for the identity of the personnel involved. Responsibilities for establishing and administering the HATR and HAP program include:

7.3.2.1. Unit commanders will ensure AF Form 651, *Hazardous Air Traffic Report (HATR)*, and AF Form 457, *USAF Hazard Report*, are available to aircrews at base operations facilities, flying squadron operations offices, in trip kits and USAF ATC facilities. Commanders must emphasize the importance of identifying hazardous situations and direct the filing of appropriate HATRs or HAP events as a method of preventing future mishaps. **(T-3)**

7.3.2.2. Unit safety offices will investigate HAPs and HATRs IAW AFI 91-204 and AFMAN 91-223. The FSO or FSM will ensure HATR reporting procedures and requirements are briefed at least annually to aircrew and ATC personnel. Refer to AFMAN 91-223 for reporting requirements. **(T-1)**

7.3.3. Midair Collision Avoidance (MACA) Program. Units with flying programs must establish a written MACA program. The unit safety office is responsible for its creation, documentation and upkeep. The FSO/FSM works closely with the OG-determined OPR and other interested parties such as the Airfield Operations Flight Commander (AOF/CC), the airspace manager, local Fixed Base Operators (FBOs), Aircraft Owners and Pilots Association (AOPA), and the local Flight Standards District Officer (FSDO), to establish a comprehensive MACA program. Use the resources and services of the FAA FSDO accident prevention specialists. Tailor the MACA program to meet local needs. As a minimum, the FSO/FSM will coordinate with appropriate agencies to accomplish these key objectives: **(T-3)**

7.3.3.1. Ensure the free flow of MACA information between host and tenant organizations, effective communication between base and local airport managers and fixed base operators (FBOs), and actively support the HATR Program. **(T-3)**

7.3.3.2. Evaluate the midair collision potential with civil airlines and work with operators of nearby airfields to reduce risk and minimize the hazards. **(T-3)**

7.3.3.3. Develop a MACA pamphlet. The MACA pamphlet is a host-wing responsibility. Tenant units will provide MDS-specific information as required and will coordinate on the host-wing pamphlet. Overseas locations should consider publishing the pamphlet in the host country's language along with English. Provide educational programs/publications to general aviation servicing facilities to increase the use of available radar services among civil aircraft. Develop appropriate maps and graphics showing the base radar services and routes. Distribute the maps to all civil airfield managers, fixed base operators, military base operations, airports and other flying operations that use the surrounding airspace. **(T-3)**

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

7.3.3.5. Units and MAJCOMs are encouraged to participate in the DoD-endorsed and FAA-hosted **www.SEEandAVOID.org** (MACA website).

7.3.4. Awards Program. Ensure proper recognition of personnel through the Air Force Safety Awards Program as outlined in AFI 36-2833, *Safety Awards*. **(T-3)**

7.3.5. Operational/Training Squadron Flight Safety Program. The squadron commander will maintain overall supervision of the flight safety program. The Squadron Assigned Flight Safety Officer (SAFSO) represents an extension of the wing flight safety program at the squadron level. In addition to managing the squadron flight safety program, these individuals are still responsible for carrying out all normal wing safety duties as requested by Wing COS. Units possessing aircraft with enlisted crew positions should also consider appointing an enlisted crewmember as additional duty flight safety NCO to assist in the flight safety program. **(T-3)**

7.3.5.1. The squadron commander will ensure that the following actions are accomplished by the SAFSOs: **(T-3)**

7.3.5.1.1. Upon appointment, contact the wing safety office for required training. **(T-3)**

7.3.5.1.2. Administer the unit safety program using this instruction as a guide and management tool. **(T-3)**

7.3.5.1.3. Disseminate flight safety information to unit crewmembers. **(T-3)**

7.3.5.1.4. Forward all flying safety matters of significance, which cannot be corrected at unit level through the unit commander to the COS. **(T-3)**

7.3.5.1.5. Assist in conducting wing safety inspections as requested and conduct unit self-inspections. **(T-3)**

7.3.5.1.6. Ensure a current file of applicable safety directives, to include this instruction, AFI 91-204, AFMAN 91-223, AFPAM 91-212 and AFI 36-2833 are maintained by the unit. **(T-3)**

7.3.5.1.7. Maintain Volume V of the squadron Flight Crew Information File (FCIF) IAW AFI 11-202, Volume 2, *Aircrew Standardization/Evaluation Program*, if applicable. Use of Volume V is optional IAW AFI 11-202, Volume 2, paragraph 9.1.3. If Volume V is utilized, procedures will be implemented to ensure all aircrews review Volume V. **(T-3)**

7.3.5.1.8. Maintain unit safety bulletin boards. **(T-0)**

7.3.6. Data-centric Proactive Safety Programs. Chiefs of Safety and unit-level staffs will use MFOQA, ASAP and LOSA proactive safety as correlated data streams for hazard identification and risk mitigation to prevent mishaps and accomplish the mission. Proactive safety programs enable leaders, safety professionals, aircrews and support personnel to achieve efficiencies in maintenance, operations, safety, tactics and training. These programs affect positive change in the Air Force by engendering a culture where personnel are willing to identify hazards and errors, not cover them up. See paragraphs **5.10 – 5.12** for a more detailed description of MFOQA, ASAP and LOSA.

7.4. Aero Club Operations. The host unit commander appoints an FSO as a safety advisor to the base Aero Club. If the host unit does not have an assigned FSO, the commander will obtain the assistance of a tenant unit FSO to provide safety assistance to the Aero Club. The host safety

office may investigate Aero Club mishaps IAW AFI 91-204. However, the National Transportation Safety Board (NTSB) or host nation civil aviation authority has primary responsibility for investigating and reporting. Refer to AFI 34-217, *Air Force Aero Club Program*, for further guidance on Aero Club support. The wing safety advisor should attend the monthly aero club safety meetings.

7.5. Training Meetings and Briefings. The COS will ensure the following: **(T-3)**

7.5.1. Each flying unit will conduct quarterly aircrew flying safety meetings. This requirement is fulfilled whether conducted as a unit or Wing. Topics covered should include unit mishaps, MDS-specific trend analysis, local flying hazards (e.g. airspace, aerodrome), seasonal concerns (weather), human factors to include annual fatigue management and awareness training given by Aerospace Physiology or Aerospace Medicine, etc. **(T-3)**

7.5.2. Maintenance units receive timely briefings on maintenance-related mishaps and trends relevant to the unit's mission/MDS.

7.5.3. Airfield Operations personnel receive timely briefings on HATR and CMAV related mishaps, events and trends.

7.5.4. Interim Safety Board Training**.** The FSO/FSM conducts annual training for unit personnel identified to serve as interim safety board members in conjunction with or for the safety office. This requirement is N/A for AFRC. ISB composition is identified in AFMAN 91-223.

7.5.5. Other Activities Related to Flight Safety. The FSO/FSM/FSNCO or their designated representative, should attend Airfield Operations Board meetings, Foreign Object Damage Prevention Committee meetings and Standardization/Evaluation and Training review meetings.

7.6. Inspections/Assessments and Monitoring.

7.6.1. The COS will conduct assessments/inspections of all assigned (host) flying units' flight safety programs for compliance with USAF and wing safety requirements IAW **Table 3.1** Assessments/inspections of tenant unit flying safety programs will only be accomplished as stated in Base Support agreements. Refer to **Chapter 3** for additional guidance. **(T-3)**

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

7.6.3. USAF Hazard Reporting (HR). The FSO or FSM investigates reported flight-related hazards according to **Chapter 4.**

7.6.4. Flight Safety personnel (to include FSNCO and SAFSO) will inspect, assess and monitor flight-related workplaces, operations and support IAW **Chapter 3** criteria. Potential spot inspection/monitoring areas include but are not limited to: **(T-3)**

7.6.4.1. Airfield. Tenant units need only inspect/monitor unit-specific ramps and taxiways. Host has responsibility for entire airfield. (**Note:** May be accomplished in conjunction with activities prescribed in AFIs 13-204V2, *Airfield Operations Standardization and Evaluations*, and 13-204V3, *Airfield Operations Procedures and Programs*.)

7.6.4.1.1. High-interest areas.

7.6.4.1.2. Tenant units need only inspect/monitor unit-specific ramps and taxiways. Host has responsibility for entire airfield.

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

7.6.4.1.4. Engine-run areas (including engine exhaust standoff distances and condition of pavement to prevent FOD).

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

7.6.4.1.6. Barriers and arresting gear.

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

7.6.4.1.8. Airfield markings (including runway markings, distance markings, taxi lines, etc.).

7.6.4.1.9. Airfield signs (include distance remaining, instrument hold, visual flight rules (VFR) hold, taxiway guidance, etc.).

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

7.6.4.1.11. Airfield vegetation and drainage.

7.6.4.1.12. Wildlife hazards present on the airfield.

7.6.4.2. Operations and Maintenance.

7.6.4.2.1. Supervisor of flying program.

7.6.4.2.2. Runway supervision program.

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

7.6.4.2.4. Bird/Wildlife strike reporting.

7.6.4.2.5. Aircraft marshaling, fueling and towing procedures.

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

7.6.4.2.7. Aero Club operations.

7.6.4.2.8. Aircraft generations, engine start and launch exercises.

7.6.4.2.9. Post-flight maintenance debriefing procedures.

7.6.4.2.10. Unit and transient (host only) maintenance operations.

7.6.4.2.11. Product Quality Deficiency Reporting System.

7.6.4.2.12. Flight safety information use in maintenance training flight.

7.6.4.2.13. Maintenance engine-run training procedures.

7.6.4.2.14. Engine-run areas (including engine exhaust standoff distances and condition of pavement to prevent FOD).

7.6.4.2.15. Snow removal plans and operations, if applicable.

7.6.4.2.16. Deicing training for aircrew and maintenance. Include flightline-deicing procedures.

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

7.6.4.2.18. Functional check flight procedures.

7.6.4.2.19. Assigned and attached unit's flight workplaces, briefings and meetings.

7.6.4.2.20. Life-support workplaces and training programs.

7.6.4.2.21. Egress training.

7.7. Airfield Maintenance, Construction and Waivers (Host). COS or designated SE representative monitors routine airfield maintenance and major construction projects. (**Note:** Ensure any conversations with the contractors concerning safety related matters are not construed as contract changes). On major construction projects, the COS or designated SE representative reviews the initial plan and follow-on plans for compliance with AFI 32-1023, *Designing and Constructing Military Construction Projects*, UFC 3-260-01, *Airfield and Heliport Planning and Design*, and attends the preconstruction conference or briefing to consider if it will affect unit operations. **Note:** At OCONUS locations, plans shall be IAW SOFA, HNFA and BIA. **(T-3)**

7.7.1. COS will participate in annual Airfield Manager's review of airfield waivers per AFI 13-204V3. **(T-3)**

7.7.2. When able, COS should participate in risk analysis of items needing waivers and work to eliminate those items. Consider these factors:

7.7.2.1. The inspection of areas before use.

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

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

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

7.7.2.5. Briefing pilots and transient aircrews with updated information.

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

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

7.7.2.8. Explosives safety criteria.

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

Chapter 8

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-duty and off-duty activities.

8.1.1. Each installation ground safety manager will implement and manage a base-wide ground safety program IAW applicable AFPD/AFI 90-8xx and 91-series guidance, and other applicable regulatory guidance in conformance with the AFSMS. Newly assigned ground safety managers will conduct a ground safety program self-assessment within 90 days of taking the position. **(T-2)**

8.1.2. Wing subordinate units and tenant organizations implement a program that supports the installation program. **(T-1)**

8.1.3. Host safety offices may not impose host command-unique requirements on tenant units unless specified in the support agreement. Tenant USAF units without full-time qualified safety authorizations receive the same safety services as installation subordinate units. (**Note:** HAF, MAJCOM, AFOTEC and NAF safety offices are not configured as a traditional safety office IAW AFMS 106 A and are, therefore, treated as a tenant unit without an assigned safety staff. They will follow the host program unless specified in a host tenant support agreement.) Support Agreements will identify and delineate responsibilities. IAW DoDI 4000.19, *Support Agreements,* and AFI 25-201, *Intra-Service, Intra-Agency, and Inter-Agency Support Agreements Procedures,* non-USAF tenant units may be provided safety services based on support agreements (host may require reimbursement for services provided). **(T-2)**

8.1.4. One-deep safety positions will develop and maintain complete and thorough continuity folders covering all duties required by their positions.

8.2. Oversight Requirements. Ground safety personnel will conduct inspections of all assigned units. (See **Chapter 3**) **(T-2)**

8.3. Host Ground Safety Staff Responsibilities. Train managers, supervisors and employees to identify, evaluate and control workplace hazards. Ensure mishaps are investigated and reported IAW AFI 91-204 and AFMAN 91-224. **(T-2)**

8.3.1. Manage the US Air Force installation ground safety program, including operational, occupational, off-duty and traffic safety. **(T-2)**

8.3.1.1. Assist supervisors in developing and maintaining JSAs, and setting up programs to ensure organizational compliance with OSHA, DoD and Air Force safety requirements. **Note:** Overseas installations may need to consider application of host nation standards as well. **(T-2)**

8.3.1.2. Work cooperatively with other installation functions to include tenant units safety staff, Security Forces, Personnel, Civil Engineering, Contracting, Logistics Readiness Squadron (LRS), FSS, BE, Environmental, Public Health, FES Flight and AOP/AOPT personnel to provide an effective ground safety program. **(T-2)**

8.3.1.3. Monitor on-base sports facilities and activities. **(T-3)**

8.3.2. Implement an effective traffic safety program IAW AFI 91-207, *US Air Force Traffic Safety Program*. **(T-2)**

8.3.3. Review and recommend for approval, if appropriate, the use of new hazardous materials IAW AFI 32-7086, *Hazardous Materials Management.* Coordinate on updates of the installation's hazardous materials Authorized User List when requested by the installation CE's environmental function under the Installation Hazardous Materials Management Program (IHMP). **(T-2)**

8.3.4. Review Civil Engineering work requests, project design and specification for safety criteria. **(T-2)**

8.3.5. Provide technical safety consultation services to all base activities and promote on-duty and off-duty safety awareness. **(T-3)**

8.3.6. Budget for training, to include training of safety professionals, and safety promotional campaigns (Refer to AFI 65-601V1, *Budget Guidance and Procedures)*; budget, acquire and distribute safety education materials. **(T-2)**

8.3.7. Work with contracting officials to ensure requests for equipment, products and services using purchase orders and/or Government Purchase Card are reviewed for potential safety and health impact IAW AFI 64-117, *Air Force Government-Wide Purchase Card (GPC) Program*, AFI 32-7086, Hazardous Materials Management, and AFPAM 91-210, Contract Safety. (T-2)

8.3.8. Assist tenant units without full-time safety personnel with ground mishap reporting procedures and requirements. **(T-2)**

8.3.9. Coordinate Department of the Air Force civilian and Non-Appropriated Fund civilian mishap investigation information through the appropriate channels, and provide a representative to actively participate in the FECA Working Group, if one is held at the installation level. **(T-3)**

8.3.10. Maintain records of reportable and recordable mishaps IAW AFI 91-204. **(T-2)**

8.3.11. Maintain a master list or file of approved safety, fire protection and occupational health variances or exemptions to AFI 91-203 and any variances to AFOSH requirements that apply to the installation. The current approved variances/exemptions are available at the AFSEC/SEG SharePoint® website: **https://cs3eis.af.mil/sites/OO-SE-AF-18/default.aspx**. Evaluate and process new AFI/AFOSH standard variances IAW paragraph **1.7.4** **(T-2)**

8.3.12. Responsible for developing and implementing the installation commander approved written procedures that define how to handle OSHA representative(s) during official installation visits or inquiries. These procedures will address any requirements called for in paragraph **8.8** of this instruction and those contained within DoDI 6055.1, Enclosure 3. **(T-1)**

8.3.13. Assist in the development and review of emergency response plans and procedures for handling events such as, but not limited to ground and aircraft emergencies, toxic spills, ventilation malfunctions, cleanup operations and emergency egress. These areas of review include: **(T-1)**

8.3.13.1. Disaster response required by AFI 10-2501.

8.3.13.2. HAZMAT response required by AFI 10-2501.

8.3.13.3. Response to severe weather warnings.

8.3.13.4. Crash recovery plans.

8.3.13.5. Notifying and convening Interim Safety Boards (ISBs) for ground-related mishaps.

8.3.14. Provide fully qualified ground safety personnel in support of AEF deployment taskings. Ground safety managers will know the current deployment status of all assigned military personnel and ensure the proper status information is provided for the Airman Readiness Tool Report. **(T-2)**

8.3.14.1. To ensure personnel are familiar with ground safety program responsibilities, the GSM or their supervisor will conduct a review of all appropriate skill level core tasks with individuals prior to their deployment. **(T-3)**

8.3.14.2. Individuals who do not meet required core tasks for appropriate skill level requirements will be required to receive appropriate training from their supervisor and/or GSM prior to deployment. **(T-3)**

8.3.15. Conduct newcomers' safety orientation (Local Conditions Course II). Additionally, ensure local hazards information is developed and available for personnel on extended (greater than 30 days) TDY to the installation. **(T-3)**

8.3.16. Conduct the Air Force Supervisor Safety Training (SST) that incorporates MAJCOM/FOA/DRU and organization/installation unique requirements into the core curriculum. Group or Wing level tenants with an assigned safety staff will conduct their own SST to ensure their assigned personnel are trained in their MAJCOM/FOA/DRU program specifics unless otherwise specified in support agreements. **(T-3)**

8.3.17. Assist COS in new commander safety orientations in units without full-time safety staff. **(T-3)**

8.3.18. Administer the ground safety awards program IAW AFI 36-2833. **(T-3)**

8.3.19. Conduct USR training. Training will be conducted using a locally developed training course that includes basic AF requirements as well as additional requirements levied by MAJCOM/FOA/DRU and local safety office supplements. The training may also be conducted using the electronic course provided by AFSEC/SEG, but will include MAJCOM/FOA/DRU/local unique requirements as an add-on. Refer to paragraph **2.2** for additional information. **(T-3)**

8.4. Tenant Unit and GSU Responsibilities. The tenant's higher headquarters will assess the tenant's internal program. **(T-3)**

8.4.1. Tenant and GSUs without full-time safety staff will appoint a ground USR IAW paragraph **2.2** and comply with the responsibilities outlined in paragraphs **2.2** and **8.5** **(T-3)**

8.4.2. Tenant units with full-time qualified safety personnel carry out all program elements not performed by the host and conduct their assessments, inspections and mishap investigations IAW a formal support agreement. The support agreement will specify those responsibilities from paragraph **8.3** that the tenant and host have agreed to.

8.5. Unit Safety Representative (USR) Responsibilities. The commander is responsible for the unit safety program as referenced in paragraph **1.8.19** The USR assists the unit commander by being knowledgeable of safety requirements, by assisting unit personnel and by keeping the commander informed on how effective safety and health requirements are carried out throughout the unit. USRs, in addition to the responsibilities listed in paragraph **2.2,** will: **(T-3)**

8.5.1. Advise the commander on safety related matters at least on a quarterly basis or more frequently as necessary and document key elements briefed. **(T-2)**

8.5.2. Assist supervisors and unit personnel in the hazard abatement process. **(T-3)**

8.5.3. Assist installation safety, unit commander and supervisors with mishap investigations. Ensure mishap notification procedures are established in the unit. **(T-2)**

8.5.4. Disseminate safety educational materials and verify unit safety briefings are being conducted. **(T-2)**

8.5.5. Support the spot inspection program IAW paragraph **3.7.4** **(T-3)**

8.5.6. Support the installation safety program and attend USR meetings as determined by their appropriate safety office. **(T-2)**

8.5.7. Post AFVA 91-209, *Air Force Occupational Safety and Health Program,* in a conspicuous location readily accessible to all employees and applicants for employment. **(T-2)**

8.5.8. Provide the wing safety office with a current listing of all facilities owned/used by their unit for inspection purposes. **(T-3)**

8.6. Unit Motorcycle Safety Representative (MSR). Each unit commander with motorcycle riders will appoint, in writing, at least one MSR to coordinate the motorcycle safety program IAW AFI 91-207, *The US Air Force Traffic Safety Program.*

8.7. Hazard Identification and Abatement. The host ground safety manager will: **(T-1)**

8.7.1. Evaluate and process safety related hazard reports and maintain a master hazard report log. **(T-1)**

8.7.2. Assign RACs to safety hazards (and deficiencies, if applicable) and coordinate with health and fire protection officials when required. Comply with **Attachments 6** through **9,** which provide additional instructions for assigning RACs, determining abatement priority numbers and completing the AF Form 1118, *Notice of Hazard,* and AF Form 3, *Hazard Abatement Plan.* **Note:** Electronic systems that collect identical data and can produce a hard copy AF Form 3 may be used. **(T-1)**

8.7.3. Assist in establishing funding priorities by using the abatement priority number (APN) system for hazard abatement projects during the budgetary cycle. **(T-1)**

8.7.4. Maintain the installation master hazard abatement plan (MHAP), including AF Form 3, covering safety, fire and health hazards. **Note:** A fire hazard is a condition that can cause a fire to occur. A fire deficiency is a condition which reduces fire safety below acceptable levels, including noncompliance with standards, but by itself cannot cause a fire to occur. Fire Safety Deficiencies will not be included in the MHAP as they are managed IAW AFI 32-10141, *Planning and Programming Fire Safety Deficiency Correction Projects.* **(T-1)**

8.8. Department of Labor (DoL) Inspections and Investigations of DoD Working Conditions. IAW 29 CFR 1960.31 and 1960.35, OSHA and NIOSH officials, acting as representatives of the Secretary of Labor, are authorized to conduct announced or unannounced inspections of DoD workplaces, except uniquely military workplaces and operations, and nonmilitary-unique workplaces staffed exclusively by military personnel. The DoD Components are authorized to request through the DUSD (I&E) that NIOSH perform hazard evaluations. OSHA inspection procedures for federal agency workplaces are provided in OSHA Directive Number CPL 02-00-050 (Reference (u)).

