

6 JULY 2004



PACIFIC AIR FORCES COMMAND
Supplement 1

22 OCTOBER 2004

Safety

AVIATION SAFETY INVESTIGATIONS AND
REPORTS

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

NOTICE: This publication is available digitally on the AFDPO WWW site at:
<http://www.e-publishing.af.mil>

OPR: HQ AFSC/SEFM (Lt Col Folkerts)

Certified by: HQ AFSC/SEF (Col Corso)
Pages: 65
Distribution: F

This manual provides aviation unique guidance to support AFI 91-204, *Safety Investigation and Reports*. It directs procedures specific to investigating and reporting USAF aviation mishaps and events. It implements Air Force Policy Directive (AFPD) 91-2, *Safety Programs*. It applies to commanders, managers, supervisors, and safety staffs at all levels, all persons who investigate and report Air Force mishaps, and those persons who handle such reports. Ensure that all records created by this AFI are maintained in accordance with AFMAN 37-123, *Management of Records*, and disposed of in accordance with AFMAN 37-139, *Records Disposition Schedule*.

Send major command (MAJCOM) supplements to HQ USAF/SE, 9700 G Avenue SE, Kirtland AFB NM 87117-5670, for approval before publication.

Reference AFI 91-204, **Attachment 1** for a Glossary of References and Supporting Information.

(PACAF) This publication gives command procedures for investigating and reporting all US Air Force flight mishaps. It applies to commanders, functional managers, supervisors, and all PACAF personnel. It replaces AFI 91-204, *Safety Investigations and Reports*, Chapter 7, *Aircraft Mishaps and Events*. Material in the previous PACAF Supp to AFI 91-204, Chapter 7 has been carried forward to this publication. This publication does not apply to the Air National Guard (ANG) and the Air Force Reserve Command (AFRC) members or units.

(PACAF) AFMAN 91-223, 6 July 2004, is supplemented as follows:

Chapter 1— GENERAL INFORMATION	4
1.1. Overview.	4
1.2. Non-reportable mishaps.	4

- 1.3. Aviation Events that Require Safety Investigations and Reports. 4
- 1.4. UAV Mishaps. 8
- 1.5. Parachute Recovered RPV Costs. 9
- 1.6. (Added-PACAF) Quarterly Flight Summaries. 9

- Chapter 2— RESPONSIBILITIES** **11**

 - 2.1. Responsibilities of the Interim Safety Board (ISB) President. 11
 - 2.2. Deployed Unit Safety Operations. 12

- Chapter 3— PRIVILEGED SAFETY INFORMATION** **13**

 - 3.1. General Information. 13

- Chapter 4— DETERMINING INVESTIGATIVE RESPONSIBILITY** **14**

 - 4.1. Mishap Ownership. 14
 - 4.2. Mishaps Involving Civil Aviation and/or Federal Air Traffic Services. 14

- Chapter 5— SAFETY INVESTIGATIONS** **15**

 - 5.1. General Guidelines. 15
 - Table 5.1. SIB Membership Minimum Requirements. 15
 - 5.2. Safety Investigation Board Member Roles. 16
 - 5.3. SIB/SIO Requirements and Restrictions. 19
 - 5.4. Investigative Evidence. 21
 - 5.5. Deficiency Reporting Procedures. 24
 - 5.6. Coordinating with an AIB. 25

- Chapter 6— REPORTS AND BRIEFINGS** **28**

 - 6.1. General Information. 28
 - 6.2. Class E HATR and CMA Violation Reporting Procedures. 30
 - Table 6.1. FAA AFREP and Regional Boundaries By State. 33
 - 6.3. Life Sciences Safety Reporting. 34
 - 6.4. Documenting the Investigation and Analysis. 34
 - 6.5. Formal Reports. 35
 - Figure 6.2. Formal Report Distribution Memorandum. 38
 - Table 6.2. Example Certificate of Damage. 42
 - Figure 6.3. Tab T Outline. 45

AFMAN91-223_PACAFSUP1_I 22 OCTOBER 2004	3
6.6. Briefing Investigation Results.	49
Chapter 7— FOLLOW-UP ACTIONS	50
7.1. Overview.	50
7.2. Acting upon Recommendations.	50
Figure 7.1. Sample Final Review Comments.	53
7.3. Forms Adopted.	53
Attachment 1— GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION	55
Attachment 2— SAFETY MESSAGE FORMATS	60
Attachment 3— DMS RELEASE OF SAFETY MESSAGES AND FORMAL REPORT ROUTING	61

Chapter 1

GENERAL INFORMATION

1.1. Overview. This manual provides aviation unique guidance to support AFI 91-204, *Safety Investigation and Reports*. It directs procedures specific to investigating and reporting USAF aviation mishaps and events.

1.2. Non-reportable mishaps. Do not report Aviation Mishaps meeting Class D dollar cost or injury criteria as defined in AFI 91-204, paragraph 1.8.4.

1.3. Aviation Events that Require Safety Investigations and Reports.

1.3.1. Class E Events. Events that do not meet reportable mishap classification criteria described in AFI 91-204, paragraph 1.8. and have a high potential for causing injury, occupational illness, or damage if they recur (high potential for becoming a mishap). Class E events are deemed important to investigate and trend for mishap prevention. Unless noted, report all events whether intent for flight is established or not. In most cases, events do not require reporting if they occur as described in the aircraft flight manuals and are expected responses to crew's actions or flight regime. For example, do not report the loss of pitot-static instrument indications if the loss is the result of crew failure to activate the pitot heat. If the circumstances of an event meet two or more criteria, such as an in-flight fire which results in a physiological episode, report the event utilizing the following hierarchy: Physiological, Propulsion, Flight Control, Instrument, Miscellaneous, High Accident Potential (HAP). Hazardous Air Traffic Report (HATR), Controlled Movement Area (CMA) Violation, Bird/Wildlife Aircraft Strike Hazard (BASH).

1.3.1.1. Physiological Events. Report episodes of abnormal physical, mental, or behavioral conditions or symptoms which occur during or after flight. For assistance in determining reportability of physiological events, contact the owning MAJCOM SEF, SGP, or HQ AFSC/SEFL, DSN 246-0830/0880, commercial (505) 846-0830/0880. The following events must be reported:

1.3.1.1.1. Aircrew or passenger decompression sickness from evolved gas (bends, chokes, skin, neurological, or neurocirculatory manifestations).

1.3.1.1.2. Aircrew loss of consciousness or incapacitation in-flight.

1.3.1.1.3. Aircrew hypoxic (altitude) hypoxia (suspected, probable, or definite).

1.3.1.1.4. Aircrew trapped gas disorders (ear, sinus, teeth, or abdominal).

1.3.1.1.5. Aircrew or passenger symptoms or health effects caused by toxic, noxious, or irritating materials such as smoke, fumes (including carbon monoxide) or liquids.

1.3.1.1.6. Aircrew G-induced loss of consciousness.

1.3.1.1.7. Aircrew spatial disorientation of any type (including visual illusion) resulting in an unusual aircraft attitude.

1.3.1.1.8. Any medical condition, event or physical injury directly resulting from performance of flight activities that an aeromedical professional determines is significant to the health of the aircrew.

1.3.1.1.9. Aircrew degraded operational capabilities or retinal damage caused by military or commercial lasers.

1.3.1.1.10. (Added-PACAF) The director of base medical services or the designated representative will make a telephonic report to HQ PACAF Office of Command Surgeon within 4 hours on the following Class E physiological mishaps:

1.3.1.1.10.1. (Added-PACAF) Hypoxic (altitude), hypoxia (suspected, probable, or definite).

1.3.1.1.10.2. (Added-PACAF) Decompression sickness from evolved gas (skin, bends, chokes, neurological or neurocirculatory involvement).

1.3.1.1.10.3. (Added-PACAF) Loss of consciousness from any cause. For G-induced loss of consciousness (G-LOC) reports on aircrew and passengers in ejection seat or encapsulated equipped aircraft.

1.3.1.1.10.4. (Added-PACAF) Incidents potentially related to positive pressure breathing.

1.3.1.1.10.5. (Added-PACAF) During duty hours (0700-1700 Hawaiian Standard Time) make the report directly to HQ PACAF Office of Command Surgeon. For incidents occurring during non-duty hours, make the report the morning of the next duty day.

1.3.1.2. Propulsion-Related Events. Report the following propulsion related events:

1.3.1.2.1. Loss of thrust sufficient to prevent maintaining level flight at a safe altitude or which requires the pilot to jettison stores.

1.3.1.2.2. Engines which do not restart normally after an intentional in-flight engine shutdown for training, functional check flight (FCF) or other non-emergency purposes. A normal restart is one that occurs at the planned and expected time and altitude using routine restart procedures.

1.3.1.2.3. Emergency or precautionary landing of a single engine or rotary wing aircraft, with imminent engine or rotor drive system failure confirmed after landing.

1.3.1.2.4. Any unselected or inadvertent propeller or thrust reversal event.

1.3.1.2.5. Turbine engine flameout, failure, or emergency shutdown after completing normal engine start sequence until normal engine shutdown at mission conclusion. This applies to all single engine and multiple-engine aircraft. Do not report:

1.3.1.2.5.1. Flameouts or emergency engine shutdowns occurring during maintenance engine runs

1.3.1.2.5.2. Intentional inflight engine shutdowns for training or FCF.

1.3.1.2.6. All F-16 engine stalls, when operating outside of Region 1 (except F100-PW-200 engine stalls). Do not report stalls occurring during maintenance engine runs.

1.3.1.2.7. All F-15 engine stalls, occurring during afterburner operation that involves maneuvering flight (except F100-PW-100 engine stalls). Do not report stalls occurring during maintenance engine runs.

1.3.1.3. Flight Control-Related Events.

- 1.3.1.3.1. Unintentional departure from controlled flight for any reason.
 - 1.3.1.3.1.1. (PACAF) Use MDS specific dash 1 flight manual for definition of departure for that aircraft.
 - 1.3.1.3.2. All uncommanded inputs to the flight controls (including stability augments, auto-pilot, or trim systems) whether it results in a dangerous situation or not. Report autopilot faults if, in the opinion of the investigator, the autopilot would have put the aircraft in a dangerous situation.
 - 1.3.1.3.3. All uncommanded reversions to a backup mode for any safety critical flight control system.
 - 1.3.1.3.4. Aircraft side stick controller interference from any source or for any reason.
- 1.3.1.4. Instrument-Related Events.
 - 1.3.1.4.1. In-flight loss of all pitot-static instrument indications.
 - 1.3.1.4.2. In-flight loss of both primary and standby attitude indicators.
 - 1.3.1.4.3. Simultaneous loss of more than one electronic display (i.e.; Multi-function Display/CRT) showing attitude, altitude, airspeed or heading. Report regardless of duration of event or ability to fly the aircraft on standby instruments.
- 1.3.1.5. Miscellaneous Aircraft Events.
 - 1.3.1.5.1. In-flight fires.
 - 1.3.1.5.2. Massive fuel leakage in an engine bay.
 - 1.3.1.5.3. All gear up landings.
 - 1.3.1.5.4. Unintended departure from takeoff or landing surfaces, (e.g. runway, helipad, landing zone, etc.) onto adjacent surfaces. Includes landing short of the landing surface. For the purposes of this manual, the overrun is considered part of the takeoff or landing surface.
 - 1.3.1.5.5. Spillage or leakage of radioactive, toxic, corrosive, or flammable material from aircraft stores or cargo that creates a hazardous condition or an airborne emergency divert. Identify in the message which agency or unit prepared the shipment. If cargo is shipped under a waiver, tell which agency (MAJCOM, Numbered Air Force, etc.) granted the waiver.
 - 1.3.1.5.6. Explosive/missile releases impacting outside of the impact area. If a malfunction of the explosive or missile is involved, report as explosive/missile mishap.
 - 1.3.1.5.7. Any unintentional strike by an aircraft or UAV to another object.
 - 1.3.1.5.8. All events where a member of the crew executed any portion of an emergency checklist in response to smoke or fumes. The intent is to report those noxious fumes and/or visible particulate matter that the crew has decided constituted a safety hazard versus an annoying odor. If the event meets the reporting criteria in paragraph 1.3.1.1., report as a "Physiological Event."
 - 1.3.1.5.9. In-flight malfunction of an air refueling drogue, hose, hose reel assembly, or refueling pod.

1.3.1.5.10. Structural failure of critical landing gear components. A critical landing gear component is defined as any component that could cause landing gear collapse upon failure.

1.3.1.5.11. In-flight hoist malfunctions involving inadvertent separation of the hoist cable from the hoist (i.e., inadvertent cable shear or cable unwrapping from the drum).

1.3.1.6. High Accident Potential (HAP) Events. Report any hazardous occurrence that has a high potential for becoming a mishap as a HAP event. This includes emergency conditions arising from aircraft operation or from the failure or malfunction of systems or components essential for safe flight.

1.3.1.7. Hazardous Air Traffic Report (HATR) Events. Report any air traffic or movement area hazardous occurrence that endangers the safety of an aircraft or UAV. The intent of the HATR program is to identify potentially hazardous aviation practices or procedures based on a particular event and to disseminate information that might prevent similar hazardous conditions at other USAF locations or operations. See paragraph 6.2. for specific HATR reporting guidance. Report the following:

1.3.1.7.1. Near Mid Air Collision (NMAC): Aircrew took abrupt evasive action to avoid a collision or would have taken evasive action if circumstances allowed.

1.3.1.7.2. TCAS Resolution Advisories (RA): TCAS RAs (involving USAF aircraft/UAV) that require the aircraft/UAV to deviate from an assigned clearance. This includes USAF aircraft/UAV triggering TCAS RA aboard civil or other DOD aircraft.

1.3.1.7.3. Air Traffic Control (ATC) Services: Any ATC service that contributed to a hazardous air traffic condition. Example: Failure by ATC to maintain required separation between aircraft under their control.

1.3.1.7.4. Pilot Procedures: Any aircrew actions that contributed to a hazardous condition.

1.3.1.7.5. Navigational Aid (NAVAID): An equipment indication/malfunction that contributed to a hazardous air traffic condition.

1.3.1.7.6. Flight Information Publication (FLIP)/ Notice to Airman (NOTAM): Any occurrence with the FLIP/NOTAM publications that contributed to a hazardous condition

1.3.1.7.7. Ground Events: Any occurrence caused by an aircraft, vehicle, or pedestrian in the movement area (e.g. taxiway/ramp/parking area) that endangers an airborne aircraft or an aircraft operation on the ground.

1.3.1.7.8. Runway Intrusions: Unauthorized entry of a runway or other surface used for take-off and landing of aircraft that results in aircraft endangerment.

1.3.1.7.9. Publications/Directives: Errors in air traffic publications/directives that contributed to a hazardous air traffic condition.

1.3.1.7.10. Communications: Any communications, or lack thereof, that contributed to a hazardous air traffic condition.

1.3.1.8. Controlled Movement Area (CMA) Violation Events. Reference AFI 91-204, Attachment 1, for CMA definition. Report airfield infractions caused by aircraft, vehicles, or pedestrians entering the CMA without specific control tower approval. See paragraph 6.2. for specific CMA

Violation event reporting guidance. If the violation resulted in the endangerment of an aircraft, report as a Class E HATR event.

1.3.1.9. Bird/Wildlife Aircraft Strike Hazard (BASH) Events. Bird/wildlife strikes (damaging and non-damaging) with less than Class C damage thresholds. Bird/wildlife strikes to captive or live munitions (explosive/missiles) are reported as aviation events. A message is not required for strike events if no other Class E criteria are met (ie. engine shutdown).

1.3.1.9.1. Flight safety offices of the organization owning the aircraft will report bird/wildlife strikes. Strikes occurring to non-USAF DoD aircraft at AF bases are reported by the host installation flight safety office.

1.3.1.9.1.1. (Added-PACAF) All bird/wildlife strikes need to be entered into AFSAS, but no final message is required if no other Class A/B/C/E damage/criteria apply.

1.3.1.9.1.2. (Added-PACAF) Ensure transient air crew fill out a bird/wildlife strike form, then send a copy via fax/email to the owning safety office for entry into AFSAS.

1.3.1.9.2. Aircrews and maintenance personnel documenting the necessary data for reporting wildlife strikes through AFSAS can use AF Form 853, Air Force Bird/Wildlife Strike Report.

1.3.1.9.3. Wildlife strike events occurring while aircraft are assigned to an expeditionary force will be reported by the expeditionary force flight safety office, when staffed adequately.

1.4. UAV Mishaps. If a UAV is destroyed and destruction was not a desired objective of the planned mission, it is considered a UAV mishap. If UAV destruction was a desired objective of the planned mission, it is a mishap only if destruction occurs outside authorized range airspace and/or if collateral damage results.

1.4.1. Critical Profile Missions. An FSAT RPV or Sub-scale RPV mission may be declared a Critical Profile mission when planned mission requirements result in a high mishap risk.

1.4.2. Critical Profile Mission Criteria.

1.4.2.1. Designate RPV missions as Critical Profile missions when the following criteria are met in mission plans. MAJCOMs and units may expand these criteria or use more restrictive criteria for designating Critical Profiles.

1.4.2.2. Any required track meeting the user's need that places the RPV within 10 seconds (for Sub-scale) or 60 seconds (for FSAT) of the predefined range boundary. Base time on a turn to 90 degrees convergence at the anticipated air speed.

1.4.2.3. Any required altitude meeting the user's need that places the RPV at or below the minimum altitude at which the system was designed to operate reliably.

1.4.2.4. Any presentation placing the RPV at or beyond line-of-sight control or tracking capabilities.

1.4.2.5. Any presentation requiring the RPV to maneuver at the limits of its aerodynamic capabilities or in excess of known subsystem limitations.

1.4.2.6. Any required presentation which saturates control system capabilities, including the RPV controller.

1.4.2.7. For FSAT RPV missions, when economics do not justify man-rating an FSAT for an operational check flight prior to unmanned flight; but an RPV mission is nevertheless desired.

