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Safety

**AVIATION SAFETY INVESTIGATIONS
AND REPORTS**

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This Department of the Air Force Manual (DAFMAN) provides aviation-unique guidance to support DAF Instruction (DAFI) 91-204, *Safety Investigations and Reports*. It applies to all Regular Air Force, United States Space Force (USSF), Air Force Reserve (AFR), and Air National Guard (ANG) military and civilian personnel. This DAFMAN applies to commanders, managers, supervisors, and safety staffs at all levels, all persons who investigate and report DAF aviation safety events, and those persons who handle such reports. Ensure all records generated as a result of processes prescribed in this publication adhere to AFI 33-322, *Records Management and Information Governance Program*, and are disposed of in accordance with the AF Records Disposition Schedule located in the AF Records Information Management System. Refer recommended changes and questions about this publication to the office of primary responsibility (OPR) using the DAF Form 847, *Recommendation for Change of Publication*; route DAF Forms 847 from the field through the appropriate functional chain of command. This DAFMAN may be supplemented at any level, but all supplements must be routed to the AF Safety Center (AFSEC) Flight Safety Division (AFSEC/SEF) for coordination prior to certification and approval. All previous supplements are cancelled/obsolete. The authorities to waive wing, unit, delta, or garrison level requirements in this publication are identified with a Tier (“T-0, T-1, T-2, T-3”) number following the compliance statement. See DAFMAN 90-161, *Publishing Processes and Procedures*, for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver authority, or alternately, to the publication OPR for non-tiered compliance items. The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not

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SUMMARY OF CHANGES

This document has been substantially revised and must be completely reviewed. Major changes were made to align guidance with the investigation reporting requirements in the AF Safety Automated System (AFSAS) <https://afsas.safety.af.mil>. Common core investigation requirements have been moved to DAFI 91-204. All references to the terms “formal report(s), formal safety report(s), and safety investigation report(s)” have been replaced with the term “safety report(s)”. The use of “tab(s)” in safety investigation reporting have been replaced with “exhibit(s)”.

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Chapter 1

GENERAL INFORMATION

1.1. Overview.

1.1.1. This DAFMAN, in conjunction with DAFI 91-204, provides guidance for investigating and reporting aviation safety events.

1.1.2. For the purposes of this DAFMAN, the terms “Major Command (MAJCOM)” and “Field Command (FLDCOM)” include MAJCOM and FLDCOM-equivalents regarding safety responsibilities (i.e., direct reporting units, field operating agencies [e.g., ANG Readiness Center]).

1.1.3. For the purposes of this DAFMAN, the term “Safety Investigation Board (SIB)” includes any assembly of safety investigators.

1.1.4. For the purposes of this DAFMAN, the term "aircraft" includes unmanned aerial vehicles (UAV) and unmanned aircraft systems (UAS).

1.1.5. Aviation safety investigations include Class A through E mishaps, hazard investigations, and safety studies. See DAFI 91-204 for descriptions.

1.2. SIB Support. SIBs should contact their Convening Authority (CA) safety staff for investigative support. Contact the AFSEC/SEF Duty Officer when the CA safety staff cannot provide the required support in a timely manner. See [Attachment 2](#) for AFSEC/SEF investigation support contact information.

Chapter 2

ROLES AND RESPONSIBILITIES

2.1. Convening Authority. In addition to the requirements in DAFI 91-204, the CA at all levels will:

- 2.1.1. Ensure safety events are investigated in accordance with membership requirements in **Table 5.2. (T-1)**
- 2.1.2. Ensure SIB members meet the minimum training, qualification, and grade requirements in **Table 5.1. (T-1)**
- 2.1.3. Act upon requests for additional members and subject matter experts. **(T-1)** See **paragraph 5.3** for sourcing technical experts.
- 2.1.4. Grant investigation timeline extensions when warranted. **(T-1)**
- 2.1.5. Determine a process for approving Class C-E mishaps, hazard investigations, and safety studies. **(T-1)** Approval options include but are not limited to in-person or remote briefings, slide-only reviews, and safety report reviews.
- 2.1.6. Ensure SIB briefings or safety report messages are not staffed outside of safety channels. **(T-1)**
- 2.1.7. Ensure Class C-E mishaps, hazard investigation, and safety study results are approved for release within 15 days of the completion of the investigation. **(T-1)**

2.2. Commander of the mishap unit or Commander of the Regular DAF installation nearest a mishap. In addition to the requirements in DAFI 91-204, appoint an Interim Safety Board (ISB) in accordance with **paragraph 4.2. (T-1)**

2.3. Director or Chief of Safety. In addition to the requirements in DAFI 91-204, the Director or Chief of Safety will:

- 2.3.1. Ensure an adequate number of potential investigators are appropriately trained and available to conduct aviation safety investigations. **(T-1)**
- 2.3.2. Advise the CA on SIB membership requirements in accordance with DAFI 91-204 and **Table 5.1** and **Table 5.2. (T-1)**
- 2.3.3. Ensure orders appointing the SIB are accomplished. **(T-1)** The orders must include all SIB primary members, the recorder, and may include other secondary members. **(T-1)** The orders must contain the individual's position, full name, rank/grade, organization, and assigned base. **(T-1)** Orders may be accomplished using AFSAS.
- 2.3.4. Ensure an AFSAS account is set up for each SIB member. **(T-1)** At a minimum, the following roles should be assigned:
 - 2.3.4.1. Data Extraction Access: Events
 - 2.3.4.2. Data Extraction Access: Recommendations
 - 2.3.4.3. Event: Data Viewer
 - 2.3.4.4. Event: Investigator

- 2.3.4.5. Event: Message (View Only)
- 2.3.4.6. Recommendation: View Only
- 2.3.4.7. Workspace: US Air/Space Force

2.3.5. If travel is required, direct SIBs to be in place within 72 hours of notification of the mishap to the CA. **(T-2)** If the mishap occurred in a deployed location, advise each SIB member on travel requirements and personal and professional gear that is required. **(T-2)**

2.3.6. Provide ISB contact information to the SIB. **(T-1)**

2.3.7. Provide the SIB a point of contact from the CA's safety staff. **(T-1)** The point of contact provides assistance and advice in all aspects of the investigation.

