BY ORDER OF THE
SECRETARY OF THE AIR FORCE

AIR FORCE INSTRUCTION 91-202

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Safety

THE US AIR FORCE MISHAP PREVENTION PROGRAM

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This instruction implements AFPD 91-2, *Safety Programs*. It establishes mishap prevention program requirements, assigns responsibilities for program elements, and contains program management information. It applies to all Air Force personnel, including Air Force Reserve and Air National Guard members. In overseas areas, follow this instruction as long as it's consistent with host country laws and status-of-forces agreements. This instruction implements NATO Standardization Agreements (STANAGs) 3101, *Exchange of Accident/Incident Information concerning Aircraft and Missiles*; 3102, *Flight Safety Cooperation*; 3531, *Safety investigation and Reporting of Accident/Incidents Involving Military Aircraft and/or Missiles*; and 3750, *Reporting and Investigation of Airmiss Incidents*. Send major command (MAJCOM) supplements to HQ AFSC/SEP, 9700 G Avenue SE, Kirtland AFB NM 87117-5670, for coordination and approval before publication. **Attachment 1** contains references, abbreviations, acronyms, and terms used in this instruction. Unless noted otherwise, AF/SE is the waiver authority for provisions in AFI 91-202. For purposes of this instruction, the term MAJCOM includes FOAs and DRUs.

SUMMARY OF CHANGES

The document incorporates the ideas, principles, and concepts of risk management into several areas of the instruction. **Chapter 1** discusses using risk management during the Hazard Abatement Action. It also adds risk management to all levels of Air Force personnel's responsibility. This chapter also specifically outlines responsibility for Installation Civil Engineer offices. **Chapter 2** clarifies the need for adequate and experienced safety manning in all disciplines. The chapter also adds Space Safety Officers, Managers, and Engineers as well as allowing FSNCOs to be maintenance, aircrew or career safety personnel. This chapter also expands the information on the Table of Allowances for computer support and adds a paragraph outlining the Major Range and Test Facility Base safety programs. **Chapter 3** clarifies the role of the safety office in program evaluations of contractor facilities and actions. Spot Inspections and High Interest Area definitions and actions were also added. **Chapter 5** changed the periodic summaries and the issuance times to allow for better coverage of the topics. Added a significant paragraph on Mishap Analysis programs and methods as well as provides guidance on how to use the data. It chapter also discusses the use and creation of metrics. **Chapter 6** updated all class numbers and rearranged the paragraphs to

provide a clearer understanding of the course and their uses. An annual training requirements report is now required to be submitted by the MAJCOMs. **Chapter 7** expands the Aircraft Maintenance, Aero Club Operations, and Wildlife Aircraft Strike Hazard areas. **Chapter 8** requires ground safety personnel to attend the Facility Utilization Board and clarified other areas of the chapter. **Chapter 9** outlines the new requirements of the program executive officer, program and system safety manager in all aspects of system safety. Risk assessment was added to ensure its incorporation into all aspects of system safety. **Chapter 10** was modified by the addition of weapons safety personnel management requirements as well as additions in the responsibilities of the weapons safety personnel. AFSC/SEW also added a paragraph discussing weapons safety training. **Chapter 11** expanded the roles, responsibility, and training requirements for space safety officers. It outlines the different types of space safety, both launch and orbital safety. It also specifically discusses the training necessary for both types of safety training. **Attachment 5** was added outlining the responsibilities of weapons safety manning. The bar (|) preceding a paragraph indicates a major revision from the previous edition.

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Chapter 1

PROGRAM OVERVIEW

1.1. The Mishap Prevention Process. Air Force host and tenant safety offices are responsible for implementing the Air Force Safety Program. Any interorganization and interservice agreements will be addressed in the Host/Tenant Support Agreement. The host safety office implements mishap prevention programs and processes for all Air Force units and programs on base unless otherwise outlined in a Host/Tenant Support Agreement. Safety staffs at all levels assist with implementation and integration of operational risk management into all Air Force operations and missions.

1.2. Determining Standards. Commanders, functional managers, supervisors, and individuals, with the host safety office's help, identify rules, criteria, procedures, Occupational Safety and Health Administration (OSHA), Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH), explosive safety, or other safety standards that could help eliminate unsafe acts or conditions that cause mishaps.

1.3. Applying Standards. Applying sound standards is basic to preventing mishaps. All Air Force units must apply standards by observing these fundamental principles:

1.3.1. Commanders, functional managers, supervisors, and individuals must all contribute to the mishap prevention program. An effective program depends on individuals integrating mishap prevention at every functional level and being responsible for complying with applicable safety standards.

1.3.2. Units must establish specific procedures (for example, inspections) to ensure that all personnel and activities comply with the program standards.

1.3.3. Every level of command is responsible for compliance with applicable safety standards.

1.4. Hazard Controls:

1.4.1. **Identifying Hazards.** The primary responsibility for identifying workplace hazards, to include equipment and environmental situations that place workers, equipment, or facilities at risk, rests with the individual. Commanders, functional managers, supervisors, and individuals identify hazards by evaluating the work environment and job tasks. Safety, environmental, and medical staffs and fire-protection personnel provide technical assistance.

1.4.2. **Determining Hazard Abatement Action.** The proper way to eliminate a particular hazard is often difficult to determine, and alternatives are limited by time and cost. After considering all factors, choose the alternative that contributes the most to overall mission accomplishment. Consider these three categories of corrective actions:

1.4.2.1. Planning and Engineering. Use risk management processes during the planning, design, and execution phases to 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 facility is operating. Eliminate hazards identified after an item is deployed by modifying the item or installing protective devices or guards. The supervisor, with safety staff help, completes a job safety analysis (JSA) and operational hazard analysis (OHA) to ensure worker, equipment, and work environment compatibility. Proce-

dures for JSA and OHA are contained in the Supervisors Safety Training (SST) handbooks, AFOSH Standard 91-31, *Personal Protective Equipment*, and AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH)*.

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

1.4.2.3. Personnel Actions. People work more safely and effectively when properly trained and motivated. Supervisors must keep their people involved in risk management. AFI 91-213, *Operational Risk Management,* outlines the basic tenets and processes of risk management. Operational risk management is a systematic process of detecting, assessing and controlling measures to enhance total organizational performance.

1.4.3. **Taking Action.** Commanders protect national resources, both human and material, and have the authority to take action in implementing safety measures.

1.4.3.1. Functional managers correct hazards in their areas of responsibility.

1.4.3.2. The safety office helps functional managers and commanders determine needed corrective actions and provide the commander with follow-up support until the hazard is eliminated or changes are in place.

1.5. Notifying Other Affected Units and Agencies. Relay hazard and mishap information to other units and agencies with similar missions or equipment according to AFI 91-204, *Investigating and Reporting US Air Force Mishaps.* AFI 91-204 and **Chapter 4** and **Chapter 5** of this instruction explain what information to relay and what communication systems to use. Mishap prevention data is worthless unless people who need the information get it. No one cannot afford to have mishaps caused by problems already known and solved by other units.

1.6. Program Responsibilities:

1.6.1. The Assistant Secretary of the Air Force (Acquisition) makes policy and gives guidance to ensure that technical and engineering criteria for developing and acquiring Air Force systems, facilities, and equipment conform with OSHA, AFOSH, and explosive safety standards and other safety criteria.

1.6.2. The Assistant Secretary of the Air Force (Manpower Reserve Affairs, Installations, and Environment) makes policy, approves policy, and gives guidance to ensure that Air Force programs and operations conform with OSHA, AFOSH, and explosive safety standards and other safety criteria.

1.6.3. The Deputy Chief of Staff Installations and Logistics:

1.6.3.1. Ensures that logistics and maintenance procedures, operations, and technical publications meet all safety standards and criteria.

1.6.3.2. Ensures that Air Force procedures for transporting, storing, handling, and using hazardous materials and waste comply with environmental statutes and occupational regulations to reduce mishaps.

1.6.3.3. Ensures that civil engineering procedures, operations, technical publications, and designs for new construction meet OSHA and AFOSH standards, as well as explosives and other safety criteria.

1.6.4. The Deputy Chief of Staff Personnel makes policy on personnel matters relating to safety.

1.6.5. The Air Force Chief of Safety:

1.6.5.1. Implements executive orders, DoD directives, and instructions on safety.

1.6.5.2. Makes program policy and establishes guidelines.

1.6.5.3. Implements the Air Force Mishap Prevention Program.

1.6.5.4. Prepares and publishes AFOSH guidance on safety matters to ensure that the Air Force complies with OSHA standards.

1.6.5.5. Prepares guidance and coordinates testing to ensure the Air Force complies with DoD Explosive Safety standards.

1.6.5.6. Prepares guidance, accomplishes certifications, and develops procedural rules to ensure compliance with DoD and Department of Energy rules related to nuclear systems.

1.6.5.7. Reviews records disposition (AFMAN 37-139, *Records Disposition Schedule*) for functional records and submits recommended changes as required.

1.6.6. The Air Force Surgeon General:

1.6.6.1. Makes policy and establishes guidelines for the AFOSH program.

1.6.6.2. Prepares and publishes AFOSH standards related to occupational health.

1.6.6.3. Ensures that Air Force occupational health programs meet OSHA requirements.

1.6.7. MAJCOM, FOA, NGB, and DRU commanders direct the development of programs that implement the Air Force Mishap Prevention Program that meet the needs of the organizations.

1.6.8. MAJCOM, FOA, and DRU Safety Staffs:

1.6.8.1. Evaluate the management, implementation, and effectiveness of the Air Force Mishap Prevention Program within the command and report directly to the MAJCOM/FOA/DRU commander.

1.6.8.2. Analyze and distribute prevention data from mishap reports, all safety communication (ALSAFECOM) messages, and analysis programs to subordinate units.

1.6.8.3. Ensure safety considerations are identified and integrated into each major modification to hardware and software, maintenance, and test program.

1.6.8.4. Review records of mishaps from other MAJCOMs for “lessons learned” that might be applied.

1.6.8.5. Attend the Non-Nuclear Munitions Safety Board and Explosive Safety Council Meetings. MAJCOMS with nuclear missions must also support Nuclear Weapons System Safety Group meetings and those with a space mission must attend the Space Safety Council.

1.6.9. Air Force Materiel Command (AFMC) and Program Executive Officers (PEO):

1.6.9.1. AFMC acts as the safety staff for the Program Executive Officers and Designated Acquisition Commander (DAC).

1.6.9.2. Identifies and corrects product safety deficiencies, gives technical assistance to mishap investigation boards, and implements corrective action involving materiel safety aspects of mishap reports as required by AFI 91-204.

1.6.9.3. Ensures that appropriate personnel review specifications, drawings, and plans to eliminate safety hazards as early as possible.

1.6.10. Commanders, supervisors, and functional managers at all levels develop and implement safety, risk management, and health programs that integrate hazard reduction and safety policy into all on-duty and off-duty operations and activities.

1.6.11. Safety staffs, this will include, but is not limited to:

1.6.11.1. Advise the commander, functional managers, and supervisors on safety and health matters.

1.6.11.2. Manage on- and off-duty safety programs.

1.6.11.3. Assist subordinate and tenant units with their safety programs.

1.6.11.4. Provide mishap prevention data and safety education material to subordinate and tenant units.

1.6.11.5. Keep the commander informed on program status and hazards.

1.6.11.6. Process hazard reports and manage installation master hazard abatement program master file.

1.6.11.7. Review civilian compensation claims involving occupational injuries to ensure mishaps were properly investigated and reported in accordance with applicable OSHA and Air Force directives.

1.6.11.8. Review hospital treatment records to ensure mishaps were properly investigated and reported.

1.6.11.9. Conduct safety education programs.

1.6.11.10. Provide the training necessary for potential interim investigation board members to do their job according to AFI 91-204. The host safety staff should provide initial and annual recurring training, as required.

1.6.11.11. Provide supervisors assistance with job safety training, JSAs, and OHAs.

1.6.11.12. Ensure all mishaps are investigated properly and reported according to AFI 91-204.

1.6.11.13. Attend the Facility Utilization Board (FUB) meetings.

1.6.11.14. Accomplish explosive siting requirements according to AFMAN 91-201.

1.6.11.15. Establish a proactive mishap prevention program, which ensures plans, procedures, facility and equipment modifications/acquisitions, hardware, software, and operations receive a safety review and incorporate reasonable risk management and hazard elimination and reduction features.

1.6.12. Installation Civil Engineers:

1.6.12.1. Will providing budget costs for abating facility hazards.

1.6.12.2. Coordinate siting and major construction plans with the installation safety office and ensure explosive site plans have been approved before beginning construction as required in AFMAN 91-201.

1.6.12.3. Coordinate hazard abatement project information.

1.6.12.4. Provide traffic engineering expertise.

1.6.12.5. Manage hazardous waste collection and disposal.

1.6.12.6. Coordinate any major base maintenance (digging permits, road markings, welding projects outside the civil engineering shops, etc.).

1.6.13. Commanders and functional managers below wing level:

1.6.13.1. Implement safety and health program elements in their unit or area of responsibility.

1.6.13.2. Provide safe and healthful workplaces.

1.6.13.3. Ensure all individuals receive necessary job safety and off-duty safety training.

1.6.13.4. Ensure all appropriate hazard abatement actions needed to resolve identified hazards are implemented and follow-up is accomplished until all abatement actions are complete. Keeps safety staff updated on all abatement actions.

1.6.13.5. Ensure the principles of operational risk management (ORM) are actively implemented and utilized within the unit at all levels.

1.6.13.6. Ensure a proactive mishap prevention program is implemented in the unit to include the procurement and proper use of the appropriate personal protective equipment and facility compliance with applicable OSHA and AFOSH standards.

1.6.14. Supervisors:

1.6.14.1. Know the safety and occupational health standards that apply to their areas.

1.6.14.2. Analyze job environment and tasks for hazards through proper ORM techniques referenced in AFI 91-213. JSA and OHA can be used as part of the procedures. Instructions for completing a JSA/OHA are contained in AFI 91-301 or AFOSH Standard 91-31.

1.6.14.3. Enable each worker to participate in workplace risk management processes.

1.6.14.4. Develop job safety standards or job safety training outlines for their assigned work areas. Train all personnel on standards to follow and hazards to avoid.

1.6.14.5. Make sure that all work complies with occupational safety and health standards.

1.6.14.6. Exercise control over job tasks to ensure personnel correctly follow all precautions and safety measures, including the proper use of personal protective equipment.

1.6.14.7. Train personnel on safety and health standards, procedures, and requirements of the job tasks and document the training. Ensure lesson plans are developed and maintained as required by AFI 91-301 and this directive.

1.6.14.8. Take appropriate actions to promptly eliminate safety and health hazards and correct deficiencies.

1.6.14.9. Immediately report all mishaps that occur in your work area and all subsequent employee absences to the supporting safety office. Inform civilian personnel if a mishap involves a civilian employee.

1.6.14.10. Make sure all personnel are trained on the objectives and principles of risk management in AFI 91-213.

1.6.14.11. Post notices of hazards.

1.6.14.12. Develop off-duty education programs suitable for your workers' needs.

1.6.15. Individuals:

1.6.15.1. Comply with standards, instructions, job guides, technical orders, and operating procedures.

1.6.15.2. Identify and report hazards or situations that place yourself, your co-workers, your equipment, or your facility at risk using the risk management process.

1.6.15.3. Use protective clothing or equipment when required.

1.6.15.4. Use risk management to identify, reduce, or eliminate risk in activities on and off-duty.

1.6.15.5. Notify your supervisor about any job-related injury or impaired health that may impact your job performance.

1.6.15.6. Report any job-related injury as well as any suspected or actual exposure to chemicals or hazardous materials.

Chapter 2

THE SAFETY ORGANIZATION

2.1. Safety Staff. One staff element should manage each organization's safety program. The safety staff will perform and/or assists risk assessment of wing mission, contingency exercises, and operations. In addition, the staff will review and help develop emergency plans and procedures to include, but not limited to, SAFE HAVEN, SAFE CONVOY, HAZMAT and disaster response required by AFI 32-4001 or AFI 32-4002, and when required by law (Clean Air Act), or accidental release risk management programs for explosives. The chief of safety must answer directly to the commander. Full-time safety personnel must be qualified, trained to manage safety programs, and able to function at the staff level. Use the Air Force Manpower Standard (AFMS) 106A to determine the required size of the safety staff. In units without an authorized safety position, the commander must appoint a collateral duty safety individual to perform the safety functions. All requests for manpower changes to safety office personnel will be coordinated with the applicable MAJCOM/SE office before submission to the local management engineering team. Do not assign full-time safety personnel additional duties that are not directly associated with the job duties described in the 91-series directives and their supplements.

2.1.1. **Chief of Safety.** Supervises the mishap prevention program for the commander. The chief of safety must be qualified in the primary mission of the unit. Assigned individuals must complete the Chief of Safety Course (WCIP05B). For example, in units with an operational primary flying mission, the chief of safety must be a rated officer, qualified and current in a unit mission aircraft. In a space satellite control unit the chief of safety must have experience in the satellite operations.

2.1.2. **Flight Safety Officer (FSO).** Full-time FSOs are assigned to authorized unit positions by the AFMS. FSOs at squadron and wing level must be current in a unit mission aircraft. FSOs in higher headquarters positions should be rated officers with experience in headquarters-managed mission aircraft. Full-time FSOs must complete the Flight Safety Officer Course (WCIP05A) and should fill the position for a minimum of 2 to 3 years.. Commanders of flying units without an authorized flight safety officer (FSO) will appoint a collateral duty FSO.

2.1.3. **Ground Safety Managers (GSM).** Full-time GSMs are assigned to positions authorized by the AFMS. Assigned individuals must complete the Ground Safety Management Course (WCIP05D) and the Advanced Occupational Safety Course at the earliest opportunity after being assigned as a GSM.

