-country agreements. **(T-0)**

13.3.2.2. Federal/state officials may perform OSH inspections of AF contractor workplaces in areas where the US holds exclusive federal jurisdiction. Verify with base legal office to determine which areas of the installation fall under federal jurisdiction. **(T-1)**

13.3.2.3. The DoL does not have authority over working conditions for which another federal agency or certain state agencies exercise statutory authority to prescribe or enforce standards or regulations affecting safety and health. Thus, OSHA authority does not extend to working conditions specifically covered by:

13.3.2.3.1. Any nuclear safety or health standard or instruction implementing Title 42, U.S.C., 2012, 2021, 2121(b), and 2201(b).

13.3.2.3.2. Any explosives safety standard or instruction implementing Title 10, U.S.C., 172, Ammunition Storage Board.

13.3.2.4. Regardless of whether or not a state has an OSHA-approved plan, state safety and Industrial Hygiene officials have no authority in AF contractor workplaces located in areas where the US holds exclusive federal jurisdiction.

13.3.2.5. Federal/state inspections or investigations of contractor operations on an AF installation will be reported IAW this instruction.

13.3.3. AFSAS OSHA Event Module.

13.3.3.1. OSHA Events shall be entered into the AFSAS OSHA Events Module. **(T-1)** An OSHA Event is defined as any official contact (i.e., email, fax, telephonic, in person) initiated between the AF and federal/state officials requesting inspection of processes, facilities or projects (military, civilian or contractor) or investigation of a mishap/incident on the installation. Any request for mishap/incident investigation information, i.e., the OSHA Rapid Response Report (see paragraph **13.3.4**) or AF Form 978, *Supervisor's Preliminary Mishap/Incident Report*, is considered an OSHA Event. Detailed instructions can be found in the AFSAS OSHA Events Module Guide located on the AF Occupational Safety SharePoint® website (**https://cs2.eis.af.mil/sites/10178/**). **Note:** Self-investigation responses, the OSHA Rapid Response Report or AF Form 978 requested by federal/state officials do not require coordination with appropriate MAJCOM/DRU/FOA (SE, FES, SG, JA) and HAF (AFSEC, AFCEC, AF/SG, AF/JA).

13.3.3.2. All OSHA Event correspondences will be uploaded into the AFSAS OSHA Events Module as the official recordkeeping process for OSHA Events. **(T-1)**

13.3.4. OSHA Rapid Response Report. If a Rapid Response Report is requested by OSHA, the installation safety office may ask OSHA if they will accept the AF Form 978 in lieu of the Rapid Response Report.

13.3.4.1. The affected organization will ensure the appropriate report is completed by the supervisor or USR and appropriately routed to the installation safety office. **(T-1)**

13.3.4.2. The installation safety office will:

13.3.4.2.1. Ensure the report does not contain any privileged information. **(T-1) Note:** To prevent inadvertent release of privileged information, a 1S0X1 or 0018 will not complete a Rapid Response Report.

13.3.4.2.2. Notify the installation commander or designated authority. **(T-1)**

13.3.4.2.3. Ensure the report is uploaded to the appropriate AFSAS OSHA Event. **(T-1)**

13.3.4.2.4. Provide the report to OSHA by their suspense date. **(T-1)**

13.3.4.3. The Rapid Response Report Worksheet is located on the AF Occupational Safety SharePoint® website (**https://cs2.eis.af.mil/sites/10178/**).

13.3.5. OSHA Notice of Unsafe or Unhealthful Working Conditions. Upon receipt of an OSHA Notice of Unsafe or Unhealthful Working Conditions, the installation safety office will upload the Notice into the AFSAS OSHA Events Module within two workdays and notify AFSEC by Email (**afscseg@us.af.mil**). **(T-1)** This reporting requirement applies to AF workplaces or operations performed by a contractor in which AF workplaces, equipment or procedural deficiencies are identified in the Notice. **Note:** OSHA Notice of Unsafe or Unhealthful Working Conditions include those issued and abated on the spot.

13.3.5.1. Although units receive notices individually at a particular location, the identified hazard may be classified as an Corporate-wide Repeat violation, previously identified at another AF location. All OSHA Notice of Unsafe or Unhealthful Working Conditions correspondence to OSHA will be coordinated with the appropriate MAJCOM/DRU/FOA (SE, FES, SG, JA) and HAF (AFSEC, AFCEC, AF/SG, AF/JA). **(T-1)** If required, AFSEC will coordinate with SAF/IEE. The MAJCOM and AFSEC track all violation(s) from identification through proposed response to OSHA and subsequent closure.

13.3.5.2. Informal Conference. The installation safety office will request an Informal Conference with the local OSHA office. Exceptions to an Informal Conference shall be coordinated through affected disciplines (i.e., BEE, FES, PH, etc.), MAJCOM and AFSEC/SEG. **(T-1)**

13.3.5.3. Pre-informal Conference. A Pre-Informal Conference involving applicable local representatives, MAJCOM and AFSEC will be held to discuss expectations of the Informal Conference. It shall be held no later than two days prior to the Informal Conference. **(T-1)** The Pre-informal Conferences will be scheduled by the applicable safety office and will:

13.3.5.3.1. Be scheduled with the local OSHA office as soon as possible IAW the OSHA Notice of Unsafe or Unhealthful Working Conditions instructions. **(T-1)**

13.3.5.3.2. Be used to contest violations and/or seek lesser classification, i.e., Serious to Other-Than-Serious. **(T-1)**

13.3.5.3.3. Be used to request extension on abatement dates (Petition for Modification of Abatement Date) and/or allow time for multi-level coordination through specific disciplines, MAJCOM, AFSEC and SAF/IEE. **(T-1)**

13.3.5.3.4. Involve, via teleconference, applicable MAJCOM and HAF-level agencies to include AFSEC/SEG. **(T-1)**

13.3.5.4. Petitions for Modification of Abatement Date (PMA) requested from OSHA (to include interim control measures) will be initiated by the installation OSM as the OSHA process manager for the installation commander. An electronic courtesy copy shall be sent to the MAJCOM/DRU/FOA and AFSEC. **(T-1)**

13.3.5.5. After the Informal Conference with OSHA, or approved exception, the commander or designated official will draft and coordinate the proposed official response to the violation, which will then be sent to the applicable MAJCOM/DRU/FOA safety office and AFSEC in parallel. **(T-1)** The MAJCOM/DRU/FOA will forward their coordinated position to AFSEC via e-mail to **afscseg@us.af.mil** for review and approval. AFSEC/SEG will determine SAF/IEE coordination. AFSEC/SEG will send the approved OSHA response to the installation for release. Units will build this additional coordination process into the time frame allowed for the response suspense to OSHA. **(T-1)**

13.3.5.6. In addition to local notifications, such as installation IG, JA, PA, CC or CV, and affected organizations or tenant activities, the installation safety office shall notify:

13.3.5.6.1. Applicable MAJCOM/FOA/DRU/SEG/SGP/SGPB/CE.

13.3.5.6.2. Applicable Intermediate Command/SEG/SGP/CE.

13.4. USAF Aviation Safety Equipment Database Reporting.

13.4.1. Purpose and Scope. The database will be maintained by AFSEC/SEFE in an electronic spreadsheet format and will be organized into aircraft categories of Bomber, Cargo/Transport, Fighter/Attack, Helicopter, Remotely Piloted Aircraft, Reconnaissance/Battle Management/C3I, Special Operations, Tanker, Trainer and Other.

13.4.2. Aircraft. Each aircraft model will be described to the level necessary to convey configuration differences, e.g., EC-135N, KC-135R, F-16CM, F-16B Block 15.

13.4.3. Inventory. The number of aircraft in this model as of the end of the fiscal year will be provided. If still in production, the planned production buy and current inventory as of the end of the fiscal year will be reported. Provide the following information for each item listed below:

13.4.3.1. The nomenclature, manufacturer and status of each equipment item for each Model Design Series.

13.4.3.2. If an update or procurement is in progress, document the current configuration, the new configuration, its Initial Operational Capability (IOC) date and its expected completion date by Fiscal Year Quarter.

13.4.3.3. If an item is planned but not funded, do not report it. If an item is in source selection, report it as to be determined (TBD) and include estimated IOC and completion dates.

13.4.3.4. If an item is installed only on a portion of the fleet, identify the extent of its installation (e.g., 20% of fleet).

13.4.3.5. Elaboration of each data element and requests for more detailed information are provided in the descriptions below. For each item, provide a Point of Contact to address further questions or clarifications.

13.4.4. Crash Survivable Parametric Recorder (Flight Data Recorder). Report any data recorder specifically designed to survive an aircraft crash and provide parametric data to a mishap investigation, e.g., LAS-209F, MU-1003. Additionally, document program's current compliance with applicable Air Force requirements contained within Aircraft Information Programs publications (AFH 63-1402, *Aircraft Information Program*). For any retrofit programs in progress, indicate when the retrofit program commenced, the status of the program (number complete), and what organization is accomplishing the retrofits.

13.4.5. Crash Survivable Acoustic Recorder (Cockpit Voice Recorder). Report any acoustic recording device specifically designed to survive an aircraft crash and provide evidence to a mishap investigation, e.g., A90A, VADAR. Additionally, document its compliance with USAF/SE requirements statement of 1997 for 2-hour recording capability and compliance with FAA TSO 123a.

13.4.6. Emergency Locator Transmitter (ELT)/Crash Position Indicator (CPI). Report any devices whose purpose includes alerting Search and Rescue to the location of aircraft wreckage and/or crew. Document compliance with FAA TSO C-126.

13.4.7. Traffic Alerting and Collision Avoidance System (TCAS). Identify the generation of the TCAS system (TCAS I, TCAS II, ETCAS, V7.0 ACAS) or transponder only mode. Also, identify any Automatic Airborne Collision Avoidance Systems.

13.4.8. Global Positioning System (GPS). Identify either stand-alone receiver or integrated GPS capability. If integrated into a navigation/avionics suite, then provide information of next higher-level assembly.

13.4.9. Ground Collision/Proximity Warning Systems (GPWS). Identify the generation of the GPWS system (First, Second, Third, Fourth, EGPWS, TAWS) and Class (Class A, B, C). If an additional function of another device, then provide information about the device that generates the warning, e.g., Flight Control Computer. Document compliance with USAF/XO Memorandum, Implementation of AF Navigation and Safety Master Plan and Policy Clarification for GPWS, ADF, and GPS Navigation Systems, 13 March 1997 and FAA TSO C151b.

13.4.10. Ground Collision Avoidance System (GCAS). For Bomber, Fighter/Attack and Special Operations aircraft, identify any type of GCAS equipment, or if an additional function of another device, then provide information about the device that generates the warning or pull-up command, e.g., GCAS, AGCAS, TFR, TAR.

13.4.11. Windshear Detection System (WDS). If an additional function of another device, then provide information about the device that provides detection, e.g., FSAS, MARK VII GPWS.

13.4.12. Other Electronic Storage Devices. Identify any other devices that if they survive a mishap, contain recorded information that could be of use to a mishap investigation. Examples could be a central computer that stores information on system faults, Head-Up-Display tapes, Multi-Function Display tapes, Quick Access Recorders, Signal Acquisition Units or a structural life usage recorder.

13.5. Mishap Response.

13.5.1. General. Pre-mishap response planning by safety staffs must address appropriate participation in all base-level responses, including:

13.5.1.1. Major mishaps.

13.5.1.2. Hazardous materials mishaps.

13.5.1.3. Natural disasters.

13.5.1.4. Nuclear weapons mishaps.

13.5.1.5. Conventional weapons mishaps.

13.5.1.6. Directed Energy Weapons mishaps.

13.5.2. The basic response planning document for Major Accident Response, Natural Disasters, Enemy Attack, and Distribution is AFI 10-2501, *Air Force Emergency Management Program.*

13.5.3. Emergency Operations Center (EOC). The EOC responds to peacetime major accidents and natural disasters to provide on-scene command and control of Air Force military resources and functional expertise. The EOC and its members will meet the requirements in AFI 10-2501.

Note: Ideally, the safety representative to the EOC should not be responsible for assembling the interim safety board (ISB). **(T-2)**

13.5.4. Safety Response to Other than Major Peacetime Accidents. Some mishaps may not warrant a full activation of the Disaster Response Force (DRF). However, the safety staff may need some EOC elements to support investigation of these less severe incidents, such as Combat Camera or Civil Engineering Specialists. Each safety staff should consult with their supporting readiness and emergency management flight to determine how to formally provide for partial EOC support when the full DRF is not activated.

13.5.5. Munitions Rapid Response Team. The Air Force Life Cycle Management Center Munitions Sustainment Division (AFLCMC/EBH) has developed a conventional munitions rapid response team to support Air Force units throughout the world anytime a munitions incident occurs. The team includes experts (engineers, equipment specialists, program managers and safety personnel) from associated conventional munitions and commodities programs. These personnel are able to travel anywhere in the world within 24 to 48 hours to assist safing the affected system, determining cause of failure, and assessing salvage ability of the system. If your MAJCOM/FOA/DRU or unit has an incident, and this team's help is desired, contact the AFLCMC Munitions Operations and Readiness Branch (AFLCMC/EBHM) via the Global Ammunition Control Point (GACP) Customer Relationship Management (CRM) System at **https://www.my.af.mil/ammoprod/wm/** to request support or by calling DSN 312-777-AMMO (2666); DSN 312-775-AMMO (2666); Commercial 801-777-AMMO (2666) or 801-775-AMMO (2666).

13.6. Job Hazard Analysis (JHA).

13.6.1. JHAs are conducted on all work processes, where appropriate, to identify potential hazards, determine appropriate PPE and include preventative measures in procedures to mitigate hazards. Part of the JHA process overlaps BE efforts to link tasks to hazards and identifying Occupational and Environmental Health PPE requirements. The JHA shall involve BE to avoid duplication of effort and to ensure proper awareness of process changes. **(T-1)**

Note: A JHA is not required when existing guidance adequately ensures all safety requirements of an operation or process.

13.6.2. A JHA Guide and worksheet are available at the AF Occupational Safety SharePoint® website (**https://cs2.eis.af.mil/sites/10178/Pages/Links.aspx**). Additional information on JHAs can be found in OSHA 3071, *Job Hazard Analysis*.

13.7. Risk Assessment Codes (RAC). Note 1: This instruction is not for use for System Safety processes. Those are addressed in MIL- STD-882E, *DoD Standard Practice for System Safety.*

Note 2: AF Bioenvironmental Engineering will refer to the latest version of DoDI 6055.01, *DoD Safety and Occupational Health (SOH) Program,* Appendix to Enclosure 3 – *Determining RACs,* to determine appropriate health RACs.
Note 3: This instruction is not for use to determine Fire Safety Deficiencies (FSDs). FSDs are addressed in AFI 32-10141, *Planning and Programming Fire Safety Deficiency Correction Projections.*

13.7.1. Risk Assessment Codes are an expression of the degree of risk associated with a hazard that combines hazard severity and mishap probability into a single numeric identifier. RACs are tools used by fire, safety and health professionals and commanders to prioritize abatement plans and mitigate hazards. It may not be possible to assign a RAC to every hazard or circumstance and the lack of a RAC should not dissuade efforts to mitigate hazards.

13.7.1.1. This instruction describes the basic RACs and provides some guidelines for assigning priorities based on cost, effectiveness and exposure. The discipline specific chapters also provide additional guidance for assessing the risks of the applicable hazards.