8.8.1. The DoL may conduct, as part of its evaluation program, annual targeted inspections or program assistance visits of Air Force installations based on the comparative incidence of worker compensation claims. The DoL will prescribe special procedures in the notification process. OSHA representatives may question or privately interview any employee, supervisory employee or official in charge of an operation or workplace. Federal or state OSHA representatives must present identifying credentials and state the purpose of the visit to the installation commander or authorized representative before conducting an inspection of a workplace on an Air Force installation. Installation commanders, through execution of local approved written procedures IAW paragraphs **1.8.13.13** and **8.3.12,** will: **(T-1)**

8.8.1.1. Ensure Security Forces notifies the installation safety office of OSHA's arrival at the gate. **(T-2)**

8.8.1.2. Ensure the OSHA representatives will be met and escorted during their visit. **(T-2)**

8.8.1.3. Host an initial in-brief with DoL OSHA representatives. The installation safety office will notify their CC/CV and IG of OSHA's arrival. They will then notify as applicable, BE, Public Health, FES Flight, Civilian Personnel Office, tenant unit safety offices and others as needed of the in-brief meeting details. CC, IG, Contracting and Civilian Personnel Office attendance is optional. The BE, Public Health, FES Flight and tenant unit safety offices will be expected to attend based upon the OSHA inspector's stated purpose of their visit. **(T-2)**

8.8.1.4. Upon request, provide access to available safety, fire protection and health information on workplaces. **(T-2)**

8.8.1.4.1. While OSHA officials may review "For Official Use Only" mishap reports in the workplace during the course of their inspection, do not release "For Official Use Only"-marked reports or materials to them. OSHA requests for copies of such reports or materials must be obtained through the DoL IAW the provisions of AFI 91-204. **(T-2)**

8.8.1.4.2. OSHA officials with appropriate need to know may review Airmen exposure records and specific parts of Airmen medical records pertaining to the OSHA complaint. The OSHA official must safeguard the individual's medical information according to HIPAA laws.

8.8.1.5. Provide photographic or video support, if required. Videos or photographs taken on installations fall under the exclusive control of the installation commander. Air Force officials may review negatives, photographs and videos before release if they suspect possible disclosure of classified or proprietary information without the review. **(T-2)**

8.8.1.6. Arrange a closing conference with the OSHA official if requested and invite labor representatives to attend.

8.8.2. Treat DoL OSHA notices of hazards in the same manner as an Air Force inspector report. Evaluate and assign a RAC to each hazard identified by OSHA inspectors. **(T-1)**

8.8.3. Ensure Airmen verify DoL inspection results, including all testing. Air Force tests or sampling for future testing should be accomplished at the same time and at the same location as the DoL testing, if possible. **(T-1)**

8.8.4. Ensure that DoL personnel conducting the inspection receive a coordinated response to DoL inspection reports as required and prescribed by the OSHA Citation instructions. If an OSHA inspection team visits the installation and it appears there may be possible notices of safety or unhealthy workplace violations, the installation commander's staff, to include IG, JA, PA, Contracting Office and others as appropriate, should be notified and involved in abatement plan establishment. Although a unit will be cited individually at a particular location, the identified hazard may, in fact, be classified a "Repeat" citation, because a similar finding was previously cited at another installation. This practice is because OSHA is treating the Air Force as an "Enterprise" organization. Therefore, the finding is considered a corporate matter rather than a singular installation matter. In such cases, notify AFSEC. AFSEC needs to be involved in the tracking of the hazard(s) from identification through proposed response to OSHA and subsequent closure. Upon receiving a citation, the cited unit will draft a proposed official response to the violation, which will be sent simultaneously to the applicable MAJCOM/DRU/FOA safety office and the AFSEC Ground Safety Office (SEG) for review prior to releasing the response to OSHA. Units will need to build this additional coordination into the time frame allowed for the suspense to OSHA. Provide copies of the inspection report, replies to DoL, and related correspondence through command channels to the addressees listed in paragraphs **8.8.5.1 – 8.8.5.9** **(T-1)**

8.8.5. In addition to local notifications, such as installation JA, PA, CC or CV, and affected organizations or tenant activities, installation safety offices shall notify the agencies in paragraphs **8.8.5.1 – 8.8.5.9** within two duty days of any official DoL OSHA visit to an Air Force installation, to include AF-led Joint Bases. This requirement also applies when an installation receives a formal request from OSHA to self-investigate a fire, safety or health matter on OSHA's behalf. Notification shall include unit(s) or specific area(s) being inspected. Upon completion of the OSHA visit, health and fire officials, as applicable, shall coordinate responses to DoL OSHA visits and citations with the safety staff. If cited, the safety staff will transmit a supplemental report on investigations or inspection visits within two workdays after receiving the DoL OSHA citation(s). This reporting requirement applies to Air Force workplaces or operations performed by a contractor in which Air Force workplaces, equipment or procedural deficiencies are identified in the citation. Transmit report by e-mail to: **afscseg@us.af.mil.** **(T-1)**

8.8.5.1. **usaf.pentagon.saf-ie.mbx.workflow@mail.mil** (SAF/IEE).

8.8.5.2. **usaf.pentagon.af-a4-7.mbx.workflow@mail.mil** (AF/A4).

8.8.5.3. **usaf.pentagon.af-se.mbx.workflow@mail.mil** (HQ USAF/SE).

8.8.5.4. **afsc.seg@kirtland.af.mil** (HQ AFSC/SEG).

8.8.5.5. usaf.pentagon.af-sg.mbx.af-sg1-workflow@mail.mil (AF/SEG Workflow).

8.8.5.6. usaf.pentagon.af-sg.mbx.afmsa-sg3pb-workflow@mail.mil (AFMSA/SG3PB).

8.8.5.7. AFCEC/CEXFworkflow@us.af.mil (HQ AFCEC/CEXF).

8.8.5.8. Applicable MAJCOM/FOA/DRU/SEG/SGP/SGPB/CE.

8.8.5.9. Applicable Intermediate Command/SEG/SGP/CE.

8.8.6. Include the following information: **(T-1)**

8.8.6.1. Date(s) of investigation/inspection.

8.8.6.2. Agency and name of inspector.

8.8.6.3. MAJCOM/FOA/DRU, installation, unit and workplace visited.

8.8.6.4. Reason for visit.

8.8.6.5. Results of investigation or inspection. If cited, also send in the supplemental message a copy of the violation reference or any notices of unsafe and unhealthful working conditions, along with the RAC assigned and any corrective action response for OSHA.

8.8.6.6. Problems encountered, if any.

8.8.6.7. If significant hazards or deficiencies are identified or problems occur during a DoL OSHA inspection or investigation, call the MAJCOM/FOA/DRU. The MAJCOM/FOA/DRU will notify AFSEC/SEG.

8.8.6.8. POC Name and DSN.

8.9. DoL Occupational Safety and Health Administration (OSHA) Annual Visit Summary. AFSEC/SEG will use the procedures and information attained through paragraph **8.8** to complete the annual report required by the DoL. **(T-1)**

8.10. DoL Inspection of Contractor Operations. Within the 50 states and US territories, Air Force contractors operating from Air Force or privately-owned workplaces located on or off Air Force installations are subject to enforcement authority by federal and state safety and health officials. Authorized safety officials from states without OSHA-approved safety and health plans may, subject to the exceptions in this instruction, exercise jurisdiction over contractor operations. At overseas locations, local government agencies may conduct inspections of contractor workplaces or operations as stipulated in status of forces or country-to-country agreements. **(T-0)**

8.10.1. Federal OSHA officials may perform OSH inspections of Air Force contractor workplaces in areas where the US holds exclusive federal jurisdiction. Check with base legal office/JA to determine which areas of the installation fall under federal jurisdiction. **(T-0)**

8.10.2. The DoL does not have authority over working conditions for which another federal agency or certain state agencies exercise statutory authority to prescribe or enforce standards or regulations affecting safety and health. Thus, OSHA authority does not extend to working conditions specifically covered by:

8.10.2.1. Any nuclear safety or health standard or instruction implementing Title 42, U.S.C., 2012, 2021, 2121(b), and 2201(b).

8.10.2.2. Any explosives safety standard or instruction implementing Title 10, U.S.C., 172, *Ammunition Storage Board.*

8.10.3. Regardless of whether or not a state has an OSHA-approved plan, state safety and industrial hygiene (IH) officials have no authority in Air Force contractor workplaces located in areas where the US holds exclusive federal jurisdiction.

8.10.4. A notice for a DoL inspection or investigation of contractor operations on an Air Force installation will be reported IAW paragraph **8.8.5** of this instruction.

8.11. U.S. Department of Labor (DoL) Inspections of DoD Working Conditions. Safety and health standards are enforceable by federal or state officials as follows: **(T-0)**

8.11.1. Safety and Health Standards Enforcement. IAW Sections 1960.31 and 1960.35, OSHA and NIOSH officials, acting as representatives of the Secretary of Labor, are authorized to conduct announced or unannounced inspections of DoD workplaces except for uniquely military workplaces and operations, and nonmilitary-unique workplaces staffed exclusively by military personnel. The DoD Components are authorized to request through the DUSD (I&E) that NIOSH perform hazard evaluations. OSHA inspection procedures for federal agency workplaces are provided in OSHA Directive Number CPL 02-00-150.

8.11.2. State OSHA officials, operating under a federally-approved plan and subject to the terms of any variance, tolerance or exemption granted by DoL, may enforce state OSHA standards in workplaces. Check with the base legal office/JA to determine which areas of the installation fall under exclusive federal jurisdiction. **(T-0)**

8.11.3. Admit federal and state OSHA without delay on Air Force installations during regular working hours. **(T-0)**

8.11.4. When federal or state OSHA officials require entry to a classified or restricted area, the official must meet security requirements.

8.11.5. DoD agencies are responsible for resolving issues related to citations or requests for delays, variations, tolerances or exemptions of applicable safety and health standards.

Chapter 9

WEAPONS SAFETY

9.1. Program Management. The Weapons Safety program comprises four disciplines: explosives safety, missile safety, nuclear surety and directed energy weapon (DEW) safety.

9.1.1. Units at and above squadron level with an explosives, missile, nuclear or directed energy weapons mission must have a weapons safety program. **(T-2)**

9.1.2. The host coordinates weapons safety for the entire installation. Tenant units implement mission unique mishap prevention programs where the host does not have a mission in that area. Tenant units must coordinate, through a MOA or Memorandum of Understanding, any additional program functions with the host to avoid duplication and clearly delineate responsibility. **(T-3)**

9.2. Weapons Safety Personnel Management and Manning Plan. Weapons Safety personnel are normally from the 2WXXX or 2MXXX career fields. Civilian personnel with the appropriate series (WG or GS, 0018, 0017-series) experience in the safety career program may be used in all positions that do not have a military necessity. It is the responsibility of the COS to recruit, train and staff the Weapons Safety function. **(T-2)**

9.2.1. MAJCOM Chief of Weapons Safety must have munitions, missile or nuclear weapons experience.

9.2.2. Individuals will be scheduled for formal Weapons Safety Management Course L3AZR2W071-0C2A within 90 days of assuming weapons safety position and complete the course within six months of being assigned. MAJCOMs must ensure all weapons safety personnel in their command are properly trained. MAJCOMs also ensure that bases or units develop standardized local lesson plans if intermediate or MAJCOM standardized plans are not provided. Additional nuclear surety training requirements are listed in AFI 91-101, *Air Force Nuclear Weapons Surety Program*. **(T-2)**

9.2.3. Upon completion of training course L3AZR2W071-0C2A, Weapons Safety Management Course, the Air Force Career Field Manager (AFCFM) will immediately award SEI 375 to the individuals.

9.2.4. Based on mission needs, Weapons Safety personnel are highly encouraged to attend the following courses: MINA, Introduction to Mishap Investigation (IMI), AMMO-47 Lightning Protection for Air Force Facilities, and AMMO-65 DoD Contractor's Explosives Safety Standards. The MAJCOM weapons safety office will identify any additional training requirements for WSMs tasked to manage a DEW safety program.

9.3. Explosives Safety Standards. Air Force explosives safety standards are in AFMAN 91-201, *Explosives Safety Standards*. Criteria for specific explosives are specified in technical publications and other standard publications, such as command and local directives.

9.4. Weapons Safety Personnel. Manage Weapons Safety program to ensure Air Force units understand and comply with all explosives, missile, nuclear surety and directed energy safety standards.

9.4.1. Review waivers, exemptions and deviations from established explosives safety criteria and ensure that compensatory measures are integrated into local written procedures according to paragraph **9.4.5** below. **(T-1)**

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

9.4.3. Assist units in performing a risk assessment for explosives operations according to applicable directives. **(T-2)**

9.4.4. Ensure that units identify and document compensatory measures to minimize mishaps, eliminate violations and reduce risk. **(T-2)**

9.4.5. Coordinate on all local written procedures affecting weapons safety and perform annual review. **(T-2)**

9.4.6. Remain aware of planning and activities on the installation 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, explosives or directed energy weapons. Reviewed documentation must be maintained by safety office. Archived/inactive test plans, safety appendices or written procedures do not require annual review unless reactivated. **(T-2)**

9.4.7. Advise each new wing and group level commander responsible for an explosive safety program within 60 days of appointment on applicable waivers, exemptions, deviations and compensatory measures as well as the associated risk for each. Commanders below group level will be briefed by appointed ADWSRs, when appropriate. **(T-2)**

9.4.8. Participate in mishap prevention and RM determination in the following areas: **(T-2)**

9.4.8.1. Maintenance, storage, alert, research and developmental test, and operating locations.

9.4.8.2. Flight line explosives operations.

9.4.8.3. Operational procedures for aircraft carrying hazardous materials.

9.4.8.4. Explosives Ordnance Disposal (EOD) proficiency/demolition ranges.

9.4.8.5. Nuclear surety elements. (See AFI 91-101).

9.4.8.6. Munitions maintenance handling equipment (MMHE) quality assurance programs.

9.4.8.7. Weapon systems maintenance.

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

9.4.8.9. Planning for contingencies.

9.4.8.10. Concurrent Servicing Operations.

9.4.8.11. Licensed locations.

9.4.8.12. Installation support (Continental United States only) for Department of Energy (DOE) shipments (SAFE HAVEN). (See AFMAN 91-201).

9.4.8.13. Weapons safety training for unit personnel.

9.4.8.14. Weapons test review process, if applicable.

9.4.8.15. Explosives movement route.

9.4.8.16. Hot Cargo Pads and Inspection Points/Secure Holding Location for Explosives-Loaded Commercial Vehicles.

9.4.8.17. Management, storage and disposition of Materials Potentially Presenting an Explosives Hazard (MPPEH).

9.4.8.18. Aerial port explosives operations.

9.4.8.19. Small arms ranges.

9.4.8.20. Field training exercise areas where explosives are used.

9.4.8.21. Missile Alert Facilities (MAF) and Launch Facilities (LF).

9.4.9. Annually review installation explosives location map and provide changes and corrections to CE. Review must be documented and maintained by the safety office. CE published maps should be coordinated with logistics, operations and safety. The reviews can be documented on separate logs and should include but not be limited to the following applicable areas: **(T-2)**

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

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

9.4.9.3. Authorized flight line locations for conducting explosives operations to include concurrent servicing operations activities, explosives aircraft cargo on or off loading, and combat aircraft explosives loading.

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

9.4.9.5. Arm and de-arm areas.

9.4.9.6. Explosives support workplaces, such as flightline munitions holding areas.

9.4.9.7. Base explosives prohibited zones (see AFMAN 91-201 and UFC 3-260-01). **Note:** At OCONUS locations, consideration must be given to SOFAs, HNFAs and BIAs.

9.4.9.8. Vehicle inspection points and suspect vehicle areas.

9.4.9.9. Parking spots for aircraft loaded with munitions or explosives identified in AFMAN 91-201.

9.4.9.10. Potential electromagnetic radiation hazard zones that could affect munitions operations. After 100% evaluation, plot only those zones that actually impact munitions operations to include primary and alternate explosive routes. The review must be documented and maintained by Weapons Safety. The reviews can be documented on separate logs.

9.4.9.11. DEW operations and maintenance location hazard zones that could affect munitions operations. After 100 percent evaluation, plot only those zones that actually impact munitions operations to include primary and alternate explosive routes; identify hazardous DEW effects to Potential Explosive Sites, including ordnance and fuel. The

review must be documented and maintained by Weapons Safety. The reviews can be documented on separate logs.

9.4.9.12. EOD range(s).

9.4.9.13. Base weapons range(s)

9.4.9.14. Restrictive easement(s).

9.4.10. With the assistance of Ground Safety, assign RACs to weapons safety hazards. **(T-2)**

9.5. Weapons Safety Program Requirements. Units that maintain explosives must:

9.5.1. With the assistance of base civil engineering and safety, submit explosives site plans according to AFMAN 91-201. The installation safety office is the OPR for all explosives site plans. **(T-2)**

9.5.2. Request a license for facilities that store small quantities of explosives according to AFMAN 91-201. **(T-2)**

9.5.3. Review and help develop plans and procedures for handling emergencies to include, but not limited to, SAFE HAVEN, HAZMAT response, AFI 10-2501 or UFC 3-260-01, and when required by law (e.g., Clean Air Act; Environmental Planning Community Right To Know Act; secure explosives holding areas IAW the Defense Travel Regulation, Part II, Chapter 25), or accidental release RM programs for explosives. **Note:** At OCONUS locations, consideration must be given to SOFAs, HNFAs and BIAs. **(T-2)**

9.6. Missile Safety. Missile systems are ground-launched or air-launched and do not include unpiloted drones or remotely piloted vehicles. The aerospace vehicle, ground support and operational equipment, personnel, and the operational environment are all sources of mishaps. Typically, missile launch operations will be conducted from a MRTFB range and will comply with DoDD 3200.11, *Major Range and Test Facility Base (MRTFB),* and DoDI 3200.18, *Management and Operation of the Major Range and Test Facility Base*, in addition to AFI 99-103, *Capabilities-Based Test and Evaluation,* and AFI 13-212, *Range Planning and Operations,* safety requirements as described in **Chapters 1** and **2** of this instruction.

9.7. Nuclear Surety. The goal of the Air Force Nuclear Weapons Surety Program is to incorporate maximum nuclear surety, consistent with operational requirements, from weapon system development through dismantlement. AFI 91-101 contains nuclear surety program requirements.

9.8. Directed Energy Weapons (DEW). New weapons systems using the electromagnetic spectrum to produce high-energy lasers, high-power microwaves, particle beams and conventional-munition-driven electromagnetic pulse (EMP) systems are in various stages of development. AFPD 91-4 and AFI 91-401 provide Air Force DEW safety policy, including the requirements for safety certification.

9.9. Munitions Rapid Response Team. Hill AFB's Munitions Rapid Response Team (MRRT) 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 3** for specific guidance.

9.10. Department of Defense Explosives Safety Board (DDESB). The DDESB is a joint board of the DoD. It is subject to the direction, authority and control of the Secretary of Defense, under the Deputy Under Secretary of Defense (Environmental Security).

9.10.1. The board consists of a chairperson and an officer (O-6/GS-15 or above) from each of the military departments. In addition, each military department must designate an alternate. Within the Air Force, AF/SE provides the primary and alternate members.

9.10.2. The DDESB establishes DoD explosives safety policy and is responsible for the DoD Explosives Safety Management Program (ESMP). DDESB conducts Component-level programmatic evaluations according to DoDI 6055.16, *Explosives Safety Management Program*, which requires the Secretaries of the Military Departments to establish, resource, implement and maintain effective DoD Component-level ESMPs. Each year DDESB evaluates one of the Military Departments ESMPs. This is a top to bottom review (HAF, MAJCOM, NAF and installation) of the services' explosives safety program.

9.11. Weapons, Explosives and DEW Training.

9.11.1. The MAJCOM/DRU/FOA weapons safety office must provide MAJCOM/Center-unique WSM training to their NAF- and installation-level weapons safety personnel.

9.11.2. The installation WSM provides weapons safety training to all appointed ADWSRs on their responsibilities and program management. **(T-2)** ADWSRs are required to be trained within 30 working days of appointment, with recurring training as determined by the MAJCOM.

9.11.3. Installation weapons safety, ADWSR or designated representative conducts explosives safety training, which augments the job training provided by the supervisor. The installation weapons safety staff evaluates and monitors this training, approves lesson plans and reviews them annually. All personnel (supervisory and non-supervisory) who operate, handle, transport, maintain, load or dispose of missiles, explosives or nuclear weapons must receive initial explosives safety training before performing any of these tasks. All personnel tasked to work on aircraft configured with explosives/ordnance will receive training that includes how to identify an armed aircraft and a familiarization of the hazards involved when working on or around explosives loaded aircraft, ensure initial explosives safety training is provided before performing any of these tasks. Recurring training must be provided not later than the end of the 15th month following initial training. **Exception:** Personnel who store and/or handle only the following are exempt from initial and refresher explosives safety training. **(T-2)**

9.11.3.1. Small arms ammunition, including cartridge-actuated tools in quantity-distance hazard class/division 1.4.

9.11.3.2. Document destroyers.

9.11.3.3. Small tear gas items, such as grenades.

9.11.3.4. Aircraft, vehicle and facility fire extinguisher cartridges.

9.11.3.5. Other hazard class/division 1.4 items in their packaged configuration only. Personnel who will unpack and handle unpackaged items other than the exceptions listed above still require training.

9.11.4. Personnel conducting or directly supporting DEW operations, maintenance, testing or training must receive training prior to use, within 30 days of assignment to unit, and every 15 months thereafter. **(T-3)**

9.12. Weapons Safety Committees. These committees include the Explosives Safety Committee, the Non-Nuclear Munitions Safety Board, the Nuclear Weapons Systems Safety Group and the Directed Energy Weapons Safety Board. The committees are chaired by an AFSEC/SEW representative and are composed of the chiefs of weapons safety or their MAJCOM representatives. These committees discuss matters of mutual concern that cross MAJCOM lines.