2.1.4. **Weapons Safety Managers (WSM).** The AFMS authorizes full-time Weapons Safety positions in units. WSMs must be qualified in their Air Force Specialty Code (AFSC) or civil service equivalent in the maintenance or operation of nuclear weapons, missiles, or non-nuclear munitions. Full-time WSMs must complete the Air Education and Training Command (AETC) Weapons Safety Course. Persons selected as WSMs should be at least a 7-level in their specialty code.

2.1.5. **System Safety Officers, Managers, and Engineers.** Some commands and staff agencies are authorized system safety positions. Individuals in these positions must complete the System Safety Management Course or the System Safety Analysis Course according to their particular job requirements.

2.1.6. **Space Safety Personnel.** Units performing orbital or launch missions are authorized space safety positions. These positions at squadron and wing level must be experienced in the unit's mission and be trained as outlined in **Chapter 11**.

2.1.7. **Flight Safety NCO (FSNCO).** The FSNCO is an integral part of the flight safety program and reports directly to the chief of safety or FSO. The FSNCO must have maintenance or aircrew experience with the unit-assigned aircraft type or be a career safety person. Once appointed, individuals should complete the Flight Safety NCO and Jet Engine Mishap Investigation Courses.

2.1.8. **Career Safety Personnel.** The Air Force has an enlisted career field (AFSC 1S0X1) and a civilian career field (GM/GS-018, Occupational Safety and Health Manager or Specialist, and GM/GS-803, Safety Engineer). These career safety personnel are assigned to positions authorized by the UMD. The enlisted safety career program is described in AFMAN 36-2108, *Airman Classification*. The civilian safety career program is described in AFI 36-601, *Civilian Career Program Management*. See **Attachment 2** for the enlisted career program.

2.2. Organizing the Program. The same prevention techniques apply to all disciplines. In organizing the safety staff:

2.2.1. Ensure that safety staffs manage the mishap prevention program and report directly to the MAJCOM, DRU, FOA, or installation commander.

2.2.2. Consolidate all safety disciplines under a single manager.

2.3. Managing the Program. Commanders must establish a management strategy that:

2.3.1. Ensures that functional managers and supervisors (rather than the safety staff) take corrective action for deficiencies.

2.3.2. Minimizes administrative tasks, details, and augmentation duties not directly associated with safety.

2.3.3. Involves the safety staff in appropriate meetings, conferences, and councils.

2.3.4. Integrates safety into all operations and missions of the wing's organizations.

2.3.5. Emphasizes risk management.

2.3.6. Emphasizes accountability.

2.4. Safety Office Equipment. When setting up equipment requirements consider these elements:

2.4.1. **Vehicles and Communication.** The safety staff must be mobile to do its job. In flying units, missile units, and units operating a test range, the staff must have the use of a two-way radio-equipped vehicle. 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. **Tables of Allowance (TA).** These TAs list items that safety offices use:

2.4.2.1. TA 006, Organizational and Administrative Equipment.

2.4.2.2. TA 009, Small Computer Systems. As a minimum, each full-time safety staff office should have: a 486 computer (or faster), with CD-ROM read capability and a laptop with portable CD-ROM suitable for reading Air Force publications for use by mishap investigation boards and

using software compatible with Microsoft products (the Air Force standard). As part of the safety office's computer support, to include the assigned laptop, it is highly recommend to have direct access to the Internet and World Wide Web.

2.4.2.3. TA 010, Vehicles.

2.4.2.4. TA 014, Training Devices.

2.4.2.5. TA 016, Special Purpose Clothing and Personal Equipment.

2.4.2.6. TA 453, Ground and Flight Safety Offices.

2.4.2.7. TA 629, Visual Information (VI) Support (Originator/Utilization Equipment).

2.4.2.8. TA 660, Equipment Allowances for Non-Weapon Systems Communications Requirements.

2.4.3. **Mishap Investigation Kits.** Each MAJCOM determines the need for and the contents of investigation kits. A recommended list of contents is in AFP 127-1, *US Air Force Guide to Mishap Investigations,* **Chapter 2**. Safety staffs with host base responsibilities will maintain a mishap response and investigation kit sufficient to meet initial response and interim safety investigation board requirements.

2.5. Office Administration:

2.5.1. **ALSAFECOM Messages.** Handle and distribute these messages as described in **Chapter 5**.

2.5.2. **Mishap, Safety Inspection, and Hazard Reports.** Maintain and dispose of all reports created or received according to AFMAN 37-123, *Management of Records*, AFI 37-138, *Records Disposition - Responsibilities and Procedures*, and AFMAN 37-139, *Records Disposition Schedule*.

2.6. Publications Library. Air Force safety offices normally establish a publications library. When a master publication library and technical order library are readily available, the safety office needs to maintain only those publications that specifically apply to the safety program.

2.6.1. Documents may be hard copy or in electronic format. The library should include:

2.6.1.1. DoD standards and handbooks.

2.6.1.2. Air Force policy directives, instructions, pamphlets, and TOs.

2.6.1.3. AFOSH standards.

2.6.1.4. Copies of AFSP 91-1, *Flying Safety*, AFSP 91-2, *Road & Rec*, and AFSP 91-3, *Nuclear Surety and Weapons Safety Journal*.

2.6.1.5. Pertinent National Fire Protection Association and American National Standard Institute standards.

2.6.1.6. Federal and military specifications and standards, OSHA, National Institute of Occupational Safety and Health, National Safety Council, and commercial publications.

2.6.2. The DoD Index of Specifications and Standards (DoDISS) lists Federal and military specifications and standards. Acquire publications that you cannot obtain through the supporting Publications Distribution Office (PDO) or Technical Order Distribution Office through the supporting library.

2.6.3. The safety office advises the unit commander on how many magazines their units will need and ensures that they receive adequate distribution through the PDO or customer account representatives. AFI 37-160, Vol 7, *Air Force Publications and Forms Management Programs--Publications Libraries and Sets*, outlines responsibilities for keeping this type of library.

2.7. Air Force Councils and Committees. Safety councils and committees provide forums for discussing safety problems and keeping commanders, functional managers, and supervisors informed on the status of the mishap prevention program. This allows for more proactive involvement at all functional levels in mishap prevention and hazard identification.

2.7.1. The wing or unit commander determines the need, frequency, agenda, and participants for all safety councils and committees except those required by public law. Commanders can form safety councils and committees at any level to focus group attention on safety or health problems. Any council or committee must satisfy a specific need and may not duplicate an existing management function.

2.7.2. The occupational safety and health council is required by law and is convened according to AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health Program*.

2.8. Non-US Air Force Councils and Committees. The Air Force supports federal, state, and local safety councils and committees and encourages safety staffs to take part in them.

2.9. Major Range and Test Facility Base (MRTFB) Safety Programs. The Air Force operates several ranges established under DoDD 3200.11, *Major Range and Test Facility Base*. Operation of these MRTFB ranges carries with it specific responsibilities for public safety. The overall goal of the range safety program is to ensure safety consistent with operational requirements, which includes the prevention of test objects, space launch vehicles, or their hazardous effects from violating established limits. MAJCOMs will establish safety policy for MRTFB activities. The wing commander of the unit operating the MRTFB is considered the activity commander. Under the direction of the MAJCOM concerned, the activity commander will:

2.9.1. Ensure safety is consistent with operational requirements. Risk should be quantified and acceptable limits established. Additional risk should be accepted at an appropriate level.

2.9.2. Establish safety requirements and ensure all range users are in compliance.

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

Chapter 3

SAFETY INSPECTION, EVALUATION, ASSESSMENT, STAFF ASSISTANCE, AND MONITORING

3.1. Safety Inspection. Safety inspections help identify hazards and measure compliance with safety program requirements outlined in this instruction and AFI 91-301. Through inspections, the safety staff helps the commander determine the condition of work areas, the safety of work practices, the degree of compliance with safety and health standards, and the degree of compliance with safety program requirements. For GSUs, if the host base safety office conducts the facilities inspection annually, the GSU will forward a copy of the report to the MAJCOM parent wing. The safety staff and functional managers will ensure qualified inspectors inspect:

All Air Force facilities and work areas once within a year, except as otherwise directed.

High interest areas will be designated in writing and “spot” inspected monthly.

At least 20 percent of unmanned missile launch facilities once a year. Select these launch facilities to ensure that a representative segment of the unit's assets is inspected annually.

3.1.1. **Administrative areas.** Collateral duty, task-qualified safety personnel may conduct these inspections when the safety staff determines the mishap potential is minimal. The base safety staff develops specific provisions for meeting inspection requirements and conducts over-the-shoulder assessments of the collateral-duty personnel to ensure that their safety inspections are sound.

3.1.2. **Non-Administrative areas.** Functional managers, and supervisors inspect all work areas periodically, through spot inspections. The Chief of Safety will determine the frequency of spot inspections and ensure activities that operate around-the-clock are adequately surveyed at times other than normal duty hours.

3.1.3. **Safety Inspection Responsibilities.** The host safety staff inspects units that do not have an authorized, full-time safety position in a particular discipline. The host performs the required annual inspection for those safety areas:

3.1.3.1. Unless a host-tenant agreement requires otherwise, the parent or gaining unit or command inspects units not supported by an Air Force base.

3.1.3.2. If their mishap potential is low, remotely located units of approximately 25 people or less may not need an annual inspection by a safety staff. In these cases, the MAJCOM determines other provisions for meeting annual inspection requirements.

3.1.4. **Safety Inspection Procedures:**

3.1.4.1. Scheduling Inspections. Safety staffs may designate inspections as "prior-notice" or "no-notice." Annual flight, ground, and weapons inspections should be conducted jointly when possible. Also, when possible, combine safety inspections with other inspections to reduce the number of inspections a unit receives.

3.1.4.2. Personal Consultations. 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 unhealthy working conditions, equipment, and practices. Conduct such con-

sultations privately and do not identify employees who want to remain anonymous. Be careful not to offer anyone a formal grant of confidentiality.

3.1.4.3. Inspection Checklists. Use inspection checklists, especially for items common to several units or facilities. Make checklists available to the supervisors of the activities slated for inspection.

3.1.4.4. Safety Inspection Reports. Report annual inspections in writing. Send formal reports to the unit commander, the supervisor, and functional manager. In tenant units, send a copy of the report to the parent safety office. These reports must contain:

3.1.4.4.1. The unit, activity, or work area inspected.

3.1.4.4.2. The date of the inspection.

3.1.4.4.3. A description of any hazards or unsafe work practices, noted with reference.

3.1.4.4.4. Causes of deficiencies and hazards noted.

3.1.4.4.5. Recommendations for corrective action.

3.1.4.4.6. Risk assessment codes (RAC) for identified hazards, where applicable.

3.1.4.4.7. Management and supervisory support compliance.

3.1.4.5. Follow-up actions. Use spot inspections and follow-up reporting to ensure corrective action is taken and the hazards are mitigated.

3.2. Safety Program Evaluation. At least once every three years, qualified safety personnel must evaluate the safety program management of each organization at wing or installation level and higher.

3.2.1. **Command Units--Wing Level and Above.** The higher headquarters evaluates the safety program management of organizations at or above the wing level as required by OSHA. Conduct evaluations with prior notice.

3.2.2. **Evaluation Scope.** Safety program management evaluations address the areas of command and functional manager support, compliance with program directives, and the effectiveness of mishap prevention programs.

3.2.3. **Evaluation Reports** . Prepare a written report for each evaluation. Send a copy of the report to the commander and safety staff of the organization evaluated.

3.3. Assessments. Qualified safety personnel periodically assess the safety program management of each organization below wing level as required by DoD and this instruction.. These assessments should cover all safety disciplines. You may conduct assessments in conjunction with the annual safety inspection. Conduct assessments with prior notice.

3.3.1. Wings and groups with GSUs, Detachments, or Operating Locations (OL) will perform a safety program assessment of each activity at intervals not to exceed 3 years. Include a safety inspection as part of the safety program assessment of the activity.

3.3.2. Wing and groups will conduct unit safety program assessments of all GSUs at intervals not to exceed 36 months. If requested by the GSU commander and if manpower and funds are available to support the GSUs request the assessment may be conducted more frequently.

3.3.3. **Assessment Scope.** Safety program management assessments address command and functional manager support, compliance with program directives, and the effectiveness of mishap prevention programs, including an analysis of unit mishap reports and other management indicators.

3.3.4. **Assessment Reports.** Prepare a written report for each assessment. You may include assessment reports with inspection reports, but you must prepare them as separate sections. Send a copy of the assessment report to the commander of the organization assessed.

3.4. Staff Assistance. Safety staffs at all command levels visit subordinate units when problems, deficiencies, or special subjects require on-scene assistance. Visits may also be necessary when units implement new missions, equipment, or programs that impact mishap prevention programs. The objective is to help develop solutions, not to inspect or evaluate. Give a report to the visited unit's commander, if requested. Do not require replies unless the 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. The staff assistance visit program is designed to provide a high degree of flexibility in determining which units to visit and the functional safety areas involved. The purpose of staff assistance program is to provide assistance to unit safety personnel by reviewing their management and administrative procedures for effectiveness and providing recommendations for improvement.

3.5. Contract Monitoring. If safety personnel are required to conduct a safety quality assurance evaluations (QAE) function, QAE training is required locally through Base Contracting. ***NOTE:*** AF Safety personnel must not put anything in a contract that establishes a requirement for the Air Force to protect contractor employees or their equipment. Likewise, do not include anything in inspection or surveillance programs to give the perception that the Air Force is supervising or observing contractor personnel to provide for their personal safety or to ensure the safety of their equipment. Requirements for protection of the general public may be included, (for example, barriers around trenches). Air Force safety personnel must avoid taking actions that put them in direct control of a work site or contractor employees. If an Air Force inspector notices a potential OSHA violation, he/she should report the hazard to the contracting officer, who can remind the contractor of the obligation under the contract to comply with all pertinent regulations. Unless there is imminent danger, Air Force personnel (other than a contracting officer) should avoid reporting safety violations directly to the contractor. Similarly, Air Force personnel should not perform safety inspections of worksites and contract Statements of work (SOW) should not require Air Force inspections.

3.6. High Interest Areas. These areas have the greatest risk to life or property damage, have experienced repeated mishaps, or in the judgment of the appropriate (ground, flight, weapons, or space) safety discipline requires added monitoring. These inspections may be no-notice or scheduled and the MAJCOM, Numbered AF, and/or host installation safety office establishes the documentation requirements.

3.7. Monitoring. Monitoring is a continuous, informal surveillance of operations to ensure adequate control of hazards and compliance with safety program objectives. Spot inspections and surveillance are ways to fulfill this requirement.

3.7.1. **Spot Inspections.** Spot inspections are no-notice to check the day-to-day safety and health of an organization, workcenter, facility, etc. The MAJCOM, Numbered AF, and/or host installation safety office establishes documentation requirements for spot inspections. Minimum documentation will include date, inspector's name, organization or activity inspected, unit point of contact, and a

brief description of what was observed, if there was/was not a discrepancy and of the status (open/closed).

3.7.2. **Surveillance.** Surveillance is a monitoring tool that can also assist in checking the day-to-day activities of an organization. No documentation is necessary for surveillance unless unsafe conditions or practices are noted and corrective action cannot be made without written notification. The following is a partial list of operations and areas that should be routinely checked.

3.7.2.1. Aircraft ground handling and parking.

3.7.2.2. Fuel servicing; hot refueling, integrated combat turnarounds, and concurrent servicing.

3.7.2.3. Aircraft maintenance procedures and facilities (on all workshifts).

3.7.2.4. Hazardous compressed gases and chemical storage, handling and use.

3.7.2.5. Air freight cargo compatibility, handling, loading, and unloading.

3.7.2.6. Work performed at elevated heights.

3.7.2.7. Activities requiring use of personal protective equipment and clothing.

Chapter 4

HAZARD REPORTING PROGRAM

4.1. What Hazards To Report. Mishap prevention depends on personnel identifying, reporting, and correcting hazards promptly and efficiently. Any person assigned, attached, or under contract to the Air Force may report a hazard. Submit a hazard report on any event or condition that affects flight, ground, weapons, or space safety. Reportable hazards include unsafe procedures, practices, or conditions. The reporting requirement in this paragraph is exempt from licensing in accordance with AFI 37-123, paragraph 2.11.6, *The Information Collection and Reports Management Program: Controlling Internal, Public, and Interagency Air Force Information Collection*.

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

4.2.1. AFI 11-215, *Flight Manuals Program*.

4.2.2. AFI 91-204, *Investigating and Reporting US Air Force Mishaps*.

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

4.2.4. TO 00-35D-54, *USAF Materiel Deficiency Reporting System.*

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

4.3. Reporting Procedures:

4.3.1. Report hazards to the responsible supervisor or local agency. If the hazard is eliminated on the spot, no further action is required unless it applies to other similar operations or to other units or agencies.

4.3.2. If the hazard presents imminent danger, the supervisor or individual responsible for that area must take immediate action to correct the situation or apply interim control measures.

4.3.3. Report hazards that cannot be eliminated immediately to the safety office by AF Form 457, USAF Hazard Report (HR), by telephone or in person. Reports can be submitted anonymously.

4.3.4. The safety staff investigates the HR. The investigator discusses the HR 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.

4.3.5. If the hazard is validated:

4.3.5.1. The investigator assigns a RAC, a HR control number, and monitors corrective action until complete.

4.3.5.2. The investigator completes the HR's Part II, "Summary of Investigation," and sends it promptly to the individual responsible for making sure corrective action is completed and the hazard eliminated or controlled.