13.7.1.2. Risk Assessment Codes. Only qualified occupational safety, fire and/or health personnel shall assign a RAC to each hazard after an evaluation of the concern. (T-2)

13.7.2. Safety and fire RACs are determined by plotting the probability (A, B, C or D) that a mishap will occur and the potential mishap severity (I, II, III or IV) if it does happen (**Table 13.1**). FSDs will not be assigned a RAC. Fire safety deficiencies are addressed in AFI 32-10141, *Planning and Programming Fire Safety Deficiency Correction Projects.*

13.7.3. Health-related RACs are determined by plotting the health hazard severity and illness probability categories.

13.7.3.1. Health Hazard Severity Category (HHSC). The HHSC reflects the magnitude of exposure to a single physical, chemical or biological agent and the medical effects of exposure. Determine the HHSC by totaling the exposure and medical effects points and use the following table: **(T-2)**

13.7.3.2. Illness Probability Category (IPC). The IPC is a function of the duration of exposure and the number of exposed personnel. Determine the IPC for health hazards by totaling the exposure duration and number of personnel exposed points and use the following guide:

13.7.4. Commanders will consider this RAC system when determining which hazards/ deficiencies warrant the expenditure of limited resources. **(T-2)**

13.7.5. Assigned RACs 1-3 will be tracked in the installation master hazard abatement plan. RACs 4 and 5 will be tracked IAW locally prescribed processes. All RACs will be tracked until completely abated. **(T-2)**

Table 13.1. Safety and Ergonomic Hazard Risk Assessment Code Matrix.

Hazard Severity		**Mishap Probability**			
Description	Code	A Likely to occur immediately	B Probably will occur in time	C Possible to occur in time	D Unlikely to occur
Death, permanent total disability, or loss of facility or asset of $2,500,000 or more	I	1 Critical/Imminent	1 Critical/Imminent	2 Serious	4 Minor
Permanent partial disability or major property damage of $600,000 up to $2,500,000	II	1 Critical/Imminent	2 Serious	3 Moderate	4 Minor
Lost workday injury or compensable injury, or minor property damage $60,000 up to $600,000	III	2 Serious	3 Moderate	4 Minor	5 Negligible
Injury involving first aid or minor supportive medical treatment, a minimal threat to personnel or property (damage up to $60,000), or a violation of a standard	IV	4 Minor	4 Minor	5 Negligible	5 Negligible

13.8. Abatement Priority Number (APN).

13.8.1. The APN is a two-part code: the RAC and the Cost Effectiveness Index (CEI). CEI measures cost effectiveness of a hazard abatement project and represents a ratio of the project cost and its potential effectiveness. The APN will be used to determine the relative priority of abatement actions. Use the APN in establishing funding priorities for hazard abatement projects during the budgetary cycle. Compute APN:

13.8.1.1. Step 1. Determine RAC from **Table 13.1,** based on mishap severity and probability of occurrence. **(T-2)**

13.8.1.2. Step 2. Determine the severity probability multiplier (M) from the matrix in **Table 13.2,** using the same severity and probability used to determine the RAC. **(T-2)**

Table 13.2. Severity and Probability Multiplier Matrix.

Probability				
Severity	**A**	**B**	**C**	**D**
I	188	63	21	7
II	63	21	7	2
III	21	7	2	1
IV	7	2	1	0.26

13.8.1.3. Step 3. Determine exposure (E), or the average number of personnel exposed daily to the hazard during the course of the year. **(T-2)**

13.8.1.4. Step 4. Determine the total abatement project cost (C). **(T-2)** If actual costs are not known, use best available estimate.

13.8.1.5. Step 5. Compute the CEI by dividing the C for abatement by the product of M and E, or CEI = C/ (M) (E). **(T-2)**

13.8.1.6. Step 6. Determine APN by listing the RAC followed by the CEI in parenthesis, or APN = RAC (CEI). **(T-2)**

13.8.1.7. Step 7. Determine relative priority of abatement projects by comparing the CEI of projects within identical RACs. **(T-2) Note:** The lower the CEI, the higher its relative priority within the same RAC.

13.8.2. To use APNs to establish a priority list of projects, follow these steps:

13.8.2.1. Step 1. Determine RAC. **(T-2)** Assumptions: Given a hazard that will probably occur in time (Probability B) and would result in a permanent partial disabling injury (Severity II) if it resulted in a mishap. Therefore, the assigned RAC from **Table 13.1** would be 2.

13.8.2.2. Step 2. Determine multiplier (M). **(T-2)** Plot mishap probability (B) versus hazard severity (II) on **Table 13.2** to obtain a multiplier of 21.

13.8.2.3. Step 3. Determine exposure (E). **(T-2)** Assumption: The functional manager or supervisor determined that on an average day 25 people are exposed to the hazard.

13.8.2.4. Step 4. Determine the total cost of project (C). **(T-2) Example:** The total cost of the project to abate the hazard as provided to the functional manager by CE is $2,100.

13.8.2.5. Step 5. Determine CEI. **(T-2)** CEI = C/ (M) (E); (M) (E) = 21x25, therefore CEI = 2100/ (21) (25) = 4.

13.8.2.6. Step 6. Determine APN. **(T-2)** APN will be (RAC) (CEI) = (2) (4).

13.8.2.7. Step 7. Determine relative priority. **(T-2)** The APN will now be used to prioritize this project in relation to other RAC 2s for which APNs have been computed. A hypothetical priority listing containing this project is shown in **Table 13.3**

Table 13.3. Abatement Priority Number Index.

RAC	CEI	APN	Priority
1	(3)	1(3)	1
1	(113)	1(113)	2
2	(4)	2(4)	3
2	(15)	2(15)	4
3	(11)	3(11)	5
3	(96)	3(96)	6

Note: The APN system is not used to compare projects of two different RACs.

13.9. Preparation of Safety Risk Assessments. A risk assessment succinctly documents the results of several steps in the risk management process and supports follow-on decision-making processes. A suggested risk assessment layout is show in **Figure 13.4**

Figure 13.4. Sample Risk Assessment Layout and Guidance.

Risk Assessment Title

1. **Background**: Broadly describe the situation being evaluated. Provide sufficient detail so the remainder of the risk assessment may be easily understood.
2. **Hazard Identification:** Accurately and succinctly describe the hazard (e.g., deficiency with engineering design, material, quality, software, operations, maintenance) being analyzed.
3. **Initial Risk:** Using quantitative (preferred) and qualitative (alternate) means, identify the probability and severity of a mishap that could result from the hazard, based upon the exposure of personnel or assets to the identified hazard. Use the baseline or "as designed" state as the basis for determining the initial risk. Fully explain the methodology used, data considered (e.g., reported mishaps/events, deficiency reports, test results, etc.) and rationale for determining initial risk.
4. **Interim Risk:** Many times initial mitigation steps have already been taken prior to the completion of a written risk assessment. These steps may include permanent risk mitigation measures or temporary stop-gap risk mitigation measures. Describe these measures and explain how the initial risk is being mitigated, their effectiveness and the resulting interim risk until final risk mitigating options can be implemented.
5. **Risk Mitigation Options:** It is likely several options still exist to mitigate the risk of the identified hazard. Effective control measures reduce or eliminate one of the three components (i.e., probability, severity or exposure) of risk. Investigate specific strategies and tools that reduce, mitigate or eliminate risk. Address each risk mitigation option separately. One option to always consider is "taking no further action" which is the equivalent of accepting the initial risk and acknowledging and accepting projected future losses.
6. For each option, including accepting the initial risk, address:
    1. **Description:** Describe the option being evaluated.
    2. **Impact:** Describe the impact of this option. What are its benefits; limitations? Address its effectiveness and explain how it will eliminate or control future losses. Does it address other hazards/problems or introduce new ones?
    3. **Cost:** Estimate the costs (i.e., financial, operational, maintenance) to implement this option.
    4. **Schedule:** Estimated timeline needed to implement this option.

5. **Target Risk:** Great risk mitigation options eliminate hazards and their risk entirely; others only reduce the risk. Assuming this risk mitigation option is implemented; identify the probability and severity of a mishap that could result from the hazard based upon the exposure of personnel or assets to the identified hazard. Fully explain the methodology used (including analytical assumptions and limitations), data considered, and rationale for determining the target risk.
6. **Projected Losses:** Estimate the projected losses with implementation of this option. Express losses over a period of time, a number of events or for a given population as appropriate. Fully explain the methodology used, data considered and rationale for determining these projected losses. Note: If qualitative means were used to determine the probability of a mishap, use the upper and lower bounds of the selected probability and the expected exposure (i.e., as appropriate, remaining life of asset, period of test, etc.) to calculate the range of projected future losses.
7. **Summary of Options:** If the number of risk mitigation options is lengthy, a tabular summary may be appropriate. Include, as necessary.
8. Recommendation: State the recommended courses of action, including rationale.
9. Endorsements: Document the program office's preparation and review of the risk assessment by providing dates, signature blocks and signatures for the risk assessment's author, the System Safety Manager, the Chief Engineer, and the Program Manager.

13.10. Safety Release.

13.10.1. Requirements.

13.10.1.1. The Program Manager shall provide a safety release for the system prior to each developmental and operational test involving personnel. **(T-3)** The safety release must identify the known ESHO hazards that may affect the test and their associated risk acceptance. **(T-3)** A Safety Release provides the Test and Evaluation community the known system-related Environment, Safety and Occupational Health (ESOH) hazards prior to exposing people, equipment or the environment. The safety release must transmit system ESOH hazard data to the operators, maintainers, trainers and testers. **(T-3)** Test organizations use the safety release and other relevant data, documents and expertise to assess, further mitigate and accept test risks as appropriate. Refer to the Defense Acquisition Guidebook, DoDI 5000.02, *Operation of the Defense Acquisition System*, MIL-STD-882E, *DoD Standard Practice for System Safety*, and AFMAN 63-119, *Certification of System Readiness for Dedicated Operational Testing*, for additional information. As a minimum, the safety release will contain: **(T-1)**

13.10.1.1.1. Known hazards and mitigation actions/measures identified and tracked by the program office (e.g., master hazard list, Safety Assessment Report, SSG tracked hazards, previous test identified hazards, airworthiness analysis/certificates).

13.10.1.1.2. A cover letter or equivalent by the PM stating the item/system is safe to test given known hazards and mitigating measures, signed by the appropriate acquisition risk acceptance authority (A16.1.2).

13.10.1.2. The PM shall document that the associated risks have been accepted by the appropriate acquisition acceptance authorities as specified in DoDI 5000.02. **(T-2)** The user representative shall be part of this process throughout the life cycle and shall provide formal concurrence prior to all serious- and high-risk acceptance decisions. **(T-2)**

13.10.2. Format. The AFSEC recommended format for a safety release is provided in **Figure 13.5**

Figure 13.5. Safety Release Letter (Example).

MEMORANDUM FOR [Test Organization(s)] [Date] FROM: [Organization/Office Symbol] [Organizational Address]
SUBJECT: [Program Name] [Specific Activity, (e.g., RDT&E, FDE, OA, OT&E)] Safety Release
Ref: DoDI 5000.02, Operations of Defense Acquisition Systems [include any system safety and programmatic documentation (e.g., SSHA, SAR, PESHE) used to prepare this document]
1. Purpose. [State the purpose of the program, services involved, which service has lead, which office has been designated at the Program Office lead. State what time frame/operations/testing this safety release will cover.]
2. System Description. [Give a brief system description with the name, type, model number/designation, software version and the system mission (as applicable). Indicate how the system/materiel works and/or how it will be used/worn/operated.]
3. Discussion. [Discuss sources of data and summarize the open, mitigated and unmitigated ESOH hazards affecting this safety release. Provide the resultant risk level of those hazards. Provide which user representative(s) are/were a part of this process and have/will provide formal concurrence prior to all serious- and high-risk acceptance decisions.]
4. Conclusions/Recommendations. [Indicate whether the system is safe for testing and whether or not there are any exceptions that need to be detailed. Highlight any known safety problems requiring additional investigation during test. List any technical or operational limitations or precautions needed to prevent injury or equipment/property/environmental damage.] [Org/office] must be immediately notified of any safety related anomalies regarding the use of the system under test.
5. Point of Contact (POC). The POC is [Program Manager (and System Safety Manager, as required), office symbol(s), DSN and Commercial phone numbers, e-mail address(es).]
[Signature]
[Signature block of appropriate risk acceptance authority (see paragraph **A16.1.2** above)]
[Number of attachments] Attachments
1. [List of the appropriate attachments/documents used to support this safety release] Distro: [List the organizations/office symbols of the user representatives and testing organizations which will require/coordinate this safety release]
AFSEC/[XX]
AFOTEC/SE [or MAJCOM/SE, if an FDE]
AFMC/SES [LDTO]
[User]

13.11. Launch Vehicle Space Debris Assessment Report (SDAR).

13.11.1. Delivery Requirements Note: SDAR delivery will be IAW the requirements specified below. The normal schedule is:

13.11.1.1. Preliminary Design Review (PDR) draft SDAR: 30 days prior to the program or project PDR or equivalent program/project development milestone. The program manager (PM) receives the draft document and distributes it to the Chief Engineer and Safety Office and other offices as required. The purpose of preparing the report early in the design and development process is to ensure early identification of orbital debris issues when resolutions are least costly to implement. Any orbital debris mitigation compliance issues not resolved by the PDR require resolution no later than the Critical Design Review (CDR) or equivalent program/project development milestone.

13.11.1.2. CDR Draft SDAR: 45 days prior to the program or project CDR or equivalent program/project development milestone. The purpose of the CDR draft is to update and clarify the issues and changes to the PDR Draft. The PM will submit the CDR draft for review and concurrence to the Center-level (or equivalent) Chief Engineer, both the Center-level and NAF-level (or equivalent) Safety Offices, and any other offices as required.

13.11.1.3. Final Launch Vehicle SDAR: The PM will submit the Final Launch Vehicle SDAR 30 days prior to the launch approval process (Air Force Operational Readiness Review, Flight Readiness Review, or equivalent) for approval and signature by the appropriate acquisition authorities (Center Commander or equivalent, or designated approving official). Prior to final SDAR approval the Center (or equivalent) technical and/or safety subject matter expert will independently review the final launch vehicle SDAR. In addition, in the event of non-compliances requiring user concurrence on risk acceptance, the NAF (or equivalent) technical and/or safety subject matter expert will also review the final launch vehicle SDAR prior to approval. Note: SDARs are not required for suborbital missions.

13.11.2. **Format Note:** Each launch vehicle SDAR will follow the format shown in **Table 13.4** below and, at a minimum, include the content indicated.

Table 13.4. SDAR Format.