1.4.3. Critical Profile Approval. When informed of a proposed Critical Profile mission, the using command evaluates the mission to determine if benefits warrant mission execution. If approved, owning MAJCOM concurrence and HQ AFSC notification are also required prior to flight. To expedite this process, RPV units will provide written notification to the owning MAJCOM and an information copy to AFSC/SEF of the Critical Profile request, a short risk assessment, and notification of intent to fly NLT one week prior to mission execution. Approval from the owning and using MAJCOMs constitutes execution authority. Within one week, verbal concurrence is required prior to flight, followed by written documentation of concurrence. Using and owning MAJCOMs establish approval authorities based on the risks associated with various critical profiles.

1.5. Parachute Recovered RPV Costs. Include the repair costs or loss involved related to abnormal events or clearly excessive damage. Abnormal events include torn parachutes, late recovery initiation, failure of a parachute to blossom or release, high winds, etc. Excessive damage includes buckling of the main fuselage, fire at impact, destruction of the payload section, etc. Do not include the cost of expected damage to parachute-recovered RPVs resulting solely from surface/water impact during an otherwise normal recovery sequence. This is an operational expense and not reportable. Do not include cost of recovery since recovery is normally a mission objective for recoverable RPVs.

1.6. (Added-PACAF) Quarterly Flight Summaries.

1.6.1. (Added-PACAF) No later than the end of the first month following the end of the quarter, forward the wing's "Quarterly Flying Safety Summary" to PACAF/SEF via e-mail. Ensure it's password protected. The summary should include the following:

1.6.1.1. (Added-PACAF) Flight Safety Manning/Phone Listing: Include listing of Wing and Squadron Flight Safety personnel. Include name, squadron, weapon system and contact phone number.

1.6.1.2. (Added-PACAF) Last quarter mishap summaries: List the type aircraft, mishap class, mishap date, short one line description, and AFSAS report number. Include Class A, B, C, E, HAP, HATRs and Aero Club mishaps.

1.6.1.3. (Added-PACAF) Bird/wildlife strikes: List all bird/wildlife strikes for the quarter. Include transient as well as local aircraft.

1.6.1.4. (Added-PACAF) Listing of potential SIB members. Break listing out by SIB position. List the following Primary SIB members; Board President, Investigating Officer, Flight Surgeon, Pilot Member, and Maintenance Member. Also include Conditional SIB members (if applicable/available); additional crewmembers (navigator, loadmaster, etc.) qualified in the mishap aircraft, Life Support Officer/NCO, Air Traffic Control Officer, Weather Officer and Fire/Rescue. Include name, rank, DEROS, unit assigned, duty phone, aircraft experience, training received (i.e. BP, FSO, etc), date of last local SIB training and if previous SIB experience. See AFI 91-204, 2.11.1 for training requirements.

1.6.1.4.1. (Added-PACAF) Quarterly, PACAF/SEF will coordinate with HQ PACAF/DPCXS for a listing of PACAF assigned personnel trained in the following: WCIP05C/Flt Safety Officer /EPD, WCIP05A /Aircraft Mishap Invest/PZ, J3AZR2A671A 001 /Jet Engine Mishap Invest/B8Y, L3AZR1SO71 004 /Flt Safety NCO/ 8RH, AFSC820/Mishap Invest, Non Air-

craft/I9Q, AFSC810/Safety Board Presidents Course/SIP. Forward listing to all NAF and wing safety offices.

1.6.1.5. (Added-PACAF) Recommendation Status: Include the status of Recommendations from any Class A/B/C/HAP/HATRs that a unit in your wing is the OPR/OCR. List AFSAS number, aircraft type, date of mishap, the Recommendation itself, and the status of the Recommendation. All OPEN Recommendations should be listed as well as any Recommendations that have been CLOSED during the quarter. Include Other Recommendations of Significance (ORS) also.

1.6.1.6. (Added-PACAF) Flying Safety Meeting Minutes: Include minutes from the most recent wing flying safety meeting.

1.6.1.7. (Added-PACAF) 36 ABW forward only Manning, Birdstike, SIB listing and status of any open Recommendations/Other Recommendations of Significance as applicable. NAFs forward only Manning, SIB listing and status of any open Recommendations/Other Recommendations of Significance as applicable. Keep the summaries as simple as possible and in Word format.

Chapter 2

RESPONSIBILITIES

2.1. Responsibilities of the Interim Safety Board (ISB) President. The ISB President will:

2.1.1. Preserve evidence following guidelines established in AFPAM 91-211, *USAF Guide to Aviation Safety Investigation*.

2.1.1.1. Record the name, office symbol, and phone number of each provider of AF or DoD records, including photographs, videos, and ATC tapes.

2.1.1.1.1. USAF and DoD photographers should include their name, office symbol and date on each photograph or set of photographs, or videotape.

2.1.1.2. Request the name, address, and telephone number of bystanders who provide evidence of any kind, placing that information on any photographs or videos provided, including the date of the photograph or recording.

2.1.2. Ensure all equipment associated with the mishap is impounded and turned over to the permanent SIB. Notify other bases with involved equipment (including aerial tankers) of the need for impoundment.

2.1.2.1. (Added-PACAF) In many cases, the opportunity exists to de-brief individuals involved in a mishap, which expedites the safety investigation. However, for some Class A mishaps, the SIB must reconstruct the mishap with only sparse evidence, much of which is provided by the interim SIB. To help the SIB determine Cause(s) and provide mishap prevention Recommendation(s), the evidence must be gathered, protected, and preserved by the Interim Board President and handed to the SIB for analysis. Bottom-line: at no time prior to the hand-over of evidence to the SIB President should any piece of evidence be reviewed, copied, tampered with, or modified (I.E. HUD tape, aircraft/training records, FEF folder, maintenance logs, etc.). The integrity of each piece of evidence is crucial to the success of the investigation and the Air Force's mishap prevention program.

2.1.3. Coordinate with HQ AFSC/SEFE (DSN 246-5867) on the removal and shipping of Flight Data Recorders (FDR) and/or Cockpit Voice Recorders (CVR) prior to the permanent SIB's arrival. The ISB should not hesitate to send FDRs and CVRs upon coordination with HQ AFSC/SEFE. Delays in shipping could needlessly extend the SIB's timeline.

2.1.4. Ensure the ISB medical officer and mortuary office (when assigned by the command) collect and preserve life sciences evidence in a Class A or B Aircraft mishap.

2.1.4.1. Preserve perishable evidence (to include video and still photography at the mishap site), collect laboratory samples, complete radiological studies, and obtain initial witness statements.

2.1.4.2. Ensure evidence not associated with human remains (life support equipment, aircraft egress systems, etc.) is left undisturbed at the mishap site until the evidence is turned over to the SIB or when directed by the SIB President.

2.1.4.3. Contact the Armed Force Institute of Pathology (AFIP) to coordinate forensic pathology assistance. AFIP can be reached via telephone at any time through DSN 285-0000 or commercial (301) 319-0000.

2.1.4.4. Contact HQ AFSC/SEFL if further assistance is needed. Guidance for the interim board medical officer is also found in AFI 48-125 *The US Air Force Personnel Dosimetry Program* and AFPAM 91-211 *USAF Guide To Aviation Safety Investigation*.

2.2. Deployed Unit Safety Operations.

2.2.1. When an aviation mishap occurs during wartime or contingency operations, the Convening Authority will investigate the mishap, subject to access restrictions imposed by the Theater Commander. Reference AFI 91-204, paragraph 2.12.

2.2.2. Aviation mishaps occurring during wartime or contingency operations may present unique challenges. Logistics and transportation for SIB members may preclude the investigation from being completed within established timeline guidance. Additionally, access to crash sites may not be possible if the aircraft is behind the Forward Edge of the Battle Area (FEBA) or in hostile territory. ISBs will endeavor to capture as much data as possible to assist the SIB (weather, flight crew records, flight plans, etc.).

Chapter 3

PRIVILEGED SAFETY INFORMATION

3.1. General Information. Follow guidance listed in AFI 91-204, Chapter 3. There is no additional aviation specific guidance.

Chapter 4

DETERMINING INVESTIGATIVE RESPONSIBILITY

4.1. Mishap Ownership. OPCON and TACON Considerations. Operational or Tactical control of an aircraft or UAV does not change mishap ownership. Class A and B mishaps will be investigated by the owning organization, IAW AFI 91-204. Expeditionary forces staffed with a Flight Safety Officer may conduct Class C mishap and Class E event investigations at the request of the mishap owner and upon approval of the deployed expeditionary Wing Commander or equivalent.

4.2. Mishaps Involving Civil Aviation and/or Federal Air Traffic Services. Cooperation between NTSB, FAA, and the Air Force in these investigations is essential. Reference AFI 91-204, paragraphs 2.7.7. and 4.8. Mishaps involving Civil Air Patrol USAF members or Air Force contractors flying Civil Air Patrol owned assets, on approved Air Force missions, will be handled per AFI-204 and this manual. Mishaps involving Civil Air Patrol volunteers or CAP Corporation employees will be handled by the NTSB/FAA

4.2.1. USAF Aero Club Mishaps. For mishaps involving Air Force Aero Clubs, the NTSB is the lead investigating agency. Follow sports and recreation mishap reporting guidance from AFMAN 91-224. In case the NTSB or designated representative agency does not investigate, the host wing commander may direct the wing safety office to conduct an investigation. Exception: For mishaps occurring outside the United States, the host nation civil aviation authority may have jurisdiction and investigative authority.

4.2.1.1. The Chief of Safety (COS) at the host wing will appoint a Flight Safety Officer (FSO) to assist/conduct Aero Club mishap investigations. In units with no active flying mission, the COS will appoint a ground safety technician to assist with Aero Club investigations.

4.2.1.2. Aero Club mishaps investigated by the wing safety office are conducted under Services AFIs using AFI 91-204 and this manual only as a guide. Any reports of Aero Club mishaps are not privileged. The only exception is investigation of Aero Club mishaps when Aero Club aircraft are performing USAF directed missions. If on a USAF directed mission, investigate IAW 91-204 and this manual.

4.2.2. AF Participation in NTSB Investigations. Reference AFI 91-206(I). The Air Force may take part in NTSB-led investigations. If the Air Force does take part in such an investigation or public hearing, it does so as “a party to” the investigation or hearing. Air Force representatives to NTSB investigations will be graduates of formal Air Force safety training courses. Colonels and above will be graduates of the Air Force’s Board Presidents Course. All others will be graduates of the FSO course or Aircraft Mishap Investigation Course (AMIC). Air Force representatives to NTSB investigations are responsible to AF/SE while assigned to the NTSB investigation.

4.2.3. FAA Participation in USAF Investigations. When a military flight mishap involves a function of the FAA, the Convening Authority will allow the FAA to participate in the military investigation. FAA participants must sign nondisclosure of privileged information agreements. If a military investigation concludes FAA personnel or facilities were causal in the mishap, comply with AFI 91-206(I).

Chapter 5

SAFETY INVESTIGATIONS

5.1. General Guidelines. Convening an Investigation. The convening authority determines the size and scope of the investigation required for each mishap, subject to AFI 91-204 and this manual. **Table 5.1.** establishes the **minimum** requirements. For ARC Class B mishaps, these requirements are recommended. The convening authority will identify additional members as necessary to thoroughly investigate and document a mishap. The convening authority may request a waiver to the minimum requirements by contacting AFSC/SEF.

Table 5.1. SIB Membership Minimum Requirements.

Class A Aircraft with a Destroyed A/C or Fatality	Board President Investigating Officer AFSC Rep (Note 1) Maintenance Member Medical Member Pilot Member Conditional Members (see para. 5.2.2.) Recorder
Class A without a Destroyed A/C or Fatality (Includes destroyed UAVs)	Board President Investigating Officer Maintenance Member Medical Member Conditional Members (see para. 5.2.2.) Recorder
Class A and Class B Engine Confined FOD (Note 2)	Board President or Investigating Officer 1 other SIB member
Class B	Board President Investigating Officer 1 other SIB member

Note 1: By CSAF direction, an AFSC Representative is a required member on all Class A investigations involving a destroyed aircraft or a fatality. AFSC representation on other SIBs will be considered in those cases where AF/SE or the convening authority deems AFSC representation crucial due to the nature of the mishap and the significant and broad-reaching implications to the Air Force. In those cases, AF/SE will determine availability and extent of participation.

Note 2: An engine confined FOD mishap is defined to be a mishap that occurs when an object or objects external to the engine cause damage to the engine and all the damage is confined to the engine and integral engine components. Damage is considered confined to the engine if there is less than \$20,000 damage external to the engine. If the total cost of all damage external to the engine is \$20,000 or more, the engine confined FOD classification does not apply

5.1.1. Single Investigating Officer (SIO). The convening authority may appoint a SIO for Class C mishaps and Class E events when the investigation is not technically complex.

5.1.1. (PACAF) Requests for waivers will be made through the convening authority (i.e. NAF/SE, PACAF/SE and AFSC, IN TURN).

5.1.1.1. (Added-PACAF) For Class C flight mishaps and Class E events the SIO will be a graduate of the Flight Safety Officers (FSO) course or Aircraft Mishap Investigation Course (AMIC). Flight safety NCOs and civilians may investigate and report Class C aircraft mishaps and Class E aircraft events when no operator factors are involved provided they have attended AMIC, JEMIC, or the FSO course.

5.1.2. The SIB member or single investigator activities prescribed by this instruction take precedence over all other duties.

5.1.3. (Added-PACAF) PACAF Class A Aircraft SIB Procedures. Following notification of a Class A aircraft mishap, PACAF/SEF will contact each wing and NAF Chief of Safety to nominate trained SIB members for each required board position with the exception of the SIB President, flight surgeon and the Safety Center Representative. PACAF/SE will also contact NAF/SEs to determine the availability of potential SIB Presidents and forward the names through PACAF/DO to COMPACAF for approval. PACAF/SG will select the flight surgeon and provide that name to PACAF/SE. After all SIB positions are filled, PACAF/SE will publish the SIB orders.

5.1.3.1. (Added-PACAF) PACAF/SEF will assign a member of the flight safety staff to be the SIB's point of contact. The POC will provide any assistance the board may need and will coordinate the briefing schedule to COMPACAF.

5.2. Safety Investigation Board Member Roles. SIB members will fall into one of four categories: Primary members, "Conditional" Primary members, Secondary members, and Observers. Reference AFPAM 91-211 for member duties and checklists.

5.2.1. Primary SIB Members. Primary SIB members determine findings, causes, and recommendations and may submit minority reports if they do not agree with the BP in the outcome of the investigation. Primary members will be relieved of all non-SIB duties, and include the following positions:

5.2.1.1. Board President (BP). The BP is in charge of the SIB, is the final decision authority, and reports directly to the Convening Authority.

5.2.1.2. Investigating Officer (IO). The IO is responsible for daily SIB activities, the investigation, and preparing of reports/messages. Directs and coordinates activities of other board members, and works with AFSC Rep to "manage" the SIB.

5.2.1.3. AFSC Representative. Acts as the investigation process expert, to guide SIB analysis efforts. Conducts "refresher training" of SIB procedures and is familiar with technical assistance resources which may be required by the SIB.

5.2.1.4. Pilot Member (UAV Air Vehicle Operator or Mission Commander for UAV mishaps). Analyzes operations factors, to include qualifications, proficiency, training, communications, and aircrew actions throughout mishap sequence. Analyzes mission-specific concerns, performance data, and aircrew stressors.

5.2.1.5. Maintenance Member. Analyzes maintenance factors, to include pre-mishap status of mishap aircraft, aircraft systems, maintenance qualifications, proficiency and, training. Evaluates depot and QA actions, as well as possible design/engineering deficiencies.

5.2.1.6. Medical Member. Analyzes medical/human factors and egress/life support equipment and function. Evaluates medical histories, records, laboratory, radiologic, and pathology reports. Determines the cause(s) of injuries or death.

5.2.2. "Conditional" Primary Members. Depending upon the mishap circumstances, the following members will be identified by either the convening authority or the SIB to provide specialized expertise. If their area of expertise relates to a factor that was integrally involved in initiating or sustaining the mishap sequence, these individuals are required SIB members and are accorded Primary Member status. If the BP determines the conditional member's area of expertise is not a factor in the mishap, this member serves as a secondary member.

5.2.2.1. Additional crewmembers (navigator, loadmaster, etc.) qualified in the mishap aircraft.

5.2.2.2. Life Support Officer or NCO, if life support equipment is known or suspected to have been a factor in the mishap or may have contributed to injuries. This member is required for all ejection seat equipped aircraft.

5.2.2.3. Airfield Operations Officer/SNCO when Air Traffic Control or Airfield Management are involved.

5.2.2.4. Weather Officer, when weather or meteorological service is involved.

5.2.2.5. Weapons Safety Expert, if a weapon or warhead is involved.

5.2.2.6. Nuclear Expert, if nuclear reactors, nuclear power systems, or radioactive sources are involved.

5.2.2.7. Air Force Operational Test and Evaluation Center (AFOTEC) or other test organization Representative, anytime AFOTEC people or equipment, or AFOTEC-managed test, assessment, or evaluation procedures are involved. Other Test organizations may take part in investigations and send a representative when they have test responsibilities.

5.2.2.8. Jumpmaster, if the mishap involved personnel airdrop operations.

5.2.2.9. Other Service Representatives (USN, USA, USMC, and/or USCG) when their aircraft, facilities, materiel, or personnel are involved and they elect to participate. The non-AF members will actively participate in the investigation and aid in report preparation. The Convening Authority determines whether they are accorded primary member status. Depending upon the extent of involvement, other services may provide a qualified investigator to serve as an assistant IO on the SIB.

5.2.2.10. Crash Fire & Rescue (CFR) Specialist, if CFR response, actions or failures played a major role or contributed significantly to the extent of damage or injuries.

5.2.3. Secondary Members. Secondary members assist the SIB in mishap investigation and reporting. The BP determines the extent of their participation and they are not authorized to submit a minority report. The following secondary members may be required, depending upon the mishap circumstances.

5.2.3.1. Recorder. An officer or SNCO familiar with administrative procedures and experienced in the use of typical office computer software.