4.3.5.3. The responsible individual completes Part II, "Action Taken," within 10 working days and returns the HR to the safety office for monitoring.

4.3.5.4. The investigator tells the originator (if known) about the corrective action 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.

4.3.6. If the HR response is not satisfactory to the reporting member, the member may submit a reevaluation request according to AFI 91-301.

4.3.7. HRs that generate an AF Form 3, Hazard Abatement Plan, may be closed and corrective action monitored through the hazard abatement process. See AFI 91-301 for further action required for AF Form 3 processing.

4.4. Additional Reporting Procedures:

4.4.1. Transient personnel unable to report a hazard at a base where it is found, submits the HR to the next Air Force base they visit, or to the safety office at their home base. That safety office sends the report to the responsible base safety offices.

4.4.2. The safety office sends reports on hazards that cannot be corrected at the local level to the agencies that can take appropriate action.

4.4.3. Tenant personnel send hazard reports involving activities for which the host is responsible to the host base safety office for processing.

4.4.4. Send hazard reports by message if they require urgent action. Send messages to the safety office at the headquarters where action can be taken. List units with similar equipment as information addressees.

4.4.5. Persons identifying hazards involving weather forecasting must submit hazard reports as soon as possible to ensure that records are not destroyed. Promptly after landing, aircraft commanders advise the appropriate facility providing air weather services of their intention to submit a hazard report. If necessary, notify these facilities by message.

4.4.6. Base safety offices send hazard reports that involve other military services, foreign nations, or agencies outside the Air Force to HQ USAF/SE, 9700 G Ave SE, Kirtland AFB NM 87117-5670 and to the affected Air Force units and their chain of command as information addressees. AF Form 130 should be submitted to HQ AFCIC/ITIA, 1250 AF Pentagon, Washington DC 20330 for a Report Control Symbol control number assignment.

4.5. Promoting the Program. The unit's commander ensures the AF Form 457 is available to all unit personnel. The base safety office will maintain a small quantity of the forms to help ensure availability by base personnel. The safety office must respond promptly (within 10 working days) to the reporting member on their findings, status of the AF Form 457, and any recommendations.

Chapter 5

MISHAP PREVENTION INFORMATION AND DATA ANALYSIS

5.1. Information Protection. Analyzing and distributing mishap prevention information are key elements in mishap prevention. All safety mishap reports, except Class A and B “8-hour” messages, are "For Official Use Only" (FOUO). For FOUO handling procedures, see AFI 37-131, *Air Force Freedom of Information Act Program*. Some safety mishap reports require additional handling restrictions as privileged reports. See AFI 91-204 for further information and handling restrictions.

5.1.1. Privileged and FOUO controls protect the parts of the report that personnel provided in confidence or conclusions investigators derived from those parts. Use mishap reports only for mishap prevention and limit access to these reports. The safety staff must brief everyone with access to privileged safety or privacy act information on the proper handling procedures annually. See AFI 91-204 for more information.

5.1.2. To provide wider dissemination, sanitize mishap information by removing the parts that make it privileged. AFI 91-204 describes the method for sanitizing privileged reports.

5.2. Action Information:

5.2.1. **Mishap Reports.** Send reports of Air Force mishaps as directed by AFI 91-204. Many of these reports have recommendations needing urgent action by some addressees. Consider mishap reports to be action documents.

5.2.2. **ALSAFECOM Messages.** The Air Force Chief of Safety (HQ USAF/SE) uses the ALSAFECOM message to rapidly distribute critical safety information. HQ USAF/SE sends these messages to each MAJCOM commander and director (or chief) of safety. The messages convey mishap prevention data and often require action to eliminate hazards.

5.2.3. After receiving an ALSAFECOM message, each director or chief of safety:

5.2.3.1. Reviews the message and sends it to the agencies and units that need to take action.

5.2.3.2. Keeps a file of ALSAFECOM messages that are applicable to the unit.

5.2.3.3. Annotates the message to show its distribution and the actions the unit takes in response to the reported hazard or mishap.

5.3. Advisory Information:

5.3.1. **Recurring Publications.** The AFSC, Major Commands (MAJCOMs), Air Force Reserve, and Air National Guard may produce recurring publications providing education and training in mishap prevention.

5.3.1.1. Purpose and Scope. The goal of these documents is to prevent mishaps in operating and maintaining aircraft and associated equipment and facilities, storing and handling explosives, conducting industrial operations, operating government and privately owned vehicles, and participating in off-duty sports and recreation. The publications also provide educational information on implementing OSHA standards and in establishing and maintaining nuclear surety and environmental safety programs.

5.3.1.2. Air Force military members and civilian employees, including Air Force Reserve and Air National Guard units and members, are the primary audience of special publications. The secondary audience is other DoD and non-DoD personnel supporting Air Force missions. A one-for-one safety publication exchange is authorized with foreign militaries where such action clearly supports mishap prevention purposes and is in the US Government's best interest. This exchange of information provides an open forum for mishap prevention ideas and programs.

5.3.1.3. The Commander, AFSC, will issue recurring publications pertaining to the entire Air Force mishap prevention program. MAJCOMs, Air Force Reserve, and Air National Guard may issue recurring publications pertaining to mishap prevention in their unique missions.

5.3.1.4. Operating Policies. The office of primary responsibility (OPR) for each document will determine the number of pages and frequency of publication.

5.3.1.4.1. Each OPR will act as its own reviewing authority for document contents.

5.3.1.4.2. Each OPR will establish a distribution ratio to control distribution of recurring publications. Publication Distribution Offices (PDOs) will distribute the publications to organizations at Air Force installations. The OPR will make distribution to units without a PDO by the most economical means.

5.3.2. **Periodic Summaries.** HQ AFSC sends periodic mishap summaries to the MAJCOM safety staffs. These summaries include recent mishap experience, mishap statistics, analyses of current problem areas, and proposed changes in safety policy. Regular summaries include:

5.3.2.1. Blue Four News. HQ AFSC/SEF sends monthly Blue Four News messages to safety offices throughout the Air Force, summarizing the previous month's Class A flight mishaps and commenting on the trends that the mishaps indicate. This summary is to be controlled as a "privileged" report since dates, times, and mishap specifics.

5.3.2.2. How Goes It in Ground Safety. HQ AFSC/SEG sends this message on an as needed basis but not less than semi-annually to all Air Force safety offices and the Army and Naval Safety Centers to provide updates on ground safety issues and activities.

5.3.2.3. Hurtline and OUCH. These HQ AFSC/SEG quarterly messages provide a summary and analysis of Air Force Class A, B, and C mishaps for all Air Force Safety offices.

5.3.2.4. Ground Safety Spotlight. This HQ AFSC/SEG sends this message on an as needed basis but not less than quarterly to all Air Force offices to provide safety interest items from recent mishaps, injuries, compensation cost data, or resource protection needs.

5.3.2.5. OSHA Chronicles. HQ AFSC/SEG sends this message on an as needed basis but not less than semi-annually to all Air Force safety offices to provide information on OSHA visits to Air Force installations giving a synopsis of findings and citations to prevent reoccurrence.

5.3.2.6. AFSP 91-1, *Flying Safety.* Focuses on all aspects of flying safety to include mishap investigations, the wildlife hazard reduction (BASH) program, as well as command-generated articles and mishap prevention concerns.

5.3.2.7. AFSP 91-3, *Nuclear Surety and Weapons Safety Journal*. HQ AFSC/SEW writes articles focusing on all aspects of weapons and space safety as well as nuclear surety. In every issue of this journal, HQ AFSC/SEW discusses conventional and nuclear weapon mishap trends and potential methods of prevention.

5.3.2.8. AFSP 91-2, *Road & Rec.* Focuses on all aspects of ground safety to include mishap investigations as well as command-generated articles and mishap prevention concerns.

5.3.3. **MAJCOM Publications.** MAJCOMs should publish either a safety magazine, newsletter, or safety kit to aid in the dissemination of command-specific safety information.

5.4. Methods of Distribution. Select an appropriate distribution method by considering your content, time available, and audience. Some suggested methods of distributing advisory information are:

5.4.1. Periodic safety meetings.

5.4.2. Supervisor safety briefings.

5.4.3. Base newspapers and bulletins.

5.4.4. Safety publications.

5.4.5. AFSC or MAJCOM publications.

NOTE: The MAJCOM chief of safety decides whether to distribute summaries to subordinate units.

5.5. Mishap Analysis Programs. Full-time safety staffs at all levels should develop locally oriented mishap analysis programs to evaluate mishap statistics and identify trends. Managers develop local programs to formulate intervention efforts by determining the root causes for mishaps. When setting up an analysis program:

5.5.1. Identify successes or problem areas and trends, measure safety program effectiveness, and guide prevention actions.

5.5.2. Make sure that the program is flexible enough to allow for additional changes.

5.5.3. Some healthy prevention programs are characterized by large numbers of reports (indicating safety awareness on the part of submitters), while others may see few or no reports (including a safe operating environment)

5.6. Standard Mishap Rates. Safety staffs at the MAJCOM level and above can compute the standard rates for their organization. Care must be taken to ensure the statistic validity of the rates. Information on mishap rates can be obtained by calling AFSC/SEC. The Air Force Safety Center uses standardized rates for

5.6.1. Flight mishaps

5.6.2. Federal Employee's Compensation Act Lost Time Injury/Illnesses

5.6.3. On-Duty Ground Mishaps

5.6.4. Off-duty Ground Mishap

5.6.5. Combined On- and Off-duty Mishap

5.7. Mishap Prevention Analysis Methods. One way to approach analysis is to divide it into two broad functions: monitor and study. The monitor function is an ongoing task, while the study function is a specific effort directed to a particular problem.

5.7.1. **Monitor Function.** 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:

5.7.1.1. Hazardous Air Traffic Reports

5.7.1.2. High Accident Potential (HAP)

5.7.1.3. Deficiency Reports

5.7.1.4. Inspection/Assessment Reports

5.7.1.5. Foreign Object Damage Reports

5.7.1.6. First-Aid Injury Reports

5.7.1.7. Maintenance Logs or Reports

5.7.2. **Study Function.** This process requires a much more detailed examination of a problem area. There are no specific ground rules on how to do it; the nature of the problem and the data available tend to dictate the way to go. First, it is best to draft an objective statement that describes the problem and limits the study. An example is: "Determine why 'X' is increasing." Next identifying factors and data that affect the problem. Then develop a plan on how these factors and data area going to be collected, tabulated, compared, plotted, and calculated. Finally, collect the data, analyze it, and come up with conclusions that answer the objective statement. Without conclusions, the study is of no value.

5.7.2.1. Limitations:

5.7.2.1.1. Availability of Data. The type and depth of analysis that can be done at each level depends on the amount of data available. As a rule, small amounts of data cause large changes in rates and trends which can be misleading. To get large amounts of data, it is often better to add the exposure of several small units or to use data for a longer period of time. Another method is to add near mishaps to the reportable ones. This not only expands the data base but it often gives a better picture of the root causes. For example, when analyzing operational injuries, look at all the injuries that occurred on the job, not just the reportable ones.

5.7.2.1.2. Rates. Mishap rates are often misused because the limitations are not considered. Rates do not reflect responsibility for mishaps. By themselves, rates do not measure or reflect all the factors that influence exposure. They should not be used as the sole basis for determining the success of prevention efforts. Any raw data (aircraft tire failures, for example) can be divided by an exposure (number of landings) to give a rate. That, in itself, has no value unless it can be compared to other like rates or computed often to set a trend. Rates can also be misleading if the exposure is small or if the mishaps considered have little in common.

5.7.2.1.3. Tabulations. Tabulations normally do not reflect trends because exposure is not considered. Tabulated data plotted per unit of time, such as number of injuries each month, can show a trend graphically. Trends derived in this way must be used with caution because the exposure factor may not be accurate. The number of injuries per month, for example, might be meaningless if population, mission, emphasis on treatment, or disability compensation rules change.

5.7.2.1.4. Trends. When the data base is small, a few mishaps can cause large changes in rates and make it difficult to determine trends. To get large amounts of data, it is often necessary to add the data from several units or weapons systems. The resulting trends may be mathematically accurate but might not apply to any specific system. To set trends, it is best to use the most data available, defined in the narrowest way possible. There are several recognized ways of smoothing large clumps in rates to establish a reasonably valid trend. One way is to carry rates cumulatively for a period of 12 months rather than by calendar year. Starting rates at zero each year works well at the Air Force and MAJCOM level but may not at lower levels.

5.8. Use of Analysis Data. The purpose of analysis is to help prevent mishaps. Present conclusions drawn in a useful format to the people who can use them directly in their prevention programs. The data should also be available to other organizations with like equipment or problems. After taking corrective actions, follow-up analysis may be done to measure the effectiveness of these actions.

5.9. Metrics.

5.9.1. Mishap metrics (calculated as a number of successful events against some kind of total event exposure) are an effective way to compare the actions and accomplishments of your unit. Comparisons between other organizations or MAJCOMs may be misleading based on differences in operations, environment, equipment, or other variables. The metrics used by the safety community to this point have focused on results - the number of mishaps experienced over time relative to exposure. While this "bottom line" information is useful, it is incomplete. A mishap rate alone cannot explain the most critical information needed by commanders--feedback *proving* that a particular effort caused the result. In most safety offices today, we are pleased when the mishap rate is down, but we cannot satisfactorily explain why. When the mishap rate is up, we tend to choose short-term solutions to this long term-problem. The answer to the metrics dilemma is to decide on a set of safety performance measurements that precede mishap data and have a reasonable expectation of positively impacting the mishap rate.

5.9.2. Most quality-based assessment programs advise against the use of "negative metrics." The appropriate use of metrics is particularly important within the safety function, since some use of negative indicators is unavoidable (see AFPD 91-2). While each mishap represents a "failure to prevent," there is currently no corresponding way of measuring "successful prevention."

5.9.3. Hazardous air traffic reports (**Chapter 7**), hazard reports (**Chapter 4**), high accident potential, inspections and assessments (**Chapter 3**), and other reports submitted as a part of the Air Force Mishap Prevention Program under this instruction and AFI 91-204 are integral to the success of our overall safety program. Significant numbers of such reports may indicate a developing adverse trend, while even a single Class C mishap report or hazard report could identify the potential for a far more serious loss. Accordingly, maximum reporting is an essential element of successful prevention and risk assessment and must in no way be discouraged. Therefore, the use of numbers of safety reports of any type as a metric is prohibited.

5.9.4. Safety knowledge is one type of such data. Measuring safety knowledge is a good performance measurement that should be tracked with metrics. Poor judgment is a leading cause of Air Force reportable mishaps. In order to improve judgment decisions, individuals must have adequate knowledge and the right attitude (Good judgment = knowledge + attitude). Unit commanders and supervisors can positively influence their personnel by ensuring everyone maintains a high degree of safety

knowledge. The level of safety knowledge can be measured by using surveys or tests, thus commanders and supervisors reinforce the desired behavior. Individuals should be periodically surveyed for on and off-duty knowledge of basic safety principles, or job related safety standards. The safety knowledge areas that could be surveyed or tested:

5.9.4.1. Seldom performed tasks such as emergency procedures

5.9.4.2. Tasks that have a history of high mishap frequency

5.9.4.3. Critical tasks where failure or mishap could jeopardize the mission

5.9.4.4. Point-in-time, safety-related job knowledge could be displayed on a bar chart.

5.9.4.5. Trend data for a particular AFSC could be displayed on a line or a control chart to observe the trend data over time.

5.9.5. Feedback to safety-related behavior is essential. Below are three other potential metrics for measuring safety and hazard abatement.

5.9.5.1. One such feedback mechanism is to link safety performance feedback to leadership requirements by identifying safety requirements as a stand-alone scoring item on feedback and performance reports. This metric would show leadership support for risk reduction management support and will increase the safety knowledge of the leadership and the individuals.

5.9.5.2. The second possible metric would be to establish a metric that tracks letters of commendation, letters of admonishment, letters of counseling (positive and negative), letters of reprimand, and Article 15 actions for safety-related actions. This metric would show the units culture concerning safety-related activities.

5.9.5.3. The last potential metric would be to track the cycle time for abatement actions. This would show the commander's support for reducing the hazards in the unit by showing leaderships willingness to apply O&M dollars to abate hazards. Potential measurements can be:

5.9.5.3.1. The number of days, months, or years that pass between problem recognition and problem resolution is clearly measurable. When measured and displayed, the information will display to the leadership the numbers of days that pass before significant safety problems are resolved.

5.9.5.3.2. At the end of each reporting period, the major command could request closure time of all risk assessment code (RAC) items 1-4 assigned throughout the year. Risk assessment data to the RAC 4 level is meaningful since it shows a squadron leaderships resolve to fix the problem even the minor problems while RAC 1-3 are usually controlled by resources beyond the squadron financial and manpower capabilities.

Chapter 6

SAFETY EDUCATION AND TRAINING

6.1. Safety Training. Air Force Catalog (AFCAT) 36-2223, *USAF Formal Schools*, outlines specific safety-related courses (those listed below with a number designation). Refer to the AFCAT for full course descriptions and prerequisites. Organizations responsible for course management are indicated in parentheses.

6.1.1. **Occupational Safety and Health Training.** Trains individuals to meet their responsibilities in the AFOSH program. (See AFI 91-301.)

6.1.2. **Traffic Safety Education Program.** Primarily designed to improve attitudes and techniques for operators of private and government motor vehicles. AFI 91-207, *USAF Traffic Safety Program*, describes the program.

6.1.3. **Weapons Safety Training** . Trains individuals who work with, operate, handle, transport, maintain, load, or dispose of nuclear or explosive systems. **Chapter 10** outlines the training.