2.3.8. Monitor the progress of open investigations. **(T-1)** Review extension requests and obtain CA approval for extensions when appropriate. **(T-1)** Coordinate with SIBs to ensure timely investigation completion. **(T-1)**

2.3.9. Assist SIBs in determining and contacting OPR and office of collateral responsibility for recommendations and other recommendations of significance (ORS). **(T-1)**

2.3.10. Provide outbrief templates to SIBs. **(T-1)**

2.3.11. Ensure SIBs have made adequate progress and will be ready to present their results before scheduling outbriefs or recommending CA approval of requests to de-convene. **(T-1)**

2.3.12. Ensure procedures are established to de-classify recordings (e.g., head-up display videos, flight data recorder) used in safety investigations. **(T-1)**

2.4. Interim Safety Board. In addition to the requirements in DAFI 91-204, the ISB will follow the guidance in Chapters **3, 4,** and **Chapter 8** and the ISB Go Package located in the AFSAS/Pubs & Refs/ISB Go Package at <https://afsas.safety.af.mil/publications/PublicationHomepage.do>. **(T-1)**

2.5. Safety Investigation Board. In addition to the requirements in DAFI 91-204, the SIB will follow the guidance in Chapters **3, 5, 6, 7,** and **Chapter 8** and the SIB/SIO Go Package located in the AFSAS/Pubs & Refs/SIB/SIO Go Package at <https://afsas.safety.af.mil/publications/PublicationHomepage.do> (hereinafter SIB Go Package). **(T-1)**

Chapter 3

EVENT REPORTING

3.1. Mandatory Investigation and Reporting Requirements. In addition to the DAFI 91-204 requirement to report all Class A-D mishaps, CAs will ensure all events described in [paragraph 3.3](#) are investigated and reported as either Class E mishaps (damage or injury that does not meet Class D mishap or higher criteria) or hazards (no damage or injury). **(T-0)**

3.2. Small UAS (sUAS) Waiver Authority. For sUAS undergoing testing, laboratory experimentation and test support training by AF Materiel Command, the activity wing commander, laboratory technology director, or range operating authority may waive mandatory reporting of Class E mishaps and hazards described in [paragraph 3.3.2](#) through [paragraph 3.3.5](#). **Exception:** Spills or leaks of hazardous materials and off-range impacts may not be waived by the activity wing, delta, or garrison commander, laboratory technology director, or range operating authority.

3.3. Mandatory Investigation and Reporting Events. CAs will ensure the following events are investigated and reported:

3.3.1. Physiological Events. A physiological event is any injury, illness, or abnormal physiological condition experienced by aircrew or others during flight or intent for flight. Physiological events will be investigated and reported as Class E mishaps or hazards unless they meet the injury criteria of a Class A-D mishap. **(T-1)**

3.3.1.1. Physiological events will be investigated by a safety investigator and where assigned, a local flight surgeon and/or aerospace physiologist. **(T-3)**

3.3.1.2. SIBs will include toxicological testing results in AFSAS. **(T-2)** When physiological symptoms are not directly related to cabin altitude, SIBs should consider drawing blood to test for contaminants as recommended by USAF School of Aerospace Medicine. SIBs will include 72-hour and 7-day histories in the report. **(T-2)** Physiological events are described in [Table 3.1](#).

Table 3.1. Physiological Events.

Event	Condition
Hypoxia/Hyperventilation/Hypoventilation	Physiological symptoms like those encountered during physiology training. Symptomatic exposure to reduced oxygen pressure and/or concentration due to a fault in the aircrew breathing system. Symptoms resulting abnormal rate and/or depth of breathing.
Decompression Sickness	Confirmed decompression sickness by a qualified flight surgeon. Includes suspected decompression sickness where symptoms resolve on descent or within two hours at ground level, did not recur after the flight, and required no treatment beyond supplemental oxygen.
Barotrauma	Ear and sinus pain that requires the use of medication such as Afrin® or other decongestant

Event	Condition
	to resolve the ear and sinus pain in flight. Trapped gas disorders in the middle ear, sinuses, teeth, and/or intestinal tract that requires a change in flight profile to relieve (e.g., change altitude, slow descent).
Acceleration Effects	G-induced loss of consciousness (GLOC), visual disturbances, or other acceleration effects to include student pilots/combat system operators (CSO) even when not in control of the aircraft.
Spatial Disorientation or Visual Illusions	A failure to correctly sense aircraft position, attitude, or altitude which results in an unplanned/unusual attitude impacting safety of flight.
Toxic Smoke, Fumes, or Liquids Exposure	Symptomatic exposure to toxic substances.
Other	Any physiological condition that the aircrew or flight surgeon determined to be a health concern.

3.3.2. **Propulsion-Related Events.** Propulsion-related events are described in [Table 3.2](#) and will be investigated and reported as Class E mishaps or hazards unless they meet the damage or injury criteria of a Class A-D mishap. **(T-1)**

Table 3.2. Propulsion-Related Events.

Event	Condition
Loss of Thrust	Loss of thrust was sufficient to prevent maintaining level flight at a safe altitude or which required the pilot to jettison stores.
Engine Stalls/Surges	Any engine stall which required crew action. Do not report stalls that occur during engine maintenance, or in aircraft “out of envelope” situations unless reportable damage occurs.
Emergency or Precautionary Landing	For single engine or rotary wing aircraft with imminent engine or rotor drive system failure confirmed after landing.
Uncommanded or Inadvertent Propeller or Thrust Reversal	During flight or ground operations when it resulted in a hazardous situation.
Abnormal Restart	During flight, after an intentional in-flight engine shutdown for training, functional check flights, or other non-emergency purposes. A restart is abnormal when it does not occur as planned or expected when using established restart procedures.
Engine Fire	Any fire not confined to the engine tailpipe or when extinguished with agent.
Emergency, Precautionary or Inadvertent Engine Shutdown	At any time after taxi until normal engine shutdown. Note: This does not include intentional in-flight engine shutdowns for training, testing, or functional check flights or the following events during maintenance engine runs: flameout, engine stall, or emergency engine shutdown.

Event	Condition
Throttle Binding or Interference	Any binding or similar issue with setting engine performance including any event where objects impeded throttle movement.

3.3.3. **Flight Control-Related Events.** Flight control-related events are described in [Table 3.3](#) and will be investigated and reported as Class E mishaps or hazards unless they meet the damage or injury criteria of a Class A-D mishap. **(T-1)**

Table 3.3. Flight Control-Related Events.