Cover and Front Matter
Cover showing the document version and date of delivery. Inside cover signed by (at a minimum): document preparer(s), program management, Chief Engineer, and Safety Office reviewers. Statement of any restrictions on the data in the SDAR, such as proprietary, International Traffic in Arms Regulations, or export controls. Ife the document does not contain any restrictions, then include a statement to that effect. If the document does contain restricted information, then summarize and clearly mark on the page(s) where it occurs and on the cover. The document history page shows each version of the report. This page will include reviews of the previous versions by the Chief Engineer or Safety Office.
Section 1: Program Management and Mission Overview
a. Identification of the program sponsoring the mission and the PM. b. Identification of any mission partners' participation in the program and a summary of the Air Force's responsibility under the governing agreement(s).

c. Schedule of mission design and development milestones through proposed launch date, including preliminary design review and critical design review (or equivalent) dates. d. Summary table indicating compliance or noncompliance with each debris mitigation requirement of DoDI 3100.12 and this instruction. e. Brief description of the mission. f. Identification of the anticipated launch site. g. Identification of the proposed launch date and mission duration. h. Description of the launch and deployment profile, including all parking, transfer, and operational orbits with apogee, perigee, and inclination. i. Identification of all launch vehicle orbital stages and all other launch vehicle released objects (> 5 mm in diameter), including their orbital parameters, following insertion of the spacecraft into a mission orbit or into an Earth escape orbit. j. Identification of any interaction or potential physical interference with other operational spacecraft.
Section 2: Spacecraft Description
a. Brief physical description of the spacecraft, including spacecraft bus, payload, and all appendages, such as solar arrays, antennas, and instrument or attitude control booms. b. Illustration of the entire spacecraft in the mission operation configuration. c. Total spacecraft mass at launch, including all propellants and fluids. d. Dry mass of spacecraft at launch, excluding solid rocket motor propellants. e. Description of all propulsion systems (cold gas, monopropellant, bipropellant, electric, nuclear). f. Identification of any radioactive materials on board.
Section 3: Launch Vehicle Description
a. Identification of launch vehicle used. b. Identification of any upper stages used. c. Identification of any launch vehicle stage identified for permanent insertion into Earth orbit. d. Dry mass of each orbital stage after spacecraft deployment. e. Detailed illustration of each orbital stage.
Section 4: Assessment of Launch Vehicle Debris Released during Normal Operations
a. List of any object(s) greater than 5 mm identified for release into Earth orbit from any stage, including, but not limited to, dual payload attachment fittings and stage separation devices. b. Rationale/necessity for release of each object. c. Time of release of each object, relative to launch time. d. Release velocity of each object with respect to orbital stage. e. Expected orbital parameters (apogee, perigee, and inclination) of each object after release. f. Calculated orbital lifetime of each debris object until reentry. g. Assessment of launch vehicle compliance with the relevant paragraphs of DoDI 3100.12 and this instruction, and the rationale for any non-compliances.
Section 5: Assessment of Launch Vehicle Potential for Explosions and Intentional Breakups
a. Identification of all potential causes of launch vehicle orbital stage breakup during operations, including during and after passivation.

b. Summary of failure modes and effects analyses (or equivalent analyses) of all credible failure modes which may lead to an orbital stage accidental explosion. c. Detailed plan for any designed orbital stage breakup, including explosions and intentional collisions. d. Detailed plan, under normal end of life conditions and deployment malfunction scenario, for passivating each orbital stage, including the depletion of residual propellants and fluids as thoroughly as possible. e. Assessment of launch vehicle compliance with the relevant paragraphs of DoDI 3100.12 and this instruction, and the rationale for any non-compliances.
Section 6: Assessment of Launch Vehicle Potential for On-Orbit Collisions
a. Calculation of each orbital stage probability of collision with known space objects larger than 10 cm in diameter during the orbital lifetime. For the assessment of collision probability, the orbital lifetime is defined as the time from end of launch collision avoidance to atmospheric reentry. The maximum time period for the assessment is 200 years. The reduction in probability of collision achieved by on-orbit collision avoidance performed by each orbital stage may be included in this assessment. b. Assessment of launch vehicle compliance with the relevant paragraphs of DoDI 3100.12 and AFI 91-202, and the rationale for any non-compliances.
Section 7: Assessment of Launch Vehicle Post-mission Disposal Plans and Procedures
a. Description of orbital stage disposal option selected. b. Plan for any orbital stage maneuvers required to accomplish disposal after end of orbital stage mission. c. Calculation of area-to-mass ratio after completion of all orbital stage operations, including disposal maneuvers, if the controlled reentry option not selected. d. Procedure for executing orbital stage disposal plan, including timeline from final shutdown of each orbital stage to completion of passivation and disposal operations. This includes, but not limited to burning residual propellants to depletion, venting propellant lines and tanks, venting pressurized systems, discharging batteries and preventing recharging, depressurizing gas and liquid filled batteries, deactivating flight safety systems and de-energizing control moment gyroscopes. e. Demonstration of reliability of orbital stage disposal operations. f. Assessment of launch vehicle compliance with the relevant paragraphs of DoDI 3100.12 and AFI 91-202, and the rationale for any non-compliances.
Section 8: Assessment of Launch Vehicle Reentry Hazards
Note: If a reentry hazard assessment already exists for an orbital stage, refer to that report and make any necessary adjustments for orbital inclination and year of reentry. a. Detailed description of launch vehicle components by size, mass, material, and shape, if atmospheric reentry option selected. b. Summary of objects expected to survive an uncontrolled reentry, specifying software tool(s) used for the analysis (such as NASA Debris Assessment Software, NASA Object Reentry Survival Analysis Tool, or comparable software). c. Calculation of expectation of human casualty for the expected year of reentry and the orbital stage inclination.

d. If appropriate, preliminary plan for launch vehicle controlled reentry. e. Assessment of launch vehicle compliance with the relevant paragraphs of DoDI 3100.12 and this instruction, and the rationale for any non-compliances.
Section 9: Reference List
a. Complete reference list of cited material, analysis, requirements, and a list of acronyms.

13.11.3. Review. **Note:** The Center Chief Engineer in coordination with the Center Safety Office will review each SDAR delivered and provide recommendations for improvements to the PM.

13.12. Combined Space Vehicle Space Debris Assessment Report/End-of-Life Plan (SDAR/EOLP). Note: The SDAR/EOLP will be a living document that evolves with the program.

13.12.1. Delivery Requirements.

Note: Deliver IAW the requirements specified below. The normal schedule is:

13.12.1.1. Preliminary Design Review (PDR) draft SDAR/EOLP: 30 days prior to the program or project PDR or equivalent program/project development milestone. The PM receives the draft document and distributes it to the Chief Engineer and Safety Office, and other offices as required. The purpose of preparing the report early in the design and development process is to ensure early identification of orbital debris issues when resolutions are least costly to implement. Any orbital debris mitigation compliance issues not resolved by the PDR require resolution no later than the Critical Design Review (CDR) or equivalent program/project development milestone.

13.12.1.2. CDR Draft SDAR/EOLP: 45 days prior to program CDR for the spacecraft or equivalent program/project development milestone. The PM will submit the preliminary draft for review and concurrence to the Center-level (or equivalent) Chief Engineer, both the Center-level and NAF-level (or equivalent) Safety Offices, and any other offices as required.

13.12.1.3. Final pre-launch SDAR/EOLP: The PM will submit the final pre-launch SDAR/EOLP 30 days prior to the launch approval process (Air Force Operational Readiness Review, Final Readiness Review, or equivalent) for approval and signature by the appropriate acquisition authorities (Center Commander or equivalent, or designated approving official). Prior to final SDAR/EOLP approval, the Center (or equivalent) technical and/or safety subject matter expert (SME) will independently review the final pre-launch SDAR/EOLP. In addition, in the event of non-compliances requiring user concurrence on risk acceptance, the NAF (or equivalent) technical and/or safety SME will also review the final pre-launch SDAR/EOLP prior to approval. The program office PM will provide the operational organization that will assume satellite control authority with a copy of the final SDAR/EOLP prior to the Operational Readiness Review or Final Readiness Review. **Note:** SDARs are not required for suborbital missions.

13.12.1.4. The operating unit shall update the SDAR/EOLP at the major program operational milestones identified in the SDAR/EOLP. Updates shall have the following title: *[date]* Update to the SDAR/EOLP.

13.12.1.5. Develop/deliver the final operational SDAR/EOLP IAW USSTRATCOM and Air Force operational guidance.

13.12.1.6. The Center/NAF/Wing-level (or equivalent) technical and safety SMEs will independently review each SDAR/EOLP developed/delivered IAW this instruction. **(T-3)**

13.12.2. Contents of SDAR/EOLP. **Note:** **Table 13.5** below parenthetically identifies the data added during operations; the required assessments will reflect achieved operational orbit parameters and on-orbit state of the spacecraft.

Table 13.5. Contents of SDAR/EOLP.

Cover and Front Matter
Cover showing the document version and date of delivery Inside cover signed by (at a minimum): document preparer(s), program management, Chief Engineer, and Safety Office reviewers. Statement of any restrictions on the data in the SDAR/EOLP such as proprietary, International Traffic in Arms Regulations, or export controls. If the document does not contain any restrictions, then include a statement to that effect. If the document does contain restricted information, then summarize and clearly mark on the page(s) where it occurs and on the cover. The document history page shows each version of the report. This page will include reviews of the previous versions by the Chief Engineer or Safety Office.
Section 1: Program Management and Mission Overview
a. Identification of the program sponsoring the mission and the PM. b. Identification of any mission partners' participation in the program and a summary of the Air Force's responsibility under the governing agreement(s). c. Schedule of mission design and development milestones through proposed launch date, including spacecraft PDR and CDR (or equivalent) dates. d. Schedule of mission operational milestones from launch through end of life. e. Summary table indicating compliance or noncompliance with each debris mitigation requirement of DoDI 3100.12 and this instruction. f. Brief description of the mission. g. Description of operational orbits with apogee, perigee, and inclination. h. Chronology of management reviews of the EOLP to include changes in spacecraft operability which may affect the ability to passivate and dispose per the plan in Section 6 of the EOLP. i. Identification of the anticipated launch vehicle and launch site. j. Identification of the proposed launch date and mission duration. k. Identification of all released objects (> 5 mm in any dimension), including their orbital parameters following insertion of the spacecraft into a mission orbit or into an Earth escape orbit. l. Identification of any interaction or potential physical interference with other operational spacecraft.
Section 2: Spacecraft Description
a. Physical description of the spacecraft, including spacecraft bus, payload, and all appendages, such as solar arrays, antennas, and instrument or attitude control booms.

b. Detailed illustration of the entire spacecraft in the mission operation configuration. c. Total spacecraft mass at launch, including all propellants and fluids. d. Dry mass of spacecraft at launch, excluding solid rocket motor propellants. e. Total mass of post-passivation spacecraft, including all propellants and fluids. f. Description of all propulsion systems (cold gas, monopropellant, bipropellant, electric, nuclear). g. Identification, including mass and pressure, of all fluids (liquids and gases) planned to be on-board during mission, including end-of-life maneuvers. h. Description of all fluid systems, including size, type, and qualifications of fluid containers such as propellant and pressurization tanks. i. Description of all active and/or passive attitude control systems with an indication of the normal attitude of the spacecraft with respect to the velocity vector. j. Description of any range safety or other pyrotechnic devices. k. Description of the electrical generation and storage system. l. Identification of any other sources of stored energy not noted above. m. Identification of any radioactive materials on board. n. Table of the following on board the spacecraft at time of issue of SDAR/EOLP version, expected at commencement of passivation, and expected at completion of passivation. (Data to be updated during operations.) Fluids Pyrotechnic devices Electrical generation and storage system Identification of any other sources of stored energy not noted above Any radioactive materials o. List of changes in the propulsion systems and energy systems which have occurred since launch. Include a detailed illustration of the entire spacecraft in the EOL configuration. (Data added during operations.) p. Status of the major systems on board the spacecraft, including any changes in redundancy. (Data added during operations.)
Section 3: Assessment of Spacecraft Debris Released On Orbit
a. Identification of any object (>5 mm in any dimension) expected to release from the spacecraft any time after launch, including object dimensions, mass, and material. b. Rationale/necessity for release of each object. c. Time of release of each object. d. Release velocity of each object with respect to spacecraft. e. Expected orbital parameters (apogee, perigee, and inclination) of each object after release. f. Calculated orbital lifetime of each object, including time spent in low earth orbit. g. Assessment of spacecraft compliance with the relevant paragraphs of DoDI 3100.12 and this instruction, and the rationale for any non-compliances.
Section 4: Assessment of Spacecraft Potential for Explosions and Intentional Breakups
a. Identification of all potential causes of spacecraft breakup, including during and after passivation. b. Summary of failure modes and effects analyses (or equivalent analyses) of all credible failure modes which may lead to an accidental explosion.

c. Detailed plan for any designed spacecraft breakup, including explosions and intentional collisions. d. List of components identified for passivation at end of life, including method of passivation. e. Rationale for all items identified for passivation but not designed to be passivated. f. Assessment of spacecraft compliance with the relevant paragraphs of DoDI 3100.12 and this instruction, and the rationale for any non-compliances.
Section 5: Assessment of Spacecraft Potential for On-orbit Collisions
a. Calculation of spacecraft probability of collision with known space objects larger than 10 cm in diameter during the orbital lifetime. For the assessment of collision probability, the orbital lifetime is defined as the time from end of launch collision avoidance to atmospheric reentry. The maximum time period for the assessment is 200 years. The reduction in probability of collision achieved by on-orbit collision avoidance performed by the space vehicle may be included in this assessment. b. Identification of all systems or components required to accomplish any post-mission disposal operation, including passivation, and maneuvering. c. Calculation of spacecraft probability of collision with space objects, including orbital debris and meteoroids, of sufficient size to prevent post-mission disposal. d. Assessment of spacecraft compliance with the relevant paragraphs of DoDI 3100.12 and this instruction, and the rationale for any non-compliances.
Section 6: Assessment of Spacecraft Post-mission Disposal Plans and Procedures
a. Demonstration of reliability of post-mission disposal operations. b. Description of spacecraft disposal option selected. c. Plan for any spacecraft maneuvers required to accomplish post-mission disposal. d. Calculation of area-to-mass ratio after post-mission disposal, if controlled reentry option not selected. e. Procedure for executing post-mission disposal plan. f. Detailed plan for passivation of the spacecraft, including the depletion of residual propellants and fluids as thoroughly as possible, the disabling of charging circuits, and the de-energizing of rotational energy sources. This includes, but not limited to burning residual propellants to depletion, venting propellant lines and tanks, venting pressurized systems, discharging batteries and preventing recharging, depressurizing gas and liquid filled batteries, deactivating flight safety systems, and de-energizing control moment gyroscopes. g. Assessment of spacecraft compliance with the relevant paragraphs of DoDI 3100.12 and this instruction, and the rationale for any non-compliances.
Section 7: Assessment of Spacecraft Reentry Hazards
a. Detailed description of spacecraft components by size, mass, material, and shape, if atmospheric reentry option selected. b. Summary of objects expected to survive an uncontrolled reentry, specifying software tool(s) used for the analysis (such as NASA Debris Assessment Software, NASA Object Reentry Survival Analysis Tool, or comparable software). c. Calculation of expectation of human casualty for the expected year of reentry and the spacecraft orbital inclination. d. If appropriate, preliminary plan for spacecraft controlled reentry.

e. Assessment of spacecraft compliance with the relevant paragraphs of DoDI 3100.12 and this instruction, and the rationale for any non-compliances.
Section 8: Assessment for Tether Missions
a. Type of tether (e.g., momentum, electrodynamic). b. Description of tether system, including (1) tether length, diameter, materials, and design (single strand, ribbon, multi-strand mesh) and (2) end-mass size and mass remaining at EOL. c. Determination of minimum size of object that will cause tether severance. d. Tether mission plan, including duration and post-mission disposal. e. Probability of tether colliding with large space objects. f. Probability of tether severance during mission or after post-mission disposal. g. Maximum orbital lifetime of a severed tether fragment. h. Assessment of compliance with the relevant paragraphs of DoDI 3100.12, and the rationale for any non-compliances.
Section 9: Reference List
a. Complete reference list of cited material, analysis, requirements, and a list of acronyms.

13.12.3. Review. **Note:** The Center Chief Engineer in coordination with the Center Safety Office will review each SDAR/EOLP delivered and provide recommendations for improvements to the PM.

Chapter 14

SAFETY TRAINING

14.1. Job Safety Training Outline.

14.1.1. Training Requirements. Supervisors will provide and document safety training to all newly assigned individuals (i.e., PCS, PCA or work center change to include deployment) on the hazards of their job before they start work and immediately when there is a change in equipment, processes, work environment or safety, fire and health requirements. Refresher training will be conducted and documented when employees demonstrate a lack of understanding of their required safety responsibilities or training such as is called for in AFMAN 91-203, Chapter 21, *Hazardous Energy Control*, has a specified frequency for recurrence. **(T-1)**

14.1.1.1. Supervisors will review and update the JSTO annually and/or when there is a change in equipment, processes or safety, fire and health requirements, to include procedural input as a result of a completed JHA. JSTO reviews will be accomplished by the supervisor and documented with the date of review and the person conducting the review. Safety, fire protection and health personnel will provide technical assistance to supervisors in developing a training outline to meet AFI/AFOSH requirements. JSTOs will be reviewed by safety inspectors during the scheduled safety assessment. **(T-1)**

14.1.1.2. Document safety, fire and health training as specified in paragraph **1.6.28.1** Documentation will be maintained by the supervisor within the work center. **(T-2)**

14.1.1.3. Designated Employee Representatives. The civilian personnel flight will schedule and monitor safety, fire protection and health training for employee representatives. **(T-0)** Upon request, coordinate training for designated representatives of civilian employees to assist in maintaining safe and healthful workplaces. The extent of such training will depend on local needs, but can typically be met by attendance at Supervisor Safety Training.