6.1.4. **Board President—Aircraft, Space, and Missile Mishaps (AFSC).** Trains potential board presidents (full colonel or colonel select) in their duties and responsibilities. Provides future flight, space, and missile Safety Investigation Board Presidents (AFI 91-204) and Legal Investigation Board Investigating Officers (AFI 51-503) with an explanation of the investigation board process, make-up, duties and responsibilities. Instruction includes interim board procedures; Safety Investigation Board composition and duties; the safety privilege; Risk Management mishap analysis; legal and Safety Investigation Board procedures.

6.1.5. **Aircraft Mishap Investigation Course (AFSC), WCIP05A.** Trains potential formal Class A board members in aircraft mishap investigation techniques and board procedures.

6.1.6. **Aerospace Propulsion Craftsman, Jet Engine Mishap Investigation (AETC), J3AZR2A671A-001.** Provides introduction to design and construction variations of jet engines as needed for mishap investigation.

6.1.7. **Space Safety Training.** Trains individuals who work with or operate space launch or orbital space systems. **Chapter 11** outlines space safety training requirements.

6.2. Unit Safety Representatives (USR). Individuals assigned collateral duty safety responsibilities at the unit level receive training from the base safety staff or through a course developed by a MAJCOM or FOA. The unit is responsible for maintaining training records. USRs will begin training within 30 days after appointment. Unit Safety Representatives at GSUs will receive training from the host base safety staff or by using a training course developed by the parent unit. Qualified safety personnel should conduct this training. Weapons Safety USRs could use the HQ AFSC provided Introduction to Weapons Safety as part of their initial training. This CD-ROM is available through the host safety office.

6.3. Full-Time Safety Personnel. There are several safety courses available for full-time safety personnel. MAJCOM safety staffs make sure that persons assigned to full-time safety positions are trained before beginning or as soon as possible after assuming the job. MAJCOMs will manage and track all safety personnel and required training to include AETC, AFIT, AFSC, OSHA Training Institute (OTI) Courses through the use of a computer data base program. This program tracks an individual's training

throughout his/her safety career. It identifies what courses have been taken, what courses are needed and when the individual is scheduled to attend. Owning MAJCOMs will advise installations safety staffs on who is scheduled and when they must attend so workloads can be managed during trainee's absence. This is the current list of available safety courses:

6.3.1. **Flight:**

6.3.1.1. **Flight Safety Officer (AFSC), WCIP05C.** Provides safety education for officers assigned to full-time wing flight safety positions.

6.3.1.2. **Air National Guard Aircraft Mishap Prevention (AFSC), WCIP05K** . Provides safety program management techniques and an overview of the safety investigation board process for ANG flight safety personnel.

6.3.1.3. **Flight Safety NCO (AETC), L3AZR1S071-004.** Trains individuals performing duties as the wing or base flight safety NCO. Individuals who have a background in aircraft maintenance or have completed a familiarization course on their base aircraft are preferred.

6.3.1.4. **Aircraft Mishap Investigation Course (AETC), WCIP05A** . Provides instruction on aircraft mishap investigations and analyses of human and material factors to officers who will be primary members on Class A flight mishap investigation boards and AFMC civilian technical experts (GS-9 and above).

6.3.1.5. **Security Assistance Training Program (International) Flight Safety Officer Course.** Provides allied officers assigned to manage aviation safety programs with an understanding of safety program management fundamentals, safety principles, and investigation techniques.

6.3.2. **Ground:**

6.3.2.1. **Safety Apprentice (AETC), L3ALR1S031-002.** Provides training for Air Force, ANG, Reserve, and International personnel in the fundamentals of mishap prevention and Air Force safety program elements.

6.3.2.2. **OSHA Training Institute (AFSC).** Provides several different courses for career safety personnel at the journeyman level; e.g., Permit Required Confined Space Entry, Industrial Hygiene for Safety Personnel. Refer to the OSHA Training Institute Schedule of Classes.

6.3.2.3. **National Safety Council (NSC) Safety Training Institute (AFSC).** Provides several different courses for career safety personnel at the journeyman level; e.g., Laboratory Safety, Fundamentals of Occupational Ergonomics. Refer to the NSC Safety Training Institute Course Catalog.

6.3.2.4. **Advanced Occupational Safety (AFSC).** Trains career safety personnel in safety program development, facilitation and evaluation. Focus is on advanced concepts and strategies rather than technical expertise.

6.3.3. **Weapons:**

6.3.3.1. **Weapons Safety (AETC), L3AZR2W071-001.** Provides training to personnel who are assigned primary duty in weapons safety management. The ANG Explosives Safety Orientation Course and the Explosives Safety Advanced Course, taught by the ANG Professional Military Education Center, may be substituted for the AETC course for full-time or part-time Guard and

part-time Reserve weapons safety personnel. Full-time Reserve technicians should attend the formal AETC course.

6.3.3.2. **Advanced Weapons Safety Seminar (AFSC).** Provides follow-on training to graduates of the Weapons Safety course to update WSMs on current issues and concerns.

6.3.3.3. **Introduction to Weapons Safety CD ROM (AFSC).** Provides an introduction to Weapons Safety. Available at all wing level safety offices, all collateral duty Weapons Safety personnel are highly encouraged to view this CD. Also, it will be viewed prior to attendance of the AETC Weapons Safety course (L3AZR2W071-001).

6.3.4. **Systems:**

6.3.4.1. **System Safety Management (AFSC), WCIP057.** Education for officers and civilians performing system safety management, system acquisition and development, or systems engineering tasks.

6.3.4.2. **System Safety Analysis (AFSC), WCIP060.** Trains engineers and technical staff members in the practical application of system safety analysis techniques.

6.3.5. **Management:**

6.3.5.1. **Chief of Safety (AFSC), WCIP05B.** Provides education in safety and related academic subjects for officers and civilians assigned to wing or base chief of safety positions.

6.3.5.2. **Ground Safety Management (AFSC), WCIP05D.** Provides applied management education for civilian and enlisted personnel with management responsibilities for Air Force ground safety programs.

6.3.6. **Cross-Functional:**

6.3.6.1. **Safety Craftsman (AETC), L3AZR1S071-003.** Trains enlisted and civilian personnel performing supervisory duties in Air Force ground and weapons safety programs.

6.3.6.2. **Advanced Safety Investigation (AFSC).** Trains non-flight safety personnel in advanced safety investigation techniques and concepts.

6.3.6.3. **Safety Investigation Board President Course.** Trains potential board presidents (colonels and colonel selectees) in their duties and responsibilities for Class A aircraft, space, and missile mishaps.

6.3.7. **Operational Risk Management (ORM):**

6.3.7.1. **ORM Principles Course.** Provides staff members who will manage and execute command ORM programs with the risk management concepts and tools necessary to develop programs.

6.3.7.2. **ORM Tools and Techniques Course.** Provides staff members hands on experience with the ORM tools in assessing and managing risk.

6.4. Annual Reporting of Training Requirements for AFSC Managed Courses. MAJCOMs must screen subordinate units' training needs annually and report requirements to AFSC/SEPA NLT 1 July for the upcoming fiscal year. Requirements must be prioritized according to the following codes:

6.4.1. **Priority Codes:**

6.4.1.1. Priority A = Mission Essential; meets all established course prerequisites.

6.4.1.2. Priority B = Does not meet all established prerequisites; training required to perform safety related duties. All Priority B quota requests require written justification from the MAJCOM, describing the nature of the work for which individuals require training.

6.4.2. **Report Format:**

FY: _____MAJCOM: _____

POC (Name, DSN, E-mail):

_____

COURSE TITLE AND NUMBER	NUMBER OF QUOTAS PRIORITY A	NUMBER OF QUOTAS PRIORITY B

Chapter 7

FLIGHT SAFETY

7.1. Program Management. Each unit conducting or supporting flight operations must have a flight safety program to support its mission.

7.1.1. The host safety office is responsible for the base flight safety program.

7.1.2. Tenant units coordinate their flight safety programs with the host to avoid duplication. If the host does not have a FSO authorization, the largest tenant with an authorization manages the base flight safety program. If neither the host nor the tenant has a FSO authorization, flight safety responsibilities revert to the host chief of safety.

7.2. Oversight Requirements:

7.2.1. The FSO must conduct an annual assessment of all assigned flying units' flight safety programs.

7.2.2. The host FSO assesses tenant unit support of the host base program.

7.2.3. The tenant's higher headquarters assesses the tenant's internal program.

7.3. Monitoring. The assigned FSO and FSNCO monitor flight-related facilities or operations as part of a continuous quality-improvement program. Areas for monitoring include:

7.3.1. **Programs:**

7.3.1.1. Supervisor of flying (SOF) program.

7.3.1.2. Runway supervision program.

7.3.1.3. Life-support facilities and training programs.

7.3.1.4. Egress training.

7.3.1.5. Foreign object damage-control program, control equipment, and procedures.

7.3.1.6. Wildlife hazard reduction (BASH) program.

7.3.1.7. Midair Collision Avoidance.

7.3.1.8. Hazardous Air Traffic Reports.

7.3.2. **Airfield Conditions:**

7.3.2.1. High-interest areas.

7.3.2.2. Airfield Daily Inspections.

7.3.2.3. Ramps and runways (including taxiways, overruns, stressed pavement areas, and unstressed pavement areas immediately next to runways).

7.3.2.4. Lighting systems (including runway lights, approach, taxiway, and ramp lights, and vehicle-control lights).

7.3.2.5. Barriers and arresting gear.

7.3.2.6. Airfield obstructions (including obstacles on approach paths).

7.3.2.7. Airfield markings (including runway markings, distance markings, taxi lines, and so on).

7.3.2.8. Airfield signs (include distance remaining, instrument hold, VFR hold, taxiway guidance, and so on).

7.3.2.9. Vehicle traffic control on or around the airfield and parking areas.

7.3.2.10. Wildlife hazards present on the airfield.

7.3.3. **Operations and Maintenance:**

7.3.3.1. Low-level routes, weapons ranges, and drop zones.

7.3.3.2. Unit and transient maintenance operations.

7.3.3.3. Aircraft generations, engine start, and launch exercises.

7.3.3.4. Emergency-response equipment (including crash-rescue vehicles, ambulances, communications and crash-recovery equipment).

7.3.3.5. Assigned and attached unit's flight facilities, briefings, and meetings.

7.3.3.6. Snow removal plans and operations.

7.3.3.7. Aero club operations.

7.4. Response to Emergencies. The FSO reviews and helps develop plans and procedures for handling problems involving aircraft emergencies. These areas of review include:

7.4.1. Disaster response required by AFI 32-4001, *Disaster Preparedness Planning and Operations*.

7.4.2. HAZMAT response required by AFI 32-4002, *Hazardous Material Emergency Planning and Response Compliance*.

7.4.3. Response to aircraft in-flight emergencies.

7.4.4. Response to severe weather warnings.

7.4.5. Crash recovery plans.

7.4.6. Notifying and convening investigation boards.

7.4.7. Procedures for missing aircraft.

7.4.8. Procedures and training for extracting crew members from local and common transient aircraft.

7.5. Aircraft Maintenance. Assigned FSOs and FSNCOs must work closely with aircraft maintenance operations to fully integrate all flightline maintenance personnel into the unit's flight safety program. Like the flight crews, all flightline maintenance personnel should be briefed on aircraft mishaps. FSOs and FSNCOs monitor maintenance areas for continuous quality improvement. These areas should include:

7.5.1. Debriefing procedures.

7.5.2. Functional check flight procedures.

7.5.3. Product Quality Deficiency Reporting System.

7.5.4. Flight safety information use in maintenance training.

7.5.5. Distribution of safety publications.

7.5.6. Aircraft marshaling, fueling, and towing procedures.

7.5.7. Ground engine-run/taxi training procedures.

7.5.8. Wildlife and bird strike reporting.

7.6. Mishap Board Training. The FSO trains unit personnel identified to serve as basic aircraft mishap investigation board members. Positions and qualification requirements are in AFI 91-204. MAJCOMs determine the most effective interval and mode of training.

7.7. US Air Force Hazard Reporting (HR) and Hazardous Air Traffic Reporting (HATR) Programs RCS: HAF-SE (AR) 7602. The FSO investigates HRs according to **Chapter 4** and HATRs according to **Attachment 3**.

7.8. Aero Club Operations. The host unit commander appoints a FSO as an advisor to the base Aero Club. If the host unit does not have an assigned FSO, the commander obtains the assistance of a tenant unit FSO to provide safety assistance to the Aero Club. If there is no FSO available, the commander appoints a member of the ground safety staff. The host safety office reports Aero Club mishaps according to AFI 91-204, AFI 34-217, *Air Force Aero Club Program*, and 49 CFR, chapter VIII, National Transportation Safety Board, part 830, as appropriate. The Chief of Safety for the installation possessing the Aero Club aircraft will use the procedures in AFI 91-204 chapters 7 and 11 for reporting these mishaps and will determine the safety personnel who will investigate the mishap. For mishap prevention purposes, all Aero Club aircraft are considered appropriated fund assets. All reports will be forwarded to HQ AFSC/SEF and HQ AFSVA/SVPAR. Any Air Force investigation conducted under AFI 91-204 fulfills the Air Force mishap reporting requirements of AFI 34-217 and shall not take precedence over or interfere with civil aviation authorities or agencies investigating a non-Air Force aircraft mishap.

7.9. Airfield Maintenance and Construction. FSOs and FSNCOs monitor routine airfield maintenance and major construction projects. On major construction projects, the FSO reviews the initial plan for compliance with AFJMAN 32-1013, *Airfield and Heliport Planning and Design*, (formerly AFR 86-14), and attends the preconstruction conference or briefing to consider if it will effect unit operations. Consider these factors:

7.9.1. The inspection of areas before use.

7.9.2. The impact of maintenance and construction on daily flying schedule and emergency situations.

7.9.3. The communications between the tower and contractor and the availability of the contracting agent.

7.9.4. Controlling vehicular traffic on the airfield and designating haul routes for contractor trucks.

7.9.5. Briefing pilots and transient air crews with updated information.

7.9.6. Establishing the minimum allowable distance between equipment and the runway.

7.9.7. Marking obstructions, controlling foreign objects, and assigning hearing protection.

7.9.8. Explosive safety criteria.

7.9.9. The potential impact of construction on wildlife hazards to airfield operations.

7.10. Midair Collision Avoidance (MACA) Program. Units with flying programs must establish a MACA program. The unit safety office is responsible for its administration. The FSO works closely with the MAJCOM-determined OPR and other interested parties such as the Chief Air Traffic Control Operations Officer (CATCO), the Airfield Operations Flight Commander (AOF/CC), the airspace manager, and the local Flight Standards District Officer (FSDO), to establish a comprehensive MACA program. Tailor the MACA program to meet local needs. Consider these key objectives when developing a MACA program:

7.10.1. Ensure the free flow of MACA information between host and tenant organizations, effective communication between base and local airport managers and fixed base operators, and actively support the HATR Program.

7.10.2. Provide educational programs to increase the use of available radar services among civil aircraft.

7.10.3. Use the resources and services of the Federal Aviation Administration (FAA) FSDO accident prevention specialists.

7.10.4. Develop appropriate maps and graphics showing the base radar services and routes. Distribute the maps to all civil airlines and pilots, base fixed operators, airports and other flying operations that use the surrounding airspace.

7.10.5. Establish procedures to control VFR aircraft and minimize the air-traffic hazards.

7.10.6. Deconflict MTRs as much as possible and acquaint the flying public with the location, configuration, speeds, and altitudes of the base MTR and military operating areas through military and FAA personnel.

7.10.7. Ensure that arrival and departure routes (including stereo routes and profile descents) minimize conflicts with runway traffic, nearby airfields, and local flying areas.

7.10.8. Evaluate the midair collision potential with civil airlines and work with operators of nearby airfields to reduce risk and minimize the hazards.

7.10.9. Develop a MACA pamphlet.

7.10.10. Units may combine MACA programs with other military organizations in a 50-mile range of their base. This will require more coordination efforts but will result in a better product to be used by the area's civilian population.

7.11. Bird Aircraft Strike Hazard (BASH) Program. Includes all wildlife aircraft strike hazards.

7.11.1. **Responsibilities for establishing and administering the Air Force BASH Program.**

7.11.1.1. HQ AFSC/SEFW:

7.11.1.1.1. Analyze AFI 91-204 wildlife strike data to provide baseline information to Air Force agencies.

7.11.1.1.2. Approve the exchange and distribution of Air Force wildlife strike data to US Government and foreign agencies.

7.11.1.1.3. Monitor MAJCOM wildlife strike hazard reduction programs.

7.11.1.1.4. Instruct FSOs in wildlife strike hazard reduction and provide basic wildlife strike hazard training at AETC-sponsored training programs (i.e., NCO Safety Course, Pest Management Course, Airfield Management Course, etc.).

7.11.1.1.5. Propose wildlife strike hazard reduction policies and guidelines to AF/SE.

7.11.1.1.6. Review proposed Federal legislation affecting the Air Force's wildlife hazard reduction program and coordinates the Air Force response with HQ USAF/SE and other agencies.

7.11.1.1.7. Identify and develop programs to aid MAJCOMs in evaluating potential bird strike hazards in low level airspace.

7.11.1.1.8. At MAJCOM request, provide on-site technical assistance to reduce wildlife hazards at bases with flying operations.

7.11.1.1.9. At MAJCOM request, provide technical assistance in evaluating installation BASH plans.

7.11.1.1.10. Coordinate USAF BASH program with other Federal agencies.

7.11.1.1.11. Identify Air Force BASH research requirements, developing and managing research projects.

7.11.1.1.12. Establishes and maintains liaison with international, Federal, state and private organizations regarding wildlife hazard reduction.