Event	Condition
Unintentional Departure from Controlled Flight	When it met the aircraft-specific flight manual definition of a departure from controlled flight for that aircraft.
Uncommanded Inputs to the Flight Controls	All uncommanded inputs to the flight controls (including stability augments, or trim systems) whether it resulted in a dangerous situation or not. Report autopilot faults if, in the opinion of the aircrew, the autopilot would have put the aircraft in a hazardous situation.
Uncommanded Reversions to a Backup Mode	All uncommanded reversions to a backup mode for any safety-critical flight control system that resulted in an in-flight emergency (either declared by the crew or directed by the flight manual).
Unintentional Aircraft Stick or Yoke Controller Interference	When it resulted in a hazardous situation.
Automatic Ground Collision Avoidance System	Unintentional automatic terrain avoidance maneuvering, or manually activated recovery systems such as the pilot activated recovery system. Report these events regardless of when or if the aircrew overrode or otherwise took over for the system. Do not report intentional activations made for training or familiarization. Include “AGCAS activation” in AFSAS one-liner where an Automatic Ground Collision Avoidance System activated.
Remotely Piloted Aircraft Action Not Complying with Control Input	During flight and ground operations. Including, but not limited to, unintentional autonomous go-around, permanent loss of all command-and-control links, and malfunctions or emergencies for which the aircraft modified its flight path (e.g., executes Lost Link or Contingency missions) without operator input.

3.3.4. **Instrument-Related Events.** Instrument-related events are described in [Table 3.4](#) and will be investigated and reported as Class E mishaps or hazards unless they meet the damage or injury criteria of a Class A-D mishap. **(T-1)**

Table 3.4. Instrument-Related Events.

Event	Condition
Loss of All Pitot-Static Instrument Indications	Loss occurred in-flight.

Event	Condition
Loss of Both Primary and Standby Attitude Indicators	Loss occurred in-flight.
Non-Recoverable Loss of More Than One Electronic Primary Flight Display	Loss occurred in-flight at any primary crew duty station regardless of the ability to use standby instruments.

3.3.5. **Miscellaneous Reportable Events.** Miscellaneous aircraft events are described in [Table 3.5](#) and will be investigated and reported as Class E mishaps or hazards unless they meet the damage or injury criteria of a Class A-D mishap. **(T-1)**

Table 3.5. Miscellaneous Reportable Events.

Event	Condition
Fire	Fire occurred in-flight.
Fuel Leak	Fuel leak resulted in an in-flight emergency or forced landing.
Gear Up Landing	Partial or full gear up landing.
Landing Gear Structural Failure	Failure of critical landing gear components, meaning any component that could cause landing gear collapse.
Departure From Takeoff or Landing Surface	Any unintended departure from takeoff or landing surfaces onto adjacent surfaces, including landing short of the landing surface. The overrun is considered part of the takeoff or landing surface. Report unintended departures of sailplanes only when the aircraft is damaged.
Inadvertent or Uncommanded Canopy Openings	Opening occurred in-flight.
Spill or Leak of Hazardous Material	Hazardous material is radioactive, toxic, corrosive, or flammable. The leak or spill is from aircraft stores or cargo, and it created a hazardous condition or an in-flight emergency.
Unintentional Contact Between an Aircraft and an Object	Any time an aircraft unintentionally makes contact with another object (including another aircraft).
Cabin Pressure Loss	When it required the execution of an emergency procedures checklist.
Aerial Refueling Equipment Malfunction	Occurred in-flight and affected an aerial refueling probe, boom nozzle, aerial refueling receptacle, multi-point refueling system, wing air refueling pod, boom drogue adaptor, hose, hose reel assembly, or aerial refueling pod. Report malfunctions involving helicopter aerial refueling probe oscillations.
Hoist Malfunctions	Occurred in-flight and involved inadvertent separation of the hoist cable from the hoist (e.g., inadvertent cable shear or cable unwrapping from the drum) or intentional helicopter hoist cable shear due to a fouled or stuck cable.

Event	Condition
Electrical Power Loss	Loss occurred in-flight and was a complete loss or a transfer to backup battery power. Does not include momentary power loss events resulting from intentional acts such as a transfer from one generator to another.
Inadvertent System Actuation	Actuation is due to design or ergonomic issues that created a potentially hazardous condition.
Loss of UAS Detect and Avoid	Sustained loss of detect and avoid systems which required aircrew to alter their actual or intended flight path.
Laser Events	Event occurred in-flight, negatively impacted flight operations or safety, or resulted in eye irritation or post flight medical evaluation.
F-16 Canopy Water Pooling	Event matches the F-16 flight manual description.

3.3.6. **Hazardous Air Traffic Report (HATR) Events.** A HATR is an event resulting in or from potentially hazardous aviation practices or procedures listed in [Table 3.6](#) See [paragraph 8.1](#) for more information. HATR events are described in [Table 3.6](#).

Table 3.6. HATR Events.

Event	Condition
Airfield Separation	Loss of separation between an aircraft and other aircraft, vehicles, or pedestrians in a controlled movement area that results in endangerment to the aircraft.
Airborne Separation (Near Mid-Air Collision)	Aircrew took abrupt evasive action or would have taken such action if circumstance allowed, or another aircraft or aircraft-type entities (e.g., UAS, balloons, parachutists, paragliders) were within 500' or inside "well clear" and presented a hazard to flight safety. Report greater than "well clear" events when closure rate, aircraft maneuvers, visibility, control instructions, or other related circumstances resulted in a hazard to flight safety. While unintentional separation less than 500' normally meets this criteria, it is not required. Also report Traffic Collision Avoidance System Resolution Advisories which required the aircrew to deviate from a planned or assigned flight path.
Communications and Equipment	Any Navigational Aid/Air Traffic Control (ATC) equipment deficiency/malfunction/outage which contributed to a hazardous situation.
Publications or Directives	Flight information publications, notices to airmen, aeronautical information publication, or other related publications which contributed to a hazardous air traffic condition.