5.2.3.2. Human Factors Consultant. If the SIB suspects significant, complex human factors issues were present in the mishap, a consultant with more narrowly focused human factors expertise may be beneficial to the medical officer. Such consultants include aerospace physiologists, aviation psychologists, pilot physicians, or aerospace medicine specialists. The SIB will coordinate with the convening authority as early as possible in the investigation if a human factors consultant is desired. The MAJCOM SG and/or HQ AFSC/SEFL may act in an advisory capacity to assist in determining the most appropriate type of consultant. Normally, the MAJCOM/SG will (when required) appoint a human factors consultant to assist the medical member in the investigation. When the convening authority is below MAJCOM level, this authority may be delegated to the Commander of the local Medical Treatment Facility (MTF/CC), depending on the mishap circumstances. The MTF/CC, in consultation with their Chief of Aerospace Medicine (Senior Flight Surgeon), will then appoint a human factors consultant to assist the investigation.

5.2.3.2.1. (Added-PACAF) A human factor specialist may be requested primarily from HQ PACAF Office of Command Surgeon or secondarily from HQ AFSC/SEFL when human factors are suspected as a factor in Class A or Class B mishaps. For Class B mishaps initiate request for a human factors specialist through PACAF/SEF who will contact the HQ PACAF Office of Command Surgeon.

5.2.3.3. Representatives of the involved aircraft/item Single Manager or Air Force test organization.

5.2.3.4. Representatives from the FAA or NTSB, if appropriate. See AFI 91-204 paragraph 4.8 and AFI 91-206(I).

5.2.3.5. Commander's Representative. The BP or commander whose aircraft or operator was involved in the mishap may request a commander's rep, subject to convening authority approval. The Commander's Representative's role is to provide information to the SIB regarding operational and organizational details and practices.

5.2.3.5. (PACAF) Commander's Representatives are strictly prohibited from providing any information regarding the SIB investigation to anyone outside the SIB, except as explicitly authorized by the SIB President.

5.2.3.6. Air Force Flight Standards Agency representative, if instrument flight procedures or publications are involved. The convening commander coordinates with AFFSA/XO, Andrews AFB MD 20331-7002, DSN 857-4702 or -2128 for assistance.

5.2.3.7. Personnel determined by HQ AFSC/JA to be necessary and appropriate under cooperative agreements. (An example would be foreign military representatives.)

5.2.3.8. Technical personnel with expertise in specific systems or other needed fields.

5.2.3.9. Administrative Specialists. NCOs or airmen that can help the SIB with administrative tasks such as making formal reports, running errands, answering phones, or filing. Most SIBs will have at least one.

5.2.4. Observers. Civil aviation, foreign military, and sister service personnel may request to observe the Air Force investigation. An observer is not a member of the Air Force SIB. Requests are approved by AF/SE followed by the convening authority. Observers may participate to the extent authorized by the BP. Consult AFSC/JA on limitations regarding access to privileged information and witness interviews by SIB observers. Reference AFI 91-204, paragraph 5.4.4.

5.3. SIB/SIO Requirements and Restrictions. Select primary SIB members from outside the mishap wing whenever possible.

5.3.1. Board President.

5.3.1.1. Class A Aircraft Flight Mishap SIB.

5.3.1.1.1. The CSAF requires the BP to be a graduate of the HQ AFSC Board President Course (no waivers permitted). The BP must be appointed from outside the wing (or equivalent organization) experiencing the mishap, and must neither be attached to the mishap organization for flying purposes nor anticipating an assignment to the mishap organization within the next six months. For aircraft flight mishaps involving a fatality, the CSAF requires the BP to be a Brigadier General select or higher rank.

5.3.1.1.2. Additional requirements for Class A SIB Board Presidents are as follows: For all aircraft mishaps not involving a fatality, the BP must be a Colonel or higher rank. The BP must be a pilot or navigator, unless mishap circumstances clearly indicate the aircrew was not a factor. The requirements of this paragraph may be waived by AF/SE for unique circumstances. Contact AFSC/SEF for waiver.

5.3.1.1.2. (PACAF) SIB President selections are not limited to current and qualified pilots or navigators.

5.3.1.2. For UAV Class A mishaps, the BP must be a Lieutenant Colonel or higher rank and should be a graduate of the HQ AFSC Board President Course.

5.3.1.3. For Class B mishaps, the BP must be a Lieutenant Colonel or higher rank (recommended for ARC) and should be a graduate of the HQ AFSC Board President Course. The requirements of this paragraph may be waived by AF/SE for unique circumstances. Contact AFSC/SEF for waiver.

5.3.1.3. (PACAF) For Class B mishaps involving strictly maintenance or logistic issues the BP need not be rated. Additionally, for all Class B flight mishaps the BP should be from outside the mishap wing. As a minimum, the BP will not be assigned to the mishap squadron.

5.3.2. Investigating Officer.

5.3.2.1. The IO must be a graduate of the USAF Flight Safety Officer (FSO) Course or the Aircraft Mishap Investigation Course (AMIC). No waivers to this requirement are authorized for Class A and B mishaps. Current or previous qualification in the mishap aircraft is desirable. Flight safety NCOs and civilians may investigate and report Class C aircraft mishaps and Class E aircraft events when no operator factors are involved provided they have attended the Aircraft Mishap

Investigation Course (AMIC), AETC Jet Engine Mishap Investigation Course (JEMIC), or the FSO course.

5.3.2.2. For Class A mishaps, the IO must not be a member of the mishap wing or crew. For other mishaps with a SIB formed, the IO should be selected from outside the mishap squadron whenever possible, and preferably from outside the mishap wing.

5.3.2.2.1. (Added-PACAF) The BP and IO should be from different weapon systems if available.

5.3.3. Pilot Member. Must currently be on flying status and qualified in the mishap aircraft. (For UAVs, a UAV Air Vehicle Operator or Mission Commander, fully qualified in the mishap UAV will substitute for the pilot member.)

5.3.3. (PACAF) Pilot Member. When possible, will be an Instructor Pilot (IP) in the type aircraft involved in the mishap.

5.3.4. Maintenance Member. A fully qualified maintenance officer, civilian equivalent, or senior NCO, with at least two years maintenance experience in the mishap aircraft, if available. The Maintenance Member must be a graduate of the Aircraft Mishap Investigation Course (AMIC) or AETC Jet Engine Mishap Investigation Course (JEMIC).

5.3.4. (PACAF) Officer or MXNCO. For Officer: Will be a graduate of AMIC or JEMIC and will be fully qualified by DAFSC. MXNCOs will only be selected for as the primary maintenance member for propulsion related Class A or B mishaps. MXNCOs will be a graduate of JEMIC or AMIC and should be qualified by primary or secondary propulsion AFSC. Of the 2 years required experience, the maintenance member should have a minimum of 1-year flightline or quality assurance experience on the type aircraft involved.

5.3.5. Medical Officer. The medical officer must be a current Air Force flight surgeon credentialed in aerospace medicine and, whenever possible, qualified in the mishap aircraft. The medical officer investigating fatal mishaps will be a graduate of the Aircraft Mishap Investigation and Prevention Course or have previous mishap investigation experience. In addition to Class A mishaps, a medical officer will be included in the SIB whenever human factors appear to be a factor in the mishap.

5.3.5. (PACAF) Will be a flight surgeon (DAFSC 48XX). This individual should have experience in both the mission and type or similar type of aircraft involved. If possible, the flight surgeon should be a graduate of the AMIC at the School of Aerospace Medicine. HQ PACAF Office of the Command Surgeon will make selection.

5.3.6. Airfield Operations (Air Traffic Control or Airfield Management) Member. The convening Authority will coordinate with the MAJCOM Airfield Operations staff to ensure a properly qualified officer or SNCO with air traffic control and/or airfield management expertise is appointed as a SIB member. The Convening Authority must coordinate with Air Force Flight Standards Agency (HQ AFFSA/XA), DSN 857-4743 or -4775, to identify a qualified SIB member, if one is not available within the command.

5.3.7. Weapons Safety Expert. Select a graduate of the Weapons Safety Manager Course, with knowledge in the involved weapon.

5.3.8. Life Support Officer/NCO. Life Support members must be graduates of the HQ AETC Aircrew Life Support Officer's Course, S-V8G-A, or the one-week mishap investigation portion of that course.

5.3.8. (PACAF) An egress system specialist/life support technician who is highly qualified in the specific egress system involved will be assigned whenever an ejection seat/module of a mishap aircraft is utilized whether the ejection is successful or not. A life support member/egress specialist should be assigned whenever a successful or unsuccessful ejection, bailout or ground egress attempt may have occurred.

5.3.9. Commander's Representative. The Commander's Representative must not have had any involvement in the mishap event and may not be a supervisor of involved persons. The Commander's Representative is strictly prohibited from providing any information regarding the SIB investigation to anyone outside the SIB, except as explicitly authorized by the SIB President.

5.4. Investigative Evidence.

5.4.1. Flight Data Recorders (FDR) and/or Cockpit Voice Recorders (CVR). The Mishap Analysis and Animation Facility (MAAF) at HQ AFSC is the central Air Force activity for recovery, transcription, and analysis of FDR and CVR data in support of Air Force safety investigations. Coordinate with HQ AFSC/SEFE (DSN 246-5867) on the removal and shipping of Flight Data Recorders (FDR) and/or Cockpit Voice Recorders (CVR) as soon as possible. The ISB should not delay sending FDRs and CVRs after coordination with HQ AFSC/SEFE. Delays in shipping could needlessly extend the SIB's timeline.

5.4.1. (PACAF) Board members must ensure that all data derived from electronically stored media is returned along with the storage media to the SIB, and then passed to follow-on investigations (i.e. AIB) and agencies as required by the basic instruction guidance.

5.4.2. Bird or Wildlife Strikes. In case of bird or wildlife strikes, the investigating flight safety office will:

5.4.2.1. For every bird strike, send remains (if available) to the Smithsonian National Museum of Natural History for identification. Remains may include feet, beak, and/or feathers. If no remains are apparent, spray blood smear with water and blot with a clean paper towel. Fold towel and place into labeled zip-loc bag. Send a copy of the corresponding AFSAS report with the strike evidence to the following address: "Smithsonian Institution, Feather Identification Lab, NHBE 610 MRC 116, PO Box 37012, Washington, DC 20013-7012." For high priority mishap identifications ship remains via overnight delivery to the following address: "Smithsonian Institution, Feather Identification Lab, NHBE 610 MRC 116, 10th and Constitution Ave. NW, Washington, DC 20560." To ensure overnight delivery, time shipments to the Smithsonian to arrive Monday - Friday. If you collect a whole bird carcass, place it in a freezer and contact the Smithsonian at (202) 357-2334 to see if the museum can use the specimen in their collection. Remains found on the runway as the result of a suspected aircraft strike should also be recorded into AFSAS and sent to the Smithsonian for identification. Once the Smithsonian has entered the identification into the AFSAS report, AFSAS will automatically notify the reporting unit of the species identification through email. Bird remains recovered from a mishap site should be collected IAW instructions outlined in the paragraph above. The ISB should not delay recovering and shipping remains to the Smithsonian Institution, as the sample could be compromised. If there are any questions, contact HQ AFSC/SEFW (DSN) 246-5679.

5.4.2.2. For wildlife strikes other than birds, send samples of skin, fur, teeth or other non-fleshy remains, if possible, or a photograph of the remains along with the corresponding AFSAS report to the Smithsonian for identification.

5.4.3. Photographic evidence. Digital and video images can be effectively used as evidence. Ensure each photograph or set of photographs, or videotapes, has been labeled with the name and office symbol of the photographer. Photos/videos, which did not suggest SIB analysis, are non-privileged. Photos/videos that indicate interpretation or analysis are privileged. Still images that are privileged should be marked as such to include use of digital watermarks/coding on digital photos or video. Ensure all images are properly protected from inadvertent release to the public, especially those identified as privileged. Only the SIB BP/SIO has the authority to release electronic images, following the guidance in AFI 91-204, paragraph 5.13. While the SIB is ongoing, local PA personnel should consult with the SIB BP before publication of crash photos to determine the appropriate classification.

5.4.4. Removing Wreckage from the Mishap Scene. The SIB may request wreckage recovery assistance from the nearest military base through the On-Scene Commander.

5.4.4.1. Underwater Salvage. If recovery or salvage of floating debris and/or submerged wreckage is required but is beyond the capabilities of the base concerned, the convening authority may contract with commercial salvage operations or request help from the US Navy, as follows:

5.4.4.1. (PACAF) Telephonically coordinate requests for assistance from the Naval Sea Systems Command with HQ PACAF/SEF. HQ PACAF/SE will be the point of contact for all salvage requests for Class A flight mishaps.

5.4.4.1.1. Contact Commander, Naval Sea Systems Command, Attn.: Supervisor of Salvage (CODE OOC), DSN 326-1731, or commercial (202) 781-1731. For an after-hours duty officer, call (202) 781-3889 and include the following information:

5.4.4.1.1.1. Exact location of wreckage if known.

5.4.4.1.1.2. Whether wreckage is marked by buoy or "pinger," and expected life of pinger.

5.4.4.1.1.3. Type of ordnance on board.

5.4.4.1.1.4. Whether classified material is on board.

5.4.4.1.1.5. A statement that funding for travel, per diem, salaries and contractual support will be provided by separate correspondence. Funding must be identified for the Supervisor of Salvage to mobilize resources.

5.4.4.1.2. Follow up telephone requests with a message to: CNO WASHINGTON DC//N31/N889// with an information copy to: COMNAVSEASYS COM WASHINGTON DC//OOC// per instructions given by the Supervisor of Salvage. In addition send an information copy to:

5.4.4.1.2.1. The commandant of applicable naval district.

5.4.4.1.2.2. The cognizant fleet commander if outside the CONUS. For Pacific areas, use CINCPACFLT PEARL HARBOR HI. If Far East, Western Pacific, or Indian Ocean, include COMSEVENTHFLT and CTF 73. For Atlantic areas use CINCLANTFLT NORFOLK VA. For the Mediterranean Sea, include COMSIXTHFLT and CTF 63. For the Arabian Gulf/Red Sea include COMFIFTHFLT and CTF 53.

5.4.5. Cleanup, rehabilitation, and security of the scene. If base agencies require assistance, contact the following agencies:

5.4.5.1. The 775 CES/CED, Hill AFB UT 84056-5912, DSN 777-5501, commercial number (801) 777-5501, if explosive ordnance disposal (EOD) is required.

5.4.5.2. The Air Force Operations Center, Washington DC 20330-1480, DSN 227- 6103, commercial (202) 697-6103, if additional technical advice or medical assistance is required.

5.4.5.3. The Munitions Rapid Response Team has personnel knowledgeable in munitions available to support MAJCOMs whenever there is a time critical emergency. This team can be activated to respond within 24 to 48 hours. Contact OO-ALC/WMR for this support. During duty hours call DSN 777-2666. Off duty hours contact Hill AFB command post at DSN 777-3007 or commercial (801) 777-3007.

5.4.5.4. If, after all reasonable efforts are taken, there is wreckage still remaining that cannot be reasonably removed, obtain authorization from the appropriate federal or state officials to leave the wreckage in place. If permission is obtained, obliterate or mark all wreckage not removed from the mishap scene, according to one of the following procedures, in the order of preference:

5.4.5.4.1. Dismantle the wreckage as much as possible and bury the residue when terrain accessibility and laws permit.

5.4.5.4.2. Have qualified explosives ordnance disposal (EOD) personnel demolish the wreckage to scatter parts in small pieces over the widest area possible, using established procedures. Coordinate with the responsible civil authorities and take care to prevent forest fires or damage to public or private property.

5.4.5.4.3. Mark all wreckage with a large and conspicuous yellow painted cross. Give the exact location of the wreckage by coordinates, together with photographs showing configuration of wreckage, to the Air Force Rescue Coordination Center (AFRCC), Langley AFB VA 23665-2789, DSN 574-8112, commercial (800) 851-3051.

5.4.5.4.4. If wreckage is so inaccessible the standard demolition or painting methods cannot be used, carefully plot and photograph it from as low an altitude as practical. Provide the exact wreckage coordinates and photographs showing the wreckage configuration to air search activities and the AFRCC.

5.4.6. Disposing of Evidence.

5.4.6.1. Provide post-tear-down request (TDR) disposition instructions for all hardware sent for TDR. The SIB/SIO must remind the laboratory to not destroy or release the hardware to anyone until receiving written approval from the SIB or a follow on AIB, as applicable.

5.4.6.2. Ensure the AIB President knows the wreckage and/or mishap involved aircraft/components is available and acknowledges custodial responsibility, in writing. Tell the host installation commander of the transfer. If the AIB President is not available and the SIB is prepared to release the wreckage or mishap involved aircraft/components, release to the host installation commander or his/her designee, who will maintain custody until the AIB President is able to accept. If there is not a follow on AIB, transfer custody of the vehicle and all related parts to the installation commander. Transfer may be made to tenant units, as appropriate, with written agreement between the installation commander and tenant unit commander.

5.4.6.3. All wreckage or mishap involved aircraft/components from Class A mishaps must be retained and stored at the host installation or other appropriate storage area until a formal release from AFLSA/JACT is obtained for appropriate disposal or repair. In unique circumstances, with the approval of the convening authority, AFLSA/JACT may release before an AIB is convened. Contact the host installation Staff Judge Advocate to obtain release from AFLSA/JACT. The wreckage release request from the host installation to AFLSA/JACT must be made through the MAJCOM/JA. (reference AFI 51-503, paragraph 10.7) After release is obtained, return Air Force equipment not damaged beyond repair to the possessing organization. Before deciding whether the basic airframe is damaged beyond repair, contact the prime center for the aircraft and allow them to survey the wreckage. A wreckage release by AFLSA/JACT is not a disposal authorization but is a release from legal hold. Those in possession of wreckage must further comply with T.O 1-1-638, Repair and Disposal of Aerospace Vehicles, prior to any subsequent disposal decision. The custodian is required notify the Maintenance Training Device (MTD) community prior to disposal. In addition, compliance with other applicable instructions, to include AFMAN 23-110, *USAF Supply Manual, Volume 6, Excess and Surplus Personal Property*, may be necessary prior to any subsequent disposal action. (reference AFI 51-503, paragraphs 10.7.3 and 3.5.4.1) The wreckage can then be turned over to DRMO for disposal. Components subjected to a crash or fire environment must be carefully evaluated by responsible systems engineering personnel who are cognizant of the crash environment before permitting any further use. The possessing agency must contact the System Program Office for inspection, disposition or shipping instructions. Items returned to the source of repair through the supply system must be tagged with a DD Form 1575 and AFTO Form 350. Annotate with: "Removed from Class A mishap number (include the assigned mishap number). Engineering evaluation required." Do not place components from crash damaged aircraft into the supply system without these safeguards.