7.11.1.1.13. Manage bird feather identification program.

7.11.1.1.14. Provide technical assistance to Safety Investigation Board president when a wildlife hazard may be a factor in a mishap.

7.11.1.1.15. Chair the annual Air Force BASH Steering Group.

7.11.1.2. Air Education Training Command (AETC):

7.11.1.2.1. Incorporate wildlife aircraft strike hazard reduction training into AETC-sponsored formal training coursed used to educate base pest management specialists, safety technicians and airfield managers in wildlife aircraft strike hazard reduction.

7.11.1.2.2. Incorporate safety awareness of wildlife aircraft strike hazards into safety briefings provided at joint undergraduate navigator training (JUNT), joint specialized undergraduate pilot training (JSUPT), and pilot instructor training (PIT) programs.

7.11.1.3. MAJCOMs and ANG:

7.11.1.3.1. Ensure each installation with flying operations has a written BASH plan and review the plan annually. Review tenant unit BASH plans if host installation belongs to another MAJCOM. ANG and AFRC will coordinate review process with gaining MAJCOM for each ANG and AFRC unit.

7.11.1.3.2. Conduct on-site reviews of installation BASH programs at least every 36 months. ANG and AFRC will coordinate on-site reviews of each ANG and AFRC unit with the gaining MAJCOM for each unit.

7.11.1.3.3. Consider potential wildlife strike hazards when developing or revising operational procedures, training routes, ranges, instrument approach and departure procedures, establishing MOAs or low altitude tactical navigation areas.

7.11.1.3.4. Establish procedures to coordinate base improvement projects, i.e. base beautification , waste water treatment, golf courses etc., for BASH related issues.

7.11.1.4. Wing, Base and Installation Safety Offices:

7.11.1.4.1. Establish a BASH plan that meets command operational requirements.

7.11.1.4.2. Each installation with flying operations must develop a contingency plan that lists responsibilities and procedures for wildlife control.

7.11.1.4.3. Establish a Bird Hazard Working Group (BHWG) consisting of organizations involved in airfield bird control, habitat management, operations and safety. The BHWG must meet at least semi-annually with minutes maintained. The vice wing commander or equivalent will chair the meeting.

7.11.1.4.4. Develop a Bird Hazard Warning System to inform aircrews of possible flight hazards due to bird activity in local areas. Bird Watch Condition (BWC) codes will be used to communicate local bird activity along with location, number and type of birds. BWC codes are defined as:

7.11.1.4.5. **SEVERE:** Bird activity on or immediately above the active runway or other specific location representing high potential for strikes. Supervisors and aircrews must thoroughly evaluate mission need before conducting operations in areas under condition SEVERE.

7.11.1.4.6. **MODERATE:** Bird activity near the active runway or other specific location representing increased potential for strikes. BWC moderate requires increased vigilance by all agencies and supervisors and caution by aircrews.

7.11.1.4.7. **LOW:** Bird activity on and around the airfield representing low potential for strikes.

7.11.1.4.8. Designate Phase I and Phase II periods of bird activity based on historical birds activity information. Phase II represents heavy bird activity, normally associated with migratory season. Publish Phase I and II designations in the appropriate DoD Flight Information Publications.

7.11.2. **Base Level BASH Program.** Hose Air Force, Air Force Reserve, or Air National Guard, installations with flying operations must establish a BASH program. The BASH program will include all tenant flying units. The BASH program requires complete documentation of local wildlife hazards, effects on missions and possible solutions. Tenant units located on an airfield that is not hosted by the Air Force, Air Force Reserve, or Air National Guard will establish a BASH program with the host activity (civilian airport, Naval Air Station, Federal airfield, etc.). The BASH program will document coordination with the host activity on reducing wildlife hazards.

7.11.2.1. The host flight safety office will establish the BASH plan, to include, defining the nature and extent of wildlife hazards and implementation of the plan. Plan implementation may require environmental controls and changes to bird dispersal techniques and operational procedures.

Cooperative agreements for managing fish and wildlife resources require coordination with state and Federal conservation agencies prior to implementation.

7.11.2.2. BASH programs at overseas locations depend on host nation support and regulations. MAJCOMs will evaluate those plans to ensure the spirit of AFI 91-202 is complied with to the maximum extent possible.

7.11.2.3. Grass Height. Mow airfield to maintain a uniform grass height between 7 and 14 inches. Each installation BHWG will establish airfield mowing zone boundaries. Installations located in arid climates where growing grass is difficult may develop natural vegetation on the airfield to limit attractiveness to wildlife. These situations require comprehensive vegetation/wildlife hazard management and will be reviewed individually by AFSC/SEFW for approval. MAJCOM safety offices may request a waiver to grass height restrictions from AFSC/SEFW.

7.11.2.4. Obtain additional information on wildlife strike hazard reduction from AFPAM 91-212, *BASH Management Techniques* and on wildlife strike reporting from AFI 91-204, *Safety Investigations and Reports.*

7.11.3. **Technical Assistance.** Technical assistance is available through the USAF BASH Team, HQ AFSC/SEFW, 9700 G Avenue SE, Suite 266, Kirtland AFB, NM 87117-5670. DSN 246-5674/5679/5681/0698 or Comm (505) 846-xxxx, fax x0684.

7.12. Other Activities Related to Flight Safety. The FSO attends Air Traffic Control Board meetings, Foreign Object Damage Prevention Committee meetings, and Standardization/Evaluation and Training review meetings.

Chapter 8

GROUND SAFETY

8.1. Program Management. This chapter contains the minimum requirements for safety offices at all command levels. Ground safety mishap prevention efforts include both on- and off-duty activities.

8.1.1. Each installation ground safety manager oversees and implements a total base safety program.

8.1.2. Wing subordinate units and tenant organizations implement a program that supports the installation program.

8.1.3. Host safety offices may not impose host command-unique requirements on tenant units unless specified in the host-tenant agreement. Tenant units without full-time qualified safety authorizations and with fewer than 400 people receive the same safety services as wing subordinate units. For tenant units greater than 400 people that don't have their own full-time safety personnel specify safety support through the host-tenant agreement.

8.1.4. Ground safety managers will use AFPD 91-series, other AFI 91-series and applicable federal, state, and AF guidance to establish the installation ground safety program.

8.2. Host Ground Safety Staff Responsibilities:

8.2.1. Ensure mishaps are investigated and reported in accordance with AFI 91-204.

8.2.2. Manage the US Air Force base ground safety program, including operational and occupational safety, industrial safety, contractual safety requirements, sports and recreation safety, and traffic safety.

8.2.2.1. Operational safety includes performing and/or assisting in operational risk assessments of wing mission, contingency exercises, and deployment operations.

8.2.2.2. Occupational safety includes assisting supervisors perform JSAs and OHAs; report organizational compliance with OSHA, DoD, and AF safety requirements.

8.2.2.3. Traffic safety includes both government and privately motor vehicles. As safe vehicle operation is a basic responsibility of the vehicle operator, installation safety staff will be responsible to ensure operators are properly educated. Safety personnel will work with installation security police, civil engineers, and transportation personnel to provide a well-rounded education program. Safety personnel will also be responsible to ensure the requirements of DoDI 6055.4 are being met.

8.2.2.4. Sports and Recreation mishap prevention programs are the primary responsibility of the Morale, Welfare, and Recreation Office. They will monitor on-base and Air Force-sponsored off-base sports facilities and activities. Civil engineer, medical, and safety staffs will provide assistance and technical guidance. Additionally, safety personnel will provide sports and recreational safety education materials and conduct inspections of sports and recreation facilities.

8.2.3. Support environmental safety and fire prevention efforts.

8.2.4. Conduct or assist in newcomers orientation programs.

8.2.5. Assist supervisors in development of JSAs and OHAs; and report OSHA visits through MAJCOMs as the base focal point.

8.2.6. Provide technical safety advice and consultation services to all base activities, provide the new commander's safety orientation, promote on- and off-duty safety awareness, and administer the ground safety award program.

8.2.7. Budget for training and safety promotional campaign incentives; budget, acquire, and distribute safety education materials.

8.2.8. Establish procedures to ensure that local purchase requests for equipment meet safety requirements.

8.2.9. Assists tenant units with ground mishap reporting assign installation reporting and assign installation mishap control numbers.

8.2.10. Administer the installation Occupational Safety and Health Council (AFI 91-301).

8.3. Tenant Unit Responsibilities:

8.3.1. Tenant units without full-time safety personnel:

8.3.1.1. Manage and conduct an internal unit safety program.

8.3.1.2. Support the host installation program.

8.3.1.3. Investigate or assist in investigating unit mishaps.

8.3.1.4. Conduct spot inspections of unit facilities and operations.

8.3.1.5. Provide ground safety support for off-installation exercises involving unit resources.

8.3.2. Tenant units with full-time qualified safety personnel carry out all program elements not performed by the host and conduct their own assessments, inspections, and mishap investigation. Safety staffs do not evaluate their own programs.

8.4. Safety Standards. The Air Force publishes industrial and general ground safety standards as AFOSH standards, which implement OSHA standards. Area-specific instructions and technical data include other ground safety criteria. When AFOSH standards or safety criteria do not cover a situation, use non-Air Force standards, including professional safety and health standards, national consensus standards, and other Federal agency standards. MAJCOMs in coordination with HQ AFSC will determine what operations and activities are considered military unique where full OSHA compliance may not be capable. (***NOTE:*** AFOSH standards are primarily for functional manager, supervisor, and employee use to ensure the safety of their operations.)

Chapter 9

SYSTEM SAFETY

9.1. System Safety Principles. System safety disciplines apply engineering and management principles, criteria, and techniques throughout the life cycle of a system within the constraints of operational effectiveness, schedule, and costs. The degree of safety achieved in a system is directly dependent upon government and contractor management emphasis.

9.1.1. System safety is an inherent element of system design and is essential to supporting system requirements. Successful system safety efforts depend on clearly defined safety objectives and system requirements.

9.1.2. System safety must be a planned, integrated, comprehensive effort employing both engineering and management resources.

9.1.3. Follow this order of precedence to satisfy system safety requirements and resolve identified hazards according to Military Standard (MIL-STD)-882, *System Safety Requirements*:

9.1.3.1. Design for minimum risk.

9.1.3.2. Incorporate safety devices.

9.1.3.3. Provide warning devices.

9.1.3.4. Develop procedures and training.

NOTE: The degree of safety achieved in a system id directly dependent upon government and contractor management emphasis

9.2. System Safety Program Requirements:

9.2.1. System safety engineering is an element of the systems engineering function and a part of the mishap prevention program. System safety programs must meet the requirements of the latest revision of MIL-STD-882 or Commercial Off the Shelf (COTS) Data Pacs. MIL-STD-882 has been deemed acquisition reform compliant by the Defense Standardization Improvement Council and shall be used on all applicable programs.

9.2.2. Program managers must ensure that system safety engineering is an integral part of the systems engineering process and receives proper management attention. Program managers must provide direct lines of communication to the system safety staff to receive timely information on identified hazards that have high mishap potential.

9.2.3. Management must ensure that safety offices monitor program requirements to identify and correct hazards throughout the operational life of a system or facility to ensure hazards are identified through operational experience, mission changes, environmental effects, or system modification. Management must also ensure that safety staffs identify and control all hazards associated with decommissioning or disposal of a system.

9.2.4. Program safety offices must clearly define and document risk acceptance authority during life-cycle system decisions. “Unacceptable” residual hazards (as defined by MIL-STD-882C, appendix A, figure 2) can only be accepted by the Air Force Acquisition Executive (AFAE). “Undesirable” residual hazards (same reference) can only be accepted by the program executive officer (PEO), des-

ignated acquisition commander (DAC), or equivalent. In the case of a PEO program having an imbedded DAC sub-program (i.e., aircraft engine) which involves an unacceptable risk at the system (e.g., aircraft) level, the DAC will coordinate on the document and forward it to the PEO for approval, or for coordination and submittal to the AFAE, as applicable. For each unresolved "unacceptable" or "undesirable" hazard, the PM will prepare a written residual risk assessment or acceptance document describing the residual hazard and assessing its overall risk. This document will be coordinated through the center or laboratory safety office and the MAJCOM Safety Directorate. The AFAE, PEO, or DAC will show his/her acceptance of the residual hazard by counter-signing the prepared document.

9.2.5. Requesting proposals and invitations during a bid for system acquisitions (including test, maintenance and support, modification, and training equipment), you must include detailed and appropriate tailoring of the system safety tasks as outlined in MIL-STD-882.

9.2.6. Each MAJCOM appoints a trained system safety manager to act as the point of contact to facilitate system safety matters.

9.3. Responsibilities:

9.3.1. **SAF/AQ Program Executive Officer (PEO):**

9.3.1.1. Furnishes safety risk assessments to the System Acquisition Review Council.

9.3.1.2. Informs the Air Force Acquisition Executive (AFAE) of any significant residual hazards and associated program risks.

9.3.1.3. Reviews all uncontrolled catastrophic and critical hazards before releasing programs to the next milestone phase.

9.3.1.4. Accepts residual risks that the program manager is not authorized to accept and sends risks beyond PEO authority to the AFAE.

9.3.1.5. Ensures a system safety program according to MIL-STD-882 is required for all programs.

9.3.1.6. Coordinates issues affecting safety with the using command.

9.3.2. **HQ USAF/SE:**

9.3.2.1. Develops policy and provides guidance on applying system safety management and engineering to Air Force systems.

9.3.2.2. Provides an independent assessment of overall program safety (residual hazards and associated risks).

9.3.3. **Air Force Materiel Command (AFMC):**

9.3.3.1. Establishes and maintains the Air Force's capability to conduct system safety programs.

9.3.3.2. Maintains "acquisition and design lessons learned" data base and make it available to user commands to ensure that they apply appropriate lessons to new programs.

9.3.3.3. Chairs system safety engineering analysis (SSEA) efforts as required by each system.

9.3.3.4. Maintains Design Handbook 1-6.

9.3.3.5. Ensures product centers and laboratories document safety criteria and hazards identified during their efforts. Provide hazard analysis with any development or modification to be evaluated, assessed, or tested within AFMC and the using command.

9.3.3.6. Coordinates with the using commands when modifications or changes in system use affect safety.

9.3.3.7. Evaluates mishap experience to identify deficiencies that engineers and managers may have overlooked or incorrectly analyzed during system development. Correct oversights and update "lessons learned" information.

9.3.3.8. Keeps AFSC informed of the programmatic chain-of-command for on-going and future acquisition and sustainment programs.

9.3.4. **AFSC:**

9.3.4.1. Represents the Air Force in system safety matters with other DoD components and both Governmental and non-Governmental agencies.

9.3.4.2. Develops independent safety assessments of issues, programs, and systems. Inform PEOs and PMs and using commands of planned or on-going assessments and brief the results of the assessment to the same group.

9.3.4.3. Oversees system safety training programs and handbooks.

9.3.4.4. Attends selected system safety group (SSG) and system safety working group (SSWG) meetings and provides guidance for developing effective system safety and design engineering processes and procedures.

9.3.4.5. Reviews Air Force technical and management documents (operational requirement documents, program management directives, system safety program plans, hazard analyses, SSG charters) for proper system safety program identification.

9.3.4.6. Reviews and comment on mishap reports for technical content and lessons learned. Forwards lessons learned to the Air Force Lesson's Learned data bank and to appropriate OPRs for standards, specifications, and handbooks.

9.3.4.7. Serves as an advisor and consultant to the Non-nuclear Munitions Safety Board (NNMSB), a member of safety study groups for terrestrial nuclear reactors; and as an advisor to the chair of the US Air Force Nuclear Weapons System Safety Group (NWSSG). See AFI 91-205, *Non-nuclear Munitions Safety Board*; AFI 91-109, *Air Force Nuclear Reactor Program*; and AFI 91-102, *Nuclear Weapon System Safety Studies, Operational Safety Reviews, and Safety Rules*.

9.3.5. **Program Manager or System Safety Manager:**

9.3.5.1. Establishes and maintain an appropriately tailored system safety program (SSP) according to MIL-STD 882.

9.3.5.2. Integrates SSP with other engineering and program milestones.

9.3.5.3. Identifies and assesses safety hazards and risks throughout the program life. Reports accepted residual risks and those that require PEO or higher action.

9.3.5.4. Incorporates system safety requirements and design criteria into all program documents according to other program requirements such as reliability, maintainability, and human factors.

9.3.5.5. Provides system safety assessments for design and program reviews.

9.3.5.6. Develops and conducts special tests to verify proper system performance and ensures that safety managers resolve or control all hazards.

9.3.5.7. Will receive introductory weapons safety course training when assigned to a program involved in the acquisition of an explosive item.

9.3.5.8. Must have introductory space safety course training when assigned to a program involved in the acquisition of a space system.

9.3.5.9. Develops tracking procedures for all identified hazards and their solutions, when feasible or applicable. Document management decisions for acceptance of residual risks.

9.3.5.10. Develops quantitative system safety criteria and operating limits in concert with the using or operational command.

9.3.5.11. Chair and conduct SSGs/SSWGs for each program.

9.3.6. **Using Commands:**

9.3.6.1. Specify any requirements for safety features that could reduce risk, hazards, or their effects. System safety personnel must identify particular system safety constraints as early as possible to the developing command. These system safety constraints could impact the command mission, base locations, unique operational use, support concepts or meteorological environments dealing with the weapons system.

9.3.6.2. Participates as SSG and SSWG members. Ensures acquisition, testing, training development, and modification plans include adequate operational system safety criteria.

9.3.6.3. Designate a trained focal point responsible for the system safety program. Provide HQ AFSC/SEF with the name of the focal point.

9.3.7. **Units:**

9.3.7.1. Establish and maintain a capability to conduct system safety programs.

9.3.7.2. Ensures they have adequate organizational structures and resources to perform required system safety program actions.