14.1.1.4. General Safety Education and Training Courses are listed in paragraph **14.3** Supervisors/instructors will document employee training. **(T-2)** Documentation may be accomplished using the AF Form 1286, *Safety Education/Training Roster*, or equivalent product.

14.1.2. Mandatory Items. The Job Safety Training Outline will be developed and used by supervisors to instruct all employees on work place specific hazards upon initial assignment and when work conditions or tasks change. The items below are mandatory, minimum topics the supervisor must ensure their employees receive training on prior to performing tasks in the work center. Topics addressed by other sources can be directly referenced in the JSTO to prevent redundancy and still adequately cover the required topics. Document training as specified in paragraph **1.6.27.7.1** Deployed and installation commanders may dictate more stringent requirements. **(T-1)**

14.1.2.1. Describe hazards of the job that apply to their work place. **(T-1)**

14.1.2.1.1. Specific hazards such as crushing hazards, burn hazards, chemical exposure, ladder use and falls, etc.

14.1.2.1.2. Hazards in the work environment such as flight line issues, weather hazards, loud noises in the shop, etc.

14.1.2.1.3. Applicable safety guidance such as TOs, job guides, JHAs, manufacturer's instructions, etc.

14.1.2.1.4. Describe hierarchal controls used to reduce hazard potential of these work place hazards IAW the following concepts (Refer to AFMAN 48-146 and AFPAM 90-803 for additional and detailed guidance):

14.1.2.1.4.1. Elimination. **(T-1)**

14.1.2.1.4.2. Engineering controls. **(T-1)**

14.1.2.1.4.3. Substitution.**(T-1)**

14.1.2.1.4.4. Administrative controls. **(T-1)**

14.1.2.2. Required use of PPE as determined by a JHA, requirements directed by TO, job order or instruction, recommendations from the safety office and BE.

14.1.2.2.1. Training must include donning, doffing, cleaning, maintaining, storing and disposal of PPE.

14.1.2.2.2. Personnel who wear contact lens or have medical conditions or take medications that may affect the use or wear of PPE will be reminded that they must notify their supervisor immediately. (See paragraph **1.6.29.1**).

14.1.2.3. Emergency action and fire prevention plans applicable to the work place; refer to emergency management plans for additional information. Location and use of emergency and fire protection equipment (i.e. alarms, AEDs and extinguishers) will also be addressed. **(T-1)**

14.1.2.4. Requirements for reporting unsafe equipment, conditions or procedures to supervisor immediately. Procedures must include notification to employees that reporting unsafe conditions or work related injury or illnesses can be reported without fear of retaliation. **(T-0)**

14.1.2.4.1. Purpose and location of AF Form 457, *USAF Hazard Report*. **(T-1)**

14.1.2.4.2. Purpose and means to access the ASAP process. **(T-1)**

14.1.2.5. Requirements and procedures for reporting mishaps, occupational injury, occupational illness, and OSHA recordable events such as: minimum stress and strain, terrorist acts, and work place violence without fear of coercion, discrimination or reprisal. **(T-1)**

14.1.2.5.1. Address specific requirements for on- and off-duty regular Air Force employees and on-duty only for civilians.

14.1.2.5.2. Location of medical facilities and procedures for obtaining treatment. **(T-1)**

14.1.2.5.3. Emergency procedures which apply to the work center:

14.1.2.5.4. Means to summon emergency service, i.e. 911, on-base number for cell phones, etc.

14.1.2.5.5. Evacuation routes and meet-up points.

14.1.2.5.6. Shelter in place locations.

14.1.2.5.7. Active shooter response methods.

14.1.2.6. Purpose and location of the CA-10, *What a Federal Employee Should do When Injured at Work* and Form LS-201, *Notice of Employee's Injury or Death* (Non-Appropriated Funds), if applicable. **(T-1)**

14.1.2.7. Requirements of Air Force Traffic Safety Program (Reference: AFI 91-207). Include mandatory use of seat belts and helmets, speed limits, local traffic hazards, spotters while backing and vehicle training requirements. Additionally, brief prohibition/restrictions on use of electronic devices while operating vehicles on- or off-base and discuss motorcycle safety training requirements before riding a motorcycle. **(T-1)**

14.1.2.8. Location and content of Air Force Visual Aid (AFVA) 91-209, *Air Force Occupational Safety and Health Program*. **(T-1)**

14.1.2.9. AFSMS Responsibilities, discuss how leaders, supervisors and airmen will participate in the unit safety management system and work towards continual improvement. (See paragraph **13.1**)

14.1.3. Job Specific Training Items. Supervisors will provide specific training based on the program requirements of the work place, provide application-level training, and document prior to employee performing task. If the Career Field Education Training Plan (CFETP) covers a particular training program, then no additional documentation beyond the CFETP is required. **Note:** Subjects listed below may not be mandatory for every job, but are dependent upon the type job/tasks individuals will be performing. Items listed below may not be all inclusive, refer to specific program requirements. **(T-2)**

14.1.3.1. Hazardous Energy Control. Reference: 29 CFR §1910.147 and AFI 91-203, Chapter 21, *Hazardous Energy Control.* **(T-2)**

14.1.3.2. Hazard Communication. Reference: AFI 90-821, *Hazard Communication*, and 29 CFR § 1910.1200. **(T-2)**

14.1.3.3. Bloodborne Pathogens. Reference: 29 CFR § 1910.1030. **(T-2)**

14.1.3.4. Hearing Conservation. Reference: AFI 48-127, *Occupational Noise and Hearing Conservation Program*. **(T-2)**

14.1.3.5. Confined Space Program (Entrant, Attendant, Supervisor, Monitor and Rescue Team). Reference: AFI 91-203, Chapter 23, *Confined Spaces*, and 29 CFR § 1910.146. **(T-2)**

14.1.3.6. Manual and Powered Hoists. Reference: AFI 91-203, Chapter 35, *Material Handling Equipment.* **(T-2)**

14.1.3.7. Respiratory Protection Program. Use AF Form 2767, *Occupational Health Training and Protective Equipment Fit Testing (LRA)*. Reference: AFI 48-137, *Respiratory Protection Program*. **(T-2)**

14.1.3.8. Vehicle Mounted Elevated Work Platforms, Self-Propelled and Manual Platforms. Reference: AFI 91-203, Chapter 16, *Mobile Elevating Work Platforms.* **(T-2)**

14.1.3.9. Fall Arrest System(s). Reference: AFI 91-203, Chapter 13, *Fall Protection,* 29 CFR 1910.66 and 29 CFR 1926.503. **(T-2)**

14.1.3.10. Forklift (Material Handling Equipment). Reference: AFI 91-203, Chapter 35, and 29 CFR 1910.178. **(T-2)**

14.1.3.11. Explosives Safety Training. Reference: AFMAN 91-201, *Explosives Safety Standards,* and this instruction. **(T-2)**

14.1.3.12. Pole/Tower Climbing. Reference: AFI 91-203, Chapter 30, *Communication Cable, Antenna and Communication Systems*. **(T-2)**

14.1.3.13. Cardiopulmonary Resuscitation (CPR) Training. Reference: AFI 91-203, Chapter 1, *Introduction.* **(T-2)**

14.1.3.14. Flight Line Driving. Reference: AFI 91-203, Chapter 24, *Aircraft Flight Line – Ground Operations and Activities,* and other governing directives. **(T-2)**

14.1.3.15. Fetal Protection Program. Job Specific. Reference: AFMAN 48-146, *Occupational & Environmental Health Program Management.* **Note:** Air Force Reserve – AFRCI 41-104, *Pregnancy of Air Force Reserve Personnel.* **(T-2)**

14.1.3.16. Medical Surveillance Examination (Scheduling, Administration, Reporting and Follow-up). Reference: AFI 48-145, *Occupational and Environmental Health Program*. **(T-2)**

14.1.3.17. Electromagnetic Field Training (EMF). Reference: AFI 48-109, *Electromagnetic Field Radiation (EMFR) Occupational and Environmental Health Program*. **(T-0)**

14.1.3.18. Laser Safety Training. Reference: AFI 48-139, *Laser and Optical Radiation Protection Program*. **(T-0)**

14.1.3.19. As Low As Reasonably Achievable (ALARA) Ionizing Radiation Training. Reference: AFI 48-148, *Ionizing Radiation Protection.* **(T-2)**

14.1.4. Documentation of Training. Document training as specified in paragraph **1.6.28.7.1** **(T-0)**

14.1.5. Maintenance and Disposition of Training Documentation Product. Maintain as prescribed by the records disposition schedule (**https://www.my.af.mil/afrims/afrims/afrims/rims.cfm**), Table & Rule: T 91 - 04 R 24.00 or T 91 - 04 R 25.00. Supervisors will maintain the training documentation as prescribed in paragraph **1.6.22.5** When an individual deploys/transfers to another Air Force position/location, the training documentation will be transferred physically or electronically by the old supervisor to the individual who will provided the records to the new supervisor upon arrival to deployed location or new base. The new supervisor will review the training documentation product, transfer current training completion dates as necessary and initial Hazardous Communication (HAZCOM) date and other one-time training to a new training documentation product if necessary and retain the old product IAW the Air Force Records

Disposition Schedule. The supervisor will provide a copy to personnel who separate or retire and destroy the training documentation product after one year. **(T-3)**

14.2. Continuing Education and Training Courses.

Table 14.1. Continuing Career Safety Professional Development (Recommended Safety Courses).

Course Subjects – Topics
Occupational Safety and Health Standards for the General Industry
Occupational Safety and Health for Other Federal Agencies
Introduction to industrial Hygiene for Safety Personnel
Principles of Ergonomics Applied to Work-related Musculoskeletal Disorders
National Fire Protection Association (NFPA) Life Safety
National Electric Code 9NEC) Electrical Standards
Collateral Duty Course for other Federal Agencies
Control of Hazardous Energy (Lockout – Tagout)
Machinery and Machine Guarding Standards
Hazard Evaluation and Risk Assessment
Permit-Required Confined Space Entry
OSHA Recordkeeping and Inspections
Bloodborne Pathogens Exposure Control
Environmental Compliance Assessment
Disaster Site Worker Train-the-Trainer
Evacuation and Emergency Planning
Hazardous Waste Management
Scaffolding, Cranes and Rigging
Excavation and Trenching
Traffic Control Technician
Health Hazard Awareness
Respiratory Protection
Fall Arrest Systems
Voluntary Protection Programs
Risk Management
Advanced Fault Tree Analysis
Software System Safety Analysis
System Safety/Reliability Analysis Course
System Safety Short Courses
Laser/Directed Energy Safety
Hazard Identification and Documentation
Hazard Tracking and Reporting
Risk Assessment Review & Acceptance Process
System Safety Groups
Space Safety Management
Weapon/Explosive Integration onto Weapon Systems
Other (may include management, writing and other courses designed to improve safety professional management and/or technical skills)

Table 14.2. Continuing Career Safety Professional Development (AFSEC Courses Awarding Continuing Education Units).

Course	CEUs
Aircraft Mishap Investigation Course (AMIC)	10.5
Aviation Safety Program Management (ASPM)	3.5
Mishap Investigation Non-Aviation (MINA)	7.0
Space Mishap Investigation Course (SMIC)	7.0
Safety Managers Course (SMC)	3.5
Introduction to Mishap Investigation (IMI)	3.5
Risk Management Application and Integration (RM A&I)	2.1
Board President Course (BPC)	2.1
Chief of Safety	2.8
Air Reserve Component Chief of Safety (ARCCoS)	3.3
ACC Occupational Safety Program Management Course (OSPM))	3.3
Human Factors (HF)	2.0
Ammo-47 Air Force Electrical Explosive Safety (44E-F37/645-F21 [MC])	2.9

14.3. Safety Education and Training. Air Force Catalog (AFCAT), *USAF Formal Schools* found at the following website **https://etca.randolph.af.mil** (formerly AFCAT 36-2223), outlines specific safety-related courses (those listed below with a number designation). Refer to the AFCAT for full course descriptions and prerequisites. Training in System Safety (CLE 009) is available from Defense Acquisition University (**http://www.dau.mil**). Organizations responsible for course management are indicated next to each course.

Table 14.3. Mishap Investigation.

Course Name	AFCAT Number	Owning Organization
Safety and Accident Investigation Board President Course (BPC)	AFSC810	AFSEC
Aircraft Mishap Investigation Course (AMIC)	WCIP05A	AFSEC
Mishap Investigation Non-Aviation (MINA) Course	WCIP059	AFSEC
Aircraft Mishap Investigation and Prevention (AMIP) Clinical Psychologist	B3OZY42P3 003	AFMC
Aircraft Mishap Investigation and Prevention (AMIP) Aerospace Physiologist	B3OZY43A 003	AFMC
Aircraft Mishap Investigation and Prevention (AMIP) USAF Medical Investigator (Flight Surgeon)	B3OZY48G3 003	AFMC
Aircraft Mishap Investigation and Prevention (AMIP) Non-USAF Medical Investigator (Flight Surgeon or other physician)	B3OZY48G3 010	AFMC
Life Sciences Equipment Investigation Course (LSEIC)	J3AZR1P071 0L1A	AETC

Table 14.4. Unit Safety Representative (USR).

Course Name	Owning Organization
Developed by AFSEC/SEG or MAJCOM/DRU/FOA	AFSEC

Supplemented with MAJCOM/DRU/FOA/local requirements	MAJCOM/DRU/FOA

Table 14.5. Aviation.

Course Name	AFCAT Number	Owning Organization
Flight Safety NCO (FSNCO)	L3AZR1S071-0S5A	AETC
Security Assistance Training Program	WCIP05U	AFSEC
Safety Office Course (IFSO)		
Air Combat Command (ACC) Flight Safety Program Management Course	3J5ACC1XXXX 000	ACC
DCMA Aviation Safety Officer Course, ASO		DCMA
Air Reserve Component Chief of Safety Course ARCCOS		
Aviation Safety Program Manager's Course		

Table 14.6. Occupational.

Course Name	AFCAT Number	Owning Organization
Safety Apprentice	L3ALR1S031 0S2B	AETC
Safety Craftsman	L3ACR1S071 0S2B	AETC
OSHA Training Institute (OTI		AFSEC
National Safety Council (NSC) Safety Training Institute (Refer to OSHA Training Institute catalog)		AFSEC
Advanced Occupational Safety (Refer to NSC Safety Training Institute course catalog)		AFSEC
Radiation Safety Officer Course	B6OZW43EXA-0A1A	
ACC Occupational Safety Program Management Course	3J5ACC1S0X1 000	ACC

Table 14.7. Weapons.

Course Name	AFCAT Number	Owning Organization
Weapons Safety Management Course	L3AZR2W071 0C2A	AETC
ACC Weapons Safety Program Management Course	3J5ACC2W0X1 000	ACC
Lightning Protection for Air Force Facilities (AMMO-47 OS)	J5AZB3E051 00AA	

Table 14.8. Space.

Course Name	Owning Organization

Space System Safety Course	AFSPC/SMC
Space Safety Course	AFSEC
Space Mishap Investigation Course	AFSEC

Table 14.9. System Safety.

Course Name	Owning Organization
NAVY WISE Course	AFSPC/AFMC
USC Viterbi School of Engineering (System Safety Certificate and courses)	AFSEC

Table 14.10. Management.

Course Name	AFCAT Number	Owning Organization
Chief of Safety (COS) Course	WCIP05B	AFSEC
Safety Manager Course (SMC)	WCIP05D	AFSEC

Table 14.11. Risk Management (RM).

Course Name	AFCAT Number	Owning Organization
AF RM Fundamentals Course	ADLS (under Misc. Courses)	AFSEC
AF RM Application and Integration Course (RM A&I) – on sight	WCIP 05E PDS Code WEI	AFSEC

Table 14.12. Other.