5.4.6.4. If any physical evidence has been sent for analysis and not returned to the SIB, advise the AIB of that information and notify the possessor to return the evidence to the AIB. If there is no AIB, advise the possessor to return the evidence to the owning unit, or obtain authorization for other disposition.

5.4.6.5. Return usable personal equipment or protective gear that is USAF property to possessors of record or to the issuing authority, subject to the prior needs of the SIB and AIB. Clearly mark the item to indicate its involvement in a mishap to ensure the necessary inspections are accomplished prior to reissue.

5.4.6.6. Quickly analyze personal items impounded as investigative evidence, and return them to the owner, summary court officer, or next of kin, through the AIB. If there is not an AIB, coordinate with the servicing legal office. Contact HQ AFSC/JA for assistance if necessary.

5.5. Deficiency Reporting Procedures.

5.5.1. If a SIO or SIB suspects that a component may be deficient, submit a deficiency report (DR) IAW TO 00-35D-54 *USAF Deficiency Reporting and Investigating System*. Do not attempt field disassembly of the exhibit.

5.5.2. Category I DRs are normally submitted for Class A mishaps and Category II DRs are normally submitted for Class B and C mishaps. See TO 00-35D-54 for more information. Consider initiating a Category I DR for Class C mishaps and Class E events items, if a potential exists for the item to cause

a future Class A mishap. Verbally request priority teardown of suspect components by coordinating with the single manager (SM).

5.5.2.1. (Added-PACAF) When laboratory analysis or DR is requested for a component which is suspected of being critical to the cause of a Class A mishap, the Board President should consider designating an individual fully conversant with all factors involved in the mishap to accompany the component. This individual will observe the laboratory analysis or DR and will request a preliminary evaluation for the mishap board. Requests for DRs or laboratory analysis by civilian or other US government agencies will be coordinated in advance with HQ PACAF/SE. CAT I DRs will be coordinated with the unit Chief of Safety. Category II DRs submitted for Class B and C mishaps will be logged and tracked by the wing flight safety office until closure.

5.5.2.2. (Added-PACAF) When the formal mishap report is submitted prior to receipt of the final DR/CAT I DR, a preliminary written evaluation will be included. If the formal DR is significantly different from the preliminary, the convening authority's opinion as to the effect on the previously identified causes and recommendations will be addressed in the investigating commander's endorsement.

5.5.3. If assistance is required to determine where to send a DR exhibit, contact HQ AFSC/SEFE. In most cases, teardown and analysis will be conducted by a DOD facility. Do not directly contact contractors or vendors for teardown and analysis without first speaking to the SM or HQ AFSC/SEFE.

5.5.4. Handle and ship exhibits according to TO 00-35D-54. TO 2J-1-18, *Engine Shipping Instructions*, explains how to mark engines for teardown. Ensure the mishap event number is referenced in I 90 field of the Deficiency Report. Enter the Deficiency Report Control Number into AFSAS under Failed Parts. Include exhibit disposition instructions in all DRs (e.g., return exhibit to originator). Do not dispose of exhibits sent from Class A mishaps or mishaps involving potential litigation until authorized by the Air Force Legal Service Agency (AFLSA)/JACT. Store these exhibits at either the facility that performed the analysis, or return the exhibit to the SIB, AIB, or the host installation commander, as appropriate. Take follow-up actions to ensure exhibits were received and teardowns are progressing in a timely manner.

5.5.5. Place a copy of all teardown reports, including all supporting documents (e.g. metallurgical analyses, photographs, test reports, etc...), provided in response to DRs in the formal report.

5.5.6. The convening authority safety office takes follow-up action if the final safety report was sent before receipt of all TDRs. If final exhibit disposition instructions were not included in the original request for TDR, the convening authority safety office will provide them to the SM.

5.6. Coordinating with an AIB. The SIB BP coordinates with the AIB BP regarding the AIB BP's initial view of the mishap site and refers to the AIB BP any requests from the media or next of kin to view the mishap site or obtain access to the wreckage or the personal property of the deceased. The SIB BP provides certain factual information to the AIB legal adviser as soon as possible, as specified in AFI 51-503 and below. DO NOT release SIB analysis, findings, causes, recommendations, or comments/references to witness statements. DO NOT release videotapes of simulated, computer-generated, animated or re-enacted portions of the mishap flight if they involved SIB analysis. DO NOT release SIB medical analyses.

5.6.1. For Class A mishaps, or when notified there will be a legal board for other mishaps, provide all non-privileged evidence to the legal board. Evidence not included in Tabs A-S should be transferred

in writing, in a memo to the AIB BP signed by the SIB BP. The legal board will be responsible for final disposition of all material released to them by the SIB. For other than Class A mishaps, contact the host installation staff judge advocate for guidance on disposing of materials that may be needed in potential claims or litigation. If there are no such requirements, reproduce enough copies for the safety report and then return the original documents and records to their proper custodian.

5.6.2. The SIB BP may provide factual (non-privileged) information to AIB members as it becomes available, but not to the detriment of the safety investigation. This information includes logs, directives, unstaged photographs, and all pre-mishap medical records. Also provide recordings/transcripts of air-to-air, air-to-ground, ground-to-air voice transmissions, as well as cockpit voice recorder (CVR) and flight data recorder (FDR) tapes and data that capture information at the time of the mishap. Tapes of aircrew conversations are not protected by the military safety privilege, but under Air Force policy, they are not released to the public. Transcripts are releasable. Only those individuals with a need to know will be allowed to hear the actual voice recording of the CVR.

5.6.2.1. CVR tapes and transcripts are not privileged. The CVR tapes will be transcribed. Limit the transcript included in Part 1 of the report to conversation relevant to the mishap sequence of events. Deletions should be indicated.

5.6.2.2. If the recorded voices of the mishap crew are incorporated into an animation, simulation, or reenactment video which is not otherwise privileged, the video is provided to the AIB. For fatal mishaps, under Air Force policy, a video with recorded voices of the mishap crew is not releasable due to the privacy interests of the crewmembers or the surviving family members.

5.6.2.3. Provide original films and videotapes which depict the actual mishap sequence to the AFI 51-503 Accident Investigation Board. This includes videotape recordings (VTR) of the heads-up display (HUD). Include copies of non-official videotapes or films made by individuals and return tapes to original owners.

5.6.2.4. Videotapes of simulated, computer-generated, animated or re-enacted portions of a mishap flight are always privileged if they were made with the involvement of either SIB personnel or personnel with knowledge of privileged mishap information. Do not release them to the AIB President.

5.6.2.5. The SIB President or SIO releases the wreckage and/or mishap involved aircraft/components to the AIB President after the SIB no longer needs it.

5.6.2.6. Give a complete list of all witnesses to the AFI 51-503 Accident Investigation Board regardless of whether the statements of the witnesses are in the safety report. Include contact information such as addresses and telephone numbers. Do not include this list in the safety report. Provide the names of witnesses to the AIB only after the SIB decides to conduct no further interviews of any of the witnesses (Contact HQ AFSC/JA for guidance in unusual mishaps where the SIB may release witnesses to the AIB before completing interviews of all witnesses).

5.6.3. Notify the AIB in writing if any aircraft parts have not been returned from Air Force and/or contractor laboratories and give the AIB contact information so they may retrieve the parts or document their whereabouts.

5.6.4. Release medical information as discussed below. Protect information subject to the Privacy Act. Do not release medical analyses by a SIB. 72 Hour and 14 Day aircrew medical histories are privileged. The AIB will gather their own 72 Hour and 14 Day medical histories from the aircrew and/or

mishap participants involved. Do not release post-mishap physical examination interview narratives gathered by ISB or SIB members. Release the following medical information to the AIB:

5.6.4.1. Factual photos showing human remains and the autopsy are turned over to the AIB President in a separate envelope. Provide instructions to the AIB to return the photographs to HQ AFSC/SEFL, 9700 Ave G SE, Kirtland AFB, NM, 87117 after the AIB is finished with them.

5.6.4.2. Copies of the toxicological test results, coroner's and/or autopsy report, and death certificate.

5.6.4.3. Pre-mishap medical records, factual post-mishap radiographs (X-rays, MRI, CT scans), factual lab reports, and factual post-mishap physical examinations (SF 88).

5.6.4.4. Provide copies of any records or materials required or used in the identification process and copies of requested photographs of the deceased to the mortuary officer. Either AFIP or the local flight surgeon may generate these products. HQ Air Force Personnel Center (AFPC)/MPCCM carefully controls and maintains these documents on permanent file.

5.6.5. Many Technical Orders (TOs) are subject to the Arms Export Control Act and the Export Administration Act of 1979. Ensure TOs are not subject to the above Acts prior to including them in Part I of the SIB report. If the TOs are subject to the above acts, do not include these TOs in Part I of the SIB report without receiving clearance from the release authority. The release authority is normally annotated near the front page of the document. If the release authority will not grant authority to release the TO, you can still provide the TO to the AIB. However, this should be done separately from the Part I, Tabs A-S hand-off as is done with other sensitive information, e.g., autopsy reports. If a TO is not subject to the Arms Export Control Act or the Export Administration Act of 1979 or clearance is received from the release authority, include the clearance letter or determination of inapplicability with the TO pages in the Part I.

Chapter 6

REPORTS AND BRIEFINGS

6.1. General Information.

6.1.1. Report and brief mishaps IAW AFI 91-204, Table 6.2, with the following exceptions:

6.1.1.1. Engine confined FOD mishaps do not require a formal report, unless directed by the convening authority. A MOFE is not prepared for an engine confined FOD mishap, unless a formal report is completed. Reference Note 2 of **Table 5.1.** for the definition of an engine confined FOD mishap.

6.1.1.2. When an engine or engine module is processed through the depot under the deficiency report (DR) system, the final report due date is extended to 60 days for Class B and Class C mishaps.

6.1.1.3. Class C mishaps do not require a preliminary message

6.1.1.3.1. (Added-PACAF) Despite a preliminary message not being required, AFSC still requires a status message at the 30 day point and every 30 days until the final message was transmitted. Submit the final message upon completion of the investigation.

6.1.1.4. Class E HATR and CMA events require a preliminary message within 10 workdays.

6.1.1.4.1. (Added-PACAF) Within 24 hours of determining a Class C flight mishap has occurred, send e-mail notification to PACAF/SEF. Include the following information:

6.1.1.4.1.1. (Added-PACAF) Type Aircraft and Tail #

6.1.1.4.1.2. (Added-PACAF) (Added.) Date and Time of Mishap

6.1.1.4.1.3. (Added-PACAF) Location of Mishap

6.1.1.4.1.4. (Added-PACAF) Mishap Pilot Wing/Squadron Assigned

6.1.1.4.1.5. (Added-PACAF) Mishap Aircraft Wing/Squadron Assigned

6.1.1.4.1.6. (Added-PACAF) Brief description of the mishap scenario. Factual only information of the type that would be placed in a preliminary message.

6.1.1.4.1.7. (Added-PACAF) Point of Contact (Name/Phone Number)

6.1.2. Formal Report Waivers. USAF/SE, in conjunction with the investigating MAJCOM, may waive formal reports for mishaps that can be adequately documented with the final message alone. SIBs will forward their requests for waivers to the formal report through their MAJCOM/SE to HQ AFSC/SEFM for approval. As a general rule, USAF/SE will only consider waivers for mishaps involving known materiel deficiencies for which corrective actions have been established. USAF/SE normally will not waive formal reports for mishaps involving human factors. SIBs must continue their investigation and preparation of a formal report until receipt of USAF/SE approved waiver.

6.1.2. (PACAF) Requests for waivers will be made through the convening authority (i.e. NAF/SE, PACAF/SE and AFSC, IN TURN).

6.1.3. The Air Force Safety Automation System (AFSAS) is the primary means for distributing messages.

- 6.1.3.1. Investigators will need an AFSAS user name and password to accomplish safety messages. Contact the Convening Authority Safety Office for access.
- 6.1.3.2. AFSAS login is available at the following URL: <http://sas.kirtland.af.mil/>
- 6.1.3.3. Reference the AFSAS Aviation user's guide, which can be downloaded from the AFSAS Aviation Module under the "Help/Docs" tab.
- 6.1.3.4. Mishaps/events entered into AFSAS that no longer meet reportable criteria should be removed from AFSAS.
- 6.1.4. Mishap event number. The mishap event number is vital to tracking safety reports. The mishap event number and AFSAS number should be referenced on all related correspondence, DRs, and endorsements. The mishap event number consists of sixteen characters, such as 20030118KLTS005A.
 - 6.1.4.1. Local date of Mishap. Use eight digits (YYYYMMDD).
 - 6.1.4.2. Installation Code of unit that experienced the loss of the owned asset (property). Use the four letter International Civil Aviation Organization (ICAO) code. If an ICAO code is not available, use the Home Location Code from SORTS.
 - 6.1.4.2.1. (Added-PACAF) Installation code. Use installation code for unit owning the aircraft hours, not where the mishap occurred.
 - 6.1.4.3. Unit Control Number. Use separate sets of four-character combinations (three digits and one letter) for unit control numbers. ("Unit" means group equivalent or higher.) Assign the numbers consecutively for each mishap for each fiscal year. MAJCOMs may assign block numbers for those disciplines requiring them. The last space designates the mishap or event class (A, B, C, D, or E). (005A in the example in paragraph [6.1.4.](#))
- 6.1.5. Release of messages via DMS. If mishap classification or other circumstances require release via DMS, use the applicable message format found in [Attachment 2](#). If the mishap is classified, release via secure means to the MAJCOM/SE, AF/SE, COMAFFOR/SE (if applicable), recommendation OPRs, and other agencies that have a need to know. If the mishap is not classified, disseminate via address list (AL) 9391.
- 6.1.6. "Common Service" Mishaps. Only the respective safety centers exchange formal safety reports between services. Requests for information regarding a safety investigation conducted by another US service will be directed to HQ AFSC/JA.
- 6.1.7. Changes to Reports. Only the primary members of the safety board can make changes to the formal report. Issues raised by the Convening Authority comments messages will be considered during the review process to produce the MOFE. If the final SIB message and/or formal report need to be changed after it is completed and signed by the board, the primary members of the SIB will be reconvened. For Class C mishaps and Class E events, convening authorities and MAJCOM safety staffs may make non-substantive changes to the reports in order to improve the quality of the reports. Feedback to the affected unit safety office will ensure continuous improvement.
- 6.1.8. For Class A and B mishaps, SIBs will forward draft copies (as soon as available) of their findings, causes, and recommendations and a brief narrative summary of the mishap, for review, for quality control purposes. SIBs will forward their information to Convening Authority or MAJCOM/SEF and/or HQ AFSC/SEF for review. Reviewing safety specialists are to provide suggestions for accuracy/effectiveness and do not supersede the judgment of the SIB/SIO.

6.1.8.1. (Added-PACAF) For Class A and B mishaps SIBs (or SIOs) forward draft copies of the Tab T (narrative, findings, causes, recommendations and other findings/recommendations of significance) to PACAF/SEF (and NAF/SEF as applicable for Class B mishaps only) for quality control purposes prior to finalizing the report. Coordinate with PACAF/SEF prior to sending, send via e-mail and password protect.

6.2. Class E HATR and CMA Violation Reporting Procedures. HATR and CMA violation information is vital to USAF aviation safety. Report HATR events using the AF Form 651. Report CMA violations using the AF Form 457. Reports completed by another agency such as the FAA do not alleviate the responsibility of the safety office to submit a HATR if AF personnel or equipment are involved. Information taken from these reports is intended primarily for mishap prevention. HATR and CMA violation information are not privileged information and are releasable outside AF channels, with the exception of the identity of the personnel involved. See paragraph 1.3.1.8. for reportable HATR events. See paragraph 1.3.1.9. for reportable CMA violation events.

6.2.1. Responsibilities of the Unit Commander. Unit commanders will ensure AF Form 651 and AF Form 457 are available to aircrews at base operations facilities, flying squadron operations offices, in trip kits and in USAF ATC facilities. Commanders must emphasize the importance of identifying hazardous situations and direct the filing of appropriate HATRs or CMA violation events as a method of preventing future mishaps.

6.2.2. Responsibility of the Individual Filing the HATR/CMA violation. Any person (i.e. air traffic controller, pilot, safety officer, etc...) aware that a reportable event occurred will file a HATR or CMA violation. Report the details on AF Form 651 or AF Form 457 in the following manner:

6.2.2.1. If the individual is at the AF base where the event occurred, file the report within 24 hours to the base safety office.

6.2.2.2. If the event occurred away from an AF installation, report the event to AF safety personnel at the nearest AF safety office or the next landing location with a AF safety office.

6.2.3. If an aircrew experiences a NMAC, and circumstances permit, immediately (e.g., while airborne) inform the nearest ATC agency, civil aviation authority (CAA) for overseas events, or flight service station and provide the following information:

6.2.3.1. Identification or call sign.

6.2.3.2. Time and place (name of NAVAID, radial and distance, and GPS coordinates if available) of event.

6.2.3.3. Altitude or flight level.

6.2.3.4. Description of other aircraft in the event.

6.2.3.5. Advise the controlling agency a written NMAC report will be filed and request that all available data be saved.

NOTE: Aircrews who experience a NMAC under Federal Aviation Administration (FAA) control, should immediately request that facility to initiate a FAA NMAC report.

6.2.4. Responsibilities of the safety office receiving a HATR or CMA violation. Within 24 hours after notification of the event, the safety office receiving the report determines which safety office is

responsible for the investigation. Fax the AF Form 651 or AF Form 457 to the appropriate safety office. Follow this order of priority:

6.2.4.1. If applicable, comply with NATO STANAG 3750, *Reporting and Investigation of Air Traffic Incidents*.

6.2.4.2. If foreign ATC or aircraft are involved, the overseas MAJCOM.

6.2.4.3. For hazardous events reported by local base personnel, the AF safety office at that installation.

6.2.4.4. If no AF safety office available or if an airborne report is initiated by pilot or aircrew, the originator's home station.