9.3.7.3. Ensures their safety personnel have identified safety requirements and incorporated them into all program documents.

9.3.7.4. Uses "lessons learned" data bases to define baseline safety criteria.

9.3.7.5. Participate, as appropriate, in SSGs and SSWGs to identify risks and hazards.

9.3.7.6. Coordinates issues affecting system safety with your owning command, the System Safety Group, and AFSC.

9.4. System Safety Groups (SSGs). SSGs will be established for all Acquisition Category I (ACAT 1) programs and for all aircraft unless waived by the MAJCOM. SSGs will consist of the program manager, MAJCOM system safety manager, center system safety manager, program system safety manager,

and representatives from the using command, HQ AFSC, AFMC, Air Force Operational Test and Evaluation Center, and other appropriate DoD and industry organizations.

9.4.1. The program manager or the deputy program manager chairs the SSG.

9.4.2. The SSG meets at least annually at the request of the program manager. Any member of the SSG may request that the program manager call a meeting. Each SSG will address the following:

9.4.2.1. Program status.

9.4.2.2. AFSC fleet safety assessment.

9.4.2.3. Analyses of major safety design trade-offs and modifications. Analysis will include risk hazard indices, proposed corrective actions and their effect, and current status.

9.4.2.4. Status of planned, pending, active, and disapproved safety modifications.

9.4.2.5. Selected mishap recommendations. A discussion of high accident potential reports that have occurred since the last meeting.

9.4.2.6. User/operator issues.

9.4.2.7. Action item summary including action agencies and suspense dates. Include old and new action items.

9.4.3. The SSG develops and coordinates the SSG charter and oversees the system safety program throughout the life of the system. The SSG charter will address the purpose and scope of the SSG, SSG membership (to include program, center, HQ AFMC, HQ AFSC, and using command safety personnel), operating procedures, and administration of the group. These are mandatory aspects of the SSGs:

9.4.3.1. Validating the scope of the system safety program, including contractual requirements and deliverable system safety data.

9.4.3.2. Ensuring all appropriate managers consider and document the long-term consequences of hazards.

9.4.3.3. Providing an overall safety assessment before each milestone or program review.

9.4.3.4. Reviewing and evaluating major modifications or engineering change proposals.

9.4.3.5. Identifying and establishing SSWGs as necessary, to work detailed system safety issues.

9.4.3.6. Reviewing and making safety recommendations during design, development, test, and operations.

9.4.3.7. Assigning hazard-risk indexes to each SSG discussion and action item.

9.4.4. The US Air Force NNMSB may act as the SSG for all non-nuclear munitions.

9.4.5. The program manager will be responsible for preparing minutes of SSG meetings and distributing them to SSG members and attendees 30 days after the meeting. SSG minutes shall be sent to HQ AFSC and the owning command. If a SSG is not held on a major program within a year of the previous meeting from the last one an explanatory letter shall be sent toHQ AF/SESC.

9.5. Non-developmental Items. These items, formerly known as commercial-off-the-shelf (COTS) acquisitions, require system safety programs to 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. 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. Exercise care in accepting FAA certification as a sufficient indication for safety of the design.

9.6. Risk Assessment and Management. Accomplish an appropriate assessment/analysis of the safety and operational risks associated with all modification proposals and acquisition and development efforts. Program safety offices must ensure all necessary engineering and design data is produced and maintained to adequately document the risk decisions made, the design changes incorporated to reduce or eliminate hazards and any residual risks and hazards left in the system. Residual hazards and risk accepted and signed off by the appropriate authorities should be thoroughly documented and periodically reviewed by using and developing commands. This ensures that risk assessments are still appropriate and for available possible correction as part of a later modification or redesign.

9.6.1. **Express risk as:**

9.6.1.1. Loss over a period of time.

9.6.1.2. Loss over a number of events.

9.6.1.3. Losses for a given population.

9.6.2. **Assess risk by determining:**

9.6.2.1. Recurrent hazards.

9.6.2.2. Frequency of mishaps.

9.6.2.3. Severity of mishaps.

9.6.2.4. Exposure.

9.6.2.5. Corrective actions that can eliminate mishaps or reduce risk.

(***NOTE:*** See MIL-STD-882 for an explanation of the mishap-risk index method.)

9.7. SSEA. The SSEA program evaluates and approves new operations previously prohibited due to the perceived risks. (Examples include hot pit refueling, integrated combat turn around [ICT], and concurrent servicing.)

9.7.1. 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 AFMC System Safety Office and includes experts from the developing, supporting, and operational commands.

9.7.2. A using command requests a SSEA in writing to HQ AFMC/SES and informs HQ AFSC. Requests must include:

9.7.2.1. A complete description of the proposed operation.

9.7.2.2. Justification for accepting the increased risk.

9.7.2.3. Recommended location and dates for the SSEA demonstrations.

9.7.2.4. Identification of other DoD, Government, or foreign agencies that might be involved.

9.7.3. 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.

Chapter 10

WEAPONS SAFETY

10.1. Weapons Safety Program Management. The weapons safety program comprises three disciplines: explosives safety, missile safety, and nuclear surety.

10.1.1. Units at and above squadron level with an explosives, missile, or nuclear mission must have a weapons safety program.

10.1.2. The host coordinates weapons safety for the entire base. Tenant units implement mission unique mishap prevention programs where the host does not have a mission in that area. Tenant units must coordinate any additional program functions with the host to avoid duplication.

10.2. Weapons Safety Personnel Management: Weapons Safety personnel are normally from the 2WXXX or 2MXXX career fields. Civilian personnel with the appropriate occupational series (WG or GS) experience in the safety career program will be used in all positions that do not have a military necessity. It is the responsibility of the Chief of Safety to recruit, select, and man the Weapons Safety function using **Attachment 5** of this AFI.

10.2.1. The MAJCOM Chief of Weapons Safety must have munitions or missile experience and have had a previous safety assignment.

10.2.2. Upon completion of training and six months assignment in the Weapons Safety position, the Chief of Safety will ensure the individual in Weapons Safety is awarded the special experience identifier (SEI) 375 and a two-year assignment deferment is initiated through the Military Personnel Flight (MPF) if the individual is satisfactorily accomplishing Weapons Safety tasks.

10.2.3. Individuals will be trained within 90 days of assuming the weapons safety position Initial training should be provided using the Introduction to Weapons Safety CD ROM provided by AFSC prior to attendance to the AETC Weapons Safety course.

10.3. 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.

10.4. Weapons Safety Personnel:

10.4.1. Monitor operations involving explosives to ensure Air Force units understand and comply with all safety standards (see **Chapter 6** and paragraph **10.2.3.**).

10.4.2. Review waivers, exemptions, and deviations from established explosives safety criteria.

10.4.3. Advise commanders of the increased damage potential these exceptions allow.

10.4.4. Perform an operational risk assessment for each safety violation according to AFI 91-213.

10.4.5. Ensure that units take compensatory measures to minimize mishaps and eliminate violations.

10.4.6. Coordinate on all local written procedures affecting weapons operations and perform annual review.

10.4.7. Submit an update for the Base Explosive Exception Matrix (BEEM) program to MAJCOM annually not later than 1 November. Negative inputs are not required when no changes exist. Submit changes as they occur, and during the annual update at the end of each fiscal year.

10.4.8. Remain aware of planning and activities on the base that affect weapons safety, the WSM must conduct documented initial and annual reviews on munitions-related operating instructions, explosives test plans, deployment plans, OPLANs, OPORDs, and local directives involving the storage, handling, and inspection of nuclear weapons, missiles, or explosives. Review documentation may be obtained by the OPR/OCR.

10.4.9. Advise each new commander of waivers, exemptions, deviations, and compensatory measures as well as the associated risk for each violation.

10.4.10. Participate in the quality improvement process and risk management determination in the following areas:

10.4.10.1. Maintenance, storage, alert, and operating locations.

10.4.10.2. Flight line explosives operations.

10.4.10.3. Review flight line explosives operations, operational procedures for aircraft carrying hazardous materials.

10.4.10.4. Disposal yards and demolition activities.

10.4.10.5. Nuclear surety elements. (See AFI 91-101, *Air Force Nuclear Weapons Surety Program*).

10.4.10.6. Munitions and maintenance handling equipment quality assurance programs.

10.4.10.7. Weapon systems maintenance.

10.4.10.8. Weapon systems modifications, special exercises, and test programs.

10.4.10.9. Planning for contingencies.

10.4.10.10. Combat turnaround operations.

10.4.10.11. Licensed locations.

10.4.10.12. Installation support (CONUS only) for Department of Energy (DOE) shipments (SAFE HAVEN and SAFE CONVOY). (See AFI 32-4001).

10.4.10.13. Weapons safety training for unit personnel.

10.4.11. Annually review an explosives location map, developed jointly by operations, safety, logistics, and maintained by civil engineering. The base explosives location map must include:

10.4.11.1. Explosives hazard class and division and the net explosives weight authorized at each site.

10.4.11.2. Explosives safety "clear zones" required around each location based on quantity-distance criteria.

10.4.11.3. Primary and alternate explosives movement routes through the installation.

10.4.11.4. Authorized flight line locations for conducting explosives operations to include Integrated Combat Turn (ICT) activities, explosives aircraft cargo on or off loading, and combat aircraft explosives loading.

10.4.11.5. Locations for handling hung ordnance and gun-clearing operations.

10.4.11.6. Arm and de-arm areas.

10.4.11.7. Explosives support facilities, such as flight line munitions holding areas.

10.4.11.8. Base explosive prohibited zones (see AFMAN 91-201 and AFI 32-1026).

10.4.11.9. Vehicle inspection points and suspect vehicle areas.

10.4.11.10. Parking spots for explosive loaded aircraft loaded with munitions or explosives identified in paragraph 1.22.3 of AFMAN 91-201.

10.4.11.11. Potential electromagnetic radiation hazard zones that could affect munitions operations.

10.5. Explosives Safety Program Requirements. Units that maintain explosives must:

10.5.1. With the assistance of base civil engineering and safety, submit explosive site plans according to AFMAN 91-201. The unit safety office is the OPR for all explosive site plans.

10.5.2. License facilities that store small quantities of explosives according to AFMAN 91-201.

10.5.3. Review and help develop plans and procedures for handling emergencies to include, but not limited to, SAFE HAVEN, SAFE CONVOY, HAZMAT and disaster response required by AFI 32-4001 or AFI 32-4002 and when required by law (Clean Air Act), or accidental release risk management programs for explosives.

10.6. Missile Safety. Missile systems include ground-launched or air-launched systems and subscale remotely piloted vehicles and subscale drones. The aerospace vehicle, ground support and operational equipment, personnel, and the operational environment are all sources of mishaps. Typically, missile launch operations will be conducted from a Major Range Test Facility Base (MRTFB) range and will comply with DoDD 3200.11 MRTFB range safety requirements as described in section 2.10.

10.7. Nuclear Surety. The goal of the nuclear surety program is to ensure that the Air Force designs, maintains, transports, stores, and uses nuclear weapons with maximum safety, consistent with operational requirements. AFI 91-101 contains nuclear surety program requirements.

10.8. 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. See **Attachment 4**, paragraph **A4.6.** for specific guidance.

10.9. Department of Defense Explosive 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). The board consists of a chairperson and an officer (colonel or above) from each of the military departments. In addition, each military department must designate an alternate. Within the Air Force, HQ USAF/SE provides the primary and alternate members.

The DDESB establishes DoD explosives safety policy and conducts surveys of DoD installations and furnishes a report to the installation commander. Answer these reports through channels to HQ USAF/SE. See DoD 6055-.9-STD, *The DoD Explosives Safety Board*, for further discussion of the DDESB and activities.

10.10. Weapons Safety Training.

10.10.1. The MAJCOM weapons safety office must provide MAJCOM-unique training to their wing and NAF weapons safety personnel. MAJCOMs must ensure all weapons safety personnel in their command are properly trained. MAJCOMs ensure that bases or units develop standardized local lesson plans if intermediate or MAJCOM standardized plans are not provided. Nuclear surety training requirements are listed in AFI 91-101.

10.10.2. The base or unit weapons safety manager conducts this training, which augments the job training provided by the supervisor. The weapons safety staff evaluates and monitors unit weapons safety, approves lesson plans and reviews them annually. All personnel (supervisory and nonsupervisory) who operate, handle, transport, maintain, load, or dispose of missiles, explosives, or nuclear weapons must receive initial weapons safety training before performing any of those tasks. Conduct recurring training annually thereafter, not later than the end of the month in which the initial training was conducted. Tailor the weapons safety training given to an individual to the specific duties and weapons systems. ***EXCEPTION:*** People who store and/or handle only the following are exempt from initial and refresher training: (a) Small arms ammunition, including cartridge-actuated tools in quantity-distance class/division 1.4; (b) Other class/division 1.4 items in their packaged configuration only. Personnel who will unpack and handle unpacked items still require training; (c) Document destroyers; (d) Small tear gas items (such as grenades); (e) Aircraft and facility fire extinguisher cartridges.

10.11. Explosive Safety Council. This council, chaired by AFSC, is composed of the chiefs of weapons safety, or their representatives, from each MAJCOM. The council discusses matters of mutual concern that cross MAJCOM lines. The council must hold periodic meetings, generally following other meetings in which most representatives are already present.

Chapter 11

SPACE SAFETY

11.1. Space Safety Program Management. All units conducting space-related missions must have a comprehensive space safety program.

11.2. Space Safety Program. Space safety consists of two elements: launch safety and orbital safety. All units must tailor their space safety program to meet their mission requirements. Space systems range from unique space support equipment to large boosters and satellites. Launches, ground support and operational equipment, personnel, and the operational environment are all sources of potential mishaps. Safe operations within the space environment are only possible if positive mishap prevention programs are established and faithfully followed.

11.2.1. **Launch Safety.** Modern launch vehicles operated by the Air Force have huge explosive potential, are unpiloted, and significantly less reliable than aircraft. Launch operations require a comprehensive safety program to ensure safe operations. The launch safety program covers activities associated with the ground handling, launching, and preorbital operations of space systems. It also includes activities connected with the deployment, operation, reentry, and recovery (if required) of test vehicles or payloads that don't attain orbit (either planned or unplanned). Failure to follow all range and ground safety requirements could cause a launch mishap. NOTE: Missile safety programs cover intercontinental ballistic missile test launches.

11.2.1.1. Major Range Test Facility Base (MRTFB) Range Safety. Typically, launch operations will be conducted from an MRTFB range and will comply with DoDD 3200.11 MRTFB range safety requirements as described in section 2.10.

11.2.1.2. Launch Collision Avoidance. Operators will take appropriate action to minimize the risk of collisions with other satellites or space debris during launch.

11.2.1.3. Mission Flight Control. Space launch operators will have adequate measures in place to ensure complete control over launch vehicles at all times. The surrounding public will not be exposed to undue risk.

11.2.2. **Orbital Safety.** The extremely high cost of orbital assets and irrecoverable nature of orbital operations makes orbital mishap prevention a critical component of orbital systems. The orbital safety program covers activities, after orbital insertion, associated with testing and operating space vehicles in orbit or deep space, including reentry, recovery and disposal. Orbital safety begins in the earliest phases of a program when considerations of this section must be incorporated in the design phase. Safety of orbital system is the responsibility of the owner or operator. Orbital safety programs should cover, at a minimum, the following areas:

11.2.2.1. Collision Avoidance. Operators will take appropriate action to minimize the risk of on-orbit collisions with other satellites or space debris. Collision avoidance should include maintaining separation of functional and non-functional space objects through coordinated launch window management, accurate tracking and orbital element set updating; and coordination of planned orbit changes and evasive maneuvering to preserve operational space systems and to avoid the generation of additional space debris

11.2.2.2. Directed Energy Clearing House. Programs or experiments using directed energy, either ground or space-based, shall take appropriate action to minimize hazards or interference with spacecraft or the general public and property on the earth's surface or in the atmosphere.

11.2.2.3. Orbital Debris Minimization. Orbital systems shall be designed to minimize the generation of orbital debris during and after their service life.

11.2.2.3.1. Booster disposal. Space vehicle boosters should be designed and planned to minimize hazards to future vehicles and the ground when their mission is complete. At a minimum vehicles should reenter the atmosphere or be moved into a disposal orbit at the end of its useful life where they will be less likely to interfere with operational spacecraft.

11.2.2.3.2. Orbital vehicle end-of-life safing. Vehicles should safely reenter the atmosphere or be moved into a disposal orbit at the end of its useful life where it will be less likely to interfere with operational spacecraft. End-of-life safing actions for systems disposed of in space include, but are not limited to: venting all pressure vessels, safing batteries, safing any remaining ordnance systems and turning off any transmitters.

11.2.2.4. Space Environment. Orbital systems shall be designed to minimize damage due to natural phenomena such as meteoroids, solar radiation, spacecraft charging and high energy cosmic radiation, solar flares, etc.

11.3. Space Safety Training. MAJCOMs must ensure that space safety offices provide adequate training to all individuals involved in space operations. Tailor safety training to particular systems and the individual's specific duties. MAJCOMs must ensure that lesson plans are developed to implement intermediate or MAJCOM guidance.

11.3.1. **Space Safety Managers (SSM), Orbital Safety Officers (OSO), and Space System Safety Engineer Training.** Space safety personnel in these positions should have received the Introduction to Space Safety Course, and the Launch or Orbital Safety Management course appropriate to their unit mission and be experienced in the unit mission. Training should also include system safety analysis or system safety management courses, as well as orientation to the applicable areas of space safety covered under paragraph **11.2.** above. Additional mission-specific training should be specified by the MAJCOM or unit.