3.3.7. **Controlled Movement Area Violation (CMAV) Events.** CMAVs are airfield infractions caused by aircraft, vehicles, or pedestrians entering the Controlled Movement Area without specific control tower approval. This includes aircraft landing or taking the runway for takeoff without clearance. See [paragraph 8.1](#) for more information. CAs will ensure CMAVs resulting in the endangerment of an aircraft are reported as a HATR event. (T-1)

3.3.8. **Bird/wildlife Aircraft Strike Hazard (BASH) Events.** CAs will ensure all aircraft damaging and non-damaging bird/wildlife strikes are investigated and reported. **(T-0)** See [paragraph 8.2](#) for more information.

Chapter 4

INTERIM SAFETY BOARD

4.1. ISB Duties. The sole purpose of the ISB is to gather, preserve, and protect evidence after a mishap. ISB actions are limited to identifying evidence, taking control or possession of evidence, and preserving it until it can be transferred to the SIB. The ISB does not determine factors or causes of the mishap. If an aircraft has a mishap off station, an ISB may be required at more than one location. In this situation, the CA will designate a lead ISB President to coordinate and control the activities at all locations. (T-1)

4.2. ISB Membership. Depending on the mishap, an ISB may consist of one individual or several. ISB members are selected based on qualifications, grade, and training. ISB members should not be from the mishap squadron and will not have been directly involved in the mishap or immediate supervision of the activity that led up to the mishap. (T-3) ISB position descriptions are described in [Table 4.1](#) The commander of the mishap unit, or commander of the regular DAF installation nearest a mishap, will ensure ISB members meet the qualification, grade, and training requirements listed in [Table 4.1](#). (T-2)

Table 4.1. ISB Member Requirements and Duties.

Board President (BP)	Required Training: Safety and Accident Investigation Board President Course (BPC) (T-1)
	Qualification/Grade Requirements: O-6 for Class A (O-5 for Class A Engine-confined Foreign Object Damage), O-5 for Class B (T-2)
	Duties and Responsibilities: Responsible for all activities of the ISB.
Investigating Officer (IO)	Required Training: Aircraft Mishap Investigator Course (AMIC) (T-1)
	Qualification/Grade Requirements: None
	Duties and Responsibilities: Ensures preservation of evidence. Documents the mishap site. Coordinates the efforts of other ISB members.
Maintenance	Required Training: None
	Qualification/Grade Requirements: Fully qualified maintenance officer, Senior Non-Commissioned Officer (SNCO), or civilian-equivalent. (T-2) Experience in the Mission Design Series (MDS) involved is preferred.
	Duties and Responsibilities: Assembles as much information as possible regarding the history of the mishap aircraft, including but not limited to: AF

	<p>Technical Order (AFTO) Form 781s (or the like); automated maintenance records; training records of maintainers who last performed maintenance on the aircraft; fuel, oil, hydraulic, and liquid oxygen samples. Coordinates impoundment of the mishap aircraft, servicing equipment, and consolidated tool kits used on the mishap aircraft.</p>
Pilot	<p>Required Training: None</p>
	<p>Qualification/Grade Requirements: Qualified in the mishap aircraft is preferred.</p>
	<p>Duties and Responsibilities: Assembles as much information as possible regarding the mishap flight and aircrew. This includes, but is not limited to, training records, flight evaluation folders, flight crew information files, flight plans, weather briefings, flight orders, briefing notes, radar and tower tapes, etc.</p>
Flight Surgeon	<p>Required Training: Aircraft Mishap Investigation and Prevention Course (AMIP) (T-2)</p>
	<p>Qualification/Grade Requirements: Credentialed and privileged in aerospace medicine. (T-2) Familiarity with the MDS involved is preferred.</p>
	<p>Duties and Responsibilities: Coordinates medical care at the mishap site under the direction of the incident commander and/or medical on-scene commander and advises the ISB on the site's environmental hazards. Responsible for completing 72-hour and 7-day histories; examinations; toxicological testing; collection of medical and dental records; and ensuring human remains are preserved, photographed, and documented. Serves as the liaison between local medical authorities or coroners and military investigators, including medical examiners from the Armed Forces Medical Examiner System.</p>
Jumpmaster or Parachute Malfunction Officer (as required)	<p>Required Training: Current and Qualified Jumpmaster or Parachute Malfunction Officer trained and certified in accordance with AFI 13-210_IP, <i>Joint Airdrop Inspection Records, Malfunction/Incidents, Investigations and Activity Reporting.</i> (T-1)</p>
	<p>Qualification/Grade Requirements: Minimum 7-level SNCO or fully qualified officer (T-2)</p>
	<p>Duties and Responsibilities:</p>

	Assembles as much information as possible regarding the mishap jumper. Collect drop zone controller video and parachute inspection logs.
Aircrew Flight Equipment (AFE) (as required)	Required Training: Life Sciences Equipment Investigation Course (T-1)
	Qualification/Grade Requirements: Minimum 7-level SNCO (T-2) Should have experience in the type of AFE involved.
	Duties and Responsibilities: Assembles all evidence associated with AFE and aircraft crew protection and egress systems. This includes recent servicing, qualifications and records for individuals who most recently worked on the systems.
Recorder	Required Training: None
	Qualification/Grade Requirements: O-1, E-4, GS-5 or higher (T-2)
	Duties and Responsibilities: Should be familiar with administrative duties. Responsible for administrative and logistical needs of the ISB. Facilitates a timely and orderly process of evidence collection and transfer.

4.3. Evidence Collection and Preservation. Evidence collected by the ISB lays the groundwork necessary for a successful investigation by the SIB. The ISB assembles evidence from multiple sources and locations. Concentrating only on the mishap site may result in delayed collection of perishable evidence. In addition to evidence collection and preservation guidance in DAFI 91-204, the ISB will collect the following evidence:

4.3.1. **Ground Control Station (GCS) data.** GCS data is UAV/UAS-unique data that provides valuable information for mishap investigations. If not properly recovered and handled in a timely manner, the data can be overwritten and lost. Units operating UAV/UAS must develop procedures to download the information from all applicable ground stations. **(T-1)** GCS data may be classified and special procedures may be required to download and preserve evidence. If required, contact the local Special Security Officer to coordinate downloads. **(T-3)** Upon notification of a UAV/UAS mishap, units must perform the following:

4.3.1.1. Secure the GCS keeping all systems powered on and do not reboot systems until all data is recorded. **(T-2)** Relevant data may include, but is not limited to, any display that indicates cautions, warnings, aircraft performance, and data link status.