6.2.5. Responsibilities of the Investigating Safety Office. The investigating safety office will:

6.2.5.1. Determine if the reported event merits a HATR. Notify the individual or unit that filed the HATR of this determination and the pending actions. NOTE: TCAS RAs do not automatically merit a HATR. See paragraph 1.3.1.8.2.

6.2.5.2. If the event is reportable, report the event via AFSAS as either a Class E HATR or Class E CMA. Note: Class E HATR and CMA messages should not contain findings.

6.2.5.3. Determine which organizations were involved and request those offices' assistance with the investigation. Notify:

6.2.5.3.1. The base Airfield Operations Flight Commander (AOF/CC), or equivalent, if USAF ATC or Airfield Management services were suspected to be involved. NOTE: Review ATC recordings needed for HATR investigations as quickly as possible; ATC recordings are routinely retained for only 15 days. Due to various types of recording equipment installed, review of ATC recordings are best conducted at the ATC facility. Coordinate times for review with the AOF/CC in order to minimize impact on support of flight operations.

6.2.5.3.2. The base Communications Commander if NAVAIDs were suspected to be involved.

6.2.5.3.3. The flying unit if local base aircraft were involved. If transient aircraft were involved, notify the aircrew's unit of assignment safety office.

6.2.5.3.4. The FAA facility or Flight Standards District Office (FSDO) if FAA ATC or civil aircraft were involved. NOTE: Contact the FAA Air Force Representative (AFREP) for help in notifying the proper facility or FSDO. See [Table 6.1](#) for which AFREP to contact. Include the AFREP in these investigations as needed, especially if you are having difficulty getting information from the FAA.

6.2.5.4. Complete Class E HATR and CMA preliminary message within 10 workdays. Submit a status message every 30 days until the final message was been transmitted. Submit the final message upon completion of the investigation.

6.2.5.5. If ATC or airfield management is contributory to the event, the IO must contact the AOF/CC to assist in the investigation and advise on ATC/AM procedures. If additional expertise is desired from other than base personnel, contact the appropriate MAJCOM functional. The final portion of the narrative section of the AFSAS message must indicate if the AOF/CC concurs or non-concurs with the corrective actions and narrative wording. If the AOF/CC non-concurs, their explanation must follow their indication of non-concurrence in the narrative portion of the report.

- 6.2.5.6. Notify the originator's unit and MAJCOM, if required about corrective actions that the safety office has taken or recommends.
- 6.2.6. Responsibilities of the AFREP at FAA Regional Offices. Review HATR and CMA violation events in their region involving FAA ATC or civil aircraft and provide assistance when requested.
- 6.2.7. Responsibilities of the MAJCOM OPR for Safety.
- 6.2.7.1. Receive and evaluate all HATR and CMA events for their command to ensure proper conclusions and resolutions. Coordinate with appropriate MAJCOM functional OPRs (e.g. airfield operations, civil engineering) to ensure comprehensive review is accomplished.
- 6.2.7.2. Inform the HQ AFSC/SEF (ATC rep) of non-concurrence with corrective actions taken or recommended on all HATR and CMA events.
- 6.2.8. Responsibilities of HQ Air Force Flight Standards Agency (AFFSA/XA) OPR for Airfield Operations. Review and evaluate all HATRs for trends and concerns that may have AF-wide implications. Coordinate with MAJCOM Airfield Operations staffs to reconcile any discrepancies in conclusions and recommended corrective actions.
- 6.2.9. Responsibilities of HQ AFSC OPR for HATR and CMA violation events. Administer the program and ensure the safety offices fully investigate the reports.

Table 6.1. FAA AFREP and Regional Boundaries By State.

MAILING ADDRESS	TELEPHONE	RESPONSIBILITY
HQ FAA/AAT-4 800 Independence Ave. SW Washington DC 20591	DSN: 325-6268 COM: (202) 267-3197 FAX: DSN: 325-6001 FAX: COM: (202) 267-5868	Headquarters FAA
AF REP, FAA Central/Great Lakes Region, ACE-910 901 Locust Street Kansas City MO 64106	DSN: 975-6908 COM: (816) 426-5736 FAX: (816) 426-3357	Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin
AF REP, FAA New England Region, ANE-910 12 New England Executive Park Burlington MA 01803-5299	DSN: 478-4447 COM: (781) 238-7900 FAX: (781) 238-7902	Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia, West Virginia, Washington DC
AF REP, FAA Northwest Mountain/Alaska Region, ANM-910 1601 Lind Ave SW Renton, WA 98055-4056	DSN: 984-5204 COM: (425) 227-2947 FAX: (425) 227-1114	Colorado, Idaho, Montana, Oregon, Utah, Washington, Wyoming, Alaska Flight Information Region (FIR)
AF REP, FAA Southern Region, ASO-910 P.O. Box 20636 Atlanta, GA 30320-0631	DSN: 797-5481/5482 COM: (404) 305-6900 FAX: (404) 305-6911	Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, Puerto Rico, South Carolina, Tennessee
AF REP, FAA Southwest Region, ASW-910 2601 Meacham Blvd. Fort Worth, TX 76193-0910	DSN: 477-2910/2911/2912 COM: (817) 222-5190/11/12 DSN FAX: 477- 5992 COM FAX: (817) 222-5992	Arkansas, Louisiana, New Mexico, Oklahoma, Texas
AFREP, FAA Western Pacific Region, AWP-910 P.O. Box 92007 WPC Los Angeles CA 90009-2007	DSN: 833-0481 COM: (310) 725-3901/3902 FAX: (310) 536-8490	Arizona, Nevada, California, Hawaii, Guam, FIR

6.3. Life Sciences Safety Reporting.

6.3.1. Report aeromedical, life support, egress and other human factors related to a mishap as life sciences safety information. Life sciences safety information is required for Class A, B, C and E mishaps and events for all personnel who are injured or whose actions/inactions contributed to the mishap sequence. Complete physical exams must be performed and documented on a SF 88 or SF 506 for all surviving aircrew for all Class A mishaps. Physical examinations for other mishap and event classes may be focused physical exams appropriate for the mishap. The extent of these examinations is at the discretion of the ISB medical member (or SIB medical member if there is no ISB). 72 hour and 14 day histories must be obtained from all relevant aircrew, ground or other personnel whose actions/inactions may have contributed to the mishap sequence for Class A and B mishaps. Since this determination is often difficult during the initial stages of an investigation, the AFSC website (Life Sciences page) contains a template to aid in completion of these histories. AFPAM 91-211 *USAF Guide to Aviation Safety Investigation* also contains relevant information. Most USAF medical facilities have personnel with additional life sciences expertise (aerospace physiologists, aviation psychologists, etc.), who may be valuable resources for ensuring accurate interpretation of life sciences safety information. These individuals may be consulted and can be tasked to support aviation safety investigations.

6.3.2. Life sciences information is reported in Tab T and Tab Y of the formal report and in AFSAS.

6.3.3. For mishaps and events without a formal report, report life sciences information via AFSAS.

6.3.4. Classifying Injuries: See AFI 91-204 for definitions of injuries.

6.3.5. FOD Mishaps. If a human is identified as the FOD source or if human actions contributed to the damage, conduct a thorough Human Factors investigation.

6.3.6. Report Class E Physiological Events per paragraph 1.3.1.1. Include medically indicated lab test results and toxicological test results (when determined necessary by the commander or flight surgeon) for each affected person. For decompression sickness, trapped gas disorders and in-flight incapacitation, also include a 72-hour history with the standard report.

6.3.6.1. The AF flight surgeon responding to the physiological event assists with the report. In situations where an AF physician does not initially treat the mishap individual, the AF flight surgeon with final aeromedical disposition of the case assists the investigator.

6.3.6.2. The life support officer must comment on any life support equipment failure or malfunction contributing to a physiological mishap, describing corrective action taken as appropriate.

6.3.6.3. Send unclassified or declassified original audiovisual tape or film (such as a head up display VTR) concerning a physiological mishap to HQ AFSC/SEF within 30 calendar days. HQ AFSC/SEF will make a copy of the product, return the original to the sender, produce an enhanced master recording for training, and distribute it to authorized requesters.

6.3.7. Consider human factors from both individual human performance and environmental, mission, and supervisory influence perspectives. The SIB rates identified human factors as one of the following: causal, major, minor, minimal, or present but not contributory. Medical members are tasked with accomplishing the human performance narrative. The human factors conclusions and ratings must reflect the SIB consensus.

6.4. Documenting the Investigation and Analysis. The investigation and analysis in formal reports and final messages must be written so the reader clearly understands how the findings and causes were deter-

mined. Additionally, some discussions concerning the logic in how the recommendations were chosen must be included. Analyze data collected from witness testimony, technical evaluations, and other information. Describe each area investigated and discuss its significance. Briefly discuss or list evidence with little or no significance. Extensively analyze areas important in explaining the mishap. Summarize conclusions at the end of each investigation and analysis area. Use the guidance below for documenting the investigation and analysis.

6.4.1. Documenting Mishap Factors. A “factor” is any unusual, out-of-the-ordinary, or deficient action or condition discovered in the course of a mishap investigation, which in the SIB’s opinion contributed to the eventual outcome, or is indicative of a pattern of less than adequate decisions or conditions. Mishap factors explain why causes, such as pilot error, supervision, or equipment failure occurred. These factors are not mutually exclusive but are often interrelated and in some cases influence each other. Most mishaps involve multiple mishap factors. For a thorough list of items to consider, see AFPAM 91-211, Attachment 4. Omit factors not applicable and add others as necessary to analyze the mishap. Some factors may form the basis for Other Findings of Significance (OFS) in the mishap sequence. Not all factors are findings.

6.4.1.1. Factors are documented with the following areas: Factors, Non-Factors Worthy of Discussion, and Non-Factors. Reference the narrative format in [Attachment 2](#) for final messages. Reference [Figure 6.3.](#), Tab T outline, for formal reports.

6.4.1.1.1. Factors accepted, with rationale as to why they contributed to the outcome of the mishap.

6.4.1.1.2. Non-Factors Worthy of Discussion did not contribute to the mishap, but could contribute to future mishaps and/or which warrant command attention. Non-Factors Worthy of Discussion frequently provide the background information for OFSs. For Class A and B mishaps, Non-Factors Worthy of Discussion should also include factors significantly deliberated and rejected, with rationale.

6.4.1.1.3. Non-Factors are simply listed to communicate to the reader that these factors were considered in the investigation and analysis of the mishap, but were ruled out as non-contributory. This listing does not have to be all-inclusive, but should include areas of interest the SIB looked at. For Class A and B mishaps, if the SIB deliberated significantly to rule out a factor as not relevant to the mishap sequence, explain this analysis as a non-factor worthy of discussion.

6.4.2. Identify hazards and risks within the mishap sequence and determine whether individuals or management directly addressed these particular factors during preparation and execution of the mishap sequence.

6.5. Formal Reports.

6.5.1. General Information. Formal reports present both factual and analytical information. The SIB normally produces a formal safety report with two parts: Part I, Facts and Part II, Board Conclusions & Privileged Material. Part I contains non-privileged information, which is primarily factual, and may be disclosed outside the Air Force. Part II contains the privileged portions of the formal report and will not be disclosed. Formal non-privileged reports are assembled in one part. There is also a Part III, supplemental information, which is produced by AF/SE. It includes any comment to the final message, the message of final evaluation (MOFE), and any other significant information that was received after the final message is released. See for routing of formal reports.

6.5.1.1. (Added-PACAF) For aircraft mishaps briefed to the PACAF/CC, hand carry or express mail all copies of the formal report to HQ PACAF/SE, 25 E Street, Suite A304, Hickam AFB, 96853-5403. PACAF/SE will mail the reports upon release by the convening authority. The AFSC representative may hand carry the AFSC copy.

6.5.1.2. (Added-PACAF) All other mishap formal reports will be numbered and forwarded using a letter of transmittal. Clearly identify in the subject line of the transmittal, the type of mishap, place of occurrence, aircraft/ equipment involved, identification control number(s), and date of occurrence.

6.5.2. Electronic Formal Reports. Most copies of the formal report will be made electronically. SIBs creating electronic formal reports will use *Microsoft Word* and then convert them to an Adobe Acrobat .pdf files. Reports will be saved on CD-ROM media, preferably on a "CD/R." The CD must be labeled with aircraft type and tail number, date and class of mishap, report copy number, and the safety privilege statement.

6.5.3. Assembling The Formal Report.

6.5.3.1. Assemble the report in a three ring binder. Use the USAF Mishap Report Checklist and Index, AF Form 711A, to indicate which Tabs are included in the formal report.

6.5.3.2. Print on both sides of 8.5 by 11 inch paper. Use Times New Roman, 12 point, for text documents.

6.5.3.3. Under Page Set-Up in Microsoft Word (for other word processing programs follow the intent of these guidelines):

6.5.3.3.1. Set Top and Bottom margins to one inch.

6.5.3.3.2. Select "Mirror Margins." (If you do not have a duplex printer, this will set the margins correctly for front-back reproduction. If you have a duplex printer this is the same as setting the left margin to 1.0 inches and deselecting "Mirror Margins").

6.5.3.4. Set header margin to .5 inches and ensure the following appears on each page of the report in the header block: "Aircraft Type, Aircraft Serial Number, and mishap event number" (e.g. *F-15C, 85-0001, 19970516QKKA301C*). Type it in 10 point Times New Roman, italicized and centered. Reference AFI 91-204, paragraph 6.1.2. for further details on determining mishap event numbers.

6.5.3.5. Place a footer on each page in Part II of privileged safety reports using the Privilege Warning Statement from AFI 91-204, Figure A3.1.

6.5.3.6. Arrange the tabs in alphabetical order, with Tab A on top. The first page of each tab will have the title of the tab, followed by a table of contents showing where to find information within each tab. Number all pages in order within the tab (for example, A-1, A-2, X-1, X-2, Y-1, Y-2). Center page numbers at the bottom of each page.

6.5.3.7. For bulky two-part reports, place Part 1 and 2 in separate binders. For non-privileged reports, place all of the report in one binder of an appropriate size or suitable 8.5 by 11-inch heavy-duty folder.

6.5.3.8. Formal Report Covers. Mark the covers of privileged formal reports using AFI 91-204, Figure A3.1 and add the following statement:

COPYING OR RELEASING ANY PORTION OF THIS REPORT IS PROHIBITED WITHOUT THE EXPRESS WRITTEN PERMISSION OF AIR FORCE CHIEF OF SAFETY

6.5.3.9. For classified pages and classified formal reports, use the proper security classification markings from AFI 31-401.

6.5.3.10. Do not place special handling markings on unclassified pages in Part I of two-part formal reports, for example do not use "FOR OFFICIAL USE ONLY" footers.

6.5.3.11. AF Form 711A, *USAF Mishap Report Checklist and Index*. Use this form to ensure reports are complete. Place an "X" for each item in the columns "Not Applicable," "Applicable Not Attached," or "Attached." Place the AF Form 711A in the front of the formal report.

6.5.3.12. Formal Report Tabs. Investigations that have no data for certain tabs do not require waivers for those tabs. Example: Tab N, Transcripts of Voice Communications. If there are no recorded communications, the SIB will include a memo in the Tab N stating there was no such information available.

6.5.3.13. Minority Reports. The primary members determine findings, causes, and recommendations. Primary members that disagree with the results may submit individual minority reports. Minority reports must include reasons for disagreeing, and will include suggested findings and causes, and recommendations if different from those contained in the report. Sign the minority report and place it in Tab T. Also include it as part of the final mishap message.

6.5.4. Part 1. Factual Information and Releasable Material.

6.5.4.1. Tab A. Distribution Memorandum and Safety Investigator Information.

6.5.4.1.1. A1. Distribution Memorandum. List all addressees receiving copies, extracts, or attachments to the formal report. Number and account for all copies of privileged reports by listing each addressee, including office symbol and copy number (reference **Figure 6.2.**). Include a statement, signed by the SIB president, certifying that the copies listed are the only copies of the SIB report produced. Current mailing addresses are located at:

<http://afsafety.af.mil/AFSC/RDBMS/Flight/SIB-Support/Formal-Report.htm>

6.5.4.1.2. A2. Orders appointing SIB. Include one copy of the orders appointing the SIB or SIO. The orders must contain the full name; rank/grade, SSAN, organization, assigned base, and whether they are a primary or secondary for each appointed person. Do not include administrative specialist or SIB observers on SIB orders.

6.5.4.1.3. A3. Contact Information for SIB members and advisors. Include DSN and Commercial Telephone numbers and email addresses for all SIB members and advisors. Contact information should be "permanent" rather than TDY contact information. This is to ensure SIB members and advisors are available during the follow-up process should any questions arise.

Figure 6.2. Formal Report Distribution Memorandum.

(Date)

MEMORANDUM FOR SEE DISTRIBUTION LIST

FROM: Safety Investigation Board

SUBJECT: Class A Mishap Formal Report, (MDS), (Serial Number), (Mishap Date), (Involved Wing), (Location).

1. The Safety Investigation Board (SIB) forwards this report IAW AFI 91-204.
2. The SIB provided the originals for the material found in Part 1 of the report to the AFI 51-503 Accident Investigation Board President.
3. I have retained one copy for briefing purposes and certify that these (Total Number) copies are the only copies produced by the SIB.