11.3.2. **Launch Safety Training.** Launch safety training augments the job training provided by the supervisor. Unit commanders ensure this training is developed and conducted in addition to job training. The unit safety staff evaluates and monitors unit launch safety, approves lesson plans and reviews them annually. All personnel (supervisory and nonsupervisory) who operate, handle, transport, maintain, or monitor space launch systems must receive initial launch safety training before performing any of those tasks. Conduct recurring training annually thereafter, not later than the end of the month in which the initial training was conducted. Tailor the launch safety training given to an individual to the specific duties and launch systems. MAJCOMs ensure that bases or units develop standardized local lesson plans if intermediate or MAJCOM standardized plans are not provided. Launch safety training may be given by USRs or qualified unit personnel.

11.3.3. **Orbital Safety Training.** Orbital safety training augments the job training provided by the supervisor. Unit commanders ensure this training is developed and conducted in addition to job training. The unit safety staff evaluates and monitors unit orbital safety, approves lesson plans and reviews them annually. All personnel (supervisory and nonsupervisory) who operate maintain, or monitor

orbital systems must receive initial orbital safety training before performing any of those tasks. Conduct recurring training annually thereafter, not later than the end of the month in which the initial training was conducted. Tailor the orbital safety training given to an individual to the specific duties and orbital systems. MAJCOMs ensure that bases or units develop standardized local lesson plans if intermediate or MAJCOM standardized plans are not provided. Orbital safety training may be given by USRs or qualified unit personnel.

11.4. Space Safety Council. This council, chaired by AFSC, is composed of the chiefs of space safety, or their representatives, from each MAJCOM. The council discusses matters of mutual concern that cross MAJCOM lines. The council must hold periodic meetings, generally following other meetings in which most representatives are already present.

11.5. Space Nuclear Surety. The space nuclear surety program ensures that radioactive sources and nuclear power systems used in space are designed, developed, built, maintained, stored, handled, launched, and used (including final disposition) with the maximum safety and security consistent with operational requirements. AFI 91-110 for nuclear safety review and launch approval requirements and procedures for the use of nuclear powered system and radioactive sources in space.

11.6. Forms Prescribed. AF Form 3, **Hazard Abatement Plan**; AF Form 457, **USAF Hazard Report**; and AF Form 651, **Hazardous Air Traffic Report (HATR)**.

FRANCIS C. GIDEON, JR., Major General, USAF
Chief of Safety

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFPD 91-2, *Safety Programs*

AFI 11-215, *Flight Manual Program*

AFI 32-1026, *Planning and Design of Airfields*

AFI 32-4001, *Disaster Preparedness Planning and Operations*

AFI 32-4002, *Hazardous Material Emergency Planning and Response Compliance*

AFI 34-217, *Air Force Aero Club Program*

AFI 34-601, *Air Force Lodging Management*

AFI 37-131, *Freedom of Information Act Program*

AFI 37-138, *Records Disposition--Procedures And Responsibilities*

AFI 37-160, Vol 7, *The Air Force Publications and Forms Management Programs--Publication Libraries and Sets*

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

AFI 91-101, *Air Force Nuclear Weapons Surety Program*

AFI 91-109, *Air Force Nuclear Reactor Program*

AFI 91-110, *Nuclear Safety Review and Launch Approval for Space or Missile Use of Radioactive Material and Nuclear Systems*

AFI 91-204, *Safety Investigations and Reports*

AFI 91-205, *Nonnuclear Munitions Safety Board*

AFI 91-207, *The US Air Force Traffic Safety Program*

AFI 91-213, *Operational Risk Management (ORM) Program*

AFI 91-301, *The Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Program*

AFI 91-302, *The Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Standards*

AFMAN 10-206, *Operational Reporting*

AFMAN 23-110, *USAF Supply Manual*

AFMAN 32-4004, *Emergency Response Operations*

AFMAN 36-2108, *Airman Classification*

AFMAN 37-139, *Records Disposition-Standards*

AFMAN 91-201, *Explosive Safety Standards*

AFP 127-1, *Air Force Guide to Mishap Investigation*

AFPAM 91-212, *Bird Aircraft Strike Hazard (BASH) Management Techniques*

DoDD 3200.11, *Major Range and Test Facility Base*

DoDI 6055.4, *DoD Traffic Safety Program*

DoDI 6055.7, *Mishap Investigating, Reporting, and Recordkeeping, 10 April 1989*

NATO STANAG 3101, *North Atlantic Treaty Organization Exchange of Accident/Incident Information Concerning Aircraft and Missiles, 22 September 1989*

NATO STANAG 3102, *Flight Safety Cooperation, 5 June 1990*

NATO STANAG 3531, *Safety Investigation and Reporting of Accident/Incidents Involving Military Aircraft and/or Missiles, 4 October 1991*

TO 00-35D-54, *USAF Materiel Deficiency Reporting System.*

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

Abbreviations and Acronyms

AETC—Air Education and Training Command

AFAE—Air Force Acquisition Executive

AFFSA—Air Force Flight Standards Agency

AFIT—Air Force Institute of Technology

AFMC—Air Force Materiel Command

AFMS—Air Force Manpower Standard

AFOSH—Air Force Occupational Safety and Health Standard

AFREP—Air Force Representative

AFRC—Air Force Reserve Command

AFSC—Air Force Specialty Code, Air Force Safety Center

ALSAFECOM—All Safety Communication

ANG—Air National Guard

AQE—Airman Qualifying Examination

ASAP—Aerospace Safety Automation Program

ATS—air traffic services

BASH—Bird/Aircraft Strike Hazard

CATCO—Chief, Air Traffic Control Operations

CONUS—Continental United States

COTS—commercial off the shelf

DDESB—Department of Defense Explosive Safety Board

DoD—Department of Defense

DoDISS—DoD Index of Specifications and Standards

DRU—Direct Reporting Unit

FAA—Federal Aviation Administration

FAX—facsimile transmission

FOUO—For Official Use Only

FSDO—Flight Standards District Office

FSNCO—Flight Safety NCO

FSO—Flight Safety Officer

GMV—government motor vehicle

GSM—Ground Safety Manager

GSU—Geographically Separated Unit

HATR—Hazardous Air Traffic Report

HQ AFSC—Headquarters Air Force Safety Center

HQ USAF—Headquarters United States Air Force

HR—Hazard Report

ICT—integrated combat turn

JSA—job safety analysis

MACA—midair collision avoidance

MAJCOM—Major Command

MIL-STD—Military Standard

MPF—Military Personnel Flight

MRTFB—Major Range Test Facility Base

MTR—military training route

NAF—Numbered Air Force

NAVAID—navigation aids

NGB—National Guard Bureau

NMAC—near midair collisions

NNMSB—Nonnuclear Munitions Safety Board

NSC—National Safety Council

OHA—operational hazard analysis

OPR—office of primary responsibility

ORM—Operational Risk Management

OSHA—Occupational Safety and Health Administration

PDO—Publications Distribution Office

PEO—Program Executive Office

PMV—privately owned motor vehicle

RAC—risk assessment code

RPV—remotely piloted vehicle

SOF—Supervisor of Flying

SSEA—system safety engineering analysis

SSG—system safety group

SSM—Space Safety Manager

SSO—Space Safety Officer

SSP—System Safety Program

SSWG—system safety working group

STANAG—NATO Standardization Agreement

TA—Tables of Allowance

TDY—Temporary Duty

UNT—Undergraduate Navigator Training

UPT—Undergraduate Pilot Training

USR—Unit Safety Representative

VFR—visual flight rules

WSM—Weapons Safety Manager

Terms

Air Force Occupational Safety and Health (AFOSH) Standards—Standards published by the Air Force that prescribe the conditions and methods necessary to provide a safe and healthful work environment.

AIRMISS—European term for near midair collision.

Assessments—Analysis of the effectiveness and potential of the mishap prevention program.

Evaluations—Method of appraising the effectiveness of mishap prevention program management for units at wing level and above.

Functional Managers—The senior operating officials at all levels exercising managerial control over an activity or operation. They are normally those who can acquire and commit resources for reducing or eliminating safety hazards.

Hazard or Deficiency—A condition, procedure, or practice that creates a potential for producing death, injury, occupational illness, or equipment damage.

Hazard or Deficiency Abatement—Eliminating or permanently reducing a hazard by complying with applicable safety requirements, or taking equivalent protective measures.

Hazard or Deficiency Severity—An assessment of the expected consequences if a hazard or deficiency 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.

High Interest Areas—These areas have the greatest risk to life or property damage, have experienced repeated mishaps, or in the judgment of the safety office require added monitoring. 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. These inspections may be no-notice or scheduled and documentation will be established by MAJCOM, Numbered Air Force, or the safety office.

Inspections—Safety inspections help identify hazards and measure compliance with safety program requirements.

Interim Control Measure—Temporary action taken to reduce the degree of risk associated with a hazard or deficiency pending completion of an abatement project.

Mishap—An unplanned or unsought event, or series of events, resulting in death, injury, occupational illness or damage to, or loss of, equipment or property.

Monitoring—A continuous, informal surveillance of operations for the purposes of maintaining and improving adequate control of hazards and compliance with safety program objectives.

Occupational Safety Health Administration (OSHA) Standards—Standards, including emergency temporary standards, established by OSHA pursuant to section 6 of the Occupational Safety and Health Act of 1970. This includes national consensus standards adopted by OSHA by reference.

Risk Assessment—An evaluation of possible loss in terms of hazard or deficiency severity and mishap probability of occurrence.

Risk Assessment Code (RAC)—An expression of the degree of risk in terms of hazard or deficiency severity and probability of occurrence. See AFI 91-301 for a discussion of RACs.

Risk Management—The application of a systematic process or thinking to detect, assess, and control risk to enhance total organizational performance.

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 facilities 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.

Spot Inspections—These inspections are no-notice to check the day-to-day safety and health of an organization, workcenter, facility, etc. Documentation requirements for spot inspections will be established by the MAJCOM, Numbers Air Force, or safety office. Minimum documentation will include date, inspector's name, organization or activities inspected, and unit point of contact.

Staff Assistance—Is when a higher level safety staff visits a unit (NAF, wing, squadron, etc.) and helps safety staffs develop programs and solve local problems.

Attachment 2

0X1 INTERVIEW PLAN

A2.1. Requirement. It is critical for the Air Force to continually develop and manage a professional safety force. Standardized interviewing ensures an effective ground safety program. Complete safety specialty descriptions are in AFMAN 36-2108.

A2.2. USAF Retraining Advisory Notes . USAF Retraining Advisory notes 410, 411, and 412 apply to the safety career field.

A2.2.1. **Note 410--Base Level OPR Requirement.** The OPR functionally responsible for this AFSC must conduct a personal interview to evaluate entry qualifications that cannot be verified from personnel records or by other means. Send interview results to HQ AFSC/SER with the member's application or attach a statement that no OPR is available in the immediate locale.

A2.2.2. **Note 411.** Certification by the commander or staff agency head assigned responsibility for the retraining in AFSC must accompany the application.

A2.2.3. **Note 412--MAJCOM OPR Requirement.** The MAJCOM OPR functionally responsible for this AFSC must review the application and furnish a recommendation to MAJCOM training officials to help evaluate whether approving the request is in the best interest of the US Air Force and the member. NOTE: For more information on US Air Force training advisory notes, contact the base personnel formal training section.

A2.3. 1S0X1 Retrainee Interview Checklist. The host safety staff must use the following 1S0X1 Retrainee Interview Checklist when interviewing potential retrainees for the safety career field. The staff may add other items to the checklist to fit local needs. This interview process helps ensure that only retrainee applicants with a high probability of success enter the safety career field. Interviewers must include specific comments on each checklist item in the "After the Interview" section in the recommendation letter and a statement that all checklist items under "Preparation" and "The Interview" were completed.

A2.3.1. **Preparation:**

A2.3.1.1. Verify that the candidate possesses the mandatory prerequisites specified in AFMAN 36-2108. To enter the safety career field, candidates must have:

A2.3.1.1.1. A high school diploma.

A2.3.1.1.2. A physical profile of 32222.

A2.3.1.1.3. Attained the grade of Staff Sergeant

A2.3.1.1.4. Normal color vision.

A2.3.1.1.5. An Airman Qualifying Examination (AQE) score in the general category of 55 or higher. NOTE: Rather than waive points for those candidates whose AQE scores are too low, suggest that they retake the AQE test to raise their scores. The Air Force considers a candidate's willingness to retake the exam as an indication of his or her desire to cross-train for the safety field.

A2.3.1.2. Check the candidate's background and performance record. Follow these procedures:

A2.3.1.2.1. Ask the candidate's immediate and second-line supervisor to appraise his or her work performance, attitude, and overall character.

A2.3.1.2.2. Ask the supervisors to assess whether the individual's attitude and desire are sufficient to predict success in the safety career field.

A2.3.1.2.3. Determine what professional military education courses the candidate has completed.

A2.3.1.2.4. Review the candidate's last three performance reports to identify favorable or unfavorable trends.

A2.3.1.2.5. Determine if the candidate has any problems with prolonged standing or walking or other medical problems that would affect work performance in the safety career field.

A2.3.1.2.6. Determine any pending punitive action, disciplinary suspension, or investigation.

A2.3.1.2.7. Check the candidate's driving record.

A2.3.1.2.8. Determine any problems that would preclude TDY or overseas assignments.

A2.3.2. **The Interview:**

A2.3.2.1. Set a convenient time and give the interview your full attention. Secure a quiet place to conduct the interview. Make the individual comfortable and let him or her talk.

A2.3.2.2. Ask the candidate to write a short paragraph telling why he or she wants to retrain into the safety field. (This will provide an opportunity to evaluate the member's writing and communication skills.)

A2.3.2.3. Examine the person's reasons for retraining. Look for a clearly articulated desire to enter the safety career field. Find out what the candidate believes he or she can contribute to the US Air Force safety effort.

A2.3.2.4. Determine what knowledge of other Air Force activities the individual must bring to the safety career field.

A2.3.2.5. Discuss the person's present job, work performance, and attitude toward responsibilities.

A2.3.2.6. Discuss the safety career field and answer any questions. Be candid by presenting the attractive and the unattractive features of the career field as you see them. Determine the person's attitude toward working nights, holidays, standby, and TDY.

A2.3.2.7. Assess the candidate's ability to speak clearly and distinctly. Evaluate the candidate's military image (uniform, shoes, haircut, weight).

A2.3.2.8. Make no promises.

A2.3.3. **After the Interview:**

A2.3.3.1. List the candidate's positive and negative features.

A2.3.3.2. Evaluate whether the person would make an effective safety technician or manager.

A2.3.3.3. Send the results of your interview to the local MPF and your MAJCOM 1S0X1 functional manager. Be sure to include:

A2.3.3.3.1. Recommendation for approval or disapproval.

A2.3.3.3.2. Specific comments on each checklist item under the "After the Interview" section.

A2.3.3.3.3. A statement verifying that you completed all checklist items in the "Preparation" and "The Interview" sections.

A2.3.3.3.4. The candidate's reasons for applying to retrain.

A2.4. 1S0X1 Safety Career Field Education and Training Plan (CFETP). This plan is a comprehensive core training document that identifies life cycle education and training requirements, training support resources, and minimum core task requirements. It provides personnel a clear career path to success. The supervisor at an individual's first safety assignment will provide the CFETP.

Attachment 3

HAZARDOUS AIR TRAFFIC REPORT (HATR) PROGRAM RCS: HAF-SE (AR) 7602

A3.1. General:

A3.1.1. HATR information is vital to Air Force flight safety. It is administered by the unit safety office and is not designed to be a disciplinary mechanism for reporting or correcting violations of the Federal Aviation Regulations or any Air Force directives. The sole purpose of data collected under the HATR program is for mishap prevention. HATR reports are not privileged information and may be released outside the US Air Force. All reports will be investigated.

A3.2. HATR Reporting

A3.2.1. Reportable Incidents

A3.2.1.1. NMAC: Aircrew took abrupt evasive action to avoid a collision or would have taken evasive action if circumstances allowed. NOTE: The term AIRMISS is often used in Europe for such incidents.

A3.2.1.2. Hazardous air traffic conditions: Less than required separation existed between aircraft IAW all applicable directives or any occurrence that did or could compromise flight safety.

A3.2.1.3. Communications or navigation aids (NAVAID) anomalies: Any equipment indication that did or could contribute to a hazardous air traffic condition.

A3.2.1.4. Hazardous procedures: Any system, publication, or directive that did or could contribute to a hazardous air traffic condition.

A3.2.1.5. Hazardous ground incidents: Any occurrence, including vehicle operations, on the movement area that endangered an airborne aircraft or an aircraft on the ground.

A3.2.2. Reporting Procedures:

A3.2.2.1. Anyone aware of a reportable incident files a HATR, RCS: HAF-SE (AR) 7602.

A3.2.2.2. Report the details on AF Form 651 within 24 hours to the base safety office if you are at the Air Force base where the incident occurred. Submit the form to the nearest US Air Force Base Safety Office after landing if the incident occurred during flight. Unit commanders will ensure AF Form 651, Hazardous Air Traffic Report (HATR), is available to aircrew at base operations facilities, flying squadron operations offices, in trip kits, and in US Air Force air traffic control facilities.

A3.2.2.3. If you have a NMAC, inform the nearest air traffic control agency or flight service station and provide the following information:

A3.2.2.3.1. Your identification or call sign.

A3.2.2.3.2. Time and place (name of NAVAID, radial, and distance) of the incident.

A3.2.2.3.3. Altitude or flight level.

A3.2.2.3.4. Description of the other aircraft.

A3.2.2.3.5. Advise the agency that you intend to file a written Near Midair Collision Report and request that the controllers save all available data.