Course Name	AFCAT Number	Owning Organization
Operational Safety, Suitability and Effectiveness (OSS & E)	WSYS155	AFIT
Environmental, Safety and Occupational Health (ESOH) Compliance Assessments	WENV020	AFIT
Supervisor Safety Training Course (SST)	ZZ13212	AFSEC
ACC Aircrew Flight Equipment Program Manager's Course	3J5ACC1P0X1 000	ACC

14.4. 1S0X1 Retrainee Evaluation Process. The local Occupational Safety Manager (OSM) or designated representative will act as initial Evaluating Agent for retraining applicants. **(T-3)**

14.4.1. The Evaluating Agent will:

14.4.1.1. Ask the applicant's immediate supervisor to appraise his or her work performance, attitude and overall character, and review the applicant's last 3-5 enlisted performance reports. **(T-3)**

14.4.1.2. Provide applicant a briefing on Safety programs and responsibilities. **(T-3)** Discuss the safety career field and answer any questions. Determine if applicant has problems which would preclude working nights, holidays, standby, TDY, overseas

assignments or deployments. Also, problems with prolonged standing or walking or other medical problems which would affect work performance.

14.4.1.3. Establish and document an observation period for all applicants under consideration for retraining. **(T-3)** The applicant must complete a 10 duty-day assessment period with the local Safety office before the Evaluating Agent can make a recommendation. **(T-3) Note:** Exception to the 10-duty day assessment period will be approved by AFSEC/CFM.

14.4.1.4. Provide meaningful, structured activities which assist in assessing the applicant's suitability for the Safety career field. **(T-3)** The activities will consist of:

14.4.1.4.1. An assessment of the applicant's communication skills and his/her abilities to write and speak clearly and distinctly.

14.4.1.4.1.1. Applicant will write a memorandum stating their reasons for wanting to retrain into the career field. **(T-3)** Memorandum will include strengths, areas for improvement and what the applicant can contribute to improve the safety program. **(T-3)**

14.4.1.4.1.2. Applicant will instruct and lead some portion of a safety class or meeting. **(T-3)**

14.4.1.4.2. Introduction to inspection/spot inspection process. Applicant will review annual reports, conduct follow up for the open write-ups and conduct spot inspections. **(T-3)**

14.4.1.4.3. Familiarization to flightline/maintenance/industrial areas. Applicant will visit flightline/maintenance/industrial areas as deemed appropriate by the Evaluating agent. **(T-3) Note:** This may be incorporated into paragraph **14.4.1.4.2**

14.4.1.4.4. Introduction to mishap investigation. Applicant will partake in the investigation and processing of a mishap. **(T-3)** Preferably a real mishap, but a training scenario may be used. This includes an AFSAS familiarization session, reviewing mishap findings to establish causal factors and a mishap summary/out-brief to the Chief of Safety. **Note:** This activity will include briefing applicant on what to expect at a mishap scene. **(T-3)**

14.4.1.4.5. Introduction to Hazard Abatement Program. Applicant will assign a RAC to a hazard (actual or simulated) based on an assessment of the mishap potential and its severity. **(T-3)** Applicant will also process AF Forms 457 and 1118. **(T-3)**

14.4.2. At the end of the evaluation period, the Evaluating Agent will provide the servicing FSS with a memorandum summarizing the following areas based on research and structured activities:

14.4.2.1. Approval/Disapproval of applicant's request for retraining. **(T-3)**

14.4.2.2. Assessment of applicant's structured activities. **(T-3)**

14.4.2.3. Assessment of applicant's communication skills, both written and verbal. **(T-3)**

14.4.2.4. Overall assessment of the appearance, moral standards, military conduct and bearing. **(T-3).**

Figure 14.1. 1S0 Safety Retraining Memorandum (Example).

MEMORANDUM FOR

FROM:

SUBJECT: 1S0 Safety Retraining Memorandum

1. I approve/disapprove

2. Applicant:

(Applicant's Rank and name) request for retraining.
a. (Did/did not) complete the 10 duty-day assessment period.
b. (Has/does not have) ability to communicate: write, and speak clearly and distinctly.
c. (Has/does not have) ability to meet the needs of the Safety career field.
d. (Has/does not have) appearance, moral standards, military conduct and bearing to meet the needs of the Safety career field.

Explain:

3. I interviewed applicant's immediate supervisor and foresee no problems OR have reason for concern. Explain:
4. Applicant received a briefing on Safety programs and responsibilities and has/has no problems which would preclude working nights, holidays, standby, TDY, overseas assignments or deployments.
Explain:
5. If you have questions please contact me at DSN: xxx-xxxx.

SIGNATURE BLOCK

14.5. Supervisor Safety Training. This course trains supervisors in management skills needed to implement safety policies and programs. It develops skills to recognize, control, report and eliminate hazards. MAJCOMs/FOAs/DRUs and installations with unique requirements will supplement this training with those requirements. **(T-0)** This two part course includes a Computer Based Training found on ADLS, and a classroom portion conducted by the safety office.

14.5.1. Personnel required to attend:

14.5.1.1. Noncommissioned officers and Senior Airmen when first assigned a supervisory position. **(T-0)**

14.5.1.2. Commissioned officers when first assigned as a supervisor. **(T-0)**

14.5.1.3. Civilian personnel (DAF, NAF, foreign national) upon initial assignment to a supervisory position. **(T-0)**

14.5.1.4. Any supervisor needing refresher training or who demonstrates a lack of safety knowledge. **(T-0)**

14.5.2. Administration.

14.5.2.1. Unit commanders ensure eligible personnel are identified and course scheduling is arranged with the installation occupational safety office.

14.5.2.2. The safety staff allocates quotas, giving priority to newly assigned supervisory personnel.

14.5.2.3. Prior to attending the classroom portion training held by the safety office, attendees must complete the computer-based training (CBT) located on ADLS. **(T-1)** The student will ensure a copy of the CBT certificate is provided to the safety office prior to attending the face-to-face course. **(T-2)**

14.5.2.4. Safety offices will use the AF Form 1286, *Safety Education/Training Class Roster*, or another equivalent product for attendee sign-in. **(T-2)**

14.5.3. Documenting Training.

14.5.3.1. Safety staffs will provide confirmation of training upon completion of the course to all attendees. This may include a copy of the classroom roster, email product, certificate, etc.

14.5.3.2. Safety staffs will send training rosters or equivalent product to unit training managers or appropriate installation personnel data specialists to documented in the Military Personnel Data System.

14.5.3.3. Supervisors of military personnel will ensure documentation IAW paragraphs **1.6.28.7.1** and **1.6.28.7.2** **(T-2)**

14.5.3.4. Supervisors of civilian personnel will document this training in the employee's AF Form 971, Supervisor's Employee Brief, or equivalent product. **(T-2)**

14.5.3.5. Supervisors of military and civilian personnel will ensure training completion dates are transcribed to new documentation tool upon reassignment to a new duty location or station.

Chapter 15

MISCELLANEOUS SAFETY INFORMATION

15.1. Instructions for Completing AF Form 1118, *Notice of Hazard.*

15.1.1. AF Form 1118. Qualified occupational safety, fire protection and health (BE, PH, flight surgeon and/or occupational medicine physician) officials are the sole issuing authorities for AF Form 1118.

15.1.2. Control Number. The control number for the AF Form 1118 will be the agency code (S, F, H), date of hazard identification and sequential number, e.g., S-20061201-1. The numbering system will coincide with the corresponding Hazard Abatement Plan (AF Form 3).

15.1.3. Location. Note the building number, room number and function involved where the hazard is located, and nomenclature of the hazardous item or procedure, e.g., Building 18, Room 217, CE Carpenter Shop, Table Saw.

15.1.4. Hazardous Condition. Describe in detail the nature of the hazard, including a reference to the standard or requirement violated, if any. **(T-2)**

15.1.5. Risk Assessment Code. List RAC, followed by RAC description, e.g., "1 (Critical/Imminent Danger)." **(T-2)**

15.1.6. Interim Control Measures. Identify temporary measures needed to reduce the degree of risk associated with the hazard to an "acceptable degree" until permanent corrective actions are implemented. **(T-2)** Assigned RAC will remain until completely abated even though interim control measures are in effect.

15.1.7. Permanent Corrective Action. List the action that will permanently eliminate the identified hazard. Include associated document number, e.g., install new exhaust system; CE work order and project number. **(T-2)**

15.1.8. Contact Point. Name, grade, office symbol and telephone number of individual responsible for elimination of the hazard.

15.1.9. Estimated Completion Date. Self-explanatory.

15.2. Instructions for Completing AF Form 3, *Hazard Abatement Plan.*

15.2.1. The AF Form 3 is for an identified RAC 1, 2 or 3 hazard requiring more than 30 calendar days to abate. The form then becomes part of the installation's formal master hazard abatement plan. The AF Form 3 may be used for RAC 4 or 5 hazards or deficiencies. Electronic systems that collect identical data and can produce a hard copy of AF Form 3 may be used.

15.2.2. Prepare a separate AF Form 3 for each individual hazard. **(T-2)**

15.2.3. The commander or functional manager ensures AF Form 3, Parts I and II, are completed in as much detail as possible and then sent to the appropriate installation safety, fire protection or health office:

15.2.3.1. Part I—Hazard Information.

15.2.3.1.1. Item 1 – Type of Hazard. Select the type hazard from the drop-down menu. **(T-2)** Indicate whether the hazard is part of a facility, property, traffic, etc. **(T-2)**

15.2.3.1.2. Item 2 – Category. Select appropriate category from the drop-down menu: Safety, Fire or Health. **(T-2)**

15.2.3.1.3. Item 3 – Control Number. The control number will coincide with the AF Form 3 issued by the installation safety office, leave blank unless provided by the safety office.

15.2.3.1.4. Item 4 – Date. Use the drop-down calendar to select the date this form was initiated. **(T-2)**

15.2.3.1.5. Item 5 – Date Hazard Discovered. Use the drop-down calendar to select the date this hazard was discovered. **(T-2)**

15.2.3.1.6. Item 6 – Risk Assessment Code (RAC). Use the drop –down menu and select appropriate RAC (i.e., 1 (I, A), 3 (II, C), etc.) as provided by safety, fire or health officials. **(T-2)**

15.2.3.1.7. Item 7 – Discovery Method. Use the drop-down menu to select method indicating how the hazard was originally identified. **(T-2)**

15.2.3.1.8. Item 8 – Exposure. Enter the average number of personnel exposed to the hazard daily. **(T-2)**

15.2.3.1.9. Item 9 – Description of Hazard. Provide a word description of the hazard to illustrate its potential impact if not abated. **(T-2)** This includes the condition, procedure or practice that creates a potential for producing death, injury, illness, fire, property, equipment or environmental damage.

15.2.3.1.10. Item 10 – Organization. List the organization responsible for the hazard abatement. **(T-2)**

15.2.3.1.11. Item 11 – Office Symbol. Self-explanatory.

15.2.3.1.12. Item 12 – Facility Number. Enter facility number, leave blank if not in a facility. **(T-2)**

15.2.3.1.13. Item 13 – Specific Location/Description. Provide additional descriptor, i.e., NE corner, etc. **(T-2)**

15.2.3.1.14. Item 14 – Functional Manager/POC Name. Last, First, Middle Initial. See **Attachment 1, *Terms,*** for definition.

15.2.3.1.15. Item 15 – Grade/Rank. Enter the appropriate Grade/Rank. **(T-2)**

15.2.3.1.16. Item 16 – Duty Phone.

15.2.3.1.17. Item 17 – Signature. Select electronic signature.

15.2.3.2. Part II—Abatement Information.

15.2.3.2.1. Item 18 – Interim Control Measures. List all temporary measures taken to reduce the risk associated with the hazard pending completion of permanent abatement action (i.e., issuance of specific PPE, termination of operations, specific work-around procedures, etc.). **(T-2)**

15.2.3.2.2. Item 19 – Residual RAC Level. Select the Residual RAC Level after Interim Control Measures are applied to the hazard. **(T-2) Note:** Interim controls do not reduce original RAC level. The Residual RAC level must be a RAC 4, 5 or lower.

15.2.3.2.3. Item 20 – Description of Permanent Abatement Action. Provide a description of the permanent abatement action taken or programmed to eliminate or reduce the hazard. **(T-2)**

15.2.3.2.4. Item 21 – Method of Abatement. Select from the drop-down menu to method used to abate the hazard, e.g., CE Work Order, Local Purchase, military construction (MILCON) project, etc. **(T-2)**

15.2.3.2.5. Item 22 – Project/Work Order number. Self-explanatory.

15.2.3.2.6. Item 23 – Status of Project/Work Order #. Using the drop-down menu, enter the status of the abatement project, i.e., awaiting materials, under construction, in design, in review, unfunded, etc. **(T-2)**

15.2.3.2.7. Item 24 – Project Cost. Indicate total cost associated with project identified in Item 22. **(T-2)** If actual costs are not known, use best available estimate.

15.2.3.2.8. Item 25 – Abatement Cost (if different from project cost). If the cost to abate the hazard is not the total cost of the project, enter only the cost associated with correction of the hazard. **(T-2)** For example, a $500,000 facility renovation project will correct hazardous electrical wiring estimated to cost $25,000. Item 24 would show $500,000 and Item 25 would show $25,000. If actual costs are not known, use best available estimate.

15.2.3.2.9. Item 26 – Estimated Date of Completion. Use the drop-down calendar to select the projected date of completion. **(T-2)**

15.2.3.3. Part III—For Safety/Fire/Health Use:

15.2.3.3.1. Item 27 – Severity. Use **Table 13.2**

15.2.3.3.2. Item 28 – Probability. Use **Table 13.2**

15.2.3.3.3. Item 29 – Multiplier. Use **Table 13.2**

15.2.3.3.4. Item 30 – Exposure. Same as Item 8.

15.2.3.3.5. Item 31 – Cost. Abatement Cost. Same as Item 25.

15.2.3.3.6. Item 32 – RAC. Same as Item 6.

15.2.3.3.7. Item 33 – Cost Effectiveness Index (CEI). See paragraph **13.8.1.5**

15.2.3.3.8. Item 34 – Abatement Priority Number (APN). See paragraph **13.8.2** and **Table 13.3**

15.2.3.4. Part IV—Semi-Annual Review Records:

15.2.3.4.1. Item 35 – Status of Project/Work Order #. Use drop-down to select the current status of the project (i.e., awaiting materials, under construction, in design, in review, unfunded, etc.). **(T-2)**

15.2.3.4.2. Item 36 – Comments Regarding Progress. Enter any comments regarding progress of abatement actions. **(T-2)**

15.2.3.4.3. Item 37 – Date.

15.2.3.4.4. Item 38 – Commander/Functional Manager Name. Last, First, Middle Initial.

15.2.3.4.5. Item 39 - Grade/Rank. Enter the appropriate Grade/Rank. **(T-2)**

15.2.3.4.6. Item 40 – Duty Phone.

15.2.3.4.7. Item 41 – Signature. Select electronic signature. **(T-2)**

15.2.3.4.8. Item 42 – Other Related Notes. Use this area to add any additional comments regarding the status of the hazard abatement process.

15.2.3.5. Part V—Hazard Closure.

15.2.3.5.1. Item 43 – Hazard Closed and Verified By: Enter name of qualified safety, fire or health official that verified hazard is fully abated. **(T-2)** Last, First, Middle Initial and Office Symbol.

15.2.3.5.2. Item 44 – Grade/Rank. Enter the appropriate Grade/Rank. **(T-2)**

15.2.3.5.3. Item 45 – Signature. Select electronic signature.

15.2.3.5.4. Item 46 – Date Hazard Fully Abated. Use drop-down calendar to select completion date. **(T-2)**

15.3. Pre-Departure Travel Safety (Examples Only). The Pre-Departure Travel Safety Program is a recommended management tool for commanders and supervisors. It helps military and civilian employees on orders, especially those under the age of 26, reduce the potential for a traffic mishap by identifying and mitigating risks involving travel by private motor vehicle for leave, PCS and temporary duty assignments.