4.3.1.2. Leave any aircraft controls in their original positions until photographed and/or video recorded. **(T-2)**

4.3.1.3. Confirm all recording devices are downloaded and stored on an appropriately classification secure drive. **(T-2)**

4.3.1.4. Photograph and/or video record the entire GCS area. **(T-2)**

4.3.1.5. Once the GCS mission essential items in [paragraph 4.3.1.1](#) through [paragraph 4.3.1.4](#) are completed, the CA may approve its return to the unit.

4.3.2. **Wildlife Remains.** Collect wildlife remains in accordance with [Chapter 8](#). (T-1)
Document location of wildlife remains at the mishap site as early as possible (remains may be quickly scavenged by other wildlife before the SIB arrives). (T-2)

Chapter 5

SIB REQUIREMENTS

5.1. SIB Membership. The CA appoints individuals to investigate safety events based on the event type. **(T-1)** When a mishap's initial cost estimate is within 10% of the next higher mishap class, consider using investigation procedures and requirements for the next higher class. The CA will identify SIB members as primary, secondary, or support. **(T-1)** SIB position descriptions are described in **Table 5.1** Except for AFSEC representatives that are only performing telephonic support and SIB recorders, the CA will assign members in **Table 5.2** as primary members to the SIB. **(T-1)**

5.1.1. Primary members determine the SIB's results, including factors, findings, causes, and recommendations. Only primary members authenticate the safety report. See **Table 5.2** for minimum SIB membership requirements. When the circumstances of the mishap require additional expertise, individuals identified in **Table 5.1** may be added as primary members. CAs will ensure primary members are Department of Defense (DoD) personnel and meet the qualifications, grade, and training requirements in **Table 5.1**. **(T-1)** CAs should not appoint primary members who anticipate separation or a permanent change of station within 6 months.

5.1.2. Secondary members provide expertise or assistance to the SIB. Secondary members may participate in all SIB deliberations to the extent authorized by the SIB President, but do not authenticate the safety report. CAs will ensure secondary members for Class A mishaps are not from the mishap wing/delta or equivalent. **(T-1)** CAs will ensure secondary members for Class B mishaps are not from the mishap squadron or equivalent. **(T-1)** Individuals identified in **Table 5.1** may be added as secondary members. CAs will ensure secondary members are DoD personnel and meet the qualifications, grade, and training requirements in **Table 5.1**. **(T-1)**

5.1.3. Support members are observers or other personnel who assist the SIB. Support members can come from depots, industry, civilian organizations, CA safety staffs, other government organizations, and laboratories. The SIB President determines the extent of support member involvement in the SIB. Support members do not need to be DoD personnel.

5.1.4. It is common for SIBs to use other personnel to assist with wreckage and evidence recovery, transcriptions, administrative, or other tasks. These personnel are not members of the SIB. Use of these personnel is at the discretion of the SIB President.

5.1.5. If no flight surgeon is assigned to the SIB, a flight surgeon from the mishap wing/delta or equivalent may review medical and dental records for the SIB. If the flight surgeon identifies areas that may have contributed to the mishap, the CA will assign a flight surgeon to the SIB. **(T-2)**

5.2. Class C-E Mishap and Hazard Members. The CA will ensure Class C-E mishaps and hazard investigation members meet the qualifications, grade, and training requirements in **Table 5.1**. **(T-2)** The CA may appoint Mishap Investigation Non-Aviation course graduates to investigate Class C-E mishaps if injuries occurred without aircraft damage.

5.3. Obtaining Technical Experts. SIBs will contact the AFSEC/SEF Engineering Technical Assistance Duty Officer (see **Attachment 2**) to identify technical experts available to the SIB. **(T-1)**

Table 5.1. SIB Member Requirements and Duties.

BP	Required Training: BPC (T-1)
	Qualification/Grade Requirements: Pilot or CSO (T-1) (Notes 1-4) For fatalities must be O-7 (or O-7-select) (T-1) O-6 for Class A, O-5 for Class B (T-1)
	Duties and Responsibilities: Responsible for all activities of the SIB, is the final decision authority, and reports directly to the CA.
IO	Required Training: AMIC (T-1)
	Qualification/Grade Requirements: Pilot or CSO (T-1) (Notes 1-6) Minimum SNCO (or E-6 when the individual is a trained Aviation Safety NCO) or civilian equivalent. (T-1) (Note 7)
	Duties and Responsibilities: Responsible for daily SIB activities, the investigation, and preparing of reports and messages. Directs and coordinates activities of other SIB members and works with the AFSEC Representative (if assigned) to manage the SIB. Additionally, performs duties as described above for the BP when no BP is assigned.
AFSEC Representative	Required Training: AMIC and BPC (T-1)
	Duties and Responsibilities: Process expert that guides the SIB investigation and report writing efforts. Conducts refresher training on SIB procedures and coordinates technical assistance resources.
Maintenance	Required Training: AMIC highly desired
	Qualification/Grade Requirements: Fully qualified maintenance officer, SNCO, or civilian-equivalent. (T-1) Must have a minimum of 1 year flightline or quality assurance experience in the MDS involved. (T-1) (Notes 2, 3)
	Duties and Responsibilities: Analyzes maintenance factors, pre-mishap status of mishap aircraft, aircraft systems, records, and maintenance personnel qualifications, proficiency, and training. Evaluates depot and quality assurance actions, as well as possible design or engineering deficiencies.
Pilot	Required Training: None
	Qualification/Grade Requirements:

	<p>Current and qualified in the MDS involved. (T-1) Should be an instructor or flight examiner in the MDS involved. O-3 or higher (T-1) (Notes 2, 3)</p> <p>Duties and Responsibilities: Analyzes operations factors to include qualifications, proficiency, training, communications, aircrew actions, mission-specific concerns, performance data, flight-related publications, and aircrew stressors.</p>
Flight Surgeon	<p>Required Training: AMIP (T-1)</p>
	<p>Qualification/Grade Requirements: Credentialed and privileged in aerospace medicine. (T-1) Familiarity with the MDS involved is preferred. (Notes 2, 3)</p>
	<p>Duties and Responsibilities: Analyzes medical records, medical histories, physical examinations, mechanisms of injury, human factors, medical standards, and other evidence. Advises the SIB on protected health information.</p>
Recorder	<p>Required Training: None</p>
	<p>Qualification/Grade Requirements: O-1, E-4, GS-5, or higher (T-1)</p>
	<p>Duties and Responsibilities: Manages the work center and evidence inventory. Supervises all additional administrative assistants assigned to the SIB. Maintains a filing system to account for all evidence, testimony, and board proceedings, both electronically and physically, to ensure security and prevent loss. Assists with all safety report products as needed. Assists with evidence and wreckage handover.</p>
Additional Crew Members	<p>Required Training: None</p>
	<p>Qualification/Grade Requirements: Current and qualified and should be an instructor or flight examiner in the MDS involved. At a minimum must be experienced as defined in MDS-specific Volume 1. (T-1) SNCO or O-3 or higher (T-1) (Notes 2, 3)</p>
	<p>Duties and Responsibilities: Analyzes crew position actions, other than the pilot, if they were central to the mishap. This could include CSO, air battle manager, flight engineer, loadmaster, sensor operator, etc. positions.</p>
AF Flight Standards Agency	<p>Required Training: None</p>

	<p>Qualification/Grade Requirements: Minimum SNCO, officer, or civilian equivalent. (T-1)</p> <p>Duties and Responsibilities: Analyzes instrument flight procedures or publications if they contributed to the mishap.</p>
AF Operational Test and Evaluation Center	<p>Required Training: None</p>
	<p>Qualification/Grade Requirements: Minimum SNCO, officer, or civilian equivalent. (T-1)</p>
	<p>Analyzes AF Operational Test and Evaluation Center personnel or equipment, AF Operational Test and Evaluation Center-managed test, assessment, or evaluation, or other test organizations if they contributed to the mishap.</p>
AFE	<p>Required Training: Life Sciences Equipment Investigation Course (T-1)</p>
	<p>Qualification/Grade Requirements: Minimum 7-level SNCO. (T-1) Should have experience in the type of AFE involved. (Notes 2, 3)</p>
	<p>Duties and Responsibilities: Analyzes AFE systems and equipment to determine if they contributed to the mishap.</p>
Airfield Operations	<p>Required Training: None</p>
	<p>Qualification/Grade Requirements: Minimum 7-level SNCO, fully qualified officer, or civilian equivalent. (T-1)</p>
	<p>Duties and Responsibilities: Analyzes air traffic control or airfield management issues if they contributed to the mishap.</p>
Crash Fire & Rescue	<p>Required Training: None</p>
	<p>Qualification/Grade Requirements: Minimum 7-level SNCO or fully qualified officer, or civilian equivalent. (T-1)</p>
	<p>Duties and Responsibilities: Analyzes Crash Fire & Rescue response, actions, or failures if they contributed to the mishap.</p>
Cyberspace	<p>Required Training: None</p>
	<p>Qualification/Grade Requirements: Minimum SNCO, officer, or civilian equivalent. (T-1)</p>
	<p>Duties and Responsibilities: Analyzes cyberspace systems if they contributed to the mishap.</p>
Defense Contracting Management Agency	<p>Required Training: None</p>

	<p>Qualification/Grade Requirements: Minimum SNCO, officer, or civilian equivalent. (T-1)</p> <p>Duties and Responsibilities: Analyzes contract maintenance or operations and government oversight of contractor actions if they contributed to the mishap.</p>
Human Factors	<p>Required Training: AMIP or AMIC (T-1)</p>
	<p>Qualification/Grade Requirements: Must be an Aerospace Physiologist, Psychologist. (T-1) Fully qualified officer or civilian equivalent. (T-1) (Notes 2, 3)</p>
	<p>Duties and Responsibilities: Analyzes human factors, human performance, ergonomics, and physiology and psychology issues. Collaborates with the Flight Surgeon on this analysis and assigns DoD Human Factors Analysis and Classification System (HFACS) codes.</p>
Jumpmaster or Parachute Malfunction Officer	<p>Required Training: Current and Qualified Jumpmaster or Parachute Malfunction Officer trained and certified in accordance with AFI 13-210. (T-1)</p>
	<p>Qualification/Grade Requirements: Minimum 7-level SNCO or fully qualified officer. (T-1) (Notes 2, 3)</p>
	<p>Duties and Responsibilities: Analyzes parachuting operations if they contributed to the mishap.</p>
Nuclear Expert	<p>Required Training: None</p>
	<p>Qualification/Grade Requirements: Minimum SNCO, officer, or civilian equivalent. (T-1)</p>
	<p>Duties and Responsibilities: Analyzes nuclear reactors, nuclear power systems, or radioactive sources if they contributed to the mishap.</p>
Special Warfare	<p>Required Training: None</p>
	<p>Qualification/Grade Requirements: Special Tactics Officer, Tactical Air Control Party Officer/NCO, Combat Rescue Officer, Pararescueman, Combat Controller, and Special Reconnaissance personnel. (T-1) Minimum 7-level NCO or fully qualified officer. (T-1)</p>
	<p>Duties and Responsibilities: Analyzes special warfare operations if they contributed to the mishap.</p>
Weapons	<p>Required Training: Weapons Safety Manager Course and be knowledgeable of the weapon(s) involved. (T-1)</p>

	<p>Qualification/Grade Requirements: Minimum 7-level SNCO or fully qualified officer. (T-1)</p> <p>Duties and Responsibilities: Analyzes weapons or associated systems if they contributed to the mishap.</p>
Weather	<p>Required Training: None</p>
	<p>Qualification/Grade Requirements: Minimum 7-level SNCO or fully qualified officer. (T-1)</p>
	<p>Duties and Responsibilities: Analyzes weather or meteorological service issues if they contributed to the mishap.</p>
Other Personnel	<p>Required Training: None</p>
	<p>Qualification/Grade Requirements: Minimum SNCO, officer, or civilian equivalent. (T-1)</p>
	<p>Duties and Responsibilities: Determined by AF Chief of Safety or CA to be necessary and appropriate. May include foreign military representatives and other types of personnel.</p>
<p>Notes:</p> <p>Note 1: For Class A and B mishaps the BP (including IO if no BP) must always be equal to or higher in rank than the highest ranking individual involved in the mishap. (T-1)</p> <p>Note 2: For Class A mishaps must be appointed from outside the wing/delta (or equivalent organization) experiencing the mishap and must not be attached to the mishap wing/delta (or equivalent organization) for flying (or maintenance) purposes or anticipating an assignment to the mishap wing/delta (or equivalent organization) within the next six months. (T-1)</p> <p>Note 3: For Class B mishaps must not be attached to the mishap squadron (or equivalent organization) for flying (or maintenance) purposes nor anticipating an assignment to the mishap squadron (or equivalent organization) within the next six months. (T-1)</p> <p>Note 4: For Aviation Ground Operations (AGO) mishaps with no operations involvement (e.g., no aircrew, no intent for flight) the BP may be a BPC-trained maintenance officer and the IO may be an AMIC-trained maintenance officer.</p> <p>Note 5: For parachute mishaps the IO may be an AMIC-trained static-line or military freefall qualified special warfare officer.</p> <p>Note 6: Minimum O-4 (O-3 for engine-confined damage mishaps) for Class A and B with no BP assigned. (T-1)</p> <p>Note 7: For AGO Class C-E mishaps or hazard investigations with no operations involvement (e.g., no aircrew, no intent for flight). (T-1)</p>	