A3.3. Unit Safety Office Responsibilities

A3.3.1. Within 24 hours after being notified of the incident, the safety office receiving the HATR determines which safety office is responsible for the investigation. Follow this order of priority:

A3.3.1.1. The US Air Force safety office at the base where the incident occurred.

A3.3.1.2. The safety office at the originator's home station, if there is no US Air Force safety office where the incident occurred.

A3.3.1.3. The overseas MAJCOM, if host nation air traffic services (ATS) or foreign aircraft are involved.

A3.3.1.4. When flying in a NATO environment, comply with NATO STANAG 3750, "Reporting and Investigation of Airmiss Incidents", except do not report the name of the aircraft commander.

A3.3.2. Notify the safety office responsible for investigating the HATR and mail or fax a copy of AF Form 651 to them. ***NOTE:*** If the incident occurred overseas and the HATR is filed at a base located in the United States, notify the overseas investigating office by message. This report is designated emergency status Code D. Discontinue reporting during emergency conditions. During MINIMIZE, use regular mail. Don't assign a report identifier.

A3.4. Immunity: To encourage reporting, individuals submitting HATRs are granted immunity from disciplinary action if:

A3.4.1. Their violation was not deliberate.

A3.4.2. They committed no criminal offense.

A3.4.3. No mishap occurred.

A3.4.4. They properly reported the incident.

A3.5. Investigation and Evaluation Procedures:

A3.5.1. The Investigating Safety Office will follow these procedures:

A3.5.1.1. Assign a report identifier to use with all correspondence relating to the incident. The identifier contains:

A3.5.1.1.1. The date of the incident (year, month, day).

A3.5.1.1.2. The wing or base designation.

A3.5.1.1.3. The serial number of the report (for example, HATR 91-12-16 63 AW-01). The serial number starts with number 1 at the beginning of each fiscal year. NOTE: ASAP users use assigned report identifiers.

A3.5.1.2. Determine which organizations were involved and request the proper safety office to help in the investigation. Notify:

A3.5.1.2.1. The unit if local base aircraft were involved

A3.5.1.2.2. The base ATS management if US Air Force ATS or NAVAIDs were involved.

A3.5.1.2.3. The FAA facility or FSDO if FAA ATS or civil aircraft were involved. NOTE: Contact the FAA Air Force Representative (AFREP) for help in notifying the proper facility or FSDO. See **Table A3.1.** In some cases, the local US Air Force office of primary responsibility (OPR) for ATS can provide a direct link with the FAA but communications with the FAA by a local safety office should normally be through the AFREP.

A3.5.1.2.4. The appropriate US Defense Attachè Office if the HATR occurred overseas and information about civil aircraft or host air traffic facilities is not available through normal channels.

A3.5.1.3. Send a HATR preliminary or a preliminary/final message within 10 work days. See **Figure A3.1.** for the proper format. Refer to **Table A3.2.** for correct addressees. This report is designated emergency status Code D. Discontinue reporting during emergency conditions. During MINIMIZE, use regular mail.

A3.5.1.4. If the investigation is not completed within 10 working days, send a supplemental message every 90 days to the same addressees as the preliminary message. Continue the supplemental messages until the investigation is closed and a final message is sent.

A3.5.2. Units that provide air traffic services must:

A3.5.2.1. Work closely with the base safety office throughout the investigation.

A3.5.2.2. Make sure the report clearly explains the reason(s) why the incident occurred and show how the corrective actions will prevent a recurrence.

A3.5.3. Air Force Representative (AFREP) at FAA Regional Offices reviews all HATRs and provides help when requested.

A3.5.4. MAJCOM safety offices, with the assistance from the OPR for AETC, establish procedures to carry out the HATR program. The MAJCOM safety office will determine if a reportable incident occurred. If not, notify the local unit safety office and AFSC.

In addition, overseas MAJCOMs:

A3.5.4.1. Issue supplemental procedures to carry out this program that agree with foreign air traffic control agreements in their area of responsibility.

A3.5.4.2. Determine which agency should investigate HATRs involving host nation aircraft or ATS.

A3.5.4.3. Ensure unit safety offices fully investigate the reports.

A3.5.5. Air Force Flight Standards Agency (AFFSA) OPR for ATS:

A3.5.5.1. Receive and evaluate all HATRs for trends and concerns that may affect Air Force ATS.

A3.5.5.2. Provide AFSC, Aviation Safety Directorate, recommendations for resolving trends and concerns not under Air Force jurisdiction..

A3.5.5.3. Assist AFSC in HATR summary development.

A3.5.6. The AFSC OPR for HATRs:

A3.5.6.1. Administer the program and ensure that safety offices fully investigate the reports. .

A3.5.6.2. Keep an automated data file on all reports.

A3.5.6.3. Compile a quarterly HATR summary and send a copies to HQ USAF/SE, HQ AFFSA, and MAJCOM OPRs for ATS and Safety.

Table A3.1. FAA Air Force Representatives (AFREP) and Regional Boundaries by State.

MAILING ADDRESS	TELEPHONE	RESPONSIBILITY
HQ FAA/AT-4 800 Independence Ave Washington DC 20591-5000	DSN 325-6271 COM (202)267-9427 FAX: DSN 325-6268 FAX: Com: (202) 267-5868	Headquarters FAA
AF REP, FAA Alaskan Region 611 AOG/AFREP 5800 G. Street, Ste 222 Elmendorf AFB AK 99506-2130	DSN 317-552-2374 COM (907) 552-2374 FAX Extension: 5715	Alaska, Anchorage Flight Information Region (FIR)
AF REP, FAA Central Region 601 East 12th Street Kansas City MO 64106-2894	DSN 975-6908 COM (816) 426-5736 FAX Extension: 3357 (Commercial only)	Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin
AF REP, FAA Eastern Region 12 New England Executive Park Burlington MA 01803-5299	DSN 478-4447 COM (617) 273-7900 FAX Extension: 7902 (Commercial only)	Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia, West Virginia, Washington DC
AF REP, FAA Northwest Mountain Region 1601 Lind Ave SW Renton WA 98055-4056	DSN 984-5204 COM (206) 227-2947 FAX Extension: 1114 (Commercial Only)	Colorado, Idaho, Montana, Oregon, Utah, Washington, Wyoming
AF REP, FAA Southern Region P.O. Box 20636 Atlanta GA 30220	DSN 797-5481/2 COM (404) 305-6900 FAX Extension: 6911 (Commercial Only)	Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, Panama, Puerto Rico, South Carolina, Swan Island, Tennessee
AF REP, FAA Southwest Region ASW-900 Fort Worth TX 76193-0910	DSN 477-2910 COM (817) 222-5190 FAX Extension: 5992 (Commercial Only) DSN FAX Extension: 2992	Arkansas, Louisiana, New Mexico, Oklahoma, Texas

AFREP, FAA Western Pacific Region, P.O. Box 92007 WWPC Los Angeles CA 90009-2007	DSN 833-0481 COM (310) 725-3900 FAX: (310) 536-8490 (Commercial Only)	Arizona, California, Guam, FIR, Hawaii, Honolulu FIR, Nevada

Table A3.2. List of Addressees for HATRs.

Rule	HATRs	Send Original to	Send Information Copy (Note 1)
1	All	HQ AFSC, Aviation Safety Directorate MAJCOM Safety Office, Operations Office, and OPR for ATS	HQ AFFSA OPR for ATS Numbered Air Force Flight Safety and Director of Operations Intermediate Command Flight Safety
2	Occurring in CONUS	All in Rule 1 and Appropriate FAA Region AFREP and Manager Flight Standards Division (Note 1)	All in Rule 1 and FAA NATIONAL HEADQUARTERS// AAT-4// Washington DC
3	Involving FAA Civil Aircraft Air Carrier	All in Rule 1 and Appropriate FAA Region AFREP and Manager Flight Standards Division (Note 1)	All in Rule 1 and FAA NATIONAL HEADQUARTERS// AAT-4// Washington DC NASA Moffett NAS CA//ASRS// Add: Air Carrier District Office
4	Involving FAA ATS	All in Rule 1 and Appropriate FAA Region AFREP, Manager Air Traffic Division, and appropriate Air Traffic Control Facility (Note 1)	All in Rule 1 and FAA NATIONAL HEADQUARTERS// AAT-4// Washington DC NASA Moffett NAS CA//ASRS//
5	Investigating office deems necessary (Note 2)	All in Rule 1 and Appropriate FAA Region AFREP and Manager Flight Standards Division (Note 1)	All in Rule 1 and HQ AFRC Robins AFB/ GA/SE/DO ANGRC Wash DC/SE/XO CDR USASC Ft Rucker AL PESC-PO COMNAVSAFECEN Norfolk VA/CODE 10 Commandant (G-CSP) USCG Wash DC Other MAJCOM Safety Office, Operations Office, OPR for ATS

NOTES:

1. Addresses may change. Contact the ATS facility closest to you or your AFREP for current addresses. If the addressee cannot receive electronic mail, use FAX or normal mail. Manager Flight Standards Divisions (FSD) and Air Traffic Divisions (ATD) share the same mailing address as the AFREP (table 1). Substitute FSD or ATD for AFREP and change the office number to 200 for FSDs and 500 for ATDs.

2. Consider the ATS or the ownership of the aircraft and the users of the scheduled air space involved, if any.

Figure A3.1. HATR Message Format.

NOTE: Refer to AF Form 651 when filling out HATR message.

A. PRELIMINARY MESSAGE (investigation is not completed within 10 workdays) or PRELIMINARY/FINAL MESSAGE (investigation is completed within 10 workdays):

Subject: Preliminary or Preliminary/Final HATR Number (year, month, day, unit, and serial number), RCS: HAF-SE (AR) 7602.

1. Condition reported (NMAC, communication failure, etc.).

2. Date and local time of the incident.

3. Location.

4. Altitude or flight level.

5. Type of airspace.

6. Flight conditions at altitude or flight level.

7. State who initiated the report (pilot, controller, etc.).

8A. Aircraft 1 type, model, and series.

8B. Aircraft 1 MAJCOM and unit.

8C. Aircraft 1 type of flight plan.

8D. Aircraft 1 controlling agency.

8E. Aircraft 1 ATS being used.

8F. Aircraft 1 flight activity.

9A. Aircraft 2 type, model, and series.

9B. Aircraft 2 MAJCOM and unit.

9C. Aircraft 2 type of flight plan.

9D. Aircraft 2 controlling agency.

9E. Aircraft 2 ATS being used.

9F. Aircraft 2 flight activity.

10. Narrative description of hazardous condition. Include special factors (emergency, weather conditions, equipment, and so on). If NMAC, include the estimated distance between aircraft when first sighted and distance between aircraft at closest point.

11. Investigation Summary(Preliminary/Final report only). Include agencies involved in the investigation, traffic volume, emergency conditions, and so on. If Air Force ATS were involved, allow the CATCO or equivalent to include comments about the ATS facility or personnel.

12. Cognizant official and telephone number.

B. FINAL MESSAGE:

Subject: Final HATR Number _____, RCS: HAF-SE (AR) 7602

1. Narrative description of hazardous condition (if different from the preliminary message).

2. Investigation Summary . Include agencies involved in the investigation, traffic volume, emergency conditions, and so on. If Air Force ATS were involved, allow the CATCO or equivalent to include any additional comments about the ATS facility or personnel not contained in previous messages.

3. Cognizant official and telephone number.

C. SUPPLEMENTAL MESSAGE (send every 90 days until the investigation is closed and a final message is sent):

Subject: Supplemental to Preliminary HATR Number _____, RCS: HAF-SE (AR) 7602

1. Explain why the investigation has not been completed.

2. Estimate the completion date.

3. Cognizant official and telephone number.

Attachment 4

MISHAP RESPONSE

A4.1. General. Pre-mishap response planning by safety staffs must address appropriate participation in all base-level responses, including:

A4.1.1. Major Accidents

A4.1.2. Hazardous materials accidents

A4.1.3. Natural disasters

A4.1.4. Nuclear weapons accidents

A4.1.5. Conventional Munitions Incidents

A4.2. Base OPlan 32-1. The basic response planning document is Base OPlan 32-1. It consists of separate annexes for Major Peacetime Accidents (Annex A), Natural Disasters (Annex B), Enemy Attack (Annex C), and Distribution (Annex A). The host safety office should be reflected in Annex Z and supported by tenants as locally required. A "Safety" tab is required for Annexes A and B; since losses due to hostile action are not investigated as safety mishaps, safety personnel normally support Annex C activities only at the request of the installation commander.

A4.3. Planning Factors (All Accidents/Incidents/Unusual Occurrences).

A4.3.1. **Disaster Response Force (DRF).**

A4.3.1.1. The DRF is made up of the Disaster Control Group (DCG), the base command post, unit control centers, and specialized teams. If organizational manning permits, the host safety office should plan to establish a "unit control center" to coordinate safety activities between the accident scene and the supporting installation. If manning does not permit a separate safety unit control center, the safety staff must be reachable through the base command post.

A4.3.1.2. Upon notification of a major peacetime accident, the safety staff typically begins to assemble an interim safety investigation board (SIB) in accordance with AFI 91-204. This process should be kept separate from participation in the DRF or Disaster Control Group (see below) if possible. If manning permits, the interim SIB should assemble at a location away from the accident scene until the interim SIB members can be assigned to specific tasks.

A4.3.2. **Disaster Control Group (DCG).** The DCG responds to peacetime major accidents and natural disasters to provide on-scene command and control of USAF military resources and functional expertise. Normally, the DCG consists of the following members: (see AFI 32-4001 for more details).

A4.3.2.1. On-Scene Commander (OSC)

A4.3.2.2. Civil Engineer

A4.3.2.3. Fire Department

A4.3.2.4. Security Police

A4.3.2.5. Medical Representative

A4.3.2.6. Bioenvironmental Engineer

A4.3.2.7. Maintenance

A4.3.2.8. Munitions

A4.3.2.9. Explosive Ordnance Disposal (EOD)

A4.3.2.10. Staff Judge Advocate

A4.3.2.11. Services

A4.3.2.12. Public Affairs

A4.3.2.13. Communications-Computers

A4.3.2.14. Safety

A4.3.2.15. Weather

Ideally, the safety representative to the DCG should not be responsible for assembling the interim SIB.

A4.4. Source Documents for Specific Planning Criteria. The two primary sources of detailed planning guidance for safety staffs are AFMAN 32-4004, *Emergency Response Operations,* and AFP 127-1, *USAF Guide to Mishap Investigation*. The former contains an "Accident Response Checklist" for DCG safety representative and guidance for developing a unit control center checklist; the latter describes specialized equipment requirements and an expanded set of tasks for interim SIB members.

A4.5. Safety Response to Other than Major Peacetime Accidents. Some mishaps may not warrant a full activation of the DRF. However, the safety staff may need some DCG 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 base readiness flight (disaster preparedness function) to determine how to formally provide for partial DCG support when the full DRF is not activated.

A4.6. Munitions Rapid Response Team. OO-ALC/LIW has developed a conventional munitions rapid response team to support Air Force units throughout the world anytime a munitions incident occurs. This team is made up of experts (engineers, equipment specialists, program managers, and safety personnel) from the conventional weapons and munitions programs. These personnel are able to travel anywhere in the world within 24 to 48 hours to assist in determining the cause of a failure. If your MAJCOM or unit has an incident, and this team's help is desired, contact OO-ALC/LIW to request support by calling DSN 777-5156, 5053, 5055, or 4865 during duty hours. If after duty hours contact Hill AFB Command Post at DSN 777-3007 or Commercial (801) 777-3007.

Attachment 5

WEAPONS SAFETY MANNING PLAN

A5.1. Requirement. It is critical for the Air Force to recruit strong performers into Weapons Safety. Weapons Safety positions are filled by 2WXXX and 2MXXX NCOs using a Special Experience Identifier (SEI). Most assigned individuals will be assigned to Weapons Safety only once, for a two to three year period, in their career. Superior performers may be assigned two or more times in increasingly challenging Weapons Safety positions. It is therefore essential that candidates be fast learning, highly motivated individuals.

A5.2. Recruitment. The above requirement makes it necessary for individuals in the safety office to actively recruit, whenever possible, when they are in units with the appropriate AFSCs. Also, the Chief of Safety should be in close contact with the Logistics Group and appropriate squadron commanders identifying well suited candidates. Wing staff experience, the ability to work both flight line and munitions storage issues, and an opportunity to broaden an individuals experience by learning the safety discipline, are all reasons for an individual to volunteer for Weapons Safety. The communicative skills and wide range of responsibilities inherent in the position are all desirable abilities for a potential senior NCO to have.

A5.3. Selection Process. When an individual volunteers to be assigned to Weapons Safety they should go to the Safety office on the base they are assigned and be interviewed by the Chief of Safety. The Chief of Safety, using the interview process in **Attachment 2** of this AFI, will tailor the process for Weapons Safety, working closely with the Chief of Weapons Safety. Names of candidates who are well suited for assignment will be forwarded by the Chief of Safety to the MPF. The MPF will then notify AFPC of the individuals eligibility and desires. Prior to assignment if possible, the MAJCOM will send the individual TDY to the Weapons Safety school. If possible the TDY should be accomplished in conjunction with the PCS.

A5.4. SEI Assignment. All individuals assigned to Weapons Safety must be trained within 90 days after assignment to Weapons Safety. If an individual arrives at the safety office without training, work with the MAJCOM to immediately assign the individual to training. Upon completion of training and six months in the assignment, generate SEI certification paperwork. At that time the Chief of Safety, in coordination with the individual and the Chief of Weapons Safety, will award the SEI to individuals who have demonstrated the skills needed to be assigned to a more challenging Weapons Safety assignment. This is highly desirable, since many assignments are at higher headquarters positions.