Chapter 10

SPACE SAFETY

10.1. Program Management. Every unit conducting space-related missions must have a comprehensive Space Safety program. Reference AFI 91-217, *Space Safety and Mishap Prevention Program*, for specific Space Safety program requirements. Reference AFMAN 91-222, *Space Safety Investigation and Reports*, for specific investigative reporting guidance. Reference AFI 91-110, *Nuclear Safety Review and Launch Approval for Space or Missile Use of Radioactive Material and Nuclear Systems*, for specific guidance on launches with nuclear materials on-board. **(T-1)**

10.2. Program Overview. The Air Force operates responsibly with due regard for the safety of the general public, AF personnel, space support personnel, and public and government resources. The Space Safety program includes mishap prevention guidance across the life cycle of space systems and their unique support equipment, to include Design, Systems Development, Integration, Testing, Pre-Launch, Launch Operations, Range Operations, Orbital Operations and Ground-Based Space Systems.

10.3. Design, Systems Development, Integration, Testing and Pre-Launch. Design decisions have the potential to impact the operational safety of a system. Therefore, the acquisition organization shall address the impact of design decisions on the launch, on-orbit, reentry and disposal/end-of-life (EOL) requirements in this document during the development and sustainment phases. Acquisition organizations shall comply with all safety standards that address these downstream risks. **(T-1)**

10.3.1. Space safety personnel shall participate in program performance reviews/assessments during the system development and sustainment phases.

10.3.2. Include local System Safety Managers at all milestone decision points to effectively manage the risks in each program.

10.3.3. Safety programs shall emphasize test program validation (to include procedures discipline, readiness reviews and test execution risk management) and configuration control in order to minimize mishaps.

10.4. Launch Operations and Range Operations Safety. The launch and range safety program outlines safety responsibilities and tasks for pre-launch processing at the launch site, launch operations and the reentry of launch vehicle components or reentry vehicles. It includes safety responsibilities and requirements for launch vehicles/components, reentry vehicle/components, controlled reentry and reusable launch vehicles/components, including their jettisoned components. **Note:** Weapon safety programs cover intercontinental ballistic missile test launches.

10.5. Orbital Operations Safety. The high cost of orbital assets, their unique operational design and the irrecoverable nature of orbital hardware makes mishap prevention a critical component of orbital systems, from the initial design phase through EOL activities. The orbital safety program covers all activities associated with the development, testing and operation of space vehicles in orbit or deep space, to include satellite command and control systems, spacecraft design, orbital operations, reentry, recovery and disposal elements.

10.6. Ground-Based Space Systems Safety. Ground-based space systems include unique space support equipment as well as space systems that don't directly support launch operations or on-orbit satellite operations, such as space control or warning systems.

10.7. Space Nuclear Safety. This program ensures that radioactive material and nuclear power systems used in space at or above threshold amounts have the proper design, development, assembly, maintenance, storage, handling, launch and operational use (including final disposition) with the maximum safety consistent with operational requirements. Safety reviews and launch approval for launches containing nuclear material shall be conducted IAW AFI 91-110. Programs using nuclear power systems or large amounts of nuclear material also fall under the Interagency Nuclear Safety Review Panel (INSRP), of which HQ AFSEC/SES is the DoD representative.

10.8. Space Safety Council (SSC). The SSC assists the AF/SE in fulfilling oversight responsibilities on matters concerning safe operations in the space (and related mission areas) environment through effective governance and management. The SSC also serves to improve Space Safety effectiveness and advocate for the consistent application of DoD, civil, commercial, academic and international standards or practice across the space enterprise. HQ AFSEC/SES chairs the SSC and has a composition of MAJCOMs/DRUs/organizations with space missions that affect Air Force operations. The SSC will convene at least twice per year. Reference AFI 91-217 for specific guidance.

10.9. Space Safety Training. Assigned Space Safety personnel shall receive training in all applicable aspects of Space Safety according to the unit's specific operations (e.g., risk analysis and management, System Safety, space environment hazards, testing, and conjunction assessment). Space Safety personnel shall receive training in mission specific safety tasks, as applicable: test safety, human factors, risk management, design, range systems and operations, launch systems and operations (including conjunction on-launch assessment and upper stage disposal), orbital systems and operations (including debris minimization, conjunction assessment, collision avoidance and end-of-life actions), and ground-based space systems and operations (including space control and warning systems/operations). Space Safety personnel may also need to be trained on ground safety concerns (e.g., fall protection, safety inspections, respiratory protection) to support mission operations. **(T-3)**

Chapter 11

SYSTEM SAFETY

11.1. Overview. This Chapter establishes the roles, responsibilities and policy requirements for Safety personnel in support of System Safety. System Safety is the application of engineering and management principles, criteria and techniques to achieve acceptable risk within the constraints of operational effectiveness and suitability, time and cost throughout all phases of the system life cycle. This chapter also defines how Safety personnel and organizations interact, influence and advise the other Air Force communities that are corporately responsible for System Safety in the Air Force. System acquisition and sustainment programs are subject to the mandatory policy and guidance described in paragraph **11.1.3** System safety principles are used to manage safety risks across many functional disciplines within the AF and form the basis for risk management.

11.1.1. System Safety must be a planned, integrated, comprehensive effort employing both engineering and management resources. Effective System Safety efforts depend on clearly defined safety objectives and system performance requirements. System Safety objectives shall include, but not be limited to, prevention or mitigation of all reportable mishaps that may be associated with a system's use and function throughout its life cycle. Losses of systems, mission degradation, cost and schedule impacts shall be considered. The intent is not to duplicate work performed by related or other functional disciplines, but to ensure it is done in a systematic manner that addresses and manages mishap risk.

11.1.2. System Safety efforts consist of eight essential elements that Program Managers will document and periodically review:

11.1.2.1. Documenting the system safety approach. **(T-1)**

11.1.2.2. Hazard identification and analysis over the system life cycle. **(T-1)**

11.1.2.3. Assessment of mishap risk, expressed as severity and probability of consequences. (T-1)

11.1.2.4. Identification and assessment of potential risk mitigation measures. **(T-1)**

11.1.2.5. Implementation of measures to reduce risks to acceptable levels. **(T-1)**

11.1.2.6. Verification of risk reduction. **(T-1)**

11.1.2.7. Acceptance of risks by appropriate authorities. **(T-1)**

11.1.2.8. Tracking of hazards and residual risks throughout the system life cycle. **(T-1)**

11.1.3. Within the System Safety Program, acquisition and sustainment programs must document and periodically review:

11.1.3.1. System Hazard Tracking Logs. These logs shall communicate sufficient information to identify and track the status of each hazard. To ensure appropriate management attention, the status of hazards is required to be presented at program and technical reviews. The System Safety effort supports program and technical reviews with current information of all hazards. The hazard tracking logs must contain the minimum fields required by MIL-STD-882E:

11.1.3.1.1. A hazard description. **(T-1)**

11.1.3.1.2. Unique identification information. **(T-1)**

11.1.3.1.3. Risk assessment information, including the initial assessment, the target risk level, interim assessments, as required, and the final (residual) risk assessment. **(T-1)**

11.1.3.1.4. Information concerning the mitigation action(s). **(T-1)**

11.1.3.1.5. Current status of the risk reduction effort. **(T-1)**

11.1.3.1.6. A record of user concurrence and risk acceptance by appropriate authorities. **(T-1)**

11.1.3.1.7. A link with the PESHE. **(T-1)**

11.1.3.2. Risk Mitigation. Programs shall use the system safety design order of precedence defined in MIL-STD-882E.

11.1.3.2.1. Eliminate hazards through design selection.

11.1.3.2.2. Reduce risk through design alteration.

11.1.3.2.3. Incorporate engineered features or devices.

11.1.3.2.4. Provide warning devices.

11.1.3.2.5. Incorporate signage, procedures, training and PPE.

11.1.3.3. Risk Acceptance. Every hazard that cannot be eliminated must be mitigated to the maximum extent possible and formally accepted by the appropriate level of leadership as specified in DoDI 5000.02, *Operation of the Defense Acquisition System*, and AFI 63-101/20-101, *Integrated Life Cycle Management*. **(T-1)**

11.1.4. Acquisition and sustainment communities implement system safety as an integral part of a System Program Office's systems engineering activity as outlined in AFI 63-101/20-101.

11.1.5. Program Managers are solely responsible for organizing their offices, based on system acquisition program size and complexity, to execute the system safety requirements elaborated in the DoD and Air Force policy in DoDI 5000.02, AFI 63-101/20-101, and MIL-STD-882E, *DoD Standard Practice for System Safety.* Acquisition and Sustainment Program Managers must integrate system safety RM into their program's overall Systems Engineering effort at the Integrated Product Team (IPT) level where day-to-day engineering decisions are being made. This allows System Safety to most effectively influence system design. **(T-1)**

11.1.6. For high risks requiring Component Acquisition Executive (CAE) acceptance or serious risks requiring Program Executive Officer (PEO) acceptance, program managers prepare a written safety risk assessment IAW **Attachment 15** that describes the hazards, predicted risks (stating both consequences and probabilities), available mitigation measures, costs or other limitations, proposed action(s), alternatives, resulting net mishap risk and the total of expected adverse consequences for the period of acceptance. For high risks, coordination with the lead command(s), PEO and AF/SE is required before submission for acceptance. Serious-level safety risk acceptance packages must be coordinated with the lead

commands and HQ AFSEC before assessments are submitted for acceptance. Program managers are required to reassess CAE- or PEO-accepted risks in response to any change that alters the risk level, milestone reviews, key decisions following risk acceptance, or when four years have elapsed since the last risk acceptance. Consideration shall be given to actual incident and loss experiences for the period and advances in mitigation technologies and methods. Revalidated risk assessments are then coordinated and submitted for acceptance by the appropriate authority for the new predicted risk levels.

11.1.6.1. Program risk acceptance packages and tracking are only necessary for those risks that are inside the design/specification/requirement envelope. Those outside the envelope are handled by using the user's/operator's RM process.

11.1.6.2. Program safety offices shall clearly define and document mishap risk acceptance authority during life cycle system decisions. **(T-1)**

11.1.6.3. Risk packages can use the risk matrix defined in MIL-STD-882E and associated probabilities in MIL-STD-882E, Table A-II; however, tailoring of this matrix to the specific programs is permitted. Tailored risk matrices must be approved by the CAE and risk packages must clearly define the matrix parameters used and document CAE aproval. Contracts using previous versions of MIL-STD-882 may continue using those versions for contract purposes; however, new risk acceptance packages must be converted to the MIL-STD-882E matrix and definitions (or an approved tailored matrix and definitions). IAW DoDI 5000.02, the Milestone Decision Authority, or designee, approves tailoring of the MIL-STD-882E Matrix.

11.2. Responsibilities.

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

11.2.1.1. Is the risk acceptance authority for high program safety risks.

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

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

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

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

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

11.2.2.1. Develops System Safety policy and guidance.

11.2.2.2. Reviews and coordinates on the risk acceptance packages for risks classified as High. Evaluates safety risk assessment portions of High and Serious risk acceptance.

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

11.2.2.4. Participates in Air Force Review Boards (AFRBs) and other HAF-level reviews for Acquisition and Sustainment Programs. These reviews are one of the key opportunities to influence System Safety in Acquisition and Sustainment Programs.

11.2.2.5. Represents the Air Force in system safety matters with other DoD components, other government agencies, and other non-government agencies.

11.2.2.6. Collects and consolidates System Safety Group (SSG) recommendations and inputs for the Air Force Operational Safety Council (AFOSC).

11.2.2.7. Requires all system-related Class A and B safety mishap investigation reports include the program office analyses of hazards that contributed to the mishap and program office recommendations for materiel risk mitigation measures, especially those that minimize potential human errors.

11.2.2.8. Develops and implements System Safety training programs and handbooks.

11.2.2.9. Provides advisors and consultants to System Safety Groups.

11.2.2.10. Reviews Air Force technical and management documents (capabilities management documents, program management directives, SSG charters) for inclusion of appropriate safety requirements.

11.2.2.11. Reviews and comments on mishap reports for technical content and lessons learned.

11.2.2.12. Provides members, advisors and consultants to the Non-nuclear Munitions Safety Boards (NNMSB), Laser System Safety Review Board (LSSRB) and safety study groups for terrestrial nuclear reactors. Provides a senior advisor to the chair of the US Air Force Nuclear Weapons System Safety Group (NWSSG). Refer to AFI 91-205, *Nonnuclear Munitions Safety Board*, and AFI 91-102, *Nuclear Weapon System Safety Studies, Operational Safety Reviews, and Safety Rules*.

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

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

11.2.3. Major Commands (MAJCOMs):

11.2.3.1. Major Acquisition Commands (AFMC and AFSPC). These Commands establish and maintain the Air Force's capability to support system safety efforts on major weapon system acquisitions.

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

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

11.2.3.1.3. Keep HQ AFSEC informed of the programmatic changes of the on-going and future acquisition and sustainment programs. Specifically, notifies AFSEC when System Safety managers change programs and when programs change from acquisition to sustainment and which organization is responsible for system safety.

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

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

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

11.2.3.1.7. Air Force Materiel Command (AFMC):

11.2.3.1.7.1. Coordinates system safety across the Centers associated with non-Space Program acquisitions.

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

11.2.3.1.7.3. Facilitates information exchange between program managers, chief engineers, HQ AFSEC and the user to help maintain operational safety of AFMC managed weapon systems and end items.

11.2.3.1.7.4. Ensures HQ AFMC/SES forwards to HQ AFSEC/SEFE not later than 1 November in every even-numbered year, an update to the USAF Aviation Safety Equipment Database in the format described in **Attachment 2,** reflecting fleet status on the last day of the preceding fiscal year.

11.2.3.1.7.5. Chairs System Safety Engineering Analysis (SSEA) efforts as required by each system.

11.2.3.1.8. Air Force Space Command (AFSPC). Ensures launch and on-orbit hazards are identified. Advises inputs to the acquisition framework to ensure system safety is considered throughout the space system life cycle.

11.2.3.2. Operational MAJCOMs.

11.2.3.2.1. Each MAJCOM with acquisition responsibilities must appoint a trained System Safety manager to act as the point of contact to facilitate System Safety matters. MAJCOM Safety Offices and System Safety personnel:

11.2.3.2.1.1. Specify any requirements for safety features that could reduce risk, hazards or their effects. Safety personnel must identify particular safety constraints as early as possible to the Program Office, preferably as a part of a formal requirements document, endorsed by the Lead Command's proponent office for the system. These System Safety constraints could affect the command mission, base locations, unique operational use, support concepts or meteorological operating environments dealing with the weapons system.

11.2.3.2.1.2. Participate as SSG members and System Safety Working Group (SSWG) members, as appropriate. Ensure the Programmatic Environment, Safety and Occupational Health Evaluation (PESHE) includes adequate operational safety criteria. Ensure material mishap recommendations are included in the Lead MAJCOM cycle and efforts/results are addressed by program offices.

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

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

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

11.2.3.2.1.6. Ensure assigned System Safety personnel are properly trained.

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

11.2.4. Program Executive Officers (PEOs) ensure that programs within their portfolios are integrating ESOH concerns into the overall systems engineering process using the system safety methodology in MIL-STD-882E, as required by DoDI 5000.02 and AFI 63-101/20-101. They perform periodic program and technical reviews of programs within their portfolios. These required reviews include the results of each program's System Safety and safety RM efforts. This ensures that System Safety is overseen alongside other cost, schedule, and performance issues. Finally, PEOs serve as acceptance authorities for program safety risks classified "Serious."

11.2.5. Acquisition and Sustainment Program Managers:

11.2.5.1. Program managers ensure that ESOH concerns are integrated into the overall systems engineering process using the system safety methodology in MIL-STD-882E as required by DoDI 5000.02 and AFI 63-101/20-101. **(T-1)**

11.2.5.2. Program offices must clearly define, document and adapt safety risk assessment matrices and tables using MIL-STD-882E guidance and hazard analyses, that detail: probability and severity levels, and specifies the approval authorities that will be used to manage risk to major systems/functions within their specific program(s). For example, MIL-HDBK-516B, *DoD Handbook Airworthiness Certification Criteria*, defines major functions for air vehicles; program managers for other enterprise items may develop similar breakouts to define major systems/functions for their specific items, i.e., 90- and 91-series publications and others may aid the practitioner in establishing meaningful discipline-specific risk criteria, e.g., nuclear weapons, space, AFOSH standards. Risk acceptance will be IAW DoDI 5000.02 and any tailoring of MIL-STD-882E shall be accomplished IAW DoDI 5000.02 and AFI 63-101.

11.2.5.3. Program offices must document and report status of all high and serious safety risks as part of their RM. This information is also required to be documented in the PESHE. Current High- and Serious-level safety risks must be presented at each Program and Technical Review. The PESHE should link to the program's hazard tracking logs to maintain currency of lifecycle ESOH hazards. **(T-1)**

11.2.5.4. For High and Serious risks, program managers must prepare a written risk decision package describing the hazards, predicted risks (stating both consequences and probabilities), available mitigation measures, costs or other limitations, proposed action(s), alternatives, resulting net mishap risk and the total expected consequences for the period of acceptance. **Attachment 15** guidance is mandatory for High and Serious risk acceptance packages and recommended for all other risk assessments.

11.2.5.4.1. High-level safety risk acceptance packages must be coordinated with the lead commands and AF/SE before assessments are submitted for acceptance. Serious-level safety risk acceptance packages must be coordinated with the lead commands and HQ AFSEC before assessments are submitted for acceptance. Programs that interface with or carry weapons should also notify and coordinate applicable High/Serious risk packages with the NNMSB and the NWSSG, as applicable. **(T-1)**

11.2.5.4.2. Program managers must reassess CAE- or PEO-accepted risks in response to any change that alters the risk level, milestone reviews, key decisions following approval, or four years have elapsed since the last risk assessment. Reassessments should consider actual incident and loss experiences for the period and advances in mitigation technologies and methods. Revalidated risk assessments must be coordinated and submitted for acceptance by the appropriate authority for the new predicted risk levels. **(T-1)**

11.2.5.4.3. Risk packages will use the risk matrix defined in MIL-STD-882E. Contracts using previous versions of MIL-STD-882E may continue using those versions for contract purposes; however, new risk acceptance packages must be converted to the MIL-STD-882E matrix and definitions. Any tailoring of MIL-STD-882E shall be accomplished IAW DoDI 5000.02 and AFI 63-101/20-101. **(T-1)**

11.2.5.4.4. Program managers should assess safety risks associated with modifications using the methodology outlined in **Attachment 15.**

11.2.5.5. IAW AFI 63-101, all system-related Class A and B mishap investigation reports must include the Program Manager analysis of hazards that contributed to the accident and recommendations for materiel risk mitigation measures, especially those that minimize the potential for human errors. **(T-1)**

11.2.5.6. The PM shall provide safety releases containing all identified hazards, implemented mitigation measures and accepted risks to developmental and operational testers as part of testing and fielding new or modified systems or end items prior to any test involving personnel. As a minimum, the safety release will contain the information in **Attachment 16,** *Safety Release,* of this AFI. **(T-1)**

11.2.6. System Safety Managers (SSMs) and Engineers monitor operational experience, mission changes, environmental effects or system modifications to identify and correct hazards throughout the life cycle of a system or facility. When a program (e.g., an aircraft or a space vehicle) has an embedded sub-program (e.g., an aircraft engine or hosted payload), which could create inter-related safety risk at the higher system level, both program managers will ensure their Systems Engineering Plans include processes to identify inter-related safety risks and to integrate RM and mitigation efforts for safety risks. **(T-1)**

11.2.6.1. When assigned to Program Offices, SSMs and System Safety Engineers (SSEs):

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

11.2.6.1.2. Will complete a MAJCOM-approved System Safety Course within 90 days of initial assignment to a system safety position. Safety offices must document reasons for assigned individuals who have not completed training within 120 days of assignment. **(T-1)**

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

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

11.2.6.1.5. Participate in the development and maintenance of the Programmatic Environment, Safety, and Occupational Health Evaluation (PESHE) document. **(T-1)**

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

11.2.6.1.7. Identify and assess safety hazards and risks throughout the program life. Ensures safety portions of PESHE are current and coordinated through the Center System Safety Manager (CSSM). Annually report safety RM policies, accepted mishap risks and those that require PEO or higher action for their program to the Center system safety manager IAW paragraph **11.2.7.2.7** **(T-1)**

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

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

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

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

11.2.6.1.12. When appropriate, develop operating limits and other safety risk mitigation measures in concert with the lead, using or operational commands. System Safety personnel must identify and document particular safety constraints as early as possible. **(T-1)**

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

11.2.6.1.14. Prepare formal risk assessment packages for acceptance at the appropriate level IAW **Attachment 15,** DoDI 5000.02, AFI 63-101/20-101 and MIL-STD-882E. **(T-1)**

11.2.6.1.15. Ensure System Safety requirements are clearly defined within the Systems Engineering process for their program. **(T-1)**

11.2.6.1.16. As part of the preparations for fielding new or modified systems, ensure AFOTEC, using commands and Air Force Sustainment Center Chief of Safety (AFSC/SE) are provided with a listing of all high and serious safety risks, their mitigation measures, mishap risk assessments, residual hazards and risk acceptance documentation. **(T-1)**

11.2.6.1.17. Identify budget requirements that support mishap investigations and corrections of deficiencies in support of their program. **(T-1)**

11.2.6.1.18. Provide updates to the USAF Aviation Safety Equipment Database no later than 1 November in every even-numbered year to HQ AFMC/SES reflecting fleet status on the last day of the preceding fiscal year. **Attachment 2** contains the required information and format. **(T-1)**

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

11.2.6.2.1. AFMC Centers will have a trained full-time CSSM in the center safety office, unless waived by HQ AFMC/SES. SMC will appoint a trained full-time CSSM unless waived by HQ AFSPC/SE. The CSSM should be level II acquisition certified.