15.3.1. Overview. Commanders, managers and supervisors will help guide and mentor employees in applying personal RM when planning for a trip. **(T-3)** Consider the following factors to guide the discussion on assessing risk and identifying mitigating strategies, but also consider and address other factors based on the unique nature of each situation. This interactive briefing may be documented on AF Form 4392, *Pre-Departure Safety Briefing Form.* Another tool for commanders and supervisors to consider is use of the Travel Risk Planning System (TRiPS) program to assist in travel planning for all personnel. TRiPS is accessed through the Army Safety portal (**https://trips.safety.army.mil/**).

15.3.1.1. Urge the driver to carefully and thoroughly plan the trip, allowing time for rest prior to departure and to take a break at least every two hours.

15.3.1.2. Travelers are not to drive more than 10 hours during any 24-hour period. Motorcyclists are highly encouraged to travel fewer hours. Highly recommend that travelers get a good night's sleep (7-8 hours) while traveling.

15.3.1.3. Airmen must ensure they have sufficient funds available to cover expenses (a shortage of funds often leads to exhausting, marathon driving). **(T-3)**

15.3.1.4. Travelers must check the weather forecast and road conditions for the intended route of travel. **(T-3)**

15.3.1.5. Discourage driving during late night hours. Remind the traveler that there is a greater chance to encounter impaired (intoxicated, fatigued) drivers on the road at night than during the day.

15.3.1.6. Stress the value of occupant restraint devices (mandatory for military personnel), including child restraints and the use of helmets and personal protective equipment by motorcyclists; review the hazard of reduced visibility due to factors such as darkness, weather, sun glare; and touch on the issue of being alert for road hazards such as animals crossing the roadway, stalled or slow-moving vehicles, and so forth.

15.3.1.7. Stress the importance of vehicle condition — vehicle defects also contribute to mishaps.

15.3.1.8. Discuss the main causes of injury and death by vehicle mishaps in the Air Force, which include speeding or excessive speed for conditions, fatigue, inattention or distraction, not wearing seatbelts and the effects of medication and alcohol.

15.3.2. Additional Information. Advise the member to contact their unit commander, first sergeant, flight commander, immediate supervisor or command post in the event of a mishap or if an emergency situation arises. Ensure the individual is provided the phone numbers of the points of contact.

15.4. Air Force Off-Duty High-Risk Activities Program. The Off-duty High Risk Activity (HRA) Program is a recommended management tool for commanders and supervisors. The intent of the program is to ensure participants are familiar with the hazards and injury potential associated with their particular activity. This program is intended for military personnel only.

15.4.1. High-Risk Activities. These are activities having a higher potential for personal injury due to the level of competition, speed, risk or skills needed and requiring greater agility, stamina and dexterity. Some examples of high-risk activities are flying civil aircraft, hang gliding, skydiving, mixed martial arts (MMA) fighting, parasailing, white-water rafting, motorcycle and auto racing, scuba diving, bungee jumping, bronco and bull riding, and extreme sports or any activity identified by the commander. **Note:** MAJCOM/FOA/DRU can determine within the command what are considered high risk activities.

15.4.2. Commander/Supervisor Responsibility. Commanders or supervisors will ensure all personnel are briefed about the HRA program regardless of their participation in high-risk activities. **(T-3).** Each individual should be surveyed and if it is determined they are actively engaged or about to engage in an HRA they should meet one on one with their commander or supervisor. Ideally implemented, an HRA interview is not a briefing. It is for the purpose determining the mental and physical readiness, and situational awareness preparedness of participants before the HRA occurs. The interviewer can discuss with the interviewee the risks of the activities and ascertain some idea of the likelihood that the participant can enjoy the activity without an unacceptable level of risk. Through this process the interviewer can determine such things as level of experience, knowledge of PPE requirements, physical safety aspects of the area of participation, level of supervision or oversight by qualified professional staffs or officials, rules or recommended practices of professional organizations, and so on. It is also a chance to discuss the mental and physical preparedness of the participant. If

interviewers determine participants are not adequately trained or are inexperienced, they should encourage participants to seek additional training through a nationally recognized institute before participating in the activity.

15.4.3. Individual Responsibility. Individuals planning to engage in high-risk activities, such as those described in paragraph **15.4.1,** will be encouraged to inform his or her immediate supervisor, and schedule an interview with their supervisor, squadron commander or designee. The individual engaging in a high-risk activity is responsible for applying sound RM practices to avoid jeopardizing life or limbs and their ability to perform their Air Force duties.

15.4.4. Documentation. AF Form 4391, *High-Risk Activities Worksheet,* may be used to document the briefing, completed by the squadron commander, individual's supervisor, safety officer or training manager.

JOHN T. RAUCH JR.
Major General, USAF
Chief of Safety

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

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10 USC § 1588, *Authority to Accept Certain Voluntary Services*

22 USC § 2751, *Need for International Defense Cooperation and Military Export Controls; Presidential Waiver; Report to Congress; Arms Sales Policy,* (Chapter 39, *Arms Export Control*)

50 USC § 2401, *Establishment and Mission*

29 CFR Part 1904, Recording and Reporting Occupational Injuries and Illnesses

29 CFR Part 1960, *Basic Program Elements for Federal Employees OSHA*

29 CFR § 1960.7, *Financial Management*

29 CFR § 1960.25, *Qualifications of Safety and Health Inspectors and Agency Inspections*

29 CFR § 1960.56, *Training of Safety and Health Specials*

Prescribed Forms

AF Form 3, *Hazard Abatement Plan*

AF Form 55, *Employee Safety and Health Record*

AF Form 457, *USAF Hazard Report*

AF Form 651, *Hazardous Air Traffic Report (HATR)*

AF Form 1118, *Notice of Hazard*

AF Form 1286, *Safety Education/Training Class Roster*

AF Form 4391, *High-Risk Activities Worksheet*

AF Form 4392, *Pre-Departure Safety Briefing*

Adopted Forms

AF Form 9, *Request For Purchase*

AF Form 332, *Base Civil Engineer Work Request*

AF Form 847, *Recommendation For Change of Publication*

AF Form 860B, *Civilian Progress Review Worksheet*

AF Form 978, *Supervisor's Preliminary Mishap/Incident Report*

AF Form 979, *Danger Tag*

AF Form 1754, *Job Capability and Safety Analysis (LRA)*

AF Form 4437, *Deliberate Risk Assessment Worksheet*

AFTO Form 244, *Industrial/Support Equipment Record*

OSHA 300, *Log of Work-Related Injuries and Illness*

OSHA Form 300A, *Summary of Work-Related Injuries and Illness*

Abbreviations and Acronyms

ACAT—Acquisition Category

ACC—Air Combat Command

ADLS—Air Force Distributed Learning Service

AETC—Air Education and Training Command

AEG—Air Expeditionary Group

AEW—Air Expeditionary Wing

AFCEC—Air Force Civil Engineering Center

AFCMRS—Air Force Combined Mishap Reduction System

AFFARS—Air Force Federal Acquisition Regulation Supplement

AFFOR—Air Force Forces

AFDW—Air Force District of Washington

AFGSC—Air Force Global Strike Command

AFI—Air Force Instruction

AFIMSC—Air Force Installation Mission Support Center

AFLCMC—Air Force Life Cycle Management Center

AFLCMC/EZ—Air Force Life Cycle Management Center Airworthiness Office

AFMAN—Air Force Manual

AFMC—Air Force Materiel Command

AFMC/EN—Air Force Materiel Command Directorate of Engineering

AFMRA—Air Force Medical Readiness Agency

AFMS—Air Force Manpower Standard

AFOSH—Air Force Occupational Safety and Health

AFOTEC—Air Force Operational Test Evaluation Center

AFPAM—Air Force Pamphlet

AFPC—Air Force Personnel Center

AFPD—Air Force Policy Directive

AFRC—Air Force Reserve Command

AFSAS—Air Force Safety Automated System

AFSC—Air Force Specialty Code

AFSEC—Air Force Safety Center

AFSMS—Air Force Safety Management System

AFSOC—Air Force Special Operations Command

AFSPC—Air Force Space Command

AFSWC—Air Force Service Watch Center

AFTO—Air Force Technical Order

AMC—Air Mobility Command

AMIC—Aircraft Mishap Investigation Course

AMIP—Aircraft Mishap Investigation and Prevention

ANG—Air National Guard

AOP—Aerospace and Operational Physiologists

AOR—Area of Responsibility

APMR—Annual Program Management Review

ARC—Air Reserve Component

ARCCOS—Air Reserve Component Chief of Safety

ARPC—Air Reserve Personnel Center

AS—Allowance Standards

ASAP—Airman Safety Action Program

ASPM—Aviation Safety Program Manager

ATC—Air Traffic Control

BASH—Bird/Wildlife Aircraft Strike Hazard

BCAT—Business Acquisition Category

BE—Bioenvironmental Engineering

BSC—Biomedical Sciences Corps

CA—Conjunction Assessment

CAE—Component Acquisition Executive

CCB—Configuration Control Board

CD—Deputy Commander

CE—Civil Engineering

CDP—Child Development Program

CEU—Continuing Education Unit

CFM—Career Field Manager

CFR—Code of Federal Regulations

CMAVs—Controlled Movement Area Violations

COLA—Collision Avoidance

COMAFFOR—Commander, Air Forces

COR—Contracting Office Representative

COS—Chief of Safety

CSSM—Center System Safety Manager

CQA—Clinical Quality Assurance

CV—Vice Commander

CY—Calendar Year

DART—Days Away Restricted and/or Transfer Case

DASHO—Department of the Air Force's Designated Agency Safety and Health Officer

DDESB—Department of Defense Explosives Safety Board

DESR—Defense Explosives Safety Regulation

DET—Data Extraction Tool

DEW—Directed Energy Weapons

DFARS—DoD Federal Acquisition Regulation Supplement

DoD—Department of Defense

DoDD—Department of Defense Directive

DoDI—Department of Defense Instruction

DoE—Department of Energy

DoL—Department of Labor

DRU—Direct Reporting Unit

ECP—Engineering Change Proposal

EDT—Enlisted Development Team

EOLP—End-of-Life Plan

ESMP—Explosives Safety Management Program

ESOH—Environment, Safety and Occupational Health

ESOHC—Environment, Safety and Occupational Health Council

F—Fahrenheit

FAA—Federal Aviation Administration

FAR—Federal Acquisition Regulation

FCC—Family Child Care

FECA—Federal Employees' Compensation Act

FES—Fire and Emergency Services

FOA—Field Operating Agency

FSNCO—Flight Safety Non-Commission Officer

FSO—Flight Safety Officer

FSS—Family Support Squadron

FY—Fiscal Year

GCC—Geographic Combatant Command

GPC—Government Purchase Card

GSA—General Services Administration

HAF—Headquarters Air Force

HAP—High Accident Potential

HATR—Hazardous Air Traffic Report

HAZMAT—Hazardous Material

HERO—Hazards of Electromagnetic Radiation to Ordnance

HHQ—Higher Headquarters

HQ—Headquarters

IAW—In Accordance With

IG—Inspector General

IGI—Inspector General for Investigations

IOEMC—Installation Occupational and Environmental Medicine Consultant

ISB—Interim Safety Board

JHA—Job Hazard Analysis

JSTO—Job Safety Training Outline

JSpOC—Joint Space Operations Center

JUON—Joint Urgent Operational Need

LRS—Logistics Readiness Squadron

MACA—Midair Collision Avoidance

MAF LOG C2—Mobility Air Force Logistics Command and Control

MAJCOM—Major Command

MDS—Mission Design Series

MFOQA—Military Flight Operations Quality Assurance

MFT—Multi-Functional Team

MHAP—Master Hazard Abatement Plan

MHS—Military Health System

MILCON—Military Construction

MICT—Management Internal Control Toolset

MIL-STD—Military Standard

MINA—Mishap Investigation Non-Aviation

MOA—Memorandum of Agreement

MOU—Memorandum of Understanding

MRTFB—Major Range and Test Facility Base

MTF—Medical Treatment Facility

N/A—Not Applicable

NAF—Numbered Air Force

NASA—National Aeronautics and Space Administration

NATO—North Atlantic Treaty Organization

NIOSH—National Institute for Occupational Safety and Health

OCONUS—Outside Continental United States

OEH—Occupational and Environmental Health

OJT—On-the-Job Training

OPLAN—Operational Plan

OPM—Office of Personnel Management

OPR—Office of Primary Responsibility

ORB—Operational Review Board

ORP—Operations Review Panel

OSA—Organizational Safety Assessments

OSHA—Occupational Safety and Health Administration

OSM—Occupational Safety Manager

PACAF—Pacific Air Force

PE—Program Evaluation

PEO—Program Executive Officer

PESHE—Programmatic, Environment, Safety and Occupational Health Evaluation

PH—Public Health

PM—Program Manager

PPE—Personal Protective Equipment

RAC—Risk Assessment Code

RCC—Range Commanders Council

RDA—Risk Decision Authority

RM—Risk Management

RPA—Remotely Piloted Aircraft

RRR—Rapid Response Report

SAE—Service Acquisition Executive

SAF—Secretary of the Air Force

SART—Satellite Anomaly Resolution Team

SAV—Staff Assistance Visit

SDAR—Space Debris Assessment Report

SEI—Special Experience Identifier

SE—Chief of Safety

SEF—Flight Safety Division

SEG—Occupational Safety Division

SEI—Special Experience Identifier

SEK—System Safety Branch

SES—System Safety Branch

SEW—Weapons Safety Division

SF—Security Forces

SGP—Chief of Aerospace Medicine

SIB—Safety Investigation Board

SMC—Space and Missile System Center

SMC/EN—Space Missile Center Directorate of Engineering

SME—Subject Matter Expert

SMS—Safety Management System

SNCO—Senior Non-Commissioned Officer

SOH—Safety and Occupational Health

SPE—Safety Program Evaluation

SPO—System Program Office

SRA—Safety Risk Assessment

SSC—Space Safety Council

SSE—System Safety Engineer

SSG—System Safety Group

SSM—System Safety Manager

SST—Supervisor Safety Training

SSWG—System Safety Working Group

STANAG—Standardization Agreement

TCTO—Time Compliance Technical Order

TDY—Temporary Duty

TEO—Technology Executive Officer

TO—Technical Order

TRIR—Total Recordable Incident Rate

UON—Urgent Operational Need

UAS—Unmanned Aerial System

US—United States

USR—Unit Safety Representative

USAF—United States Air Force

USAFA—United States Air Force Academy

USAFE—United States Air Force Europe

WSM—Weapons Safety Manager

WWW—World-Wide Web

Terms

Acquisition Organization—The government organization responsible for developing, acquiring, fielding, and sustaining either hardware or a service (e.g., launch services). For most Air Force

space systems and launches, the Space and Missiles Systems Center (SMC) will usually perform this function.

Active Satellite/Active Spacecraft—Orbiting systems that serve a useful purpose or could potentially serve a useful purpose (e.g., fully mission capable, partially mission capable, on-orbit spares, in test/checkout).

Airmen—All-encompassing term used to indicate all Department of the Air Force members, both uniformed military and Department of Defense civilian employees working for USAF.

Air Force Occupational Safety and Health (AFOSH)—An overarching term for the Air Force Occupational Safety and Health Program.

AFSEC/SEG Occupational Safety Emphasis Items—List developed annually by AFSEC/SEG identifying high interest inspection items based on a five year review of on-duty mishaps.

Air Force Safety Management System (AFSMS)—It is the framework upon which the USAF mishap prevention program is built. Provides organizations with an effective framework for continual improvement of safety performance. It enables organizations ability to minimize risks and reduce the occurrence and cost of injuries, illnesses, fatalities, and property damage. The system requires goal setting, planning, executing, and measuring performance to be successful.

Air Reserve Component (ARC)—Used when referring to both AFRC and ANG as one entity.