(SIB President), (Rank), USAF

Safety Investigation Board President

DISTRIBUTION:

See attachment

DISTRIBUTION LIST

(*Denotes Hard Copy with a CD-ROM version enclosed)

(All other copies are CD-ROM)

HQ AFSC/SE 9700 G Avenue SE Kirtland AFB, NM 87117-5670	Copy 1*-3 of x
MAJCOM/SE Organizational Address	Copy 4* of x
NAF/SE Organizational Address	Copy 5 of x

- 6.5.4.2. Tab B. USAF Mishap Report, AF Form 711B.
- 6.5.4.3. Tab C. Preliminary Message Report. Place the fully releasable preliminary message report.
- 6.5.4.4. Tab D. Maintenance Report, Records, and Data.
- 6.5.4.4.1. D1. Use AF Form 711C, *Aircraft Maintenance and Materiel Report* for Class A, B and C Aircraft and UAV mishaps if a formal report is prepared. Use one form for each aircraft or UAV involved.
- 6.5.4.4.2. D2. Aircraft AFTO Form 781s. If they add to the report, include copies of the AFTO Form 781K, Aerospace Vehicle Inspection, Engine Data, Calendar Inspection, and Delayed Discrepancy Document, and any other AFTO 781 series form or provide a summary of the information contained in them. 781 data is also archived in the Consolidated Aircraft Maintenance System or GO81. Ensure this data is reviewed as well as existing 781 series forms. Include copies of the following if they add to the report:
- 6.5.4.4.2.1. AFORMS Aircrew/Mission Flight Data Document.
- 6.5.4.4.2.2. AFTO 781A, Maintenance Discrepancy and Work Document.
- 6.5.4.4.2.3. AFTO Form 781H, Aerospace Vehicle Flight Status and Maintenance Document.
- 6.5.4.4.3. D3. Additional aircraft maintenance records that add to the report.
- 6.5.4.4.4. D4. Maintenance records from other involved equipment. Include records from equipment such as AGE, Fuel servicing equipment, etc.
- 6.5.4.5. Tab E. Not used.
- 6.5.4.6. Tab F. Weather and Environmental Records and Data.
- 6.5.4.6.1. F1. Weather briefings provided to flight crews. Include a copy of the actual flight crew weather briefing if available.
- 6.5.4.6.2. F2. Actual weather observations and conditions for the event. Include weather radar data, Automated Terminal Information System (ATIS), and other appropriate weather data if available.
- 6.5.4.7. Tab G. Personnel Records.
- 6.5.4.7.1. G1. Flight Records. Include a copy of the flight record pages (Individual Flight Data and Flying History Report) showing the most recent flight time in all aircraft qualified as well as the grand total time. Do not include the mishap flight time. The record should be closed out as of the mishap date. Include a recap of sorties and hours flown in the last 30, 60, and 90 days. Add an additional breakout by "Flight Time Categories" (primary/secondary/instructor/etc) and "Flight Condition Time" (night/instrument/night vision goggle/etc) if it adds to the report. Use the "Flight Time Categories" and "Flight Condition Time" as defined in AFI 11-401, *Flight Management*.
- 6.5.4.7.2. G2. Flight evaluation and training records. Include a copy of the *Record of Evaluation* from the flight evaluation folder. Also include a summary of pertinent training records if

flight crewmembers are students, or recently upgraded in their crew position, or it adds to the report.

6.5.4.7.3. G3. Maintenance training records.

6.5.4.7.4. G4. Other personnel evaluation and training records. Include these if they add to the report. Examples include records from personnel in career fields such as Air Traffic Control or Crash-Fire-Rescue.

6.5.4.8. Tab H. Egress, Impact, and Crashworthiness Analysis.

6.5.4.8.1. H1. Egress Analysis. Include written analysis of an egress systems specialist if air-crew egress was attempted/completed or if the SIB determines analysis is needed to determine if egress was attempted.

6.5.4.8.2. H2. Impact Analysis. Include technical specialist analysis of impact/wreckage and or burn patterns at the crash site if applicable.

6.5.4.8.3. H3. Airframe Crashworthiness Analysis. Include if the investigation warrants this type of analysis.

6.5.4.9. Tab I. Deficiency Reports. Include all DRs submitted in conjunction with the mishap investigation. Include a copy of the submitted DR report containing the following information: Report Control Number (RCN), Cognizant Official, name of part (nomenclature), and part number.

6.5.4.10. Tab J. Releasable Technical Reports and Engineering Evaluations. If DoD personnel provided written reports or on-scene evaluations, include them in this tab. Do not provide a promise of confidentiality to DoD personnel. AFI 91-204, Figure 5.1 provides a format for these reports. Factual reports or information provided by a contractor or Joint ALC without a promise of confidentiality are placed in this tab. Any analysis referring to privileged information (e.g., witness testimony, board conclusions, etc...) should be included in an addendum and placed in Tab W.

6.5.4.10.1. These reports should determine what parts are bent, broken, or burned; whether it happened before, during, or after the mishap; and how, etc. These reports will not state that certain systems or parts, "did or did not cause the mishap." The SIB will determine what caused the mishap, and that will appear in Tab T.

6.5.4.11. Tab K. Mission Records and Data.

6.5.4.11.1. K1. Flight Plan. DD Form 175, *Military Flight Plan*, or authorized substitute flight plan forms. Include flight orders of the pilot or crew if prepared. Include a passenger manifest if the mishap aircraft was carrying passengers during the mishap flight. If there was no manifest, provide a list giving the complete name, and grade, of all crew and passengers.

6.5.4.11.2. K2. Aircraft Weight and Balance. Include Form 365-4, *Weight and Balance Clearance Form F-Transport/Tactical*. Include a copy of the weight and balance computations on file for the flight involved. If the SIB prepares a separate weight and balance form using available data to determine weight and CG at the time the mishap occurred, do not include it here; instead, place it in Tab V of the report.

6.5.4.12. Tab L. Data from On-Board Recorders.

6.5.4.12.1. L1. Crash Survivable Flight Data Recorder (CSFDR) Data. Printouts of important data should be included. Do not printout the entire data run from the CSFDR. Include this as a file in electronic formal reports or on electronic media (floppy disk or CD ROM) for hard-copy formal reports.

6.5.4.12.2. L2. Seat Data Recorder Data. Printouts of seat data recorder should be included if available.

6.5.4.12.3. L3. Video Tape Recorder (VTR) Recordings. Some aircraft have VTRs that record flight displays and voice communications. If available, these should be included as digital video files, preferably in a common format such as .MPEG. A Privacy Act Warning Statement will accompany all recordings of voice communications. SIBs will ensure they take steps to apply appropriate declassification procedures.

6.5.4.13. Tab M. Data from Ground Radar and Other Sources.

6.5.4.13.1. M1. Air Traffic Control Radar data and plots. Printout ATC plots and include them if available and applicable to the mishap.

6.5.4.13.2. M2. Military Ground Radar, AWACS and Telemetry Data (e.g. NACTS, ACMI etc.). This data can be an invaluable aid to the investigator if available. Save as MPEG or similar files for the report. As a reminder, if this data is altered or overlaid with other communications such as a separate voice recording, it will be considered analysis and is privileged. Additionally, ensure the classification level of this data is appropriately marked for the report you are accomplishing. Apply appropriate declassification procedures. Coordinate with HQ AFSC/SEFE and 84th Radar Evaluation Squadron (RADES) at Hill AFB for availability of radar data to aid the investigation.

6.5.4.14. Tab N. Transcripts of Voice Communications. These are written transcripts of recorded "Air-to-Ground" or "Aircraft-to-Aircraft" as well as any other voice communications that may aid the investigator. Begin the transcript as early in the mishap sequence as is practical and end the transcript when all damage and injury has occurred. Long term rescue/SAR transmissions need not be included. Because these transcripts are factual data, they often provide a basis for information in the factual summary of circumstances. Do not include actual recordings in Tab N.

6.5.4.14.1. N1. Cockpit Voice Recording Transcripts. Transcripts of recordings typically from Cockpit Voice Recorders

6.5.4.14.2. N2. Air Traffic Control Transcripts. ATC radio transmissions are recorded by control position and frequency. To facilitate expeditious preparation of transcripts, safety investigators should request transcripts according to which aircraft transmissions, control positions or specific frequencies are required. See AFI 13-204, *Functional Management of Airfield Operations*, Chapter 4, for details on obtaining ATC recordings.

6.5.4.14.3. N3. Command and Control Transcripts. Transcripts of tapes from Command Posts and other Command and Control agencies that may aid the investigation.

6.5.4.14.4. N4. Other available transcripts (e.g., Crash-net, Police etc.).

6.5.4.15. Tab O. Any Additional Substantiating Data and Reports. This is supporting data not otherwise defined. It can include local operating instructions (OI), directives, approach and landing charts, and other forms. If the SIB cites a brief document (such as a three-page local OI), place it

within this Tab. Do not mark, highlight, or extract a particular page to show the SIB's exact area of interest. (Highlighted pages are placed in Tab V of the Formal Report.) For lengthy documents, it is sufficient to show a listing of documents or records reviewed by the SIB and their effective dates.

6.5.4.15.1. Include any TCTOs or TOs in this Tab. However, if the publication is protected under the Arms Export Control Act (Title 22, U.S.C. Sec. 2751 et seq.) or the Export Administration Act of 1979, as amended (Title 50, U.S.C., App. 2401 et seq.) then contact the OPR to ascertain whether the material can be publicly released (i.e. Part 1). If not publicly releasable and still required for the report place the information in Tab V as required. Regardless, the publication may be released to the AIB. If a TO is not subject to the Arms Export Control Act or the Export Administration Act of 1979 or clearance is received from the release authority, include the clearance letter or determination of inapplicability with the TO pages in the Part I.

6.5.4.16. Tab P. Damage and Injury Summaries.

6.5.4.16.1. P1. Certificate of Damage. This lists the total damage to all government property, materiel, and equipment. See AFI 91-204, paragraph 1.9. for damage cost guidelines. Provide a detailed statement that includes acquisition, replacement or repair costs (as applicable) for all property, material or equipment damaged. Include nomenclature and national stock number (NSN) if available. See [Table 6.2.](#) for an example.

Table 6.2. Example Certificate of Damage.

Item (Stock Number)	Cost
F-16D 90-XXXX	16,200,000
Centerline Pylon (NSN XXXX-XX-XXX-XXXX)	12,000
Flare Mod (NSN XXXX-XX-XXX-XXXX)	1,500
30 X M206 Flare (NSN XXXX-XX-XXX-XXXX)	880
Destroyed GMV (NSN: XXXX-XX-XXX-XXXX)	9,500
Total Direct Damage Cost	\$16,223,880

6.5.4.16.2. P2. Statement of Damage to Private Property. Omit if no private property was damaged in the mishap. If private property is damaged, the SIB will draft a statement indicating the type of property damage involved (e.g. 20' x 30' x 15' deep crater in NW corner of property, 5 acres of barley destroyed, etc.) The statement will not contain damage cost estimates, but only describe the damage incurred. Additionally do not state the cause of the property damage (e.g. 5 acres of barley destroyed by post impact fire). Statement should be no more than a brief description of the type and extent of damage to civilian personnel and property.

6.5.4.17. Tab Q. AIB Transfer Documents. Include a memorandum from the SIB President to the AIB President regarding the location and disposition of all involved evidence, wreckage, and components involved in the mishap sequence. This includes items sent to an Air Logistics Center or other location for analysis.

6.5.4.18. Tab R. Releasable Witness Testimony. Investigators take testimony from all individuals involved in the mishap and those who were witnesses to the mishap. Testimony includes both written statements and recorded interviews. Place testimony from individuals and witnesses that were not granted a promise of confidentiality in this tab. Do not include audio recordings. If a promise of confidentiality was offered to an individual, the testimony will be placed in Tab U. See AFI 91-204, paragraph 3.2.5. for discussion of promise of confidentiality. All testimony must be properly documented stating if a promise of confidentiality has or has not been extended IAW AFI 91-204, paragraph 3.2.6.2. For non-privileged interviews, read, record, and transcribe the Notice to Witness that Recorded Statement is not Confidential (AFI 91-204, Figure A3.5). For non-privileged written witness statements, include a copy of Memorandum for Non-Privileged Written Witness Statements (AFI 91-204, Figure A3.4).

6.5.4.19. Tab S. Releasable Photographs, Videos and Diagrams.

6.5.4.19.1. S1. Diagrams. (e.g., Fallout, Impact Area, Route-of-Flight, etc). Ensure diagrams are self-explanatory. Include only those diagrams that add to the report. Indicate direction with a northward pointing arrow on each diagram. If practical, indicate scale. Ensure the diagrams do not depict the location of human remains. Such diagrams should be placed in Part II, to protect the privacy interests of the decedent's family.

6.5.4.19.2. S2. Releasable Photos. Well-defined photographs help in mishap analysis. Use them to show damage, impact areas, metal fractures, flight path, vehicle travel, etc. Use electronic copies of photos for reproduction in the formal report. Only include photographs that aid the in understanding of the mishap. Do not unnecessarily show evidence of human injury (i.e., bloody aircraft parts). If the SIB absolutely needs to disseminate an injury photo to illustrate the mishap, consider using a black and white photo if it will meet the needs of the investigation. Photographs of deceased personnel, medical tests and X-rays should be given to the AIB, and if they support findings or recommendations, placed in Tab Y of HQ AFSC Copy 1 (only). Include an index of photographs to aid reviewers. Do not refer to privileged safety information on the page captions or in comments on the index. Where applicable, the title should include which direction the photograph is facing (ie, Debris field looking to the west). Photographs are privileged if they are staged for the board's analysis. Staged photographs are privileged and placed in Part II. For example, include pictures of models showing flight paths in a midair collision at Tab X. Pointing with a finger or other device at a portion of wreckage does not make the photograph staged. Assembling or reconstructing damaged parts or aligning parts to show fire patterns or impact marks are examples of staged photographs. Depictions of cockpit indications for a given set of assumptions made by the SIB or described in witness testimony are staged photographs. When investigators include privileged safety information on a transparent or electronically drawn overlay, place the photograph with the overlay in Tab X and the photograph without the overlay in Tab S.

6.5.4.19.3. S3. Releasable videos. Include any releasable videos available to the SIB. Include CD-ROM copies in Hard-copy formal reports and save as MPEG or other similar file for electronic formal reports.

6.5.5. Part 2. Board Conclusions and Non-releasable Privileged Material.

6.5.5.1. Tab T. Investigation, Analysis, and Conclusions. This is the most important part of the report. It draws on all portions of the report to provide a complete picture of what happened, how it happened, and why it happened. It is a thorough analysis of all evidence and the findings, causes, and recommendations. This section records the opinions of the SIB, and it either accepts or rejects all scenarios or theories in the report. Only in the case of a minority report are there differing findings, causes, or recommendations. Reference [Figure 6.3](#).

Boards need to pay particular attention to four critical aspects of Tab T: assessment of possible mishap factors, development of concise findings, assignment of “cause” at the critical points in the mishap sequence, and promulgation of well-considered recommendations to prevent recurrence.

Figure 6.3. Tab T Outline.**T1. Glossary of Terms and Acronyms.**

T2. Executive Summary. The executive summary provides a condensed version of the mishap report that encapsulates the mishap sequence, analysis, and board's findings, causes and recommendations. It should be two or three pages in length.

T2.1. Mission Overview. A brief description of the planned mission profile or planned maintenance actions. Do not describe the mishap sequence or provide analysis of the mishap sequence in this section.

T2.2. Mishap Crew or Maintenance Personnel Involved. A brief description of the personnel involved to include qualifications, recent experience, etc.

T2.3. Investigation and Analysis. Summarize the key events in the mishap sequence and causal factors involved. Do not include Other Finding of Significance discussions.

T2.4. Findings

T2.5. Primary Recommendations

T3. Mishap Sequence of Events and Background Information.

T3.1. Mishap Sequence of Events. A chronological sequence of events in narrative format, detailing the events of the mishap. This should include all pertinent events in the sequence to include detailed discussions of flight briefing or maintenance brief, ground ops, takeoff, etc. through the mishap sequence, search and rescue, and description of the mishap site/location. Time of significant events should be integrated in the write-ups. Do not place analysis in this section. Simply describe the "facts" of the mishap.

T3.2. Mishap Chronology. (timeline table)

T3.3. Background information on those involved in the mishap. Provide background information on the mishap crewmembers, maintenance members, leadership members, or others that add to the mishap. Background information includes but is not limited to information on training, upgrades, promotions, deployments, 30/60/90 day totals, and summary of 72 hour/14 day histories. Do not place analysis in this section. Simply describe the "facts" of the personnel involved in the mishap.

T4. Investigation and Analysis. It is important to remember to not only include what was ruled in and why with regards to being a factor in the mishap sequence, but what was ruled out and why. Explain the process used to arrive at the conclusions. If an issue could have "reasonably" been a factor in the mishap sequence but wasn't, explain in the appropriate section how the SIB determined it wasn't a factor. Not all non-factors need to be discussed. For example, if the SIB is dealing with a gear-up landing and during the course of the investigation determined that airfield NOTAMs were not an issue, that doesn't warrant mention in the report. However, given the same gear-up landing, if the SIB determined that recent maintenance performed on the landing gear wasn't a factor, that deserves discussion on how it was ruled out. Reference paragraph 6.4.1. for a discussion of factors, non-factors worthy of discussion, and non-factors. For a formal report's Tab T, each factor and non-factor worthy of discussion should be analyzed in a separate write-up. Use an overview, analysis, and conclusion for each factor and non-factor worthy of discussion, as shown below. Non-factors may simply be listed.

--Overview: Brief discussion of the factor/non-factor worthy of discussion.

--Analysis: SIB method to determine the factor's influence on the mishap scenario. Include enough information so the reader can logically follow the SIB's rationale for conclusions reached. Should include references, as appropriate, to specific Technical Orders/Publications, training received, actions accomplished, results of technical analysis, etc.

--Conclusion: Summarize whether the topic was or was not a factor, and if the factor was causal in the mishap sequence.

T4.1. Operations Areas Investigated. Topics should include analysis of the mishap pilot's background, qualifications, mission planning, ORM applied, operations supervision, etc. For a thorough list of operations factors to consider, see AFPAM 91-211, Attachment 4. Topics should flow chronologically if possible. Include human factors write-ups related to operations personnel in this section. Also include life support, egress, survival, and rescue issues in this section.

T4.1.1. Factors.

T4.1.2. Non-Factors Worthy of Discussion.

T4.1.3. Non-Factors.

T4.2. Maintenance/Logistics Areas Investigated. Topics should include mishap aircraft's background/history, aircraft records, engine history, recent maintenance performed, maintenance training, logistics issues, results of technical teardowns and analysis, etc. For a thorough list of maintenance/logistics factors to consider, see AFPAM 91-211, Attachment 4. Topics should flow chronologically if possible. Include human factors write-ups related to maintenance/logistics personnel in this section.

T4.2.1. Factors.

T4.2.2. Non-Factors Worthy of Discussion.

T4.2.3. Non-Factors.

T5. Findings and Causes. A chronological list of all the SIB's findings and causes. Ensure that all findings and causes are supported by the investigation and analysis section. Reference AFI 91-204, paragraphs 5.9. and 5.10.