11.2.6.2.2. Each laboratory technical directorate and test center will have a trained SSM in the laboratory/test center safety office. (The laboratory/test CSSM can be a part-time individual, depending on the local system safety efforts.) If a center/laboratory has a full-time system safety staff, the chief of this staff will be the CSSM or laboratory SSM. All center/laboratory SSMs will document safety criteria and hazard identification and resolution for in-house and for contractual programs. CSSMs will identify program/project documents to be coordinated by the center/laboratory SSM. **(T-1)**

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

11.2.6.2.4. CSSMs or their designated staff members will be members or advisors of SSGs and Materiel Safety Task Groups (MSTGs) and Configuration Control Boards (CCBs). (Full-time SSMs may represent system safety in lieu of the CSSM on program-unique CCBs, MSTGs, and SSGs.) **(T-1)**

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

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

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

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

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

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

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

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

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

11.2.7. Units.

11.2.7.1. Ensure the unit RM effort uses Program Manager's System Safety hazard information in its risk assessments.

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

11.2.7.3. Coordinate issues affecting System Safety with the MAJCOM Weapon System Representative, the Program Office, the System Safety Group and HQ AFSEC, as appropriate.

11.2.8. Test Organizations. During both development and operational test and evaluation, test organizations will review and validate program office risk assessments for hazards that were not eliminated through redesign. The test organizations and AFOTEC will provide the

using commands with their recommendations on program office risk assessments. The test organizations and AFOTEC will provide to the program office a summary of the test hazards and the mitigating actions for all test hazards.

11.3. System Safety Groups (SSG). In addition to the day-to-day systems engineering and system safety activities, program offices should use SSGs to collect and cross feed user inputs/insights into the program's System Safety efforts and to provide all a view of all safety issues currently in work. SSG members are detailed in paragraph **11.3.3**

11.3.1. All aircraft and space programs on the acquisition master list (AML) are required to conduct SSGs. Programs for subordinate systems used on aircraft or space systems shall address system safety issues within the SSG for the aircraft or space systems in which they are to be integrated, and are not required to have separate SSGs. Separate SSGs are not typically required for programs covered under AFI 91-102, *Nuclear Weapon System Safety Studies, Operational Safety Reviews, and Safety Rules*, AFI 91-205, *Nonnuclear Munitions Safety Board*, or AFI 91-401, *Directed Energy Weapon Safety*. SSGs are optional for all other programs not previously addressed. HQ AFSEC will maintain a list of aircraft and space programs that conduct SSGs.

11.3.2. The program manager, deputy program manager or chief engineer chairs the SSG. SSGs meet at least annually as scheduled by the chair. In addition, any member of the SSG may request the chair call a meeting. Meetings may be waived with concurrence of all required attendees. Each SSG will address the following as appropriate:

11.3.2.1. Program status. **(T-1)**

11.3.2.2. Fleet safety assessment. **(T-1)**

11.3.2.3. Analyses of major safety design trade-offs and modifications. Analysis will include risk hazard indices, proposed corrective actions and their effect and status. **(T-1)**

11.3.2.4. Status of planned, pending, active and disapproved safety modifications. **Attachment 15** has guidelines and considerations for modification planning and risk assessment. **(T-1)**

11.3.2.5. Safety investigation recommendations affecting the system. A discussion of High Accident Potential (HAP) reports that have occurred since the last meeting. **(T-1)**

11.3.2.6. User/operator issues. **(T-1)**

11.3.2.7. Safety risk mitigation options. **(T-1)**

11.3.2.8. Unmitigated hazards. **(T-1)**

11.3.2.9. System Safety program scope, including contractual requirements and deliverable System Safety data. **(T-1)**

11.3.2.10. Overall safety assessments, especially before milestone reviews. **(T-1)**

11.3.2.11. Major modifications or engineering change proposals. **(T-1)**

11.3.2.12. The need to establish SSWGs as necessary to work detailed System Safety issues. (T-1)

11.3.2.13. Making safety recommendations during design, development, test, operations, sustainment and disposal. **(T-1)**

11.3.2.14. Assigning mishap risk indices to each SSG discussion and action item. **(T-1)**

11.3.2.15. Aircraft Information Program status to emphasize the collection and analysis of safety data. **(T-1)**

11.3.3. The SSG develops and coordinates the SSG charter. The SSG charter will address the purpose and scope, mandatory membership, operating procedures and administration of the group. All mandatory members must commit to supporting SSG meetings and must sign the charter. Minimum mandatory membership includes the Chairperson (Program Manager, Deputy or Chief Engineer), Program System Safety Manager/Engineer/Officer (as appropriate, Center System Safety Manager, AFSEC, HQ AFMC/SE (for non-space systems), HQ AFSPC/SE (for space systems), the Lead MAJCOM safety office, AFOTEC and the Lead MAJCOM user representative. Optional, advisory members include SAF/AQRE, the contractor system safety manager, program engineering staff (as needed based on issues at hand), Space Launch Ranges, and other DoD and industry organizations (as appropriate) as determined by mandatory members. **(T-1)**

11.3.4. Within 30 working days, SSG minutes shall be sent to all SSG members and advisors and to SAF/AQR, AFMC/EN or SMC/EN (as applicable), HQ AFSEC, HQ AFSPC/SE or HQ AFMC/SE (as applicable), AFOTEC/SE, and the owning command. **(T-1)**

11.3.5. SSG recommendations that require capability changes or materiel modifications by the program office must be validated and documented IAW the process and criteria outlined in AFI 10-601.

11.4. Networks, Automated Information Systems, and Non-Developmental Items. Program managers are required to conduct a System Safety analysis appropriate for the system or item. For non-developmental items, the analysis should review usage history, verify intended use similarities, evaluate differences, and plan for adequate safety evaluation for all Air Force-unique modifications or changes in use. This System Safety review should be accomplished by the procuring/buying agency that is in the best position to assess the intended use and necessary modification. For example, Federal Aviation Regulation (FAR) certification requirements are incrementally implemented and may not apply to all models or year groups of similar aircraft. Operations from military fields and or with military support equipment provide unique hazard opportunities that may not have been considered in the original design. Exercise care in accepting FAA certification as a sufficient indication for safety of the design.

11.5. System Safety Engineering Analysis (SSEA). The SSEA program evaluates new operations that are currently prohibited due to the perceived risks (e.g., aircraft hot refueling, concurrent servicing operations, concurrent servicing operations supporting combat sortie generation and wet wing/rapid defueling operations). Based upon the successful demonstration and evaluation, approval may be granted to use the operation/procedures.

11.5.1. 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 AFSEC and the developing/supporting and operational commands. At the discretion of the SSEA Team

Chief, low-risk SSEAs may be done via the in-house "tabletop" method without a demonstration.

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

11.5.2.1. A complete description of the proposed operation.

11.5.2.2. Justification for accepting the increased risk.

11.5.2.3. Recommended location and dates for the SSEA demonstrations.

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

11.5.3. The SSEA team reports the results of the analysis, including operational concepts, system descriptions, risk assessments, hazard analyses, descriptions of the demonstrations, and conclusions and recommendations to the requester.

Chapter 12

HAZARD ABATEMENT

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

12.2. Responsibilities.

12.2.1. Each installation establishes a program to abate hazards based on a priority system. **(T-2)**

12.2.2. Commanders, supervisors and employees at all levels are responsible for abating hazardous conditions. **(T-2)**

12.2.3. Commanders protect national resources, both human and material, and have the responsibility to take action in implementing safety measures. **(T-2)**

12.2.4. Functional managers correct hazards in their areas of responsibility. **(T-2)**

12.2.5. The safety office helps commanders assess and prioritize abatement actions and provide the commander with follow-up support until the hazard is eliminated. **(T-2)**

12.2.6. Send projects beyond the capability of local commanders to the parent MAJCOM/FOA/DRU.

12.3. Planning and Engineering. Use RM processes during the planning, design and execution phases to identify and eliminate hazards as early as possible when they will have the least cost and operational impact on the program. Continually review plans, specifications and drawings to identify and eliminate hazards until the equipment or workplace is operating with acceptable risk levels. Reevaluate risk assessments when any factor applied in the decision-making process changes. **(T-2)**

12.4. 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. **(T-2)**

12.5. Hazard Elimination Hierarchy. The hierarchy provides a systematic way to determine the most effective feasible method to reduce risk associated with a hazard. The types of hazards employees are exposed to, the severity of the hazards and the risk the hazards pose to employees should all be considered in determining methods of hazard prevention, elimination and control.

12.5.1. In general, the following hierarchy should be followed in determining hazard elimination/mitigation and control methods:

12.5.1.1. Elimination.

12.5.1.2. Substitution of less hazardous materials, processes, operations, or equipment.

12.5.1.3. Engineering controls.

12.5.1.4. Warnings.

12.5.1.5. Administrative controls.

12.5.1.6. PPE as determined by an hazard analysis. **Note:** PPE should be used when all other hazard controls have been exhausted or more significant hazard controls are not feasible.

12.5.2. Feasible application of this hierarchy of controls shall take into account:

12.5.2.1. The nature and extent of the risks being controlled.

12.5.2.2. The degree of risk reduction desired.

12.5.2.3. The requirements of applicable local, federal, and state statutes, standards and regulations.

12.5.2.4. Recognized best practices in industry.

12.5.2.5. Available technology.

12.5.2.6. Cost-effectiveness.

12.5.2.7. Internal organization standards.

12.5.3. When controlling a hazard, first consider methods to eliminate the hazard or substitute a less hazardous method or process. This is best accomplished in the concept and design phases of any project. If this is not feasible, engineering controls such as machine guards and ventilation systems should be considered. This process continues down the hierarchy until the highest-level feasible control is found. Often, a combination of controls is most effective. In cases where the higher order controls (elimination, substitution and implementation of engineering controls) do not reduce risk to an acceptable level, lower order controls, e.g., warnings, administrative controls, or personal protective equipment, will be used to complement engineering controls to reduce risks to an acceptable level. **(T-2)**

12.5.3.1. Design for Minimum Risk (Engineering). Engineering controls are the preferred method of reducing exposure to hazards, but are not always feasible. Following are examples of engineering controls that can be implemented.

12.5.3.1.1. Substitution of a less hazardous material.

12.5.3.1.2. Change process to minimize exposure to a hazard.

12.5.3.1.3. Isolation or enclosure of a process.

12.5.3.1.4. Ventilation of a work area.

12.5.3.1.5. Use of local exhaust, i.e., fume hoods.

12.5.3.1.6. Reduce energy potential, e.g., use a lower voltage/amperage device.

12.5.3.2. Incorporate Safety Devices. Safety devices include such features as machine guards, lockouts/interlocks and limiting switches.

12.5.3.3. Provide Warning Devices. Warning devices are typically audible/aural/sensory features that alert one of a hazard.

12.5.3.4. Develop Procedures and Training.

12.5.3.4.1. Administrative. Administrative control methods, such as adjusting work schedules, good housekeeping or encouraging best work practice can reduce hazard exposures. Provide written guidance (e.g., TO notes/warnings/cautions) and training.

12.5.3.4.2. Personal Protective Equipment (PPE). PPE is determined by hazard identification in hazard analysis. PPE should be used when all other hazard controls have been exhausted or more significant hazard controls are not feasible.

12.5.4. When engineering controls have been studied, investigated and implemented, yet still do not bring employees' exposure levels to below permissible exposure limits, or when engineering controls are determined to be infeasible, then a combination of controls must be applied and followed by all affected parties. **(T-2)**

12.6. Hazard Abatement Requirements. To abate hazardous conditions:

12.6.1. Abate hazards in military-unique equipment and processes through established systems for modification and upgrade, e.g., Product Quality Deficiency Reporting Program (T.O. 00-35D-54, *USAF Deficiency Reporting, Investigation, and Resolution*), and Flight Manual Changes (AFI 11-215, *Flight Manual Procedures*). Additionally, when possible, use the same criteria specified in paragraphs **12.6.2.1 – 12.6.4.7**

12.6.2. Hazard abatement in nonmilitary-unique workplaces must:

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

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

12.6.3. Select an abatement method and, if possible, interim control measures based on the hierarchy outlined in paragraph **12.5** **Note:** Assigned RAC will remain until completely abated even though interim control measures are in effect.

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

12.6.4.1. Impact to mission.

12.6.4.2. Technical feasibility and cost of available options.

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

12.6.4.4. Previous mishap experience.

12.6.4.5. Future use of workplaces or equipment.

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

12.6.4.7. Interim control measures in effect.

12.6.5. **Attachment 6** through **9** provide additional instructions for assigning RACs, determining abatement priority numbers, and completing AF Forms 3 and 1118.

12.7. Critical/Imminent Danger Situations. Anyone identifying a critical/imminent danger situation will immediately bring it to the attention of the commander and supervisor in charge. Commanders or supervisors must take immediate action to eliminate or control the hazard or cease operations and withdraw exposed personnel until the situation is safe. **(T-2)**

12.8. Posting Notification of Hazards. The fire, safety or health officials complete the AF Form 1118 identifying RAC 1, 2 and 3 hazards according to **Attachment 8** and forward to the

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

12.8.1. Location. Post AF Form 1118 on, at or as near as possible to the hazard. However, where the nature of the hazard or workplace is such that this is not practical, post notices in a prominent place where all employees can see them. The workplace supervisor must ensure the posted AF Form 1118 is maintained in good condition and employees are kept informed of any changes. If adverse conditions are present, enclose the notice in a suitable protective cover. **(T-2)**

12.8.2. Removal. The issuing office will be the authority to remove a posted AF Form 1118, *Notice of Hazard.* Removal of notices will only occur after the hazard has been corrected, or three (3) working days (excluding weekends and federal holidays), whichever is later, following validation by the issuing authority. **(T-2)**

12.9. Installation Master Hazard Abatement Plan (MHAP). Commanders/Functional Managers will ensure all identified RAC 1, 2 and 3 hazards are entered into the formal installation MHAP. **(T-2)**

12.9.1. Those RAC 1, 2 or 3 hazards will be entered on an AF Form 3 IAW **Attachment 9.** Safety, fire or health officials assist functional managers in preparation of the AF Form 3. After commander/functional manager approves and signs the AF Form 3, send to the installation safety office. **(T-2)**

12.9.2. The host installation safety staff maintains the installation MHAP. The MHAP consists of the following:

12.9.2.1. A fiscal year log of all RAC 1, 2 and 3 items.

12.9.2.2. A complete set of AF Form 3s and AF Form 1118s from across the installation.

12.9.2.3. Other related or supporting documentation.

12.9.2.4. The signed approval called for in paragraph **12.9.5** or a cross reference to the appropriate ESOHC minutes if the option is used to track commander approval via the ESOHC.

12.9.3. Squadron commanders or functional managers will conduct a semiannual review of AF Form 3s pertaining to their areas of responsibilities and reflect that review in Block 22 of the AF Form 3. **(T-2)**

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

12.9.3.2. Completed hazard abatement projects must be certified by the appropriate agency; safety, fire, or health, to ensure the hazard was abated properly. Certification in

this particular instance means the appropriate official has performed a site visit to verify the hazard has been fully abated. **(T-2)**

12.9.4. The ESOHC will review open MHAP items at least once a year. They will address project delays and other problems during each ESOHC. The ESOHC minutes will reflect the review and delays or problems respectively. **(T-2)**

12.9.5. Annually, the COS will send a written copy of the MHAP to the installation commander for review and approval of priorities for projects. The copy sent to the commander will include a cover letter addressing the purpose of the review and description of the request for the commander's review and signature. The package will include a list of all open plan entries and those closed since the last annual review. The open list will be prioritized by RAC and Abatement Priority number (APN). See **Attachment 7. Note:** Locations utilizing the AF and MAJCOM/FOA/DRU level Risk models which are included in scheduled Facilities Utilization Boards (FUBs) and ESOHC meets the intent of this paragraph and that of **Attachment 12.9.2.4** **(T-2)**

12.9.6. The host safety office will make the MHAP available for review locally by representatives of recognized employee organizations, if such organizations exist. **(T-2)**

12.9.7. MAJCOM/FOA/DRU ground safety personnel will send copies of AF Form 3s received from subordinate installations or units to HQ AFSEC/SEG and AFMOA/ SG3P or AFCEC/DF, if appropriate, when MAJCOM funding authority for abatement action is exceeded.

12.9.8. RAC 4 and 5 hazards are not part of the installation MHAP. Safety staffs, including tenant units, will track RAC 4 and 5 hazards until closed. AF Form 3 or AF Form 1118 is optional for RACs 4 and 5. MAJCOM/FOA/DRU may delineate additional tracking requirements.

12.9.9. Once a hazard is transferred to the MHAP (RACs 1 – 3) or the RAC 4 and 5 tracking mechanism, close out applicable source hazard report or inspection report. **(T-2)**

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

12.10.1. Incorporate safety, fire and health requirements into repair and construction projects. For projects that exceed local funding authority, follow requirements in AFI 32-1021, *Planning and Programming Military Construction (MILCON) Projects*, or AFI 32-1032, *Planning and Programming Appropriated Fund Maintenance, Repair, and Construction Projects*, as applicable, and send projects to the parent MAJCOM for centralized programming. Identify the portion of project cost attributable to hazard abatement. **(T-2)**

12.10.2. Civil Engineering provides actual cost data for abatement of hazards in workplaces and real property installed equipment to the functional manager. The functional manager consolidates the information and sends it to the installation safety staff at least once a year for centralized reporting. **(T-2)**

12.11. End of Year Annual Hazard Abatement Survey Report. At the beginning of each new fiscal year AFSEC/SEG will send a data call for the end of year hazard abatement information required to complete the DoD report called for within DoDI 6055.01. This data call will be sent to each MAJCOM/FOA/DRU for subsequent distribution to their subordinate units that serve as the host installation safety office. Each host installation safety manager obtains information from installation civil engineering and functional managers in order to submit the data call back to their higher headquarters, who will, in turn, compile the results and send the composite product back to AFSEC/SEG within the suspense date assigned. FOAs and DRUs are not to submit the annual survey report if the host installation reports their hazard abatement actions through a MAJCOM. At joint bases where the Air Force is not the lead, the Air Force office will complete the data sheet to reflect only the Air Force specific hazards on the installation Master Hazard Abatement Plan or its equivalent. **(T-2)**

KURT F. NEUBAUER
Major General, USAF
Chief of Safety

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

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AF Form 651, *Hazardous Air Traffic Report (HATR)*

AF Form 860B, *Civilian Progress Review Worksheet*

AF Form 1118, *Notice of Hazard*

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AF Form 4391, *High-Risk Activities Worksheet*

AF Form 4392, *Pre-Departure Safety Briefing*

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AF Form 847, *Recommendation for Change of Publication*
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AF Form 1754, *Job Capability and Safety Analysis (LRA)*
FORM CA-10, What A Federal Employee Should Do When Injured At Work

Abbreviations and Acronyms

ACC—Air Combat Command

ADLS—Air Force Distributed Learning Service

ADWSR—Additional Duty Weapons Safety Representative

AEF—Air Expeditionary Force

AETC—Air Education and Training Command

AEW/G—Air Expeditionary Wing/Group

AFCEC—Air Force Civil Engineering Center

AFCFM—Air Force Career Field Manager

AFCMRS—Air Force Combined Mishap Reduction System

AFECD—Air Force Enlisted Classification Directory

AFFARS—Air Force Federal Acquisition Regulation Supplement

AFFOR—Air Force Forces

AFDW—Air Force District of Washington

AFGSC—Air Force Global Strike Command

AFI—Air Force Instruction

AFJMAN—Air Force Joint Manual

AFMAN—Air Force Manual

AFMC—Air Force Materiel Command

AFMOA—Air Force Medical Operations Agency

AFMS—Air Force Manpower Standard

AFMSA—Air Force Medical Support Agency

AFOSC—Air Force Operational Safety Council

AFOSH—Air Force Occupational Safety and Health

AFOTEC—Air Force Operational Test Evaluation Center

AFPAM—Air Force Pamphlet

AFPC—Air Force Personnel Center

AFPD—Air Force Policy Directive

AFRC—Air Force Reserve Command

AFRIMS—Air Force Records Information Management System

AFSAS—Air Force Safety Automated System

AFSC—Air Force Specialty Code

AFSEC—Air Force Safety Center

AFSMS—Air Force Safety Management System

AFSOC—Air Force Special Operations Command

AFSPC—Air Force Space Command

AFTO—Air Force Technical Order

AHAS—Avian Hazard Advisory System

AMA—Aircraft Movement Area

AMC—Air Mobility Command

AMIC—Aircraft Mishap Investigation Course

AMIP—Aircraft Mishap Investigation and Prevention

AML—Acquisition Master List

ANG—Air National Guard

ANSI—American National Standards Institute

AOF—Airfield Operations Flight

AOPA—Aircraft Owner's and Pilot's Association

AOPT—Aerospace and Operational Physiology Training

AOR—Area of Responsibility

APN—Abatement Priority Number

ARCCOS—Air Reserve Component Chief of Safety

ART—Air Reserve Technician

AS—Allowance Standards

ASAP—Airman Safety Action Program

ASPM—Aviation Safety Program Manager

ATC—Air Traffic Control

ATIS—Automated Terminal Information Service

BAM—Bird Avoidance Model

BASH—Bird/Wildlife Aircraft Strike Hazard

BE—Bioenvironmental Engineering

BHWG—Bird Hazard Working Group

BIA—Bilateral Infrastructure Agreements

BWC—Bird Watch Condition

C—Celsius

CAE—Component Acquisition Executive

CAMS—Core Automated Maintenance System

CAS—B—Combat Automated System – Base

CCB—Configuration Control Board

CCIP—Commander's Inspection Program

CCIR—Commander's Inspection Report

CDD—Capability Development Document

CEI—Cost Effectiveness Index

CEU—Continuing Education Unit

CFR—Code of Federal Regulations

CIP—Common Installation Picture

CMAVs—Controlled Movement Aerial Violations

COMMAFOR—Commander, Air Forces

CONOPS—Concept of Operations

COR—Contracting Officer's Representative

COS—Chief of Safety

CPD—Capability Production Document

CSSM—Center System Safety Manager

DAO—Designed Acquisition Officials

DART—Days Away Restricted and/or Transfer Case

DASHO—Department of the Air Force's Designated Agency Safety and Health Officer

DDESB—Department of Defense Explosives Safety Board

DEW—Directed Energy Weapons

DEWCB—Directed Energy Weapons Certification Board

DFARS—DoD Federal Acquisition Regulation Supplement

DoD—Department of Defense

DoDD—Department of Defense Directive

DoDI—Department of Defense Instruction

DOE—Department of Energy

DOEHRS—Defense Occupational and Environmental Health Readiness System

DoL—Department of Labor

DRF—Disaster Response Force

DRU—Direct Reporting Unit

DUI—Driving Under the Influence

DUSD—Deputy Undersecretary of Defense

DWI—Driving While Intoxicated

EESOH-MIS—Enterprise, Environmental, Safety and Occupational Health Management Information System