Annual Safety Inspection—Method to identify workplace/facility hazards used by safety staffs at the wing and below level. These are conducted by qualified safety personnel annually on all workplaces and facilities.

Annual Program Management Review—An examination of the mishap prevention program at all levels of execution to evaluate the safety management system and the performance of programs or elements managed within the system. The review is performed by senior leadership and safety professionals to ensure the system continues to be suitable, adequate and effective for its intended purposes, and for making decisions or authorizing actions that need to be taken by staff to ensure the continuous improvement of one or more of its programs or elements.

Anomaly—Unexpected events that may or may not result in damage, injury, or mission impact, but do not reach the level of a reportable mishap.

Anomaly Resolution Process—Any process used to resolve a spacecraft anomaly. Typically conducted by the operating/testing organization (squadron or equivalent level).

Apogee—The point of a satellite's greatest distance from the center of the Earth, where the satellite's velocity is lowest. The apogee altitude is the distance of the apogee point above the surface of the Earth.

Area of Responsibility (AOR)—Theater of operations for Combatant Command missions and operations such as US Central Command (USCENTCOM), US Northern Command (USNORTHCOM), US European Command (USEUCOM), US Pacific Command (USPACOM) or US Southern Command (USSOUTHCOM).

Cataloged Objects—Items entered in the JSpOC Satellite Catalog. Some items re-enter the Earth's atmosphere after cataloging.

Casualty—A serious injury or worse, including death, for a human. For the purposes of this standard, the Abbreviated Injury Scale Level 3 defines serious injury.

Collective Risk—The total combined risk to all individuals within a category (e.g., launch-essential personnel, general public) exposed to a particular hazard during a specific period of time or event; unless otherwise noted, the mean number of casualties predicted (Ec) to result from a given hazard. Specification of collective risk is either in "per mission" or "per year" value.

Collision Avoidance—A process designed to prevent collisions between on-orbit tracked objects or to prevent collisions between on-orbit tracked objects and launched vehicles (including spent stages)/payloads by determining and implementing courses of action through careful analysis of validated conjunction assessments and satellite health and mission requirements. The process includes establishing launch wait periods in either the launch window or spacecraft maneuvering based on validated conjunction assessments and accounts for uncertainties in spatial dispersions, arrival time of orbiting objects and/or the launch vehicle/payload, and modeling accuracy.

Commercial Launch—The term "commercial," for the purposes of the National Space Policy and this instruction, refers to space goods, services, or activities provided by private sector enterprises that bear a reasonable portion of the investment risk and responsibility for the activity, operate IAW typical market-based incentives for controlling cost and optimizing return on investment, and have the legal capacity to offer these goods or services to existing or potential nongovernmental customers.

Commodity Contract—Used for any materials, articles, supplies, goods or equipment. Refer to the Federal Acquisition Regulations for additional information.

Configuration Control—Process of approving or disapproving and coordinating changes to configuration items after formal establishment of their configuration identification.

Conjunction Assessment (CA)—A process for determining the point and time of the closest approach of two tracked orbiting objects or between a tracked orbiting object and a launched vehicle (including spent stages) or payload.

Controlled Reentry—See *Uncontrolled Reentry*. A planned reentry for which the final atmospheric penetration time is chosen through spacecraft maneuvering so as to either maximize the amount of spacecraft material that burns up in the atmosphere, limiting the potential for endangering the public, or to bring down a recoverable reentry vehicle (e.g., capsule) in a manner that does not endanger the public. This typically controls the time and place of the disposal of space objects that are at the end of their mission life or for reentry capsules.

Convening Authority—The individual who has the authority to order a safety investigation. For additional guidance, refer to AFI 91-204.

Corporate-wide Violations—Two or more substantially repeated violations occurring at different military locations.

Critical Asset—A resource requiring protection. It normally includes property/ infrastructure that is essential to protect the public health and safety, maintain the minimum operations of the range, or protect the national security or foreign policy interests of the United States.

Critical/Imminent Danger—Conditions or practices in a workplace which could reasonably be expected to cause death or severe physical harm immediately or before such dangers can be

eliminated through normal abatement procedures. RAC 1 hazards are classified as critical/imminent danger.

Days Away, Restricted, and/or Transfer Case Incidence Rate—The rate of all civilian injuries and illnesses resulting in days away from work, restricted work activity, and/or job transfer. This rate is calculated for a work site for a specified period of time (usually one year).

Debris—Any non-maneuverable/non-operational orbital space system or component. This includes dead satellites and their associated components, spent launch vehicle components, and objects in orbit around the Earth created by humans but no longer serve any useful purpose. Debris includes explosion and collision fragments, slag (including dust) from solid rocket motors, surface degradation products such as paint flakes, coolant released by nuclear powered satellites, and objects released due to the impact of micrometeoroids or small debris with spacecraft.

Debris Generation—Release of objects from a spacecraft into the space environment. This generally occurs in an unpredictable and uncontrolled manner. Debris generation may be the result of a collision or an occurrence within the spacecraft.

Delta V (ΔV)—The change in the velocity vector caused by thrust measured in units of meters per second. Used as a measure of required energy (i.e., fuel) to maneuver an orbital space system from one orbit to another.

Department of Defense Civilian Personnel—Includes Senior Executive Service (SES), General Schedule (GS), Defense Civilian Intelligence Personnel System (DCIPS) (GG) and federal wage system employees, including ARC technicians, unless in military duty status. Includes Non-Appropriated Fund employees who are not military personnel working part time; Corps of Engineers Civil Works employees; Youth Opportunity Program (YOP) and student assistance program employees; Direct-Hire Foreign-national civilians employed by the Air Force (Air Force Foreign Nationals [AFFN]) and Army-Air Force Exchange Service employees.

Department of Defense Military Personnel—These are non-Air Force US military personnel.

Department of the Air Force Military Personnel—These are regular Air Force, ARC personnel on military duty status. Includes Air Force Academy cadets; also includes Reserve Officer Training Corps (ROTC) cadets engaged in directed training activities. Includes members of other US military services serving on extended tour of duty with the Air Force or foreign-national military personnel assigned to the Air Force.

Employee—For the purpose of this instruction, the term Employee applies to all Department of Defense Civilian Personnel, Department of Defense Military Personnel, and Department of the Air Force Military Personnel. This may also include Personal Services Contractors see glossary definition.

End—Of-Life—Final stage of spacecraft lifetime. End result will be either recovery, reentry, spacecraft disposal (passivation), or catastrophic loss (due to on-board explosion/failure or collision with another object).

Event—See AFI 91-204 when related to a mishap or hazard.

Exemption—Grants permanent relief from a requirement.

Failure Modes—How a system or component might fail.

Federal Aviation Administration (FAA)-Licensed Launch—Any launch issued a launch license by FAA Office of Commercial Space Transportation.

Fire Hazard—A condition which can cause a fire to occur, or, if left unchecked, cause a fire to grow. The distinction between fire hazard and fire safety deficiency (FSD) is important because the documentation, reporting, and correction procedures differ for each. Only fire hazards are included in the Master Hazard Abatement Plan and FSDs are managed IAW AFI 32-10141.

Fire Safety Deficiency (FSD)—A condition which reduces fire safety below an acceptable level, including noncompliance with standards, but by itself cannot cause a fire to occur. See *Occupational Deficiency*.

Flexible Culture—One of the four sub-cultures that make up an Informed Culture. A Flexible Culture is a collection of behaviors and beliefs that acknowledge the inevitability of human error and unsafe conditions and which allow quick and smooth reactions to address hazards before mishaps result.

Flight Safety Manager—A civilian assigned to perform Flight Safety Officer duties.

Formal Inspection Report—A report with a particular prescribed format.

Full-time—Individuals in primary duty safety positions. See definition for safety and health officials. Does not include additional duty safety personnel such as USRs and Squadron Assigned Flight Safety Officers.

Functional Managers—The senior operating official at all levels exercising managerial control of an activity or operation. This individual usually can acquire and commit resources for the abatement of occupational safety and health hazards.

Geographically Separated Unit—Any Air Force unit that is geographically separated beyond a reasonable commuting distance from its servicing military personnel flight.

Hazard—Any real or potential condition that can cause injury, illness, or death to personnel or damage to or loss of equipment or property, mission degradation.

Hazard/Deficiency Abatement—Eliminating or permanently reducing a hazard by complying with applicable safety requirements or taking equivalent protective measures.

Hazard/Deficiency Severity—An assessment of the expected consequences if a hazard, if left unabated, results in a mishap. The Air Force defines severity by the degree of injury, illness, or resource damage that can result from a specific mishap.

Hazard Reporting—A process, by which any person assigned, attached or under contract to the Air Force, may report a hazard. This includes any event or condition that affects aviation, occupational, weapons or space safety.

High Interest Areas—These areas have the greatest risk to life or property damage, experienced repeated mishaps, or in the judgment of the safety office, require added oversight. They can also be work areas or operations that need additional attention or inspections because of increased mishap potential due to the nature of work performed, physical conditions or type of materials handled.

High—Risk Activities—These are activities having a higher potential for personnel injury due to the level of competition, speed, risk, or skills needed and requiring greater agility, stamina and

dexterity. Some examples of high-risk activities are flying civil aircraft, hang gliding, skydiving, parasailing, white-water rafting, motorcycling and auto racing, scuba diving, bungee jumping and bronco and bull riding. **Note:** MAJCOM/FOA/DRU determine within the command what are considered high risk activities.

Hosted Payloads—A module attached to a satellite with communications circuitry that operates independently of the main spacecraft utilizing available power, mass and space on the satellite.

Human Space Flight—Objects in orbit which support human life or have the capability to support human life, and objects in orbit intended to rendezvous, dock with such objects.

Informed Culture—A term used to describe the optimal state of an organization's safety culture, in which each individual sees his or her role as a fundamental part of the organization's commitment to safety and achievement of organizational safety goals. Four prerequisite sub-cultures help create an Informed Culture: a Just Culture, a Reporting Culture, a Learning Culture and a Flexible Culture.

Inspections—The process of determining compliance with safety and health standards through physical surveys of workplaces, operations, and facilities.

Interim Control Measure—Temporary action taken to reduce the degree of risk associated with a hazard pending completion of an abatement project.

Job Hazard Analysis—A technique focusing on job tasks as a way to identify hazards before they occur. It focuses on the relationship between the employee, the task, the tools, and the work environment.

Job Safety Training Outline (JSTO)—An outline of mandatory safety training items supervisors use when conducting work center safety training for their specific work areas. See paragraph **14.1.**

Just Culture—One of the four sub-cultures that make up an Informed Culture. A Just Culture is an organizational environment where front line operators or others are not punished for actions, omissions or decisions taken by them that are commensurate with their experience and training, but where gross negligence, willful violations and destructive acts are not tolerated. Just Culture focuses on improving system designs and employee procedures to include: better system operations; creating redundant safety systems to trap or mitigate errors; pre-identifying high-risk operations; and leadership actions designed to limit at-risk behaviors.

Launch Essential Personnel—The minimum number of persons necessary to successfully and safely complete an operation and whose absence would jeopardize the completion of the operation. This includes persons required to perform emergency actions according to authorized directives, persons specifically authorized by the Wing Commander/System Program Office(SPO) Director to perform scheduled activities, and persons in training. The number of mission-essential personnel allowed within Safety Clearance Zones or Hazardous Launch Areas is determined by the Wing Commander/SPO Director and the Range User with Range Safety concurrence.

Launch Mishap—See *Orbital Mishap* and *Pre-Launch*. Mishaps that occur between the initial ignition of any stage of the rocket and up until the final piece of launch hardware separates from the spacecraft. This includes payloads not launched into the intended orbit.

Launch Operation—Operations occurring in the terminal countdown through sub-orbital flight or orbital insertion.

Launch Operator—A person or entity that conducts or proposes to conduct the launch of a launch vehicle for the purpose of inserting a spacecraft into orbit or delivering a payload to a specified ballistic location.

Launch Vehicle—Any means of transportation used to place an object into Earth orbit or deep space, including ballistic missiles.

Launch Vehicle Components—All the parts of a launch vehicle except payload(s), to include upper stages and any apogee kick motors that separate from the spacecraft after operation.

Launch Window—A period of time during which the flight of a launch vehicle may be initiated to meet mission requirements.

Launching Agency—The range user at Air Force ranges or equivalent organization at other locations.

Learning Culture—One of the four sub-cultures that make up an Informed Culture. A Learning Culture exists when an organization has the willingness and ability to implement proper recommendations from safety information that is produced through continuous risk assessment of hazards.

Lift—Off—For the purposes of flight safety analyses, lift-off occurs during a launch countdown with any motion of the launch vehicle with respect to the launch platform (which includes a carrier aircraft), including any intentional or unintentional separation from the launch platform.

Losses—A term to describe personnel injuries, fatalities, system degradation, or destruction when describing mishap outcome.

Major Command—For the purpose of mishap prevention (MAJCOM) includes Air Force District of Washington (AFDW), ACC, AETC, AFMC, AFOTEC, AFRC, AFSPC, Air Force Global Strike Command (AFGSC), Air Force Special Operations Command (AFSOC), Air Mobility Command (AMC), ANG, Pacific Air Force (PACAF), United States Air Force Academy (USAFA) and United States Air Force Europe (USAFE).

Meteoroids—A solid object moving in interplanetary space, of a size considerably smaller than an asteroid and considerably larger than an atom or molecule (e.g., meteoroid material associated with asteroid breakup or material released from comets).

Minor Deficiencies—Any validated deficiencies that do not meet the definition of a Critical or Significant deficiency, but requires corrective action.

Mishap—An unplanned occurrence, or series of occurrences, that results in damage to Department of Defense (DoD) property; occupational illness to DoD personnel; injury to on- or off-duty DoD military personnel; injury to on-duty DoD civilian personnel; or damage to public or private property, or injury or illness to non-DoD personnel, caused by DoD activities. Mishaps are classified by total direct mishap cost and the severity of injury/occupational illness.

Missile—A rocket-propelled or jet-propelled expendable vehicle used to deliver a warhead. It may use a ballistic trajectory or fly under active guidance and control.

Mission Assurance—A process to protect or ensure the continued function and resilience of capabilities and assets – including personnel, equipment, facilities, networks, information and information systems, infrastructure, and supply chains – critical to the execution of DoD mission-essential functions in any operating environment or condition.

MTF Covered Entities—Medical professionals within the MTF who are responsible for and ensure any health information in connection with medication transactions (the three categories of HIPAA Covered Entities [health plans, health care clearinghouses and health care providers]) are electronically transmitted. These procedures must meet Medical Health System adopted standards.

Multi-Functional Team (MFT)—As defined 63- and 64-series guidance publications, MFT is a team of stakeholders responsible for a Service's acquisition. It includes not only representatives of the technical and procurement communities, but also stakeholders of the Service's acquisition and the contractors who provide the services. The team may consist of subgroup(s) responsible for routine contract actions. The team could be a Business Requirements Advisory Group, Mission Area Acquisition Team, Integrated Product Team, working group, an A-76 Integrated Product Team or Steering Group, etc.

National Consensus Standards—Standards published by recognized standards organizations such as the American National Standards Institute, National Fire Protection Association, American Conference of Governmental Industrial Hygienists, Compressed Gas Association, and National Institute for Occupational Safety and Health. National consensus standards adopted by OSHA are part of OSHA standards.

Neighboring Operations Personnel—See *Launch Essential Personnel*. Individuals required to perform safety, security, or operationally critical tasks but not associated with the specific/current operation or launch under consideration.

Non-Compliance—A noticeable or marked departure from requirements, standards, or procedures.

Nonmilitary Unique—The term nonmilitary-unique refers to military and civilian workplaces, operations, equipment and systems that are generally comparable to those of the private sector. Examples include facilities involved and work performed in the repair and overhaul of weapons, aircraft or vehicles (except for equipment trials); construction; supply services; civil engineer or public works; medical services; and office work.

Notice of Hazard—A written warning of a condition, procedure, or practice which constitutes a hazard. As used in the context of this instruction, "Notice of Hazard" refers to AF Form 1118.