T6. Recommendations. A list of all of the SIB's recommendations. Each recommendation needs to correspond to a finding. Reference AFI 91-204, paragraph 5.11. If an AF 847 or AFTO 22 was completed, place its tracking number next to the corresponding recommendation.

T7. Other Findings and Recommendations of Significance (OFS/ORS). Reference AFI 91-204, paragraph 5.12.

T8. Authentication Page. Type each primary SIB member's name, grade, and position on the last page of this tab. Have each concurring member, including primary members from other services on joint investigations, sign above it for authentication of the report or for any changes to the report. If the formal SIB report needs to be changed after it is completed and signed by the board, all primary members of the SIB will be reconvened.

6.5.5.2. Tab U. Witness Testimony Provided Under a Promise of Confidentiality. Investigators take testimony from all individuals involved in the mishap and those who were witnesses to the mishap. Testimony includes both written statements and recorded interviews. If a promise of confidentiality was offered to an individual, the testimony will be placed in this tab. Do not include audio recordings. If a promise of confidentiality was not offered place the testimony in Tab R. See AFI 91-204, paragraph 3.2.5. for a discussion of promise of confidentiality. Testimony must be properly documented stating if a promise of confidentiality has or has not been extended IAW AFI 91-204, paragraph 3.2.6.2.

6.5.5.2.1. Transcripts of complete interviews must contain the advisory in AFI 91-204, Figure A3.3. In cases where witness testimony is summarized by the interviewer, it must be clear that the witness was advised of and understood this advisory. For privileged written witness statements, include a signed copy of the Memorandum Documenting Promise of Confidentiality for Written Witness Statements in AFI 91-204, Figure A3.2.

6.5.5.2.2. Select only meaningful testimony to include in this tab. It is not necessary to publish all testimony. Place the statements and transcribed interviews of each individual together in chronological order with the earliest on top to make it easier to compare the individual's impressions. The mishap crewmembers are placed first followed by other witnesses. Consider all statements and testimony included at this tab in the analysis at Tab T.

6.5.5.3. Tab V. Other Supporting Privileged Products. These are supporting privileged products not otherwise defined.

6.5.5.3.1. V1. Applicable portions of publications. Whenever findings or recommendations involve deficiencies in or changes to technical orders, flight manuals, checklists, or directives, include applicable portions of the original publications in this tab. The SIB's conclusion that a particular paragraph of a document was or was not a mishap factor is privileged. Place highlighted pages or publication extracts revealing the deliberative process of the board in this tab.

6.5.5.3.2. V2. AF Forms 22 or AFTO Forms 847. Include copies of SIB submitted AFTO Form 22s, (*Technical Manual Change Recommendation and Reply*) or AF Form 847s, (*Recommendation for Change of Publication*), in this tab. Investigators will obtain a tracking number for submitted Forms 22 or 847 from the unit QA or MAJCOM Standardization and Evaluation office, as applicable. Place the tracking number and the mishap's AFSAS number on the submitted Forms 22 or 847 to ensure these recommendations receive the appropriate levels of review.

6.5.5.3.3. V3. Status Messages Transmitted by the SIB. Include copies of any status messages transmitted by the SIB in this tab.

6.5.5.3.4. V4. SIB Surveys. Include copies of any surveys conducted by the SIB to aid their investigation. Reference AFPAM 91-211 for a survey example and information. Coordinate with HQ AFSC/SEFL (DSN 246-0871) for assistance with conducting appropriate surveys.

6.5.5.3.5. V5. Copies of Opportunity to Submit Additional Comments Letters. Place original copies of these letters in the formal report. Reference AFI 91-204, paragraph 6.6. for guidance.

6.5.5.3.6. V6. Aircraft Weight and Balance. Include Form 365-4, *Weight and Balance Clearance Form F-Transport/Tactical* only if the SIB prepares a weight and balance form using

available data to determine weight and CG at the time the mishap occurred. If a copy of the weight and balance was on file it is factual data and will be placed in Tab K.

6.5.5.3.7. V7. Other supporting privileged products.

6.5.5.4. Tab W. Technical Reports and Engineering Evaluations Provided Under a Promise of Confidentiality. If a contractor who built, designed, or maintained the equipment provides an engineering analysis under a promise of confidentiality, include the evaluation in this tab. If possible, include a factual summary in Tab J. The memorandums of acknowledgment on protection of privileged safety data (AFI 91-204, Figure A3.7) signed by these contractors when their evaluations are included in privileged formal reports must be placed in this tab.

6.5.5.5. Tab X. Privileged Photographs, Videos, and Diagrams.

6.5.5.5.1. X1. Privileged Animation. Include CD-ROM copies in Hard-copy formal reports and save as .MPEG or other similar file for electronic formal reports.

6.5.5.5.2. X2. Privileged Videos. Video of a mishap prepared for or by the SIB are part of the SIB's analysis of the mishap. Include CD-ROM copies in hard-copy formal reports and save as .MPEG or other similar file for electronic formal reports.

6.5.5.5.3. X3. Privileged Diagrams. These should be electronically scanned for electronic formal reports.

6.5.5.5.4. X4. Privileged Photos. These photos supporting analysis in Tab T may be included here or imbedded in Tab T for clarity.

6.5.5.6. Tab Y. Life Sciences and Medical Reports. The narrative portions of the Life Sciences and Medical Reports will be placed in Tab T. However, if a more detailed narrative is required using extensive medical terminology, place it in this tab. Tab Y will contain the following in this order:

6.5.5.6.1. Y1. Life Science Narratives, Part A and Part B. Part A provides a thorough discussion of all human factors contributing to the mishap and a discussion of all significant life support, egress, survival and rescue issues. Part B provides a discussion of factors investigated and found not to be relevant in the mishap, and any other negative findings that the medical investigator determines should be discussed to show how they were logically ruled out. Part B also contains a discussion of significant factors found to be present but did not contribute to the mishap sequence.

6.5.5.6.2. Y2. AFSAS Life Science Summary.

6.5.5.6.3. Y3. 72 hour and 14 day histories. Required for all aircrew and others (maintenance, air traffic control, etc) who were relevant to the mishap sequence.

6.5.5.6.4. Y4. Life Science Consultant Reports, when appropriate.

6.5.5.6.5. Y5. Physical examinations. (Include only in HQ AFSC Copy 1). The post-mishap physicals must be documented on SF 88 or SF 506 and included in this tab. Additionally, for each rated individual, include the latest two Preventive Health Assessments (PHA) and the most recent long physical exam (SF 88 or SF 506); for other individuals involved in the mishap, only include physicals if determined appropriate by the medical member.

6.5.5.6.6. Y6. Any other reports (e.g., toxicological tests, x-rays, autopsy reports, post-mishap exam results, etc.) that support findings or recommendations made by the medical investigator. (Include only in HQ AFSC Copy 1).

6.5.5.7. Tab Z. SIB Final Products.

6.5.5.7.1. Z1. Final Message. Include a copy of the Final Message. Convening Authority and other comment messages will be added during follow-up actions.

6.5.5.7.2. Z2. SIB Proceedings and BP Comments. Use this Tab to tell reviewing agencies about investigation problems and make recommendations for improving reporting and investigating procedures.

6.6. Briefing Investigation Results.

6.6.1. MAJCOM and/or NAF Chiefs of Safety will ensure their respective commanders are aware of the ROE from AFI 91-204, paragraph 6.4, prior to presentation of the briefing. Board Presidents should verify that the commander has seen and understands the rules of engagement. Briefing slides are available for this purpose on the AFSC website.

6.6.1.1. (Added-PACAF) SIB Presidents of Class A Flight mishaps will brief COMPACAF at Hickam AFB after the investigation is completed. This briefing and the visual aids used to give this briefing will be protected per the instructions given in AFI 91-204. The mishap unit wing commander will attend the briefing. NAF/CC attendance may be requested by PACAF/CC.

6.6.1.2. (Added-PACAF) For Class A flight mishap briefings, all primary members of the SIB will attend. For Class B flight mishap investigations where the NAF is the convening authority, convening authority will determine SIB members required to attend the briefing.

Chapter 7

FOLLOW-UP ACTIONS

7.1. Overview. Follow-up actions consist of reviewing the results of an investigation and acting upon its recommendations. Reference AFI 91-204 for requirements to accomplish the review of recommendations. Reference [Figure 7.1](#) for submission of Final Review comments.

7.2. Acting upon Recommendations.

7.2.1. Evaluating MOFE Recommendations. OPRs are expected to use risk management principles during the evaluation. For formal report recommendations, formal risk assessments are required. Risk assessments must consider the identified hazard and associated risk (as identified by the safety investigation and corrected as necessary by the OPRs and OCRs), the associated costs, benefits, schedule to implement, and residual risk assuming recommendation implementation. These assessments are then used for decision-making and at the MAJCOM level for the purpose of prioritizing open recommendations. Refer to AFI 90-901, *Operational Risk Management*, and AFPAM 90-902, *Operational Risk Management (ORM) Guidelines and Tools*, for information on appropriate risk management concepts, principles, and processes.

7.2.2. Reporting Recommendation Progress.

7.2.2.1. The OPRs and OCRs or their designee will document their progress on all recommendations and other recommendations of significance using AFSAS. Reporting must occur at least once every six months until the recommendation is closed. Updates may include actions planned or taken, results of development/testing, delays experienced, brief rationale for decisions made, and concurrence or non-concurrence by other agencies.

7.2.2.1.1. (Added-PACAF) HQ PACAF/SE will track the status of open Recommendations and Other Recommendations of Significance for Class A mishaps. Where applicable, NAF/SE will track the status of open Recommendations and Other Recommendations of Significance for Class B when they are the convening authority. Wings are responsible for tracking all open Recommendations and Other Recommendations of Significance action for Flight Class C, Class E, HAP, HATR & Aero Club mishaps. This includes the status of any AFTO 22, AF Form 847 or DR. Report status and recommend closure via AFSAS.

7.2.2.2. If action is transferred to another OPR or OCR, coordinate the transfer in advance and mutually agree on the action. The last status update from the losing OPR or OCR will state the transfer effective date and will identify the gaining OPR or OCR.

7.2.3. Recommendation Reviews

7.2.3.1. MAJCOM/DRU/FOAs/ANG will establish a Mishap Review Panel (MRP) or equivalent process (eg., Material Safety Task Group) to ensure mishap recommendations are methodically addressed. The MRP or similar process will meet once every six months. The reports will be compiled using data as of 30 Sep and 30 Mar each year (end of FY and end of second quarter). A consolidated recommendation status report is due to HQ AFSC on 15 Nov and 15 May every year. This semiannual status report is a way of ensuring these responsibilities are completed. It also advises all parties of the status of open recommendations. At a minimum, the semi-annual reports will include:

- 7.2.3.1.1. Total number of recommendations open at the last review
- 7.2.3.1.2. Number of recommendations opened since the last review
- 7.2.3.1.3. Number of recommendations closed since the last review
- 7.2.3.1.4. Number of recommendations transferred to and received from another MAJCOM since the last review
- 7.2.3.1.5. Total number of open recommendations now
- 7.2.3.1.6. A tabular listing of all closed recommendations including MDS, mishap date and recommendation number
- 7.2.3.1.7. A tabular listing of all open recommendations including MDS, mishap date, recommendation number, and a short statement of status (e.g., just opened, on-track, moderate issues, significant issues, awaiting funds, closed, etc.).
- 7.2.3.1.8. A listing of the MAJCOM's Top Three recommendations. For each of these recommendations, include risk management information, and any other supporting documentation, to help with the implementation of these recommendations. If necessary, include a brief explanation of the methodology used to arrive at the Top Three recommendations.
- 7.2.3.1.9. AFMC tracks and reports the status of its open recommendations in the DB-10 database. AFMC will also enter the status of its open recommendations into AFSAS, IAW paragraph [7.2.2.1](#).
 - 7.2.3.1.9.1. (Added-PACAF) For all Class A and B mishaps, each PACAF level action agency that is an OPR on open Recommendations and Other Recommendations of Significance will report status of corrective action, with complete rationale, until recommendation is closed. PACAF/SEF will solicit inputs from PACAF Directorates (i.e. DO, LG, etc) listed as OPRs for Class A and B flight mishap Recommendations and Other Recommendations of Significance NLT 1 Oct and 1 Apr. Report status not later than 15 Oct and 15 Apr.
 - 7.2.3.1.9.2. (Added-PACAF) For PACAF Class A and B flight mishaps with non-PACAF Recommendation and Other Recommendations of Significance OPRs, PACAF/SEF will forward requests for updated status information to the appropriate MAJCOM/SE NLT 1 Oct and 1 Apr.
 - 7.2.3.1.9.3. (Added-PACAF) NAFs will report the status of all recently closed (since the last MRP) and open Recommendations and Recommendations of Significance for Class B mishaps where they are the convening authority to PACAF/SEF not later than 15 Oct and 15 Apr. See format below. Wings will report the status of all recently closed (since the last MRP) and open Recommendations and Other Recommendations of Significance for Flight Class C, Class E, HAP, HATR & Aero Club mishaps to PACAF/SEF not later than 15 Oct and 15 Apr. This includes the status of any AFTO 22, AF Form 847 or DR. As a minimum, provide the following in either Word or an Excel spreadsheet:
 - 7.2.3.1.9.3.1. (Added-PACAF) AvSAS number.
 - 7.2.3.1.9.3.2. (Added-PACAF) Mishap Date.
 - 7.2.3.1.9.3.3. (Added-PACAF) Mishap Class.

7.2.3.1.9.3.4. (Added-PACAF) Type Aircraft Involved.

7.2.3.1.9.3.5. (Added-PACAF) One liner description of the mishap.

7.2.3.1.9.3.6. (Added-PACAF) Listing of Recommendations and Other Recommendations of Significance. Forward exactly as written in the report (or as MOFEd if applicable).

7.2.3.1.9.3.7. (Added-PACAF) Actions taken. Detail specific actions taken to include dates, publications, office symbols contacted, etc.

7.2.3.1.9.3.8. (Added-PACAF) . Status.

7.2.3.2. AFSC/SEF manages the final disposition of all aviation Class A and B recommendations and other recommendations of significance (ORS). Reference AFI 91-204 paragraph 7.5.

Figure 7.1. Sample Final Review Comments.

Use this format when responding to HQ AFSC's request for comments.

SUBJ//HQ (MAJCOM, ALC, etc.) Comments for Class A Flight Mishap, F-16CJ, 20020616MSET008A

SIB's (Investigator's) Findings and Causes: (If non-concur, or concur-in-part, then add the following):

Finding 1. (Text)

Position. (Position; "Non-concur" or "concur-in-part". Finding is then deleted, reworded, separated into two findings and renumbered, etc.).

Rationale. (Rationale for change).

Finding 2. Include remaining findings only if changed or deleted.

SIB's (Investigator's) Recommendations: (Only list recommendations that non-concur or concur in part.)

Recommendation 1. (Text)

Position. (Non-concur, or concur-in-part).

Rationale. (Rationale) (**NOTE:** All recommendations must state the position and rationale.)

Revised Recommendations. (If numerous changes were made to the recommendations, this subparagraph may be needed).

Added Recommendations. (For additional concerns, if applicable).

Other Findings of Significance

Other Recommendations of Significance

7.3. Forms Adopted.

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

7.3.2. AF Form 853, *Air Force Bird/Wildlife Strike Report*

7.3.3. AF Form 711A, *USAF Safety Report Checklist and Index*.

7.3.4. AF Form 711B, *USAF Mishap Report*.

7.3.5. AF Form 711C, *Aircraft/UAV Maintenance and Materiel Report*.

- 7.3.6. AF Form 853, *Air Force Bird Strike Report*.
- 7.3.7. AFTO Form 350, *Repairable Item Processing Tag*.
- 7.3.8. AFTO Form 781, *ARMS Aircrew/Mission Flight Data Document*.
- 7.3.9. DD Form 1575, *Suspended Tag*.

GREG ALSTON, SES
Acting Chief of Safety

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

DODI 6055.7, *Accident Investigation, Reporting and Record Keeping*

AFI 91-204, *Safety Investigations and Reports*

AFPD 10-9, *Lead Operating Command Weapon Systems Management*

AFI 10-2501, *Full Spectrum Threat Response (FSTR) Planning and Operations*

AFI 13-202, *Overdue Aircraft*

Abbreviations and Acronyms

AFSAS—Air Force Safety Automated System

AFSC—Air Force Safety Center or Air Force Specialty Code

ATC—Air Traffic Control

BASH—Bird/Wildlife Aircraft Strike Hazard

BP—Board President

CA—Convening Authority

CMA—Controlled Movement Area

CVR—Cockpit Voice Recorder

DR—Deficiency Report

FAA—Federal Aviation Administration

FAA/AST—Federal Aviation Administration/Associate Administrator of Space Transportation

FDR—Flight Data Recorder

FOD—Foreign Object Damage

FSAT—Full Scale Aerial Target

HATR—Hazardous Air Traffic Report

IAW—In Accordance With

ICAO—International Civil Aviation Organization

MAAF—Mishap Analysis and Animation Facility

MDS—Mission Design Series

MEN—Mishap Event Number

MFOQA—Military Flight Operations Quality Assurance

OCR—Office of Collateral Responsibility

OPR—Office of Primary Responsibility
ORS—Other Recommendations of Significance
PEO—Program Executive Offices
R&D—Research and Development
ROA—Remotely Operated Aircraft
RPV—Remotely Piloted Vehicle
SIO—Single Investigation Officer
SPO—System Program Office
UAV—Unmanned Aerial Vehicle
UCAV—Unmanned Combat Aerial Vehicle

Terms

AERO CLUB AIRCRAFT—These are all aircraft assigned to the respective Aero Club. The Aero Club through, purchase, lease, or loan from the government may have acquired these aircraft. Aero Clubs are authorized excess DOD and General Service Administration (GSA) aircraft on a loan basis.

AEROSPACE VEHICLES—DOD aircraft, UAVs, missiles, and space vehicles.

AIRCRAFT FLIGHT MISHAP—Any mishap in which there is intent for flight and reportable damage to a DOD aircraft. Explosives and chemical agents or guided missile mishaps that cause damage in excess of \$20,000 to a DOD aircraft with intent for flight are categorized as aircraft flight mishaps to avoid dual reporting. This is the only aviation mishap subcategory that contributes to the flight mishap rate.