EMS—Environmental Management System

EOC—Emergency Operation Center

ESOH—Environmental Safety and Occupational Health

ESOHC—Environmental, Safety, and Occupational Health Council

F—Fahrenheit

FAA—Federal Aviation Administration

FAR—Federal Aviation Regulation

FAR—Federal Acquisition Regulation

FBO—Fixed Base Operations

FDT&E—Force Development, Test and Evaluation

FECA—Federal Employees' Compensation Act

FES—Fire Emergency Services

FGS—Final Governing Standards

FOA—Field Operating Agency

FOD—Foreign Object Damage

FOUO—For Official Use Only

FSDO—Flight Standards District Officer

FSM—Flight Safety Manager

FSNCO—Flight Safety Non-Commission Officer

FSO—Flight Safety Officer

FUB—Facilities Utilization Board

GCC—Geographic Combatant Command

GMV—Government Motor Vehicle

GO81—CAMS for Mobility

GOCO—Government-Owned, Contractor Operated

GSCC—Ground Safety Corporate Committee

GSM—Ground Safety Manager

GSU—Geographically Separated Unit

HAF—Headquarters Air Force

HAFMD—Headquarters Air Force Mission Directive

HAP—High Accident Potential

HATR—Hazardous Air Traffic Report

HAZMAT—Hazardous Material

HIPAA—Health Insurance Portability and Accountability Act

HMIRS—Hazardous Material Information Resources System

HNFA—Host Nation Funded Construction Agreements

HQ—Headquarters

HRA—High-Risk Activities

HRB—Hazard Review Board

HSI—Human System Integration

IAW—In Accordance With

ICD—Initial Capabilities Document

ICPA—Injury Compensation Program Administration

IEMP—Installation Emergency Management Plan

IG—Inspector General

IGEMS—Inspector General Evaluation Management System

IH—Industrial Hygiene

IHMP—Installation Hazardous Material Management Program

IMDS—Integrated Maintenance Data System

IPT—Integrated Product Team

ISB—Interim Safety Board

IT—Information Technology

JRFL—Joint Restricted Frequency List

JSA—Job Safety Analysis

JSTO—Job Safety Training Outline

JSUPT—Joint Specialized Undergraduate Pilot Training

LDTO—Lead Developmental Test Organization

LF—Launch Facility

LOSA—Line Operations Safety Audit

LSO—Launch Safety Officer

LSSRB—Laser System Safety Review Board

MACA—Midair Collision Avoidance

MAF—Missile Alert Facility

MAF LOG C2—Mobility Air Force Logistics Command and Control

MAJCOM—Major Command

MDS—Mission Design Series

MFOQA—Military Flight Operations Quality Assurance

MFT—Multi-Functional Team

MI—Management Inspection

MILCON—Military Construction

MICT—Management Internal Control Toolset

MIL STD—Military Standard

MINA—Mishap Investigation Non-Aviation

MLC—Medical Law Consultant

MHAP—Master Hazard Abatement Plan

MMHE—Munitions Maintenance Handling Equipment

MOA—Memorandum of Agreement

MRRT—Munitions Rapid Response Team

MRT—Mission Readiness Training

MRTFB—Major Range and Test Facility Base

MSTG—Materiel Safety Task Group

MTF—Medical Treatment Facility

MTR—Military Training Routes

NAF—Non-Appropriated Funds

NAF—Numbered Air Force

NAICS—National American Industry Classification System

NATO—North Atlantic Treaty Organization

NEC—National Electrical Code

NFPA—National Fire Protection Association

NGB—National Guard Bureau

NIOSH—National Institute for Occupational Safety and Health

NNMSB—Non-Nuclear Munitions Safety Board

NSC—National Safety Council

NWSSG—Nuclear Weapons Systems Safety Group

OA—Operations Analysis

OCR—Office of Collateral Responsibility

OEBGD—Overseas Environmental Baseline Guidance Document

OJT—On-the-Job Training

OL—Operating Location

OPLANS—Operational Plans

OPM—Office of Personnel Management

OPR—Office of Primary Responsibility

OSA—Organizational Safety Assessments

OSD—Office of the Secretary of Defense

OSHA—Occupational Safety and Health Administration

OT&E—Operational Test and Evaluation

PACAF—Pacific Air Force

PDCA—Plan, Do, Check, Act

PDO—Publishing Distribution Office

PE—Program Evaluation

PEO—Program Executive Officer

PERSCO—Personnel Support for Contingency Operations

PESHE—Programmatic, Environment, Safety and Occupational Health Evaluation

PH—Public Health

PIT—Pilot Instructor Training

PM—Program Manager

PME—Professional Military Education

PMR—Program Management Review

PMV—Private Motor Vehicle

POC—Point of Contact

POL—Petroleum, Oils and Lubricants

PPE—Personal Protective Equipment

PWS—Performance Based Work Statement

RAC—Risk Assessment Code

RAV—Risk Assessment Visit

RCO—Range Control Officer

RDS—Records Disposition Schedule

RDT&E—Research, Development, Test and Evaluation

RM—Risk Management

ROA—Range Operating Authority

RSO—Range Safety Officer

RTRM—Real-Time Risk Management

SAFSO—Squadron Assigned Flight Safety Officer

SAR—Safety Assessment Report

SAT—Safety Analysis Team

SAV—Staff Assistance Visit

SDS—Safety Data Sheets

SEI—Special Experience Identifier

SGP—Chief of Aerospace Medicine

SIB—Safety Investigation Board

SMC—Space and Missile System Center

SME—Subject Matter Expert

SOF—Status of Forces

SOFA—Status of Forces Agreement

SOH—Safety and Occupational Health

SPE—Safety Program Evaluation

SSAC—Senior Safety Advisory Council

SSEA—Systems Safety Engineering Analysis

SSHA—System Safety Hazard Analysis

SSG—Systems Safety Group

SSM—System Safety Manager

SSO—Space Safety Officer

SST—Supervisor Safety Training

STANAG—Standardization Agreement

TCIR—Total Case Incident Rate

TDY—Temporary Duty

TO—Technical Order

TTP—Tactics, Techniques and Procedures

UEI—Unit Effectiveness Inspection

UMD—Unit Manning Document

US—United States

USR—Unit Safety Representative

USAF—United States Air Force

USAFA—United States Air Force Academy

USAFE—United States Air Force Europe

UTM—Unit Training Manager

VFR—Visual Flight Rules

VI—Visual Information

VPP—Voluntary Protection Program

WSM—Weapons Safety Manager

WWW—World-Wide Web

Terms

Airmen—All-encompassing term used to indicate all Department of the Air Force members, both uniformed military and government civilian employees.

Air Force Hazard Communication Program (AFHCP)—Implementation of the Hazard Communication Standard (29 CFR 1910.1200) and AFI 90-821, *Hazard Communication*. The purpose of the AFHCP is to reduce the incidence of chemically induced illnesses and injuries. It informs employees of the hazards and proper preventive measures to be taken when using or handling hazardous materials in the workplace.

Air Force Occupational Safety and Health (AFOSH)—-An overarching term for the Air Force Occupational Safety and Health Program.

Air Force Occupational Safety and Health (AFOSH) Standards—-48-series written standards prescribing occupational health guidance.

Air Force Safety Management System (AFSMS)—It is the framework upon which the USAF mishap prevention program is built. Provides organizations with an effective framework for continual improvement of safety performance. It enables organizations ability to minimize risks and reduce the occurrence and cost of injuries, illnesses, fatalities and property damage. The system requires goal setting, planning, executing and measuring performance to be successful.

Air Reserve Component (ARC)—Used when referring to both the AFRC and ANG as one entity. All units, organizations, and members of the ANG and AFRC (10 U.S.C. 261) on active duty, on active duty for training, or in drill status, and ANG and AFRC technicians; include ANG and AFRC property and equipment.

Annual Safety Inspection—Method to identify workplace/facility hazards used by safety staffs at the wing and below level. These are conducted by qualified safety personnel annually on all workplaces and facilities.

Annual Safety Management Review—An examination of the mishap prevention program at all levels of execution to evaluate the safety management system and the performance of programs or elements managed within the system. The review is performed by senior leadership and safety professionals to ensure the system continues to be suitable, adequate and effective for its intended purposes, and for making decisions or authorizing actions that need to be taken by staff to ensure the continuous improvement of one or more of its programs or elements.

Area of Responsibility (AOR)—Theater of operations for Combatant Command missions and operations such as US Central Command (USCENTCOM), US Northern Command (USNORTHCOM), US European Command (USEUCOM), US Pacific Command (USPACOM) or US Southern Command (USSOUTHCOM).

Convening Authority—The individual who has the authority to order a safety investigation. For additional guidance, refer to AFI 91-204.

Critical/Imminent Danger—Conditions or practices in a workplace which could reasonably be expected to cause death or severe physical harm immediately or before such dangers can be eliminated through normal abatement procedures. RAC 1 hazards are classified as critical/imminent danger.

Days Away, Restricted, and/or Transfer Case Incidence Rate—The rate of all civilian injuries and illnesses resulting in days away from work, restricted work activity, and/or job transfer. This rate is calculated for a work site for a specified period of time (usually one year).

Department of Defense Civilian Personnel—Includes Senior Executive Service (SES), General Schedule (GS), National Security Personnel System (NSPS) and federal wage system employees,

including ANG and AFRC technicians, unless in military duty status. Includes non-appropriated fund employees who are not military personnel working part time; Corps of Engineers Civil Works employees; Youth Opportunity Program (YOP) and student assistance program employees; Direct-Hire Foreign-national civilians employed by the Air Force (Air Force Foreign Nationals [AFFN]) and Army-Air Force Exchange Service employees.

Department of the Air Force Military Personnel—These are Air Force personnel on active duty with the Air Force or ANG and AFRC personnel on military duty status. Includes Air Force Academy cadets; also includes Reserve Officer Training Corps (ROTC) cadets engaged in directed training activities. Includes members of other US military services serving on extended active duty with the Air Force or foreign-national military personnel assigned to the Air Force.

Designated Employee Representative—An individual selected by civilian employees, either directly or through an exclusive representation bargaining agreement, to represent them as a member of the safety and environmental councils and to take part in other activities as outlined in this instruction.

Evaluations—Method of appraising the effectiveness of mishap prevention program management. Addresses the areas of commander supervisory support, compliance with program directives and the effectiveness of mishap prevention programs (performance).

Exemption—Grants permanent relief from a requirement.

Fire Hazard—A condition that can cause a fire to occur. The distinction between fire hazard and fire safety deficiency (FSD) is important because the documentation, reporting, and correction procedures differ for each. Only fire hazards are included in the Hazard Abatement Plan and FSDs are managed separately.

Fire Safety Deficiency (FSD)—A condition which reduces fire safety below the acceptable level, including noncompliance with standards, but by itself cannot cause a fire to occur. A clear distinction between hazards and deficiencies may not always be possible; therefore, the judgment and experience of a qualified fire official must be relied upon. Fire safety deficiencies will not be assigned a RAC.

Flexible Culture—One of the four sub-cultures that make up an Informed Culture. A Flexible Culture is a collection of behaviors and beliefs that acknowledge the inevitability of human error and unsafe conditions and which allow quick and smooth reactions to address hazards before mishaps result.

Flight Safety Manager—A civilian assigned to perform Flight Safety Officer duties.

Formal Inspection Report—A report with a particular prescribed format.

Full-time—Individuals in primary duty safety positions. See definition for safety and health officials. Does not include additional duty safety personnel such as USRs and SAFSOs.

Functional Managers—The senior operating official at all levels exercising managerial control of an activity or operation. This individual usually can acquire and commit resources for the abatement of occupational safety and health hazards. Functional managers are designated by MAJCOM/FOA/DRU or installation commanders.

Geographically Separated Unit (GSU)—Any Air Force unit that is geographically separated beyond a reasonable commuting distance from its servicing military personnel flight.

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

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

Hazard/Deficiency Severity—An assessment of the expected consequences if a hazard, if left unabated, results in a mishap. The Air Force defines severity by the degree of injury, illness, or resource damage that can result from a specific mishap.

Hazard Reporting—A process, by which any person assigned, attached or under contract to the Air Force, may report a hazard. This includes any event or condition that affects aviation, ground, weapons or space.

High Interest Areas—These areas have the greatest risk to life or property damage, experienced repeated mishaps, or in the judgment of the safety office, require added oversight. They can also be work areas or operations that need additional attention or inspections because of increased mishap potential due to the nature of work performed, physical conditions or type of materials handled.

High-Risk Activities—These are activities having a higher potential for personnel injury due to the level of competition, speed, risk, or skills needed and requiring greater agility, stamina and dexterity. Some examples of high-risk activities are flying civil aircraft, hang gliding, skydiving, parasailing, white-water rafting, motorcycling and auto racing, scuba diving, bungee jumping and bronco and bull riding. **Note:** MAJCOM/FOA/DRU can determine within the command what are considered high risk activities.

Informal Report—A report with no particular format. (e.g. spot inspection, high interest)

Informed Culture—A term used to describe the optimal state of an organization's safety culture, in which each individual sees his or her role as a fundamental part of the organization's commitment to safety and achievement of organizational safety goals. Four prerequisite sub-cultures help create an Informed Culture: a Just Culture, a Reporting Culture, a Learning Culture and a Flexible Culture.

Inspections—The process of determining compliance with safety and health standards through physical surveys of workplaces, operations, and facilities.

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

Job Safety Training Outline (JSTO)—An outline of mandatory safety training items that supervisors use when conducting workcenter safety training for their specific work areas. See **Attachment 4.**

Joint Activity Service Billet—An activity, operation or organization in which elements of more than one Military Department of the United States, as reflected in joint manpower programs documents, perform joint missions under auspices of OSD, the chairman of the Joint Chiefs of Staff or the commander of a combatant or combined command.

Just Culture—One of the four sub-cultures that make up an Informed Culture. A Just Culture is an organizational environment where front line operators or others are not punished for actions, omissions or decisions taken by them that are commensurate with their experience and training,

but where gross negligence, willful violations and destructive acts are not tolerated. Just Culture focuses on improving system designs and employee procedures to include: better system operations; creating redundant safety systems to trap or mitigate errors; pre-identifying high-risk operations; and leadership actions designed to limit at-risk behaviors.

Learning Culture—One of the four sub-cultures that make up an Informed Culture. A Learning Culture exists when an organization has the willingness and ability to implement proper recommendations from safety information that is produced through continuous risk assessment of hazards.

Major Command—For the purpose of mishap prevention (MAJCOM) includes ACC, AETC, AFMC, AFRC, AFSPC, AFGSC, AFSOC, AMC, ANG, PACAF and USAFE.

Major Subsystem—A subsystem to the aircraft without which the mission of the platform could not be accomplished successfully. Major subsystems include, but are not limited to, propulsion, ejection system, radar systems.

Military—Unique Workplaces, Operations, Equipment and Systems—Military and civilian operations, systems and equipment that are unique to the national defense mission and military services. These operations, systems and equipment are exempted from the scope of the Occupational Safety and Health Act of 1970 (Title 29, U.S.C., Sections 651-678). An example of the Air Force operations, systems and equipment that are unique to the national defense mission are military aircraft, missiles and missile sites, early warning systems, military space systems, ammunition, military flight operations, chemical warfare gear, associated research test and development activities, and actions required under emergency conditions.

Mishap—A mishap is an unplanned occurrence, or series of occurrences, that results in damage or injury and meets Class A, B, C, D and E mishap reporting criteria IAW AFI 91-204**.**

Multi—Functional Team (MFT)—As defined 63- and 64-series guidance publications, MFT is a team of stakeholders responsible for a Service's acquisition. It includes not only representatives of the technical and procurement communities, but also stakeholders of the Service's acquisition and the contractors who provide the services. The team may consist of subgroup(s) responsible for routine contract actions. The team could be a Business Requirements Advisory Group (BRAG), Mission Area Acquisition Team (MAAT), Integrated Product Team (IPT), working group, an A-76 IPT or Steering Group, etc.

National Consensus Standards—Standards published by recognized standards organizations such as the ANSI, NFPA, American Conference of Governmental Industrial Hygienists, Compressed Gas Association, and NIOSH. National consensus standards adopted by OSHA are part of OSHA standards.

Notice of Hazard—A written warning of a condition, procedure, or practice which constitutes a hazard. As used in the context of this instruction, "Notice of Hazard" refers to AF Form 1118.

Occupational Deficiency—Conditions, procedures and practices not compliant with OSHA or AFOSH requirements, but do not, in themselves, create a potential for producing an occupational injury or illness mishap. Deficiencies may, however, create a potential for secondary injuries or illnesses or may contribute to the severity of an injury or illness that has already occurred. Examples include, but are not limited to, program management items or the absence of an eyewash stations. A clear distinction between hazards and deficiencies may not always be

possible; therefore, the judgment and experience of qualified safety, fire protection and health personnel must be relied upon.

Occupational Hazard—Conditions, procedures, and practices directly related to the workplace that can create a potential for producing occupational injuries, property or equipment damage, mission degradation, damage to the environment, or illnesses.

Performance Appraisal—A systematic comparison of an employee's performance of duties and responsibilities with performance standards.

Quality Assurance Personnel—Individuals designated to perform quality assessment functions, and manage performance in accordance with the Performance Plan. They serve as on-site technical managers assessing contractor performance against contract performance standards. Personnel in this area have many titles, such as Quality Assurance Evaluator (QAE), Quality Assurance Specialist (QAS), Functional Area Evaluators (FAEs), and Contracting Officer Technical Representative (COTR).

Quality Assurance Program Coordinator (QAPC)—Mission support group or AFMC/AFSPC Center-level individual, normally from the contracting activity, selected to coordinate and manage the Performance Management Assessment Program (Quality Assurance Program).

Qualified Safety, Fire Protection, Bioenvironmental Engineering and Health Officials—Air Force civilian and military personnel assigned to full time positions for the respective disciplines. Air Force civilian personnel who meet the Office of Personnel Management standards for safety and occupational health manager or specialist, safety engineering technician, safety engineer, fire protection engineer or specialist, medical officer, health physicist, industrial hygienist, occupational health nurse or environmental health technician job qualification standards. Safety, fire protection, and health personnel with experience or up-to-date training in occupational safety, fire protection, and health hazard recognition and evaluation are considered as meeting the qualifications of safety, fire protection, and health inspectors. Air Force military personnel, who possess a safety, fire protection, Bioenvironmental Engineering, aerospace medicine, or medicine Air Force Specialty Code. Civilians (NSPS equivalent to GS) are considered fully qualified IAW 29 CFR 1960 and military at the Air Force Specialty Code (AFSC) 7 level or can be a 5 level if task certified. (See 29 CFR 1960.25, *Qualifications of Safety and Health Inspectors and Agency Inspections*).

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 workplaces to assure the safety and security of nuclear material and/or non-nuclear classified material. Also includes parking for commercial vehicles containing Class A or Class B explosives.

Safety—The programs, RM activities, and organizational and cultural values dedicated to preventing injuries and accidental loss of human and material resources, and to protecting the environment from the damaging effects of DoD mishaps.

Safety Assessment—Method of appraising the effectiveness of mishap prevention program management used by wing safety staffs to evaluate each standalone group and squadron safety program conformance and performance within the SMS. Like program evaluations, assessments address the areas of commander and supervisory support, compliance with program directives, and the effectiveness of mishap prevention program. Assessments may be conducted in conjunction with the required annual safety inspection.

Safety Evaluation—Method of appraising the effectiveness of mishap prevention program management used by HQ AFSEC to evaluate MAJCOM and DRU safety program conformance and performance within the SMS. Also used for FOAs with assigned safety staffs. Addresses the areas of commander supervisory support, compliance with program directives and the effectiveness of the mishap prevention program.

Safety Program Evaluation—Method of appraising the effectiveness of mishap prevention program management used by MAJCOM/DRU/FOA safety staffs to evaluate wing, NAF and Center safety program conformance and performance within the SMS. Also used for FOAs with assigned safety staffs. Addresses the areas of commander supervisory support, compliance with program directives and the effectiveness of the mishap prevention program. These evaluations are conducted IAW AFI 90-201 through the Inspector General's office.

Spot Inspection—These inspections are no-notice inspections to check the day-to-day safety and health of an organization, work center, facility, etc.

Standards—Safety and health standards (including emergency temporary standards) issued under the Occupational Safety and Health Act of 1970 (Title 29, U.S.C., Sections 651-678). This includes national consensus standards adopted by OSHA by reference.

System Safety Groups (SSGs)— Augment the program office system safety function; it is not a substitute or replacement. While many SSG members are not assigned to the Program Office, they advise the system program manager or single manager on safety matters. They act as an integrated product team (IPT) for system safety. The members assist the program office in identifying risks, assessing these risks, and recommending solutions to these risks. The SSG includes safety experts associated with the particular weapon system.

System Safety Working Groups (SSWGs)—Are a subset of System Safety Groups (SSGs). SSWGs are usually formed when a full SSG wants to research a problem without tying-up the full membership. The SSG will generally form an SSWG to work a problem separately and report back to the SSG. An SSWG augments an SSG; it's not a substitute.

Team Concept—A diverse group of individuals working together with complementary skills who are committed to a common purpose, have group goals, take an approach for which they are mutually accountable.