Occupational Deficiency—Conditions, procedures and practices not compliant with OSHA or AFOSH requirements, but do not, in themselves, create a potential for producing an occupational injury or illness mishap. Deficiencies may, however, create a potential for secondary injuries or illnesses or may contribute to the severity of an injury or illness that has already occurred. Examples include, but are not limited to, program management items or the absence of an eyewash station. A clear distinction between hazards and deficiencies may not always be possible; therefore, the judgment and experience of qualified safety, fire protection and health personnel must be relied upon.

Occupational Hazard—Conditions, procedures, and practices directly related to the workplace that can create a potential for producing occupational injuries, property or equipment damage, mission degradation, damage to the environment, or illnesses.

Occupational Illness—Any reported condition that does not meet the definition of injury. Any abnormal physical condition or disorder, other than one resulting 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 Review Panel (ORP)—The panel, established in the AFI 10- series of instructions, chaired by the responsible commander that approves system modifications, training, procedures, and database changes to operational equipment.

Operational Review Board—Established in the AFI 10-series of instructions, the responsible commander that reviews problems in operations of systems chairs this board.

Operational Effectiveness—The overall degree of mission accomplishment of a system when used by representative personnel in the environment planned or expected for the operational employment of the system. Can also be referred to as *mission effectiveness.*

Orbital Insertion—The point in time when an object or vehicle achieves sufficient altitude and velocity to complete at least one orbit of the Earth. This occurs when the object or vehicle achieves a minimum 130 km perigee based on a computation that accounts for drag.

Orbital Space Systems—Term used to describe the hardware and activities associated with the design, development, testing and operation of any man-made object to achieve an altitude and velocity sufficient to complete one revolution of the Earth. The lower the altitude, the shorter the orbital period.

Passivation—The process of removing stored energy that could result in an explosion or deflagration from a space system at end-of-life. This includes electrical, mechanical, chemical, or nuclear energy.

Payload—See *Satellite* or *Spacecraft*. Refers either to the object(s) carried by a launch vehicle or the mission-performing portions of a satellite/spacecraft (e.g., the main communications package on a communications satellite). This AFI will not collectively reference a satellite/spacecraft as a "payload" following separation from the launch vehicle.

Perigee—The point in the orbit nearest to the center of the Earth, and where the satellite's velocity is greatest. The perigee altitude is the distance of the perigee point above the surface of the Earth.

Personal Services Contractors—Characterized by the employer-employee relationship between the government and the contractor's personnel (e.g. medical contractors). The Government exercises relatively continuous supervision and control over the contractor personnel performing the contract. Verify with contracting officials of the work status of the contract employee.

Performance Appraisal—A systematic comparison of an employee's performance of duties and responsibilities with performance standards.

Pre-Launch—Space related activities occurring during early acquisition stages, ground handling, processing, and transportation operations just prior to ignition (lift-off) actions.

Post-Mission—Describes the time period after a spacecraft completes its mission and culminates with final passivation and disposal activities.

Privileged Safety Information—Information that is reflective of a deliberative process in the safety investigation or given to a safety investigator pursuant to a promise of confidentiality, which the safety privilege protects from being released outside safety channels or from being used for any purpose except mishap prevention. It includes products such as draft and final findings, evaluations, opinions, preliminary discussions, conclusions, mishap causes, recommendations,

analyses, and other material that would reveal the deliberations of safety investigators, including reviews and endorsements. It also includes information given to a safety investigator pursuant to a promise of confidentiality and any information derived from that information or direct or indirect references to that information.

Program Manager (PM)—The designated individual with responsibility for and authority to accomplish program objectives for development, production, and sustainment to meet the user's operational needs. The PM shall be accountable for credible cost, schedule, and performance reporting to the Milestone Decision Authority.

Public—See *Critical Operations Personnel*, *Launch Essential Personnel* and *Neighboring Operations Personnel*. All persons not in either the Launch Essential Personnel or Neighboring Operations Personnel categories.

Public Safety—Safety involving risks to the general public of the US or foreign countries and/or their property (both on- and off-base); includes the safety of people and property not involved in supporting a launch as well as those within the boundary of a launch site.

Quality Assurance Personnel—Individuals designated to perform quality assessment functions, and manage performance IAW the Performance Plan. They serve as on-site technical managers assessing contractor performance against contract performance standards. Personnel in this area have many titles, such as Quality Assurance Evaluator, Quality Assurance Specialist, Functional Area Evaluators and Contracting Officer Technical Representative.

Quality Assurance Program Coordinator (QAPC)—Mission support group or AFMC/AFSPC Center-level individual, normally from the contracting activity, selected to coordinate and manage the Performance Management Assessment Program (Quality Assurance Program).

Qualified Safety, Fire Protection, Bioenvironmental Engineering and Health Officials—Air Force civilian and military personnel assigned to full-time positions for the respective disciplines. Air Force civilian personnel who meet the Office of Personnel Management standards for safety and occupational health manager or specialist, safety engineering technician, safety engineer, fire protection engineer or specialist, medical officer, health physicist, industrial hygienist, occupational health nurse or environmental health technician job qualification standards. Safety, fire protection, and health personnel with experience or up-to-date training in occupational safety, fire protection, and health hazard recognition and evaluation are considered as meeting the qualifications of safety, fire protection, and health inspectors. Air Force military personnel, who possess a safety, fire protection, Bioenvironmental Engineering, aerospace medicine, or medicine Air Force Specialty Code (AFSC). Government civilian employees are considered fully qualified IAW 29 CFR Part 1960 and military at the AFSC 7-level or can be a 5-level if task certified. (See 29 CFR § 1960.25).

Radioactive Material—Materials that generate, or are capable of generating, ionizing radiation including naturally occurring radioactive materials, by-product materials, source materials, special nuclear materials, fission products, materials containing induced or deposited radioactivity, and nuclear reactors.

Range User—Any individual or organization that conducts or supports any activity on resources (land, sea, or air) owned or controlled by an Air Force range. This includes such organizations as the DoD, US government agencies, civilian launch operators, foreign government agencies, and

other foreign entities that use Air Force range facilities and test equipment; conduct pre-launch and launch operations; and/or require on-orbit or other related support.

Rapid Response Report (RRR)—A form used to provide data to OSHA Investigators during civilian-related mishaps with injures. OSHA Investigators may request mishap data, the RRR completed either by the USR or Supervisor will meet this requirement.

Reentry—The event occurring when a spacecraft or other man-made object comes back into Earth's dense atmosphere from higher altitudes.

Reporting Culture—One of the four sub-cultures that make up an Informed Culture. A Reporting Culture thrives in a climate where leaders encourage both hazard reporting for appropriate staff action and error reporting for Airmen passing along lessons learned. As events are reported, hazards and errors are documented and messaged, resulting in safety performance improvement.

Risk—See *Collective risk*. The probability and severity of loss or adverse impact from exposure to various hazards.

Risk Analysis—The analysis of systems (hardware, software, firmware, and procedures) to determine potential hazards that could result in loss of personnel, injury to personnel, loss or degradation of the system, or loss of life or injury to the public.

Risk Management—The application of a systematic process or thinking to detect, assess, and control risk to enhance total organizational performance.

Safe/Safing—Placing an object in a condition that limits the possibility of new or further system or component failures.

Safe Haven—Designated area to which noncombatants of the United States Government's responsibility, and commercial vehicles and material, may evacuate during a domestic or other valid emergency. Temporary storage provided Department of Energy classified shipment transporters at Department of Defense workplaces to assure the safety and security of nuclear material and/or non-nuclear classified material. Also includes parking for commercial vehicles containing Class A or Class B explosives.

Safety—The programs, RM activities, and organizational and cultural values dedicated to preventing injuries and accidental loss of human and material resources, and to protecting the environment from the damaging effects of DoD mishaps.

Safety Assessment—Method of appraising the effectiveness of mishap prevention program management used by wing safety staffs to evaluate each standalone group and squadron safety program conformance and effectiveness within the safety management system (SMS). Like program evaluations, assessments address the areas of commander and supervisory support, compliance with program directives, and the effectiveness of mishap prevention program. Assessments may be conducted in conjunction with the required annual safety inspection.

Safety Evaluation—Method of appraising the effectiveness of mishap prevention program management used by AFSEC to evaluate MAJCOM and DRU safety program conformance and effectiveness within the SMS. Also used for FOAs with assigned safety staffs. Addresses the areas of commander supervisory support, compliance with program directives and the effectiveness of the mishap prevention program.

Safety Program Evaluation—Method of appraising the effectiveness of mishap prevention program management used by MAJCOM/DRU/FOA safety staffs to evaluate wing, NAF and Center safety program conformance and effectiveness within the SMS. Also used for FOAs with assigned safety staffs. Addresses the areas of commander supervisory support, compliance with program directives and the effectiveness of the mishap prevention program.

Satellite—See *Payload* or *Spacecraft*. An object that orbits another object known as a central body. Commonly, this term refers to Non-Human Spaceflight spacecraft in orbit around the Earth.

Satellite Control Authority—The authority to plan, schedule, and perform satellite commanding.

Separation—Occurs when the last launch vehicle component (to include non-integrated apogee kick motors) physically separates from the spacecraft. Final separation occurs when both physical separation and any tethers detach from the spacecraft.

Service Contract—A contract that directly engages the time and effort of a contractor whose primary purpose is to perform an identifiable task rather than to furnish an end item of supply. This contract may be either a non-personal or personal contract. It can also cover services performed by either professional or unprofessional personnel whether on an individual or organizational basis.

Significant Deficiencies—Any validated deficiencies that have or could have negative mission impact.

Slag—Solid material in solid rocket motor exhaust.

Spacecraft—A man-made object either that orbits a central body (planet or star) or is in an escape trajectory (eccentricity > 1) from that central body. This can include both Earth-orbiting and interplanetary spacecraft.

Spacecraft—See *Satellite* and *Payload*. An object designed to perform some function in space. This includes satellites and Human Space Flight objects in space. This term can also refer to the object while it is still on the ground. This does NOT include launch vehicle components separated from the spacecraft.

Space And Missile Systems Center (SMC)—A direct reporting unit to AFSPC that develops and acquires space launch vehicles, spacecraft, and range systems for the Air Force.

Space Control—Operations to ensure freedom of action in space for the United States, its allies, and when directed, deny an adversary freedom of action in space.

Space Debris—See *Meteoroids* and *Orbital Debris*. General class of debris, including both meteoroids and orbital debris.

Space Mishap—Any unplanned event involving space systems that results in personnel injury, system damage/destruction, or mission capability loss/delay. For reporting purposes, it also includes near misses, close calls, and HAP events.

Space Object—Any object above the Earth's atmosphere (e.g., spacecraft, debris, natural phenomena).

Space Safety—A dynamic process designed to improve operational effectiveness by managing/preventing close calls (events), reducing mishaps, and supporting mission assurance throughout the life cycle of a space system.

Space Safety Manager—Personnel assigned to a Space Mishap Prevention or Mishap Investigation role.

Space Systems—All the devices and organizations forming the space network. These consist of: launch vehicles; launch ranges; launch and range support equipment and systems; spacecraft; ground and airborne stations; and data links among spacecraft, mission, and user terminals. Space systems refer to the equipment required for space operations, comprised of nodes and links. There are three types of nodes: space, airborne, and terrestrial. Space nodes include satellites, space stations, or reusable space transportation systems. Airborne nodes are primarily aircraft weapon systems that leverage space capabilities. Terrestrial nodes include any land or sea equipment that receives, processes, or uses data derived from space capabilities. Information conduits called links tie these nodes together. There are two classification types of these links: control and mission. Space operators use control links to operate Space systems. Space systems disseminate data on mission links, which enable force multiplication.

Space Vehicles—Devices designed for orbit about the Earth or into a trajectory toward another celestial body. This definition differentiates between vehicles that remain in space (included) and vehicles that are suborbital (excluded).

Spot Inspection—These inspections are no-notice inspections to check the day-to-day safety and health of an organization, work center, facility, etc.

Standards—Safety and health standards (including emergency temporary standards) issued under the Occupational Safety and Health Act of 1970 (Title 29, U.S.C., Sections 651-678). This includes national consensus standards adopted by OSHA by reference.

Suborbital—object trajectory that does not complete a complete orbit.

System Safety—The application of engineering and management principles, criteria, and techniques throughout all phases of the system life-cycle to optimize safety within the constraints of operational effectiveness, time, and cost.

System Safety Engineer (SSE)—An individual meeting the qualifications for, and assigned to, the Office of Personnel Management 0803 Safety Engineering Series (or equivalent), or military AFSC of either 62-series Developmental Engineer or 61-series Scientist. An SSE may be assigned as a System Safety Manager (SSM).

System Safety Groups (SSGs)—The organized committee of system safety stakeholders that augment the program office system safety function; it is not a substitute or replacement. While many SSG members are not assigned to the Program Office, they advise the system program manager or single manager on safety matters. They act as an integrated product team for system safety. The members assist the program office in identifying risks, assessing these risks, and recommending solutions to these risks. The SSG includes safety experts associated with the particular weapon system.

System Safety Manager—The individual appointed by the Program Manager as the program focal point for the System Safety Program.

System Safety Working Groups (SSWGs)—Are a subset of System Safety Groups (SSGs). SSWGs are usually formed when a full SSG wants to research a problem without tying-up the full membership. The SSG will generally form an SSWG to work a problem separately and report back to the SSG. An SSWG augments an SSG; it's not a substitute.

Team Concept—A diverse group of individuals working together with complementary skills who are committed to a common purpose, have group goals, take an approach for which they are mutually accountable.

TRiPS—(Travel Risk Planning System)—TRiPS program assists in travel planning. TRiPS is accessed through the Air Force portal (**https://trips.safety.army.mil/**).

Total Recordable Incident Rate (TRIR)—A number that represents the total recordable civilian injuries and illnesses per 100 full-time employees, calculated for a worksite for a specified period of time (usually one year).

Uncontrolled Reentry—See *Controlled Reentry*. A random reentry in which the spacecraft/object reenters the atmosphere where an operator cannot sufficiently determine or influence the surface impact point prior to reentry. This is the typical reentry method for debris and spacecraft in decay orbits where the final reentry point and time is underdetermined due to uncertainty in atmospheric density conditions due to the extended time period between disposal and reentry.

Unique Space Support Equipment—Systems, equipment, and facilities required for supporting other space systems. Includes launch and orbital space support systems.

Uniquely Military Equipment, Systems and Operations—Defined in 29 CFR § 1960.2(i) and further refined in DoDI 6055.01, Enclosure 3, paragraph 2.

Unit Safety Representative—General term for a person assigned to a unit who is responsible for the additional duty safety responsibilities. May be a representative of flight, occupational or weapons, and may include a more specific title such as Additional Duty Weapons Safety Representative or Squadron Assigned Flight Safety Officer, etc.

United States—The several States, the District of Columbia, the Commonwealths of Puerto Rico and the Northern Marina Islands, American Samoa, Guam, Midway and Wake Islands, the United States Virgin Islands, any other territory or possession of the United States, and associated navigable waters, contiguous zones, and ocean waters of which the natural resources are under the exclusive management authority of the United States.

Upper Stage—Typically, the last portion of a launch vehicle used to deliver a spacecraft into orbit. Some spacecraft may also have an apogee kick solid-rocket motor or other propulsion system, to include mono or bi-propellant chemical rocket engine thrusters, electric, or ionic propulsion thrusters.

Urgent Action Notice—Significant event notifications sent out by the Air Force Service Watch Center (AFSWC). These notifications are also called AFSWC notifications.

Variance—An approved temporary change (not to exceed 5 years) to a procedure, criterion, or rule prescribed in safety standards which provides the same degree of protection to personnel.

Wing Commander/System Program Office (SPO) Director—Commander/Director of a wing/office that acquires, operates, or supports Space Systems.

Workplace—The physical location where work is performed for the Air Force by Air Force personnel or where Air Force operations take place.