Table 5.2. Event Types and Minimum Required Membership.

Event Type	Required Member(s)
Class A Destroyed Aircraft, Fatality, or Permanent Total Disability	BP IO AFSEC Representative

	Maintenance Pilot Flight Surgeon Human Factors (if fatality) Recorder AFE (if mishap involved the successful or unsuccessful use of an ejection seat)
Class A, Other	BP IO AFSEC Representative (when available and requested by CA) Flight Surgeon Recorder AFE (if mishap involved the successful or unsuccessful use of an ejection seat)
Class A or B Engine-Confined Damage	IO
Class B	BP IO or IO plus one additional primary member
Class C-E Mishap or Hazard	IO
Safety Study	Any Assembly of Safety Investigators

Chapter 6

INVESTIGATION PROCEDURES AND TECHNIQUES

6.1. Procedures and Techniques. In addition to SIB requirements in DAFI 91-204, this chapter provides procedures and techniques for mishap investigations.

6.2. Privileged Safety Information. Prior to the ISB handover briefing, the SIB IO or AFSEC Representative will brief SIB members on the definition and protection of privileged safety information. (T-0) This may be accomplished by viewing the video located on the AF Portal at <https://www.my.af.mil/gcss-af/USAF/ep/contentView.do?contentType=EDITORIAL&contentId=cA4057E1F31340BF6013225A8A9E83676&programId=tA4057E1F31340BF6013225A7678D3675&channelPageId=s6925EC13537F0FB5E044080020E329A9> or via the “SIB Day One” briefing in the SIB Go Package. All SIB members will sign the “SIB Member Guidance and NDA” after receiving the privileged safety information training. (T-1) The SIB will use the template located in the SIB Go Package. (T-1)

6.3. SIB Day One Briefing. After the ISB handover briefing, the SIB IO or AFSEC Representative will provide the “SIB Day One” briefing to the SIB members. (T-2) The briefing provides an overview of SIB member roles and responsibilities, investigation process, and reporting timelines. The SIB IO or AFSEC Representative should ensure SIB primary members review their associated checklists located in the SIB Go Package.

6.4. Non-Disclosure Agreements (NDA). During the investigation, SIBs will ensure all other personnel exposed to privileged safety information sign a “Non-Disclosure Agreement – Safety Investigation DoD Personnel” or “Non-Disclosure Agreement-Safety Investigation-Contractor Rep” (as applicable). (T-0) These personnel include, but are not limited to, interview transcribers, communication squadron personnel aiding the SIB, and individuals providing technical expertise. The SIB will use the templates located in the SIB Go Package. (T-1) Personnel who are not exposed to privileged safety information (e.g., personnel guarding or assisting in recovery of mishap wreckage) do not sign non-disclosure agreements.

6.5. Evidence Collection and Analysis. SIBs must use all available information to investigate the mishap. (T-1) SIBs must collect, review, and analyze all witness testimony, materiel analysis, historical documents, recorder data, publications, etc. to determine root cause(s) of the mishap. (T-1) Mishap evidence forms the basis of the SIB’s safety report. In addition to requirements in DAFI 91-204 SIBs will:

6.5.1. Collect and review records for all involved personnel (e.g., medical, training), aircraft, and equipment. (T-1)

6.5.1.1. Analyze records to identify any abnormalities that may have contributed to the mishap. (T-1)

6.5.1.2. As the investigation progresses, collect and analyze records of other personnel or equipment that contributed to the mishap. (T-1)

6.5.2. Collect and analyze all digital and video images. (T-1) Images captured by the ISB, first responders, or other witnesses may be crucial in identifying mishap cause(s) or eliminating damage caused by recovery actions.

6.5.2.1. SIBs will maintain a list and description of photographs or videos taken. **(T-2)** This listing should include, as a minimum, the location and name of the item being recorded.

6.5.2.2. SIBs should photograph or video aircraft parts or equipment before they are disassembled or analyzed.

6.5.2.3. SIBs may digitally record reenactments of the mishap sequence. SIBs must ensure reenactments do not cause damage or injury. **(T-1)**

6.5.2.4. SIBs will not upload classified photographs or videos to AFSAS. **(T-0)**

6.5.3. SIBs will collect and analyze data from on-board and off-board sources. **(T-1)** This data may aid the SIB to determine when events occurred during the mishap sequence. Data sources may include crash survivable flight data recorders (FDR), GCS data logger files, cockpit voice recorders (CVR), seat data recorders, head up display recorders, data transfer cartridges, ground collision avoidance system log files, digital flight bags, and personal computer debriefing system files. If applicable, SIBs will collect ATC recordings or transcriptions. **(T-1)** Additionally, SIBs will secure data recorded by other recording systems such as wingman CVRs and FDRs. **(T-1)** Before recovering data recorders, the SIB must consult the AFSEC/SEF Engineering Technical Assistance Duty Officer (see [Attachment 2](#)) to determine how to proceed and inquire as to other possible data sources on the mishap aircraft. **(T-1)** See DAFI 91-204 for guidance on shipping recorders.

6.5.3.1. SIBs frequently need to declassify aircraft head-up displays and other recordings. For each MDS there is an AF Classification Authority who determines what displays and recordings are classified. The Classification Authority determines what can be declassified and authorizes such declassifications. For some MDSs, the Classification Authority has delegated declassification authority to a lower level. See [Table 6.1](#) for the declassification process.