Tier/Waiver—**Tier 0 (T-0)—**Determined by respective non-AF authority (e.g., Congress, White House, Office of Secretary of Defense, Joint Staff). The waiver authority is non-applicable, or external to AF.

Tier 1 (T—1)—Non-compliance puts Airmen, Commanders or the USAF strongly at risk of mission or program failure, death, injury, legal jeopardy or unacceptable fraud, waste or abuse. The waiver authority is the MAJCOM/CC, delegable no lower than MAJCOM Director, with the concurrence of the AFI Certifying Official. **Note:** For acquisition and sustainment program

manager mandates in this instruction, the waiver authority is SAF/AQ (delegate to the PEO-level), with the concurrence of the AFI Certifying Official.

Tier 2 (T—2)—Non-compliance may degrade mission or program effectiveness or efficiency and has potential to create moderate risk of mission or program failure, injury, legal jeopardy or unacceptable fraud, waste or abuse. The waiver authority is the MAJCOM/CC (delegable no lower than MAJCOM Director). **Note:** For acquisition and sustainment program manager mandates in this instruction, the waiver authority is the PEO for the program.

Tier 3 (T—3)—Non-compliance may limit mission or program effectiveness or efficiency and has a relatively remote potential to create risk of mission or program failure, injury, legal jeopardy or unacceptable fraud, waste, or abuse. The waiver authority is the Wing/DRU/FOA/CC (delegable no lower than Group/CC or equivalent).

TRiPS (Travel Risk Planning System)—TRiPS program assists in travel planning. TRiPS is accessed through the Air Force portal (https://trips.safety.army.mil/).

Total Case Incidence Rate (TCIR)—A number that represents the total recordable civilian injuries and illnesses per 100 full-time employees, calculated for a worksite for a specified period of time (usually one year).

Unit Safety Committee—Organized and maintained to monitor and assist an agency's safety and health program. The committee assists in helping to maintain an open channel of communication between employees and management in the workplace. The committees provide a method by which employees can utilize their knowledge of workplace operations to assist management with improving policies, conditions, and practices. **Note:** The term "team concept" is used synonymously with "safety committee".

Unit Safety Representative—General term for a person assigned to a unit who is responsible for the additional duty safety responsibilities. May be a representative of flight, ground or weapons, and may include a more specific title such as Additional Duty Weapons Safety Representative (ADWSR) or Squadron Assigned Flight Safety Officer (SAFSO), etc.

United States—The several States, the District of Columbia, the Commonwealths of Puerto Rico and the Northern Marina Islands, American Samoa, Guam, Midway and Wake Islands, the United States Virgin Islands, any other territory or possession of the United States, and associated navigable waters, contiguous zones, and ocean waters of which the natural resources are under the exclusive management authority of the United States.

Urgent Action Notice—Significant event notifications sent out by the Air Force Service Watch Center (AFSWC). These notifications are also called AFSWC notifications.

Variance—An approved temporary or permanent change to a procedure, criterion, or rule prescribed in safety standards which provides the same degree of protection to personnel.

Workplace—The physical location where work is performed for the Air Force by Air Force personnel or where Air Force operations take place.

Attachment 2

USAF AVIATION SAFETY EQUIPMENT DATABASE REPORTING

A2.1. Purpose and Scope. The database will be maintained by HQ AFSEC/SEFE in an electronic spreadsheet format and will be organized into aircraft categories of Bomber, Cargo/Transport, Fighter/Attack, Helicopter, Remotely Piloted Aircraft, Reconnaissance/Battle Management/C3I, Special Operations, Tanker, Trainer and Other.

A2.2. Aircraft. Each aircraft model will be described to the level necessary to convey configuration differences, e.g., EC-135N, KC-135R, F-16CM, F-16B Block 15.

A2.3. Inventory. The number of aircraft in this model as of the end of the fiscal year will be provided. If still in production, the planned production buy and current inventory as of the end of the fiscal year will be reported. Provide the following information for each item listed below:

A2.3.1. The nomenclature, manufacturer and status of each equipment item for each Model Design Series.

A2.3.2. If an update or procurement is in progress, document the current configuration, the new configuration, its Initial Operational Capability (IOC) date and its expected completion date by Fiscal Year Quarter.

A2.3.3. If an item is planned but not funded, do not report it. If an item is in source selection, report it as to be determined (TBD) and include estimated IOC and completion dates.

A2.3.4. If an item is installed only on a portion of the fleet, identify the extent of its installation (e.g., 20% of fleet).

A2.3.5. Elaboration of each data element and requests for more detailed information are provided in the descriptions below. For each item, provide a Point of Contact to address further questions or clarifications.

A2.4. Crash Survivable Parametric Recorder (Flight Data Recorder). Report any data recorder specifically designed to survive an aircraft crash and provide parametric data to a mishap investigation, e.g., LAS-209F, MU-1003. Additionally, document program's current compliance with applicable Air Force requirements contained within Aircraft Information Programs publications (AFH 63-1402, *Aircraft Information Program*). For any retrofit programs in progress, indicate when the retrofit program commenced, the status of the program (number complete), and what organization is accomplishing the retrofits.

A2.5. Crash Survivable Acoustic Recorder (Cockpit Voice Recorder). Report any acoustic recording device specifically designed to survive an aircraft crash and provide evidence to a mishap investigation, e.g., A90A, VADAR. Additionally, document its compliance with USAF/SE requirements statement of 1997 for 2-hour recording capability and compliance with FAA TSO 123a.

A2.6. Emergency Locator Transmitter (ELT)/Crash Position Indicator (CPI). Report any devices whose purpose includes alerting Search and Rescue to the location of aircraft wreckage and/or crew. Document compliance with FAA TSO C-126.

A2.7. Traffic Alerting and Collision Avoidance System (TCAS). Identify the generation of the TCAS system (TCAS I, TCAS II, ETCAS, V7.0 ACAS) or transponder only mode. Also, identify any Automatic Airborne Collision Avoidance Systems.

A2.8. Global Positioning System (GPS). Identify either stand-alone receiver or integrated GPS capability. If integrated into a navigation/avionics suite, then provide information of next higher-level assembly.

A2.9. Ground Collision/Proximity Warning Systems (GPWS). Identify the generation of the GPWS system (First, Second, Third, Fourth, EGPWS, TAWS) and Class (Class A, B, C). If an additional function of another device, then provide information about the device that generates the warning, e.g., Flight Control Computer. Document compliance with USAF/XO Memorandum, Implementation of AF Navigation and Safety Master Plan and Policy Clarification for GPWS, ADF, and GPS Navigation Systems, 13 March 1997 and FAA TSO C151b.

A2.10. Ground Collision Avoidance System (GCAS). For Bomber, Fighter/Attack and Special Operations aircraft, identify any type of GCAS equipment, or if an additional function of another device, then provide information about the device that generates the warning or pull-up command, e.g., GCAS, AGCAS, TFR, TAR.

A2.11. Windshear Detection System (WDS). If an additional function of another device, then provide information about the device that provides detection, e.g., FSAS, MARK VII GPWS.

A2.12. Other Electronic Storage Devices. Identify any other devices that if they survive a mishap, contain recorded information that could be of use to a mishap investigation. Examples could be a central computer that stores information on system faults, Head-Up-Display tapes, Multi-Function Display tapes, Quick Access Recorders, Signal Acquisition Units or a structural life usage recorder.

Attachment 3

MISHAP RESPONSE

A3.1. General. Pre-mishap response planning by safety staffs must address appropriate participation in all base-level responses, including: **(T-2)**

A3.1.1. Major mishaps.

A3.1.2. Hazardous materials mishaps.

A3.1.3. Natural disasters.

A3.1.4. Nuclear weapons mishaps.

A3.1.5. Conventional weapons mishaps.

A3.1.6. Directed Energy Weapons mishaps

A3.2. The basic response planning document for Major Accident Response, Natural Disasters, Enemy Attack, and Distribution is AFI 10-2501, *Air Force Emergency Management (EM) Program Planning and Operations*.

A3.3. Emergency Operations Center (EOC). The EOC responds to peacetime major accidents and natural disasters to provide on-scene command and control of Air Force military resources and functional expertise. The EOC and its members will meet the requirements in AFI 10-2501.

Note: Ideally, the safety representative to the EOC should not be responsible for assembling the interim safety board (ISB). **(T-2)**

A3.4. Safety Response to Other than Major Peacetime Accidents. Some mishaps may not warrant a full activation of the Disaster Response Force (DRF). However, the safety staff may need some EOC elements to support investigation of these less severe incidents, such as Combat Camera or Civil Engineering Specialists. Each safety staff should consult with their supporting readiness and emergency management flight to determine how to formally provide for partial EOC support when the full DRF is not activated.

A3.5. Munitions Rapid Response Team. The Air Force Life Cycle Management Center Munitions Sustainment Division (AFLCMC/EBH) has developed a conventional munitions rapid response team to support Air Force units throughout the world anytime a munitions incident occurs. The team includes experts (engineers, equipment specialists, program managers and safety personnel) from associated conventional munitions programs. These personnel are able to travel anywhere in the world within 24 to 48 hours to assist in determining the cause of failure. If your MAJCOM/FOA/DRU or unit has an incident, and this team's help is desired, contact the AFLCMC Munitions Operations and Readiness Branch (AFLCMC/EBHM) via the Global Ammunition Control Point (GACP) Customer Relationship Management (CRM) System at **https://www.my.af.mil/ammoprod/wm**/ to request support or by calling DSN 312-777-AMMO (2666); DSN 312-775-AMMO (2666); Commercial 801-777-AMMO (2666) or 801-775-AMMO (2666).

Attachment 4

JOB SAFETY TRAINING OUTLINE (JSTO)

A4.1. Mandatory Items. The items below are mandatory and will be briefed to all personnel. This Job Safety Training Outline will be used to develop written job safety training information from which all individuals within the work center will be trained. The following areas will be discussed in detail by the immediate supervisor with all employees upon initial assignment prior to starting work or when work conditions or tasks change. Document training as specified in paragraph **1.8.22.5.2** Deployed and installation commanders may dictate more stringent requirements. **(T-1)**

A4.1.1. Hazards of the job and specific safety guidance that applies to their workplace. **(T-1)**

A4.1.2. Hazards of the work area environment to include, but not limited to, awareness of identified confined spaces (permitted and unpermitted), recognition of danger and caution tags, and the Hazard Communication Program requirement, i.e., Employee's Right to Know. **(T-1)**

A4.1.3. Proper personal lifting techniques (Refer to AFI 91-203, *Air Force Consolidated Occupational Safety Instruction*). **(T-1)**

A4.1.4. Location of medical facilities and procedures for obtaining treatment. **(T-1)**

A4.1.5. Location and use, as appropriate, of emergency and fire protection equipment. **(T-1)**

A4.1.6. Emergency procedures that apply to the workplace, including evacuation, fire reporting, emergency numbers, alarm and extinguisher location(s). **(T-1)**

A4.1.7. Requirements and procedures for reporting mishaps, occupational injury and occupational illness. **(T-1)**

A4.1.8. Reporting unsafe equipment, conditions or procedures to supervisor immediately. **(T-1)**

A4.1.9. Requirements of Air Force Traffic Safety Program, including mandatory use of seat belts and helmets, speed limits, local traffic hazards, and personal RM. Additionally, brief use of electronic devices while operating a GMV/PMV on- or off-base IAW AFI 91-207, paragraph 3.2. If applicable, discuss motorcycle safety training requirements before riding a motorcycle. **(T-1)**

A4.1.10. Purpose and location of AF Form 457, *USAF Hazard Report*. **(T-1)**

A4.1.11. Location and content of Air Force Visual Aid (AFVA) 91-209, *Air Force Occupational Safety and Health Program*. **(T-1)**

A4.1.12. Purpose of the AF Form 1118, *Notice of Hazard*. **(T-1)**

A4.1.13. CA 10, *What a Federal Employee Should do When Injured at Work.* **(T-1)**

A4.1.14. Fetal Protection Program Awareness. Reference: AFI 48-145, *Occupational and Environmental Health Program.* **Note: Air Force Reserve –** AFRCI 41-104, *Pregnancy of Air Force Reserve Personnel.* **(T-1)**

A4.2. Job Specific Training Items. To be accomplished as required based on job tasks and documented prior to employee performing task. If a particular training of this type is called for within a CFETP, then no additional documentation beyond the CFEPT is required. Supervisors will provide specific training subjects based on the needs of the job and provide application-level training. **Note:** Subjects listed below may not be mandatory for every job but dependent upon the type job/tasks individuals will be performing. **(T-2)**

A4.2.1. Personal Protective Equipment (use, location, fit, care, limitations). Reference: 29 CFR 1910.132, AFI 91-203, Chapter 14, *Personal Protective Equipment (PPE),* and other directives. **(T-2)**

A4.2.2. Hazardous Energy Control (Lockout/Tagout). Reference: 29 CFR 1910.147 and AFI 91-203, Chapter 21, *Hazardous Energy Control (Lockout and Tagout).* **(T-2)**

A4.2.3. Hazard Communication. Reference: AFI 90-821, *Hazard Communication,* and 29 CFR 1910.1200. **(T-2)**

A4.2.4. Bloodborne Pathogens. Reference: 29 CFR 1910.1030. **(T-2)**

A4.2.5. Hearing Conservation. Reference: AFOSH Standard 48-20, *Occupational Noise and Hearing Conservation Program*. **(T-2)**

A4.2.6. Confined Space Program (Entrant, Attendant, Supervisor, Monitor and Rescue Team). Reference: AFI 91-203, Chapter 23, *Confined Spaces,* and 29 CFR 1910.146. **(T-2)**

A4.2.7. Manual and Powered Hoist. Reference: AFI 91-203, Chapter 35, *Material Handling Equipment.* **(T-2)**

A4.2.8. Respiratory Protection Program. Use AF Form 2767, *Occupational Health Training and Protective Equipment Fit Testing (LRA).* Reference: AFOSH Standard 48-137, *Respiratory Protection Program.* **(T-2)**

A4.2.9. Vehicle Mounted Elevated Work Platforms, Self-Propelled and Manual Platforms. Reference: AFI 91-203, Chapter 16, *Mobile Elevating Work Platforms.* **(T-2)**

A4.2.10. Fall Arrest System(s). Reference: AFI 91-203, Chapter 13, *Fall Protection,* 29 CFR 1910.66 and 29 CFR 1926.503. **(T-2)**

A4.2.11. Forklift (Material Handling Equipment). Reference: AFI 91-203, Chapter 35, and 29 CFR 1910.178. **(T-2)**

A4.2.12. Explosives Safety Training. Reference: AFMAN 91-201, *Explosives Safety Standards,* and this instruction. **(T-2)**

A4.2.13. Pole/Tower Climbing. Reference: AFI 91-203, Chapter 30, *Communication Cable, Antenna and Communication Systems*. **(T-2)**

A4.2.14. Wearing Jewelry in the workplace. Reference: AFI 91-203, Chapter 9, *Jewelry,* and applicable technical data. **(T-2)**

A4.2.15. Portable and fixed ladder safety. Reference: AFI 91-203, Chapter 7, *Walking Surfaces, Guarding Floor and Wall Openings, Fixed Industrial Stairs, and Portable and Fixed Ladders.*

A4.2.16. Cardiopulmonary Resuscitation (CPR) Training. Reference: AFI 91-203, Chapter 1, *Introduction.* **(T-2)**

A4.2.17. Flight Line Driving. Reference: AFI 91-203, Chapter 24, *Aircraft Flight Line – Ground Operations and Activities*, and other governing directives. **(T-2)**

A4.2.18. Fetal Protection Program. Job Specific. Reference: AFI 48-145. **Note:** Air Force Reserve – AFRCI 41-104, *Pregnancy of Air Force Reserve Personnel.* **(T-2)**

A4.2.19. Medical Surveillance Examination (Scheduling, Administration, Reporting and Follow-up). Reference: AFI 48-145. **(T-2)**

A4.3. Documentation of Training. Document training as specified in paragraph **1.8.22.5.2** **(T-0)**

A4.4. Maintenance and Disposition of Training Documentation Product. Maintain as prescribed by the records disposition schedule (**https://www.my.af.mil/afrims/afrims/afrims/rims.cfm**), Table & Rule: T 91 - 04 R 24.00 or T 91 - 04 R 25.00. Supervisors will maintain the training documentation as prescribed in paragraph **Attachment 1.8.22.5** When an individual deploys/transfers to another Air Force position/location, the training documentation will be transferred physically or electronically to the new supervisor by the individual. The new supervisor will review the training documentation product, transfer current training completion dates as necessary and initial Hazardous Communication (HAZCOM) date and other onetime training to a new training documentation product if necessary and retain the old product IAW the Air Force Records Disposition Schedule. The supervisor will destroy the training documentation product one year after personnel are separated or retired. **(T-3)**

Attachment 5

JOB SAFETY ANALYSIS (JSA)

A5.1. Sequence Of Basic Steps: Break the task down into its basic steps. For example, what is done first, what is done next? You can do this by: (1) observing the task, (2) discussing it with workers, (3) using your experience and knowledge of the task, or (4) a combination of all three. Record the steps in the task in their normal order of occurrence. Describe what is done; not the details or how it is done. Three or four words are normally enough to describe each task step. **(T-3)**

A5.2. Potential Mishap Causes Or Hazards: For each task step, ask yourself what mishap could happen to workers performing the task and what the probability would be of the mishap occurring. Get the answers by: (1) observing the task, (2) discussing the task with workers and/or (3) using "lessons learned" from other mishaps. Ask the questions: **(T-3)**

A5.2.1. Can workers be struck by or contacted by anything?

A5.2.2. Can they strike against or be exposed to any item that can cause injury?

A5.2.3. Can they be caught in or between anything?

A5.2.4. Can they fall?

A5.2.5. Can they overexert themselves?

A5.2.6. Are they required to do repetitive lifting or heavy lifting?

A5.2.7. Are there potential hazards such as chemical substances, physical agents (including noise, ergonomic and thermal stress), ionizing and non-ionizing radiation or biological exposures?

A5.3. Recommended Safe Task Procedure: For each potential mishap cause or hazard identified, consider the following questions:

A5.3.1. How should workers perform the task step to avoid the mishap or eliminate the potential hazard?

A5.3.2. What can be done to eliminate or mitigate the hazard by redesigning the work area or equipment?

A5.3.3. How can the procedure be modified to eliminate the hazard? **Note:** Be sure to describe in detail the precautions workers must take and ensure that these steps are placed in the task procedure or checklist. Take special care to ensure important steps or details are not inadvertently omitted from the task and that guidance is clear, specific and easily understood by workers.

Table A5.1. Job Safety Analysis (Worksheet).

JOB:_____DATE: _____
WORKCENTER:_____SUPERVISOR: _____
TITLE OF WORKER WHO PERFORMS TASK: _____
REQUIRED PERSONAL PROTECTIVE EQUIPMENT (PPE): _____
ANALYSIS BY: REVIEWED BY:

1. SEQUENCE OF BASIC STEPS:	2. POTENTIAL HAZARDS OR MISHAP CAUSES:	3. RECOMMENDED PROCEDURES OR ACTIONS:

Attachment 6

RISK ASSESSMENT CODES (RAC)

Note: This attachment is not for use for Systems Safety processes. Those are addressed in MIL-STD-882E.

A6.1. Risk Assessment Codes are an expression of the degree of risk associated with a hazard or occupational deficiency that combines hazard severity and mishap probability into a single numeric identifier. RACs are tools used by fire, safety and health professionals and commanders to prioritize abatement plans and mitigate hazards. It may not be possible to assign a RAC to every hazard or circumstance and the lack of a RAC should not dissuade efforts to mitigate hazards.

A6.1.1. This instruction describes the basic RACs and provides some guidelines for assigning priorities based on cost, effectiveness and exposure. The discipline specific chapters also provide additional guidance for assessing the risks of the applicable hazards.

A6.1.2. Risk Assessment Codes. Only qualified ground safety and fire protection and assign a RAC to each hazard after an evaluation of the concern. There are two methods for calculating RACs. Which method is used depends on what type of hazard is present. Safety, fire and ergonomic hazards use one calculation method and health-related hazards use another. **(T-2)**

A6.2. Safety, fire and ergonomic RACs are determined by plotting the probability (A, B, C or D) that a mishap will occur and the potential mishap severity (I, II, III or IV) if it does happen (**Table A6.1**). Fire safety deficiencies will not be assigned a RAC. Fire safety deficiencies are addressed in AFI 32-10141, *Planning and Programming Fire Safety Deficiency Correction Projects.*

A6.3. Health-related RACs are determined by plotting the health hazard severity and illness probability categories (**Table A6.8**).

A6.3.1. Health Hazard Severity Category (HHSC). The HHSC reflects the magnitude of exposure to a single physical, chemical, or biological agent and the medical effects of exposure.

A6.3.1.1. Determine the HHSC by totaling the exposure and medical effects points and use the following table: **(T-2)**

A6.3.2. Illness Probability Category (IPC). The IPC is a function of the duration of exposure and the number of exposed personnel.

A6.3.2.1. Determine the IPC for health hazards by totaling the exposure duration and number of personnel exposed points and use the following guide: **(T-2)**

A6.4. Commanders will consider this RAC system when determining which hazards/ deficiencies warrant the expenditure of limited resources. **(T-2)**

A6.5. Assigned RACs will continue to be tracked in the installation hazard abatement plan until completely abated even when interim control measures are in place. **(T-2)**

Table A6.1. Safety and Ergonomic Hazard Risk Assessment Code Matrix.

Hazard Severity		Mishap Probability			
Description	Code	A Likely to occur immediately	B Probably will occur in time	C Possible to occur in time	D Unlikely to occur
Death, permanent total disability, or loss of facility or asset of $2,000,000 or more	I	1 Critical/Imminent	1 Critical/Imminent	2 Serious	4 Minor
Permanent partial disability or major property damage of $500,000 up to $2,000,000	II	1 Critical/Imminent	2 Serious	3 Moderate	4 Minor
Lost workday injury or compensable injury, or minor property damage $50,000 up to $200,000	III	2 Serious	3 Moderate	4 Minor	5 Negligible
Injury involving first aid or minor supportive medical treatment, a minimal threat to personnel or property (damage less than $500), or a violation of a standard	IV	4 Minor	4 Minor	5 Negligible	5 Negligible

Table A6.2. Exposure Points.