AIRCRAFT FLIGHT-RELATED MISHAP—Any mishap in which there is intent for flight and no reportable damage to the DOD aircraft itself, but the mishap involves a fatality, reportable injury, or reportable property damage. A missile or UAV that is launched from a DOD aircraft, departs without damaging the aircraft, and is subsequently involved in a DOD mishap is reportable as a guided missile mishap or UAV, respectively.

AIRCRAFT GROUND OPERATIONS MISHAP—Any mishap in which there is no intent for flight and which results in damage to a DOD aircraft, a fatality, reportable injury, or reportable property damage. Damage to an aircraft when it is being handled as cargo or as aircraft components when not attached to the airframe is a ground and industrial, industrial aviation mishap.

AVIATION MISHAP—An Air Force mishap involving a DOD aircraft or DOD UAV.

DEPARTMENT OF DEFENSE AIRCRAFT—All manned weight-carrying devices supported in flight by buoyancy or dynamic action and are owned or leased by the DOD Components (including Reserve forces and National Guard) that are, as follows: operated and exclusively controlled or directed by a DOD Component; furnished by the Government, loaned, or on bailment to a non-DOD organization for modification, maintenance, repair, test, contractor training, or experimental project for a DOD Component, when the Government has assumed ground and flight risk. Includes aircraft under test by a DOD Component. (This includes aircraft furnished by a contractor or another Government Agency when operated by a DOD aircrew in official status and a DD Form 250, *Material Inspection and Receiving Report*, has been executed to certify that the Department of Defense has accepted the aircraft.) Excludes

aircraft leased, on bailment, or loaned to contractors, commercial airlines, other Government Agencies, or foreign governments, when the lessee has assumed risk of loss. Excludes civil aircraft owned by civil operators and accomplishing contract air missions for the DOD Components. Excludes factory-new production aircraft until successful completion of the post-production acceptance flight (mishaps that involve such aircraft are reported as contractor mishaps). Excludes flying club aircraft or privately owned aircraft on DOD installations.

DESTROYED AIRCRAFT/UAV—Aircraft/UAV will be considered destroyed when the man-hours required to repair the aircraft/UAV exceed the maximum stated in the "major repair man-hours" column of TO 1-1-638, *Repair and Disposal of Aerospace Vehicles*. A damaged aircraft/UAV not repaired is not automatically a "destroyed" aircraft/UAV. The decision not to return a damaged aircraft/UAV to service is independent of the mishap class. When the aircraft/UAV will not be returned to service, classify the mishap damage according to the total estimated repair cost as if it had been returned to service. The SIB must submit detailed repair cost estimates through MAJCOM channels to HQ AFSC/SEF for validation if an aircraft/UAV will not be returned to service but is not considered destroyed.

EJECTION ATTEMPT—Completion of the action by the aircrew to initiate the ejection system, regardless of the outcome. For single motion systems, this only requires pulling the handle. For dual motion systems, both raising the sidearm and squeezing the trigger must be accomplished.

EJECTION SYSTEM—A mechanical device designed to forcefully separate the crew from the aircraft and return them to the earth's surface. Examples are an ejection seat, and extraction system, or a crew module.

ENGINE-CONFINED MISHAP—Applies when an aircraft or UAV turbine engine experiences reportable damage (\$20,000 or more), and damage is confined to the engine and integral engine components. Damage is considered confined to the engine if there is less than \$20,000 damage external to the engine. If the total cost of all damage external to the engine exceeds \$20,000, then the mishap is not Engine-Confined, regardless of the comparative extent of engine damage cost.

ENGINE FOD MISHAP—When objects external to the engine cause damage, the mishap is an Engine FOD mishap. When the damage is caused by an internal engine failure (including liberation of internal engine components such as bolts, rivets, bonded coatings, blades, vanes, abradable coatings, honeycomb seals, etc.), the mishap is not an Engine FOD mishap.

EVENT—An unplanned occurrence, or series of occurrences, that does not meet the reporting criteria of a mishap.

HIGH ACCIDENT POTENTIAL (HAP) EVENT—Any hazardous occurrence that has a high potential for becoming a mishap that does not fit the definition of a HATR.

IN-FLIGHT SHUTDOWN (IFSD)—Any engine shutdown in-flight, either due to an engine malfunction or by the aircrew following flight manual procedures.

INTENT FOR FLIGHT—Intent for flight is considered to exist when aircraft/UAV brakes are released and/or takeoff power is applied for commencing an authorized flight. Intent for flight continues until either the fixed-wing aircraft/UAV taxis clear of the runway or, for helicopters and/or vertical takeoff and landing aircraft, the aircraft has alighted and the aircraft weight is supported by the landing gear. Clear of the runway means the entire aircraft/UAV is physically off the active runway. Hover taxi is considered flight.

MISHAP—A mishap is an unplanned occurrence, or series of occurrences, that results in damage or

injury and meets Class A, B, C, or D mishap reporting criteria IAW paragraph 1.8. Damage or injury includes: damage to DOD property; occupational illness to DOD military or civilian personnel; injury to DOD military personnel on- or off-duty; injury to on-duty DOD civilian personnel; damage to public or private property, or injury or illness to non-DOD personnel caused by Air Force operations.

MISHAP COSTS—Direct mishap costs ONLY include property damage costs (DOD and Non-DOD) and environmental cleanup costs.

NON-ACCEPTED EQUIPMENT/VEHICLES—Non-delivered equipment/vehicles for which the Government has assumed responsibility; DD Form 250, *Material Inspection and Receiving Report*, HAS NOT been executed.

NON-RECOVERABLE IN-FLIGHT SHUTDOWN—Any engine shutdown in-flight, either due to an engine malfunction or by the aircrew following flight manual procedures whereby: the engine is unable to restart, or further investigation determines that a restart attempt would not have been successful, or further investigation determines that continued operation would have caused the engine to fail, or the aircraft cannot maintain level flight at a safe altitude as determined by the situation.

SAFETY INVESTIGATOR—An individual authorized and qualified to investigate a safety occurrence. Examples include members of an ISB or SIB, an SIO, and members of a safety staff.

SAFETY REPORT—Safety reports include message reports (preliminary, status, and final), formal reports, and injury and occupational illness forms and logs.

SINGLE MANAGER—The single individual specifically designated, under the integrated weapon system management architecture, to be responsible for the life cycle management of a system or end-item. The Single Manager is the program manager vested with full authority, responsibility, and resources to execute and support an approved Air Force program. A list of the Single Manager organizations and MDSs is available at:

<http://afsafety.af.mil/AFSC/RDBMS/Flight/SIB-Support/Formal%20Report%20Files/TableA31andMDSLlists.xls>

UNMANNED AERIAL VEHICLE (UAV)—All unmanned DOD weight-carrying devices supported in flight by buoyancy or dynamic action and are owned or leased by the DOD Components, including aerostat balloons, that are, as follows: operated and exclusively controlled or directed by a DOD Component; furnished by the Government or on bailment to a non-DOD organization for modification, maintenance, repair, test, contract training, or experimental project for a DOD Component, when the Government has assumed ground and flight risk; under test by a DOD Component. (This includes UAVs furnished by a contractor or another Government Agency when operated by a DOD crew in official status and a *DD Form 250, Material Inspection and Receiving Report*, has been executed to certify that the DOD has accepted the vehicle.) UAVs covered by this instruction include, but are not limited to, the following: Tactical UAVs, such as the RQ-1 Predator or RQ-4 Global Hawk; Full Scale Aerial Target Remotely Piloted Vehicles (FSAT RPVs), such as the QF-4; Subscale RPVs, such as the BQM-34 Firebee or MQM-107 Streaker; Buoyant UAVs, such as a tethered aerostat; Remotely Operated Aircraft (ROA), and Unmanned Combat Aerial Vehicles (UCAV). When an FSAT RPV is carrying a person, it is a DOD aircraft, not a UAV.

UNMANNED AERIAL VEHICLE MISHAP—Any mishap involving a DOD UAV as defined in this instruction, but not involving a DOD aircraft. Damage to a DOD UAV, when it is being handled as a commodity or cargo, is a ground and industrial, industrial aviation mishap. See AFI 99-151, *Air-Launched Missile Analysis Group (ALMAG)*, for additional guidance on investigating specific types of air-launched missile anomalies and failures.

Attachment 2

SAFETY MESSAGE FORMATS

Safety message formats, to be utilized primarily for DMS released messages, are available on the AFSC website or AFSAS user's guide. Use the following narrative template for final messages:

Narrative. Include enough information in the final message to show SIB or investigating officer reasoning in reaching findings, causes, and recommendations, as well as OFS/ORS. Discuss ejection, egress, life support, survival and crashworthiness features affecting damage or injury. Include crashworthiness and life support features that mitigated damage or injury, features that did not work as designed, and features not incorporated into the design but that might have mitigated damage or injury. Investigators will include sufficient detail and analysis so that those found causal understand their roles in the event for the purpose of responding. Do not simply just describe the mishap sequence of events without written analysis prior to the findings section. Use the following template for your narrative section:

1. SEQUENCE OF EVENTS. Describe the flight from where you think the mishap sequence starts, ending with all injury, death, and aircraft damage or destruction. Do not include any analysis regarding crew or Maintenance actions in this section.
2. Operations Areas Investigated.
 - 2.1. Factors. (Reference paragraph 6.4.)
 - 2.2. Non-Factors Worthy of Discussion. (Reference paragraph 6.4.)
 - 2.3. Non-Factors. (Reference paragraph 6.4.)
3. Maintenance/Logistics Areas Investigated.
 - 3.1. Factors. (Reference paragraph 6.4.)
 - 3.2. Non-Factors Worthy of Discussion. (Reference paragraph 6.4.)
 - 3.3. Non-Factors. (Reference paragraph 6.4.)
4. CONCLUSIONS. Tie all of investigation and analyses together.

Attachment 3**DMS RELEASE OF SAFETY MESSAGES AND FORMAL REPORT ROUTING****SAFETY MESSAGE AND REPORT ROUTING**

1. See AFI 91-204, Paragraph 6.2.1.3. for instructions on MINIMIZE.
2. Use non-privileged for Preliminary message and Class E HATR events
3. Place safety privilege statement at the beginning of all other messages.
4. Overseas commands use IMMEDIATE precedence.
5. Do not delay final messages awaiting testing results. If the results from testing significantly change the outcome of final message, send a status message describing the changes.
6. For extension of due date, send request to the investigating MAJCOM with information copy to HQ AFSC/SEF.
7. Reference paragraph **6.1.4.** for message recipients.
8. Check the HQ AFSC SIB Support website at <http://safety.kirtland.af.mil/AFSC/RDBMS/Flight/SIB-Support/sib-support.htm> for Formal Report Mailing addresses.

Table A3.1. Routing of Aviation Formal Reports.

	Forward	To (See <i>NOTES 2 and 5</i>)	For
1	1 hard and 2 electronic copies of formal report	HQ AFSC/SEF 9700 G Avenue, S.E. Kirtland AFB, NM 87117-5670	Review, appropriate corrective action, and permanent file
2	1 electronic copy of formal report	HQ USAF/SEI 1400 Air Force Pentagon Washington, DC 20330	Review, appropriate action.
3	1 electronic copy of formal report	MAJCOMs concerned (See <i>NOTE 1</i>)	Review, appropriate corrective action. (MAJCOMs specify Endorsement requirements and suspense dates and may grant extensions when warranted.) All recipients except MAJCOM must destroy reports upon receipt of MOFE. MAJCOM/DRU/FOAs destroy their copies upon closeout of all recommendations.
4	1 electronic copy of formal report	Wing or equivalent level organization to which pilot is attached for flying	
5	1 electronic copy of formal report	Wing or equivalent level organization that possessed the aircraft if other than unit in line 4	
6	1 electronic copy of formal report	Wing or equivalent level organization to which pilot is assigned for duty if other than unit in line 4	
7	1 electronic copy of formal report	Ferrying unit with operational control over pilot if the pilot is borrowed from a MAJCOM not included in line 3	
8	1 electronic copy of formal report	Unit where rated officer is assigned for duty if not on flying status	
9	1 electronic copy of formal report	Intermediate commands of units specified in lines 4 through 8	
10	1 electronic copy of formal report	ANG/DOS or HQ AFRC/SE if ANG or AFRC aircraft or crews are involved	
11	1 electronic copy of formal report	Gaining MAJCOM if ANG or AFRC is the Convening Authority and gaining MAJCOM is not included in line 3	
12	1 electronic copy of formal report	Each agency or organization tasked in the primary recommendations (see <i>NOTES 2 and 3</i>)	

	Forward	To (See <i>NOTES 2 and 5</i>)	For
13	1 electronic copy of formal report	ASC/ENSA 2530 Loop Road West Wright Patterson AFB OH 45433-7102	Review/take appropriate corrective action. Forward action memorandum or Endorsement with a copy of TDR, photos, test results, and when established, MIP interim or closing action to HQ AFSC/SEF with a copy to AFMC/SE within 90 days of mishap.
14	1 electronic copy of formal report	Air Logistics/Product Center item/engine manager (see <i>NOTES 3 and 4</i>)	
15	1 electronic copy of formal report	System Program Director, Air Logistics/Product for aircraft, missiles, and explosives involved (see <i>NOTES 3 and 4</i>).	
16	1 electronic copy of formal report	HQ AFMC/SE Bldg. 262, Rm S154 4375 Chidlaw Rd. Wright Patterson AFB OH 45433	Review and take appropriate corrective action. Concurrence will be in DB-10.
17	1 electronic copy of formal report	HQ AFFSA/XA 1535 Command Drive, Suite D-302 Andrews AFB MD 20762 As well as MAJCOM staffs with responsibility for providing air traffic control or airfield management services, if deficiencies in air traffic control or airfield management are involved	Review and appropriate corrective action and comments to the MOFE.
18	1 electronic copy of formal report	HQ AFSOC/SEF 229 Cody Ave Suite 102 Hurlburt Field, FL 32544 If deficiencies in rescue helicopter response were noted in investigation	Review, appropriate corrective action, and destroy upon closeout of all corrective actions.
19	1 electronic copy of formal report	HQ AWA/XO 106 Peacekeeper Drive Suite 2N3 Offutt AFB, NE 68113 If deficiencies in weather services involved	

	Forward	To (See <i>NOTES 2 and 5</i>)	For
20	1 electronic copy of formal report	HQ AFOTEC/SE 8500 Gibson SE Kirtland AFB NM 87117	Review, appropriate corrective action, and destroy upon closeout of all corrective actions.
21	1 electronic copy of formal report	DCMA-AO 6350 Walker Lane, Suite 300 Alexandria, VA 22310-3241 If USAF contractor management is involved (see <i>NOTE 2</i>)	
22	1 electronic copy of formal report	AFFSA/XO 1535 Command Drive, Suite D-303 Andrews AFB MD 20762 If instrument flight involved	
23	1 electronic copy of formal report	311 HSW/YACL 7980 Lindbergh Drive, Bldg 578 Brooks City-Base, TX 78235-5352	Review analysis and appropriate corrective action.
24	1 electronic copy of formal report	HQ AFRL/HEA 6030 S. Kent St. Mesa AZ 85206-0904 If Night Vision Devices are involved	
25	1 electronic copy of formal report	USAFSAM/ATTU 2601 Louis Bauer Drive Brooks City-Base, TX 78235-5130 If human factors are involved	Review and use in aircrew human factors education
26	1 electronic copy of TAB Y	HQ AFMOA/SGZA 110 Luke Ave. Bolling AFB, DC 20332-7050 If fatal or disabling injury or illness occurred	Review, appropriate corrective action, and destroy upon completion of corrective actions.
28	1 electronic copy of TAB Y	412 TW/ENFH 30 N Wolfe Ave Edwards AFB CA 93524 For each person involved in emergency exit or bailout	
29	1 electronic copy of TAB Y	Armed Forces Institute of Pathology 6825 16 th Street NW Washington DC 20306-6000 Attn: Air Force Medical Examiner if fatality occurred	

	Forward	To (See <i>NOTES 2 and 5</i>)	For
30	1 electronic copy of TAB Y	AFRL/HEPA Acceleration Team Leader 2800 Q St., Bldg. 824, Rm 206 Wright-Patterson AFB, OH 45433-7947 For mishaps involving: GLOC, spatial disorientation, or ejections	Review, appropriate corrective action, and destroy upon completion of corrective actions.
31	1 electronic copy of TAB Y	AFRL/HED 8315 Hawks Rd, Bldg 1184 Brooks AFB, TX 78235-5320 For mishaps involving: Directed Energy such as lasers or microwave energy sources	

NOTES:

1. This includes owning MAJCOM and all MAJCOMs operating the same MDS. Consult with the convening authority safety office to determine if they desire a hard copy of the formal report.
2. Do not send a report to an agency outside the USAF. Prepare those copies of the report and send them to HQ AFSC/JA for forwarding.
3. For all mishaps requiring an action by an AFMC organization, send one electronic copy to HQ AFMC/SE, Wright Patterson AFB OH 45433-5006, as well as the tasked agency.
4. When routing formal reports to Air Logistics Centers, SPD, or product center send the reports to the Materiel Safety Offices at the applicable ALC for internal distribution and tracking (if applicable). Use the following addresses:
 - a. OC-ALC/PSRP Tinker AFB OK 73145-3005
 - b. OO-ALC/SES Hill AFB UT 84056-5003
 - c. WR-ALC/SEM Robins AFB GA 31098-1864
NOTE: SPD and ALC support may not be collocated.
5. Refer to the AFSC website under SIB support
<http://safety.kirtland.af.mil/AFSC/RDBMS/Flight/SIB-Support/sib-support.htm> for up to date mailing addresses.

Table A3.1. (PACAF)

NOTE 1. For Class A mishaps, HQ PACAF requires two copies, one hardcopy, one electronic.

Item 10. Address for ANG/XOS: Jefferson Plaza 1 (JP-1), 1411 Jefferson Davis Hwy, Arlington, VA 22202-3231.

Item 10. Address for HQ AFRC/SE, 155 Richard Ray Blvd, Suite 131, Robins AFB, GA 31098.