	Exposure Conditions			
Alternate Route Exposure?	< Action Level	Occasionally > Action Level; Always < Occupational and Environmental Exposure Limit (OEEL)	> Action Level; < OEEL	> OEEL
No	0	3	5	7
Yes	2	4	6	9

Table A6.3. Medical Effects Points.

	Medical Conditions				
Probability	Permanent, severe, disabling, irreversible illness or death, such as asbestosis and lung cancer	Permanent, non-severe illness or loss of capacity, such as permanent hearing loss	Temporary reversible illness with a variable but limited period of disability, such as metal fume fever	Temporary reversible illness requiring supportive treatment, such as eye irritation and sore throat	No medical effect, such as nuisance noise or nuisance order
High	8	6	4	2	0
Low	7	5	3	1	0

Table A6.4. Health Hazard Severity Category (HHSC).

Sum of Exposure and Medical Effects points	**HHSC**
13-17	1
9-12	2
5-8	3
0-4	4

Table A6.5. Duration of Exposure Points.

	Exposure Duration		
Type of Exposure	**1-8 hours/week**	**> 8 hours/week, not continuous**	**Continuous**
Irregular, Intermittent with **low** probability	1	4	--
Irregular, Intermittent with **high** probability	2	6	--
Regular, Periodic with **low** probability	2	5	8
Regular, Periodic with **high** probability	3	7	8

Table A6.6. Number of Exposed Personnel Points.

Number of workers in the similar exposure group (SEG) who perform the process(es) that produce the hazard	Exposed Personnel Points
1-2	1
3-4	2
5-6	3
7-9	4
10-29	5
30-49	6
49-100	7
>100	8

Table A6.7. Illness Probability Category (IPC).

Sum Exposure Duration and Exposed Personnel Points	IPC
14-16	1
10-13	2
5-9	3
0-4	4

Table A6.8. Health-Related RAC Matrix.

	IPC			
HHSC	**1**	**1**	**2**	**3**
1	1	1	2	3
2	1	2	3	4
3	2	3	4	5
4	3	4	5	5

Attachment 7

ABATEMENT PRIORITY NUMBER

A7.1. The abatement priority number (APN) is a two-part code: the RAC and the cost effectiveness index (CEI). CEI measures cost effectiveness of a hazard abatement project and represents a ratio of the project cost and its potential effectiveness. The APN will be used to determine the relative priority of abatement actions. Use the APN in establishing funding priorities for hazard abatement projects during the budgetary cycle. Compute APN: **(T-2)**

A7.1.1. Step 1. Determine RAC from **Table A6.1,** based on mishap severity and probability of occurrence.

A7.1.2. Step 2. Determine the severity probability multiplier (M) from the matrix in **Table A7.1,** using the same severity and probability used to determine the RAC.

Table A7.1. Severity and Probability Multiplier Matrix.

Severity	Probability			
	A	B	C	D
I	188	63	21	7
II	63	21	7	2
III	21	7	2	1
IV	7	2	1	0.26

Note: The multipliers in table represent a proportional distribution of the severity and frequency of mishaps.

A7.1.3. Step 3. Determine exposure (E), or the average number of personnel exposed daily to the hazard during the course of the year.

A7.1.4. Step 4. Determine the total abatement project cost (C). If actual costs are not known, use best available estimate.

A7.1.5. Step 5. Compute the CEI by dividing the C for abatement by the product of M and E, or CEI = C/ (M) (E).

A7.1.6. Step 6. Determine APN by listing the RAC followed by the CEI in parenthesis, or APN = RAC (CEI).

A7.1.7. Step 7. Determine relative priority of abatement projects by comparing the CEI of projects within identical RACs. **Note:** The lower the CEI, the higher its relative priority within the same RAC.

A7.2. To use APNs to establish a priority list of projects, follow these steps: **(T-2)**

A7.2.1. Step 1. Determine RAC. Assumptions: Given a hazard that will probably occur in time (Probability B) and would result in a permanent partial disabling injury (Severity II) if it resulted in a mishap. Therefore, the assigned RAC from **Table A6.1** would be 2.

A7.2.2. Step 2. Determine multiplier (M). Plot mishap probability (B) versus hazard severity (II) on **Table A7.1** to obtain a multiplier of 21.

A7.2.3. Step 3. Determine exposure (E). Assumption: The functional manager or supervisor determined that on an average day 25 people are exposed to the hazard.

A7.2.4. Step 4. Determine the total cost of project (C). Example: The total cost of the project to abate the hazard as provided to the functional manager by Civil Engineering is $2,100.

A7.2.5. Step 5. Determine CEI. CEI = C/ (M) (E); (M) (E) = 21x25, therefore CEI = 2100/ (21) (25) = 4.

A7.2.6. Step 6. Determine APN. APN will be (RAC) (CEI) = (2) (4).

A7.2.7. Step 7. Determine relative priority. The APN will now be used to prioritize this project in relation to other RAC 2s for which APNs have been computed. A hypothetical priority listing containing this project is shown in table A7.2.

Table A7.2. Abatement Priority Number Index.

RAC	CEI	APN	Priority
1	(3)	1(3)	1
1	(113)	1(113)	2
2	(4)	2(4)	3
2	(15)	2(15)	4
3	(11)	3(11)	5
3	(96)	3(96)	6
Note: The APN system is not used to compare projects of two different RACs.			

Attachment 8

INSTRUCTIONS FOR COMPLETING AF FORM 1118, *NOTICE OF HAZARD*

A8.1. AF Form 1118. Qualified ground safety, fire protection, and health (BE, PH, flight surgeon and (or) occupational medicine physician) officials are the sole issuing authorities for AF Form 1118.

A8.2. Control Number. The control number for the AF Form 1118 will be the agency code (S, F, H), date of hazard identification, and sequential number, e.g., S-20061201-1. The numbering system will coincide with the corresponding Hazard Abatement Plan (AF Form 3). **(T-2)**

A8.3. Location. Note the building number, room number and function involved where the hazard is located, and nomenclature of the hazardous item or procedure, e.g., Building 18, Room 217, Civil Engineering Carpenter Shop, Table Saw. **(T-2)**

A8.4. Hazardous Condition. Describe in detail the nature of the hazard, including a reference to the standard or requirement violated, if any. **(T-2)**

A8.5. Risk Assessment Code. List RAC, followed by RAC description, e.g., "1 (Imminent Danger)." **(T-2)**

A8.6. Interim Control Measures. Identify temporary measures needed to reduce the degree of risk associated with the hazard to an "acceptable degree" until permanent corrective actions are implemented. Assigned RAC will remain until completely abated even though interim control measures are in effect. **(T-2)**

A8.7. Permanent Corrective Action. List the action that will permanently eliminate the identified hazard. Include associated document number, e.g., install new exhaust system; CE work order and project number. **(T-2)**

A8.8. Contact Point. Name, grade, office symbol and telephone number of individual responsible for elimination of the hazard. **(T-2)**

A8.9. Estimated Completion Date. Self-explanatory. **(T-2)**

Attachment 9

INSTRUCTIONS FOR COMPLETING AF FORM 3, *HAZARD ABATEMENT PLAN*

A9.1. The AF Form 3 is for an identified RAC 1, 2, or 3 hazard requiring more than 30 calendar days to abate. The form then becomes part of the installation's formal master hazard abatement plan. This does not prevent its use for RAC 4 or 5 hazards or deficiencies. Electronic systems that collect identical data and can produce a hard copy of AF Form 3 may be used. **(T-2)**

A9.2. Prepare a separate AF Form 3 for each individual hazard. **(T-2)**

A9.3. The commander or functional manager ensures AF Form 3, Parts I and II, are completed in as much detail as possible and then sent to the appropriate installation safety, fire protection or health office: **(T-2)**

A9.3.1. Part I—Hazard Information:

A9.3.1.1. Item 1 – Type of Hazard. Select the type hazard from the drop-down menu. Indicate whether the hazard is part of a facility, property, traffic, etc.

A9.3.1.2. Item 2 – Category. Select appropriate category from the drop-down menu: Safety, Fire or Health.

A9.3.1.3. Item 3 – Control Number. The control number is issued by the installation safety office, leave blank unless provided by the safety office.

A9.3.1.4. Item 4 – Date. Use the drop-down calendar to select the date this form was initiated.

A9.3.1.5. Item 5 – Date Hazard Discovered. Use the drop-down calendar to select the date this hazard was discovered.

A9.3.1.6. Item 6 – Risk Assessment Code (RAC). Use the drop –down menu and select appropriate RAC (i.e., 1 (I, A), 3 (II, C), etc.) as provided by safety, fire or health officials.

A9.3.1.7. Item 7 – Discovery Method. Use the drop-down menu to select method indicating how the hazard was originally identified.

A9.3.1.8. Item 8 – Exposure. Enter the average number of personnel exposed to the hazard daily.

A9.3.1.9. Item 9 – Description of Hazard. Provide a word description of the hazard to illustrate its potential impact if not abated. This includes the condition, procedure or practice that creates a potential for producing death, injury, illness, fire, property, equipment or environmental damage.

A9.3.1.10. Item 10 – Organization. List the organization responsible for the hazard abatement.

A9.3.1.11. Item 11 – Office Symbol. Self-explanatory.

A9.3.1.12. Item 12 – Facility Number. Enter facility number, leave blank if not in a facility.

A9.3.1.13. Item 13 – Specific Location/Description. Provide additional descriptor, i.e., NE corner, etc.

A9.3.1.14. Item 14 – Functional Manager/POC Name. Last, First, Middle Initial. See **Attachment 1**, ***Terms,*** for definition.

A9.3.1.15. Item 15 – Grade/Rank. Enter the appropriate Grade/Rank.

A9.3.1.16. Item 16 – Duty Phone.

A9.3.1.17. Item 17 – Signature. Select electronic signature.

A9.3.2. Part II—Abatement Information:

A9.3.2.1. Item 18 – Interim Control Measures. List all temporary measures taken to reduce the risk associated with the hazard pending completion of permanent abatement action (i.e., issuance of specific PPE, termination of operations, specific work-around procedures, etc.)

A9.3.2.2. Item 19 – Residual RAC Level. Select the Residual RAC Level after Interim Control Measures are applied to the hazard. **Note:** Interim controls do not reduce original RAC level. The Residual RAC level must be a RAC 4, 5 or lower.

A9.3.2.3. Item 20 – Description of Permanent Abatement Action. Provide a description of the permanent abatement action taken or programmed to eliminate or reduce the hazard.

A9.3.2.4. Item 21 – Method of Abatement. Select from the drop-down menu to method used to abate the hazard, e.g., CE Work Order, Local Purchase, military construction (MILCON) project, etc.

A9.3.2.5. Item 22 – Project/Work Order number. Self-explanatory.

A9.3.2.6. Item 23 – Status of Project/Work Order #. Using the drop-down menu, enter the status of the abatement project, i.e., awaiting materials, under construction, in design, in review, unfunded, etc.

A9.3.2.7. Item 24 – Project Cost. Indicate total cost associated with project identified in Item 22. If actual costs are not known, use best available estimate.

A9.3.2.8. Item 25 – Abatement Cost (if different from project cost). If the cost to abate the hazard is not the total cost of the project, enter only the cost associated with correction of the hazard. For example, a $500,000 facility renovation project will correct hazardous electrical wiring estimated to cost $25,000. Item 24 would show $500,000 and Item 25 would show $25,000. If actual costs are not known, use best available estimate.

A9.3.2.9. Item 26 – Estimated Date of Completion. Use the drop-down calendar to select the projected date of completion.

A9.3.3. Part III—For Safety/Fire/Health Use:

A9.3.3.1. Item 27 – Severity. Use **Table A7.1**

A9.3.3.2. Item 28 – Probability. Use **Table A7.1**

A9.3.3.3. Item 29 – Multiplier. Use **Table A7.1**

A9.3.3.4. Item 30 – Exposure. Same as Item 8.

A9.3.3.5. Item 31 – Abatement Cost. Same as Item 25.

A9.3.3.6. Item 32 – RAC. Same as Item 6.

A9.3.3.7. Item 33 – Cost Effectiveness Index (CEI). See **A7.1.5**

A9.3.3.8. Item 34 – Abatement Priority Number (APN). **See A7.2**

A9.3.4. Part IV—Semi-Annual Review Records:

A9.3.4.1. Item 35 – Status of Project/Work Order #. Use drop-down to select the current status of the project (i.e., awaiting materials, under construction, in design, in review, unfunded, etc.).

A9.3.4.2. Item 36 – Comments Regarding Progress. Enter any comments regarding progress of abatement actions.

A9.3.4.3. Item 37 – Date.

A9.3.4.4. Item 38 – Functional Manager/POC Name. Last, First, Middle Initial.

A9.3.4.5. Item 39 - Grade/Rank. Enter the appropriate Grade/Rank.

A9.3.4.6. Item 40 – Duty Phone.

A9.3.4.7. Item 41 – Signature. Select electronic signature.

A9.3.4.8. Item 42 – Other Related Notes. Use this area to add any additional comments regarding the status of the hazard abatement process.

A9.3.5. Part V—Hazard Closure:

A9.3.5.1. Item 43 – Hazard Closed and Verified By: Enter name of qualified safety, fire or health official that verified hazard is fully abated. Last, First, Middle Initial and Office Symbol.

A9.3.5.2. Item 44 – Grade/Rank. Enter the appropriate Grade/Rank.

A9.3.5.3. Item 45 – Signature. Select electronic signature.

A9.3.5.4. Item 46 – Date Hazard Fully Abated. Use drop-down calendar to select completion date.

Attachment 10

PRE-DEPARTURE TRAVEL SAFETY (EXAMPLES ONLY)

A10.1. Purpose. The Pre-Departure Travel Safety Program is a recommended management tool for commanders and supervisors. It helps military and civilian employees on orders, especially those under the age of 26, reduce the potential for a traffic mishap by identifying and mitigating risks involving travel by private motor vehicle for leave, PCS and temporary duty assignments.

A10.2. Overview. Commanders, managers and supervisors will help guide and mentor employees in applying personal RM when planning for a trip. Consider the following factors to guide the discussion on assessing risk and identifying mitigating strategies, but also consider and address other factors based on the unique nature of each situation. This interactive briefing may be documented on AF Form 4392, *Pre-Departure Safety Briefing Form*. Another tool for commanders and supervisors to consider is use of the Travel Risk Planning System (TRiPS) program to assist in travel planning for all personnel. TRiPS is accessed through the Air Force portal (**https://www.my.af.mil/trips/af/Login.aspx**).

A10.2.1. Urge the driver to carefully and thoroughly plan the trip, allowing time for rest prior to departure and to take a break at least every two hours.

A10.2.2. Travelers are not to drive more than 10 hours during any 24-hour period. Motorcyclists are highly encouraged to travel fewer hours. Highly recommend that travelers get a good night's sleep (7-8 hours) while traveling.

A10.2.3. Airmen must ensure they have sufficient funds available to cover expenses (a shortage of funds often leads to exhausting, marathon driving).

A10.2.4. Travelers must check the weather forecast and road conditions for the intended route of travel.

A10.2.5. Discourage driving during late night hours. Remind the traveler that there is a greater chance to encounter impaired (intoxicated, fatigued) drivers on the road at night than during the day.

A10.2.6. Stress the value of occupant restraint devices (mandatory for military personnel), including child restraints and the use of helmets and personal protective equipment by motorcyclists; review the hazard of reduced visibility due to factors such as darkness, weather, sun glare; and touch on the issue of being alert for road hazards such as animals crossing the roadway, stalled or slow-moving vehicles, and so forth.

A10.2.7. Stress the importance of vehicle condition — vehicle defects also contribute to mishaps.

A10.2.8. Discuss the main causes of injury and death by vehicle mishaps in the Air Force, which include speeding or excessive speed for conditions, fatigue, inattention or distraction, not wearing seatbelts and the effects of medication and alcohol.

A10.3. Additional Information. Advise the member to contact their unit commander, first sergeant, flight commander, immediate supervisor or command post in the event of a mishap or if an emergency situation arises. Ensure the individual is provided the phone numbers of the points of contact.

Attachment 11

AIR FORCE OFF-DUTY HIGH-RISK ACTIVITIES PROGRAM

A11.1. Purpose. The Off-duty High Risk Activity (HRA) Program is a recommended management tool for commanders and supervisors. The intent of the program is to ensure participants are familiar with the hazards and injury potential associated with their particular activity. This program is intended for military personnel only.

A11.2. High-Risk Activities. These are activities having a higher potential for personal injury due to the level of competition, speed, risk or skills needed and requiring greater agility, stamina and dexterity. Some examples of high-risk activities are flying civil aircraft, hang gliding, skydiving, parasailing, white-water rafting, motorcycle and auto racing, scuba diving, bungee jumping, bronco and bull riding, and extreme sports or any activity identified by the commander. **Note:** MAJCOM/FOA/DRU can determine within the command what are considered high risk activities.

A11.3. Commander's/Supervisor's Responsibility. Commanders or supervisors will ensure all personnel are briefed about the HRA program regardless of their participation in high-risk activities. Each individual should be surveyed and if it is determined they are actively engaged or about to engage in an HRA they should meet one on one with their commander or supervisor. Ideally implemented, a HRA interview is not a briefing. It is for the purpose determining the mental and physical readiness, and situational awareness preparedness of participants before the HRA occurs. The interviewer can discuss with the interviewee the risks of the activities and ascertain some idea of the likelihood that the participant can enjoy the activity without an unacceptable level of risk. Through this process the interviewer can determine such things as level of experience, knowledge of PPE requirements, physical safety aspects of the area of participation, level of supervision or oversight by qualified professional staffs or officials, rules or recommended practices of professional organizations, and so on. It is also a chance to discuss the mental and physical preparedness of the participant. If interviewers determine participants are not adequately trained or are inexperienced, they should encourage participants to seek additional training through a nationally recognized institute before participating in the activity. **(T-3)**

A11.4. Individual Responsibility. Individuals planning to engage in high-risk activities such as those described in paragraph **A11.2,** will be encouraged to inform his or her immediate supervisor, and schedule an interview their supervisor, squadron commander or designee. The individual engaging in a high-risk activity is responsible for applying sound RM practices to avoid jeopardizing life or limbs and their ability to perform their Air Force duties. **(T-3)**

A11.5. Documentation. AF Form 4391, *High-Risk Activities Worksheet*, may be used to document the briefing, completed by the squadron commander, individual's supervisor, safety officer or training manager.

Attachment 12

CONTINUING EDUCATION AND TRAINING COURSES

Table A12.1. Continuing Career Safety Professional Development (Recommended Safety Courses).

Course Subjects - Topics
Occupational Safety and Health Standards for the Construction Industry
Occupational Safety & Health Standards for the General Industry
Occupational Safety and Health for Other Federal Agencies
Introduction to Industrial Hygiene for Safety Personnel
Principles of Ergonomics Applied to Work-related Musculoskeletal Disorders
National Fire Protection Association (NFPA) Life Safety
National Electric Code (NEC) Electrical Standards
Collateral Duty Course for other Federal Agencies
Control of Hazardous Energy (Lockout-Tagout)
Machinery and Machine Guarding Standards
Hazard Evaluation and Risk Assessment
Permit-Required Confined Space Entry
OSHA Recordkeeping and Inspections
Bloodborne Pathogens Exposure Control
Environmental Compliance Assessment
Disaster Site Worker Train-the-Trainer
Evacuation and Emergency Planning
Hazardous Waste Management
Scaffolding, Cranes, and Rigging
Excavation and Trenching
Traffic Control Technician
Health Hazard Awareness
Respiratory Protection
Fall Arrest Systems
Voluntary Protection Programs
Risk Management
System Safety Course
Other (may include management, writing and other courses designed to improve safety professional management and/or technical skills)

Table A12.2. Continuing Career Safety Professional Development (AFSEC Courses Awarding Continuing Education Units).

Course	CEUs
Aircraft Mishap Investigation Course (AMIC)	10.5
Aviation Safety Program Management (ASPM)	3.5
Mishap Investigation Non-Aviation (MINA)	7.0
Safety Managers Course (SMC)	3.5
Introduction to Mishap Investigation (IMI)	3.5
Risk Management Application and Integration (RM A&I)	2.1
Board President Course (BPC)	2.1
Chief of Safety (COS)	2.8
Air Reserve Component Chief of Safety (ARCCoS)	2.8
ACC Ground Safety Program Management Course (GSPMC)	3.3
Human Factors (HF)	2.0

Attachment 13

SAFETY EDUCATION AND TRAINING

A13.1. Safety Training. Air Force Catalog (AFCAT), *USAF Formal Schools* found at the following website **https://etca.randolph.af.mil** (formerly AFCAT 36-2223), outlines specific safety-related courses (those listed below with a number designation). Refer to the AFCAT for full course descriptions and prerequisites. Training in System Safety (CLE 009) is available from Defense Acquisition University (**http://www.dau.mil**). Organizations responsible for course management are indicated in parenthesis.

A13.2. Mishap Investigation.

A13.2.1. Safety and Accident Investigation Board President Course (BPC), AFSC810 (HQ AFSEC).

A13.2.2. Aircraft Mishap Investigation Course (AMIC), WCIP05A (HQ AFSEC).

A13.2.3. Mishap Investigation Non-Aviation (MINA) Course, WCIP059 (HQ AFSEC).

A13.2.4. Aircraft Mishap Investigation and Prevention (AMIP) Clinical Psychologist, B3OZY42P3 003, (AFMC).

A13.2.5. Aircraft Mishap Investigation and Prevention (AMIP) Aerospace Physiologist, B3OZY43A 003, (AFMC).

A13.2.6. Aircraft Mishap Investigation and Prevention (AMIP) USAF Medical Investigator (Flight Surgeon), B3OZY48G3 003, (AFMC).

A13.2.7. Aircraft Mishap Investigation and Prevention (AMIP) Non-USAF Medical Investigator (Flight Surgeon or other physician), B3OZY48G3 010 (AFMC).

A13.2.8. Life Sciences Equipment Investigation Course (LSEIC), J3AZR1P071 0L1A, (AETC).

A13.3. Unit Safety Representatives (USR). Developed by AFSEC/SEG or MAJCOM/DRU/FOA, supplemented to include MAJCOM/DRU/FOA/local unique requirements.

A13.4. Aviation:

A13.4.1. Flight Safety NCO (FS NCO), L3AZR1S071-0S5A (AETC).

A13.4.2. Security Assistance Training Program (International) Flight Safety Officer Course (IFSO), WCIP05U (HQ AFSEC).

A13.4.3. Air Combat Command (ACC) Flight Safety Program Management Course, 3J5ACC1XXXX 000.

A13.4.4. DCMA Aviation Safety Officer Course, ASO.

A13.4.5. Air Reserve Component Chief of Safety Course ARCCOS

A13.5. Ground:

A13.5.1. Safety Apprentice, L3ALR1S031 0S2B (AETC).

A13.5.2. Safety Craftsman, L3ACR1S071 0S2B (AETC).

A13.5.3. OSHA Training Institute (OTI) (AFSEC).

A13.5.4. National Safety Council (NSC) Safety Training Institute (AFSEC), Refer to OSHA Training Institute catalog.

A13.5.5. Advanced Occupational Safety (AFSEC), Refer to NSC Safety Training Institute course catalog.

A13.5.6. Radiation Safety Officer Course, B6OZW43EXA-0A1A.

A13.5.7. Air Combat Command Ground Safety Program Management Course, 3J5ACC1SOX1 000

A13.6. Weapons:

A13.6.1. Weapons Safety Management Course , L3AZR2W071 0C2A. (AETC)

A13.6.2. ACC Weapons Safety Program Management Course, 3J5ACC2W0X1 000.

A13.6.3. Lightning Protection for Air Force Facilities (AMMO-47 OS), J5AZB3E051 00AA

A13.7. Space: Space Systems Safety Course (AFSPC/SMC).

A13.8. Management:

A13.8.1. Chief of Safety (COS) Course, WCIP05B. (AFSEC)

A13.8.2. Safety Manager Course (SMC), WCIP05D. (AFSEC)

A13.9. Risk Management (RM):

A13.9.1. AF RM Fundamentals Course (ADLS – under Misc Courses).

A13.9.2. AF RM Application and Integration Course (RM A&I), WCIP 05E (PDS Code WEI; AFSEC-on site).

A13.10. Other:

A13.10.1. Operational Safety, Suitability and Effectiveness (OSS & E) WSYS155 (AFIT).

A13.10.2. Environmental, Safety, and Occupational Health (ESOH) Compliance Assessments, WENV020 (AFIT).

A13.10.3. Course 8, Supervisor Safety Training (SST), ZZ132012, (HQ AFSEC/SEG).

A13.10.4. ACC Aircrew Flight Equipment Program Manager’s Course, 3J5ACC1P0X1 000.

Attachment 14

1S0X1 RETRAINEE EVALUATION PROCESS

A14.1. The local Ground Safety Manager (GSM) or designated representative will act as initial Evaluating Agent for retraining applicants. **(T-3)**

A14.2. The Evaluating Agent will: **(T-3)**

A14.2.1. Ask the applicant's immediate supervisor to appraise his or her work performance, attitude and overall character.

A14.2.2. Provide applicant a briefing on Safety programs and responsibilities. Discuss the safety career field and answer any questions. Determine if applicant has problems which would preclude working nights, holidays, standby, TDY, overseas assignments or deployments. Also, problems with prolonged standing or walking or other medical problems which would affect work performance.

A14.2.3. Establish and document an observation period for all applicants under consideration for retraining. The applicant must complete up to a 10 duty-day assessment period with the local Safety office before the Evaluating Agent can make a recommendation. **(T-3)**

A14.2.4. Provide meaningful, structured activities which assist in assessing the applicant's suitability for the Safety career field. The activities will consist of:

A14.2.4.1. Assessment of applicant's communication skills: Abilities to write and speak clearly and distinctly.

A14.2.4.1.1. Applicant will write a memorandum stating their reasons for wanting to retrain into the career field. Memorandum will include strengths, areas for improvement and what the applicant can contribute to improve the safety program. **(T-3)**

A14.2.4.1.2. Applicant will instruct/lead some portion of a safety class, i.e., Course II, Course IIIB, SST, FTAC. **(T-3)**

A14.2.4.2. Introduction to inspection/spot inspection process.

A14.2.4.2.1. Applicant will review annual reports, conduct follow up for the open write-ups AND conduct spot inspections. **(T-3)**

A14.2.4.3. Familiarization to Flight line/maintenance/industrial areas.

A14.2.4.3.1. Applicant will visit flight line/maintenance/industrial areas as deemed appropriate by the Evaluating agent. **Note:** This may be incorporated into paragraph **A14.2.4.2.1** **(T-3)**

A14.2.4.4. Introduction to mishap investigation.

A14.2.4.4.1. Applicant will partake in the investigation and processing of a mishap. Preferably a real mishap, but a training scenario may be used. This includes an AFSAS familiarization session, reviewing mishap findings to establish causal factors and a mishap summary/out-brief to the Chief of Safety. **Note:** This activity will include briefing applicant on what to expect at a mishap scene. **(T-3)**

A14.2.4.5. Introduction to Hazard Abatement Program.

A14.2.4.5.1. Applicant will assign a Risk Assessment Code to a hazard (actual or simulated) based on an assessment of the mishap potential and its severity. Applicant will also process AF Forms 457, *USAF Hazard Report*, and 1118, *Notice of Hazard.* **(T-3)**

A14.2.5. Provide the servicing FSS with a memorandum summarizing the following areas based on research and structured activities:

A14.2.5.1. Approval/Disapproval of applicant's request for retraining.

A14.2.5.2. Assessment of applicant's structured activities.

A14.2.5.3. Assessment of applicant's communication skills, both written and verbal.

A14.2.5.4. Overall assessment of the appearance, moral standards, military conduct and bearing.

A14.2.6. Complete the Safety 101 CBT.

Figure A14.1. 1S0 Safety Retraining Memorandum (Example).

MEMORANDUM FOR
FROM:
SUBJECT: 1S0 Safety Retraining Memorandum
1. I approve/disapprove _ (applicant's Rank and name) request for retraining.
2. Applicant:
a. (Did/did not) complete the 10 duty-day assessment period.
b. (Has/does not have) ability to communicate: write, and speak clearly and distinctly.
c. (Has/does not have) ability to meet the needs of the Safety career field.
d. (Has/does not have) appearance, moral standards, military conduct and bearing to meet the needs of the Safety career field.
Explain:
_____
3. I interviewed applicant's immediate supervisor and foresee no problems OR have reason for concern.
Explain:
_____
4. Applicant received a briefing on Safety programs and responsibilities and has/has no problems which would preclude working nights, holidays, standby, TDY, overseas assignments or deployments.
Explain:
_____
5. If you have questions please contact me at DSN: xxx-xxxx.

SIGNATURE BLOCK

Attachment 15

PREPARATION OF RISK ASSESSMENTS

A15.1. Risk Assessment. A risk assessment succinctly documents the results of several steps in the risk management process and supports follow-on decision-making processes (reference AFI 90-802, *Risk Management*, AFPAM 90-803, *Risk Management Guidelines and Tools*, and AF Form 4437, *Deliberate Risk Assessment Worksheet*). Decision options typically involve determining whether one or more particular courses of action should be pursued (e.g., implementing equipment improvements, safety or warning device improvements, operational improvements, technical improvements, policy improvements), or whether a risk should be accepted. A risk assessment supports decision-making processes by objectively identifying a hazard, assessing its risk, thoroughly analyzing potential options for risk mitigation and making a recommendation. **Note:** The term "losses," also include fatalities, not just system losses. A suggested risk assessment is show in Figure **A15.1** below.

Figure A15.1. Sample Risk Assessment Layout.

Risk Assessment Title
Background: Broadly describe the situation being evaluated. Provide sufficient detail so the remainder of the risk assessment may be easily understood.

Hazard Identification: Hazards are defined as any real or potential condition that can cause mission degradation, illness or injury to personnel or damage to or loss of equipment or property. Accurately and succinctly describe the hazard (e.g., deficiency with engineering design, material, quality, software, operations, maintenance) being analyzed.

Initial Risk: The first assessment of the potential risk associated with an identified hazard. Risk is the probability and severity of loss from exposure to the hazard. Risk assessment is the application of qualitative and quantitative measures to determine the level of risk associated with the identified hazard. Identify the probability and severity of a mishap that could result from the hazard, based upon the exposure of personnel or assets to the identified hazard. Use the baseline or "as designed" state as the basis for determining the initial risk. Fully explain the methodology used, data considered (e.g., reported mishaps/events, deficiency reports, test results, etc) and rationale for determining the baseline for measuring risk.

Interim Risk: Many times initial mitigation steps have already been taken prior to the completion of a written risk assessment. These steps may include permanent risk mitigation measures or temporary stop-gap risk mitigation measures. Describe these measures and explain how the baseline risk is being mitigated, their effectiveness and the resulting interim risk until final risk mitigating options can be implemented.

Risk Mitigation Options: It is likely several options still exist to mitigate the risk of the identified hazard. Effective control measures reduce or eliminate one of the three components (i.e., probability, severity or exposure) of risk. Investigate specific strategies and tools that reduce, mitigate or eliminate risk. Address each risk mitigation option separately. One option to always consider is "taking no further action" which is the equivalent of accepting the baseline

risk and acknowledging and accepting expected future losses. For each option, including accepting the baseline risk, address:

Description: Describe the option being evaluated.

Impact: Describe the impact of this option. What are its benefits; limitations? Address its effectiveness and explain how it will eliminate or control future losses. Does it address other hazards/problems or introduce new ones?

Cost: Estimate the costs (i.e., financial, operational, maintenance) to implement this option.

Schedule: Estimate schedule implement this option.

Target Risk: Describe the risk level the PM intends to achieve by implementing mitigation measures.

Residual Risk: This is the risk that remains after all mitigations have been implemented. Residual risk may be above, below, or the same as the target risk. Great risk mitigation options eliminate hazards and their risk entirely; others only reduce the risk. Assuming this risk mitigation option is implemented; identify the probability and severity of a mishap that could result from the hazard based upon the exposure of personnel or assets to the identified hazard. Fully explain the methodology used (including analytical assumptions and limitations), data considered, and rationale for determining the residual risk.

Expected Future Losses: Estimate the expected losses with implementation of this option. Express losses over a period of time, a number of events or for a given population. Fully explain the methodology used, data considered and rationale for determining these expected losses.

Summary of Options: If the number of risk mitigation options is lengthy, a tabular summary may be appropriate. Include, as necessary.

Recommendation: State the recommended courses of action, including rationale.

Attachment 16

SAFETY RELEASE

A16.1. Requirement.

A16.1.1. The PM shall provide a safety release for the system prior to each developmental and operational test involving personnel. The safety release must identify the hazards involved in the test and their formal risk acceptance. A Safety Release provides the Test and Evaluation community the known system-related Environment, Safety and Occupational Health (ESOH) hazards prior to exposing people, equipment or the environment. The safety release must transmit system ESOH hazard data to the operators, maintainers, trainers and testers. Test organizations use the safety release and other relevant data, documents and expertise to assess, further mitigate and accept test risks as appropriate. Refer to the Defense Acquisition Guidebook, DoDI 5000.02, MIL-STD-882E, and AFMAN 63-119 for additional information. As a minimum, the safety release will contain: **(T-0)**

A16.1.1.1. Known hazards and mitigation actions/measures identified and tracked by the program office (e.g., master hazard list, Safety Assessment Report, SSG tracked hazards, previous test identified hazards, airworthiness analysis/certificates).

A16.1.1.2. A cover letter or equivalent by the PM stating the item/system is safe to test given known hazards and mitigating measures, signed by the appropriate acquisition risk acceptance authority (A16.1.2).

A16.1.2. The PM shall document that the associated risks have been accepted by the appropriate acquisition acceptance authorities as specified in DoDI 5000.02. The user representative shall be part of this process throughout the life cycle and shall provide formal concurrence prior to all serious- and high-risk acceptance decisions. **(T-2)**

A16.2. Format.

A16.2.1. The AFSEC recommended format for a safety release is provided in **Figure A16.1**

Figure A16.1. Safety Release Letter (Example).

MEMORANDUM FOR [Test Organization(s)] [Date]
FROM: [Organization/Office Symbol]
[Organizational Address]
SUBJECT: [Program Name] [Specific Activity, (e.g., RDT&E, FDE, OA, OT&E)] Safety Release
Ref: DoDI 5000.02, Operations of Defense Acquisition Systems [include any systems safety and programmatic documentation (e.g., SSHA, SAR, PESHE) used to prepare this document]
1. Purpose. [State the purpose of the program, services involved, which service has lead, which office has been designated at the system's Acquisition Program Office lead. State what time frame/operations/testing this safety release will cover.]
2. System Description. [Give a brief system description with the name, type, model number/designation, software version and the system mission (as applicable). Indicate how the system/materiel works and/or how it will be used/worn/operated.]
3. Discussion. [Discuss sources of data and summarize the open, mitigated and unmitigated ESOH hazards affecting this safety release. Provide the resultant risk level of those hazards.

Provide which user representative(s) are/were a part of this process and have/will provide formal concurrence prior to all serious- and high-risk acceptance decisions.]
4. Conclusions/Recommendations. [Indicate whether the system is safe for testing and whether or not there are any exceptions that need to be detailed. Highlight any known safety problems requiring additional investigation during test. List any technical or operational limitations or precautions needed to prevent injury or equipment/property/environmental damage.] [Org/office] must be immediately notified of any safety related anomalies regarding the use of the system under test.
5. Point of Contact (POC). The POC is [Program Manager (and Systems Safety Manager, as required), office symbol(s), DSN and Commercial phone numbers, e-mail address(es).]
[Signature]
[Signature block of appropriate risk acceptance authority (see paragraph **A16.1.2** above)]
[Number of attachments] Attachments
1. [List of the appropriate attachments/documents used to support this safety release]
Distro:
[List the organizations/office symbols of the user representatives and testing organizations which will require/coordinate this safety release]
AFSEC/[XX]
AFOTEC/SE [or MAJCOM/SE, if an FDE]
AFMC/SES
[LDTO]
[User]

Attachment 17

ANNUAL AFSMS MANAGEMENT REVIEW PLAN

A17.1. Annually reviewing safety programs and analyzing results is essential to identify areas for continual improvement, correction of identified weakness, prioritization of factors related to implementation and ultimately the successful execution of the mishap prevention program under the SMS construct. This analysis and resulting adjustments to the safety program should improve the wing's processes and procedures, and consequently, decrease the frequency and/or severity of mishaps.

A17.1.1. The annual AFSMS Management Review provides senior leaders with a clear picture of the effectiveness of their safety function as well as its impact on the mission of the organization. The review will contain a statement declaring the mishap prevention program conformance and performance under the systemic processes of the AFSMS was either, met and effective, met but needs minor improvement(s), met but needs significant improvement(s), or was not effective. **(T-1)**

A17.1.2. The objective of the annual AFSMS Management Review Plan is to shift the focus of the safety program by leadership, to long-term solutions rather than reactionary one-time fixes. It is understood that the preparation and presentation of AFSMS Management Review is a new process with this version of the AFI 91-202. While statistical products related to mishap trend analysis, hazard reporting and abatement, are already a staple of the Air Force Mishap Prevention Program, other elements of this guide may be new. As the OPR, AFSEC/SEG asks that each unit make their best effort at the construction and presentation of this product during the first annual cycle in 2015. We will revise and improve this section using best-practices and suggestions from the field based on real lessons-learned for publication in subsequent changes to this AFI. The long-term strategy is to provide a near completely automated analysis capability within an IT system, like the Air Force Safety Automated System (AFSAS,) as resources permit. Nevertheless, a key and required feature of the Safety Management System is both internal and external programmatic assessments with a scorecard, to ensure continuous improvement. The interim, internal self-assessment, scorecard tool for the AFSMS will be the Annual AFSMS Management Review as described in this attachment.

A17.1.3. The annual SMS management review plan delineated below will address all areas in the "Plan – Do – Check – Act" format, unless stated otherwise. Refer to **Figure A17.1** for additional information. **(T-1)**

A17.2. Required Elements of the Annual AFSMS Management Review: (T-1)

A17.2.1. Safety goals, objectives, and priorities for the next fiscal year. **(T-1)**

A17.2.2. Analysis of the prior fiscal year's safety goals, objectives, and priorities being met. (T-1)

A17.2.2.1. Review of safety-related findings, trends, and corrective actions from CCIP and UEI reports conducted IAW AFI 90-201. **(T-1)**

A17.2.3. Risk reduction progress. **(T-1)**

A17.2.3.1. The progress in reduction of risk will include as a minimum (as applicable) the following categories, and using at least five years of previous data to compare/contrast to: **(T-1)**

A17.2.3.1.1. Civilian On-Duty Ground Mishaps.

A17.2.3.1.2. Military On-Duty Ground Mishaps.

A17.2.3.1.3. PMV-4 Off-Duty Ground Mishaps.

A17.2.3.1.4. PMV-2 Off-Duty Ground Mishaps.

A17.2.3.1.5. Space pre-launch mishaps.

A17.2.3.1.6. Space launch mishaps.

A17.2.3.1.7. Space orbit mishaps and events.

A17.2.3.1.8. Ground based space systems mishaps and events.

A17.2.3.1.9. Human Factors Assessment Codes for causal and contributory factors for all class A and B mishaps and on-duty Class C mishaps.

A17.2.3.1.10. Classified mishaps.

A17.2.3.1.11. AFCMRS and OSA results.

A17.2.3.1.12. Flight Class A, B, C, D mishaps and Class E events, and Proactive Safety trends to include ASAP, MFOQA and LOSA data.

A17.2.3.1.13. Weapons Class A, B, C, D mishaps, Class E events, Dull Swords results from weapon system safety rules violations and proactive safety trends.

Note: The Business Intelligence Tool of AFSAS will format/provide these slides at the MAJCOM, NAF, Wing, and Squadron levels.

A17.2.4. Effectiveness of safety processes to identify, assess, and prioritize risk and system deficiencies that support the organization's ability to execute its mission. Address both successes and failures of the safety processes in order to identify areas for improvement, where applicable. **(T-1)**

A17.2.5. Effectiveness in addressing underlying causes of risk and system deficiencies that includes an analysis of human factors in mishap reports and causal factors on annual inspections. If adverse trends are noted, specific actions planned to address them must be annotated in this section. Action plans already referenced from inspections conducted IAW AFI 90-201 may be referenced here. **(T-1)**

A17.2.6. Input from management, leadership, employees and employee representatives. **(T-1)**

A17.2.6.1. Hazard reporting, employee suggestions/complaints, etc., will be addressed in this section. **(T-1)**

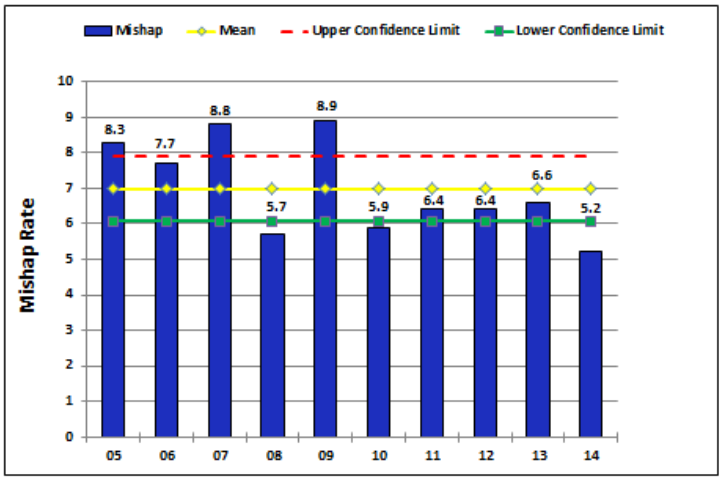
A17.2.7. Status of corrective and preventative actions and changing circumstances (Hazard Abatement). A review of open risk assessment codes, open management deficiencies, and similar issues will be addressed in this section. **(T-1)**

A17.2.8. Follow up actions from safety inspections/assessments and previous annual management reviews. **(T-1)**

A17.2.9. Signature of Commander (Installation/NAF/MAJCOM as appropriate). May be delegated no lower than vice or deputy commander, or executive director. **(T-1)**

Figure A17.1. Example of slide with control limits and Plan–Do–Check –Act Analysis.

PMV Mishap Rates by FY (Sample Slide only).



Plan (FY15): Obtain a reduction of the previous three-year average.

Do: As traffic safety continues to be one of the largest risks, our safety offices provided numerous traffic safety courses, provided unit safety representatives a large volume of traffic safety information for dissemination, and prior to long weekends/holiday periods emphasized traffic safety risks. Additionally, supervisors are highly encouraged to take advantage of the AF Form 4392, *Pre-Departure Safety Briefing,* for those 26 and under.

Check: 10% decrease from our three year-average. This is an outstanding reduction we should be proud of. Although some of the credit must be given to the increase in vehicle safety over the last decade (e.g., stability control systems, anti-lock brakes, tire-pressuring monitoring systems, multiple air bags, etc.), with the decline we saw in 2014, our Airmen are driving safer and applying sound RM while driving.

Act (FY15): Although we are proud of our success, our focus in FY15 should be:

1. Distracted driving. Technology continues to improve the safety of motor vehicles; however, if vehicle operators let distractions get in the way of the task at hand, the odds of a mishap increase dramatically.

2. Continue emphasis on Driving Under the Influence/While Intoxicated (DUI/DWI) and proper use of restraints

3. Send drivers with identified at-risk behavior(s) through Course V, Driver's Improvement Course