Table 6.1. Declassification Process.

Step	Action
1	Contact the Program Office or find the appropriate Classification Guide on IntelLink (https://www.intelink.gov) to find the Classification Authority.
2	Contact the Classification Authority or delegated authority.
3	The Classification Authority or delegated authority reviews the recording and authorizes the declassification.
4	Mask or blank any items required by the Classification Authority or delegated authority.
5	Mark the adjusted recording appropriately. This will commonly include markings for Controlled Unclassified Information and International Traffic in Arms Regulations restrictions.

6.5.3.2. The AFSEC Flight Safety Engineering Branch (AFSEC/SEFE) Mishap Analysis & Animation Facility (MAAF) is the central DAF agency for recovery, transcription, analysis, simulation, and animation of all data in support of SIBs. AFSEC/SEFE will be the primary source for animations intended to represent the actual mishap sequence. **(T-1)** The SIB's use of simulation and animation products and tools, including those generated

from contractor simulators, test range data systems, training range data systems, tactical data links, and companion aircraft will be reviewed by the MAAF to ensure the validity, limitations, and appropriate use are addressed. **(T-1)**

6.5.3.2.1. Animations are commonly created to allow SIBs to see multiple data sources merged together. MAAF personnel will be the primary source for animations intended to represent the actual mishap sequence. **(T-1)** Animations produced from data without SIB input are considered non-privileged. If the SIB provides input or direction to the animation creators, then the animation contains privileged safety information and must be marked accordingly. **(T-1)**

6.5.3.2.2. AFSEC/SEFE does not provide services such as the development or editing of multimedia products to be used solely as briefing aids.

6.5.4. SIBs will collect and review all written and verbal testimony that was completed prior to their arrival. **(T-1)** Testimony often leads the SIB in the direction of what may have contributed to the mishap. SIBs will interview all personnel involved and that contributed to the mishap unless it is impractical or impossible (e.g., left the military, fatality). **(T-1)** SIBs will follow guidance in DAFI 91-204 for instructions on how to conduct and document witness interviews. **(T-1)**

6.5.5. Contact the AFSEC/SEF Engineering Technical Assistance Duty Officer (see **Attachment 2**) to determine the appropriate organization to conduct analysis on aircraft or components and to ensure funding is approved. **(T-1)** Submit an engineering investigation type deficiency report (DR) in the Joint Deficiency Reporting System (<https://jdrs.mil>) on known or suspected causes of mishaps in accordance with Technical Order 00-35D-54, *USAF Deficiency Reporting, Investigation, and Resolution*. Enter the DR number in the appropriate field in the Object section of AFSAS. SIBs will not disassemble parts without first consulting AFSEC/SEFE or System Program Offices. **(T-1)**

6.5.5.1. Once the AFSEC/SEF Engineering Technical Assistance Duty Officer has determined the best organization to conduct analysis, the SIB will contact the organization to coordinate shipping. **(T-1)** SIBs must include disposition instructions for all evidence sent for analysis. **(T-1)** SIBs must instruct the laboratory not to release evidence to anyone until receiving approval from the SIB, a follow-on legal board, or owning unit as applicable. **(T-1)** The SIB will ship the evidence via FedEx®, UPS®, etc. (do not send via the US Postal Service). **(T-1)** The SIB will maintain shipping records and track the location and status of these items. **(T-1)**

6.5.5.2. If evidence is critical to determining the cause of a mishap, such as data recorders or suspect components, the BP may consider designating an individual to accompany the evidence for analysis. SIBs may observe laboratory analysis or teardown. Maintain contact with agencies conducting teardown and analysis. If the final technical report will not be completed in a timely manner, request a preliminary report. **(T-2)**

6.5.5.3. Technical experts that perform component analysis will provide a technical report to the SIB in accordance with DAFI 91-204 guidance. **(T-1)**

6.5.6. SIBs will collect and review publications (e.g., AFIs, checklists, technical data, local procedures) that were used during the mishap sequence. **(T-1)** SIBs will analyze the

publications to determine whether they were adequate (e.g., current, not missing information) given the mishap circumstances. (T-1)

6.5.7. SIBs should conduct historical research using AFSAS or other tools. Areas of interest may include, but are not limited to, similar mishaps, hazards, safety studies, and previous recommendations. These artifacts may contain previously identified factors that potentially impacted the current mishap. SIBs will be careful not to assume the findings and conclusions of a prior mishap investigation applies to their investigation. (T-1) This research is intended to identify areas to evaluate.

6.5.8. The SIB should research and consider data from proactive aviation safety programs such as Military Flight Operations Quality Assurance (MFOQA), Line Operations Safety Audit (LOSA), and the Aviation Safety Action Program (ASAP). These programs are described in DAFI 91-225, *Aviation Safety Programs*. SIBs can use data from proactive aviation safety programs to determine if and how similar factors found in a mishap were encountered during non-mishap events. Proactive safety data can prove particularly helpful when investigating whether the actions of mishap aircrew constituted isolated events or whether such actions form part of a larger pattern of deviation from established procedures. While the products of these programs are not privileged, the details of a SIB's request are privileged because the specific information provided would reveal SIB analysis.

6.5.8.1. The MFOQA Program has the capability to analyze historical flight data for a given MDS, operating location, or phase of flight. The SIB may request analysis and/or animations of the event as well as historical trends of similar operations. Analyses may be requested by tail number(s) or location where the event occurred (to include fleet-wide trends). SIBs will contact the AFSEC MFOQA Program Manager by calling the AFSEC/SEF Engineering Technical Assistance Duty Officer (see [Attachment 2](#)) to establish investigation support. (T-1) Non-privileged aggregate MFOQA analysis for participating MDS fleets for the last year can be found at <https://afsas.safety.af.mil/publications/PublicationHomepage.do> in the MFOQA ASAP LOSA section.

6.5.8.2. The LOSA program produces reports of non-punitive and unobtrusive peer-to-peer observations of operations and logistics activities. LOSA reports contain safety-related data collected during normal operations in order to assess safety margins and improvement measures. LOSA reports provide previously documented threats and errors encountered by aircrew, maintenance, or other personnel, how such threats and errors were managed, and the outcome of such events. LOSA reports also may provide excellent insights into training and organizational culture.

6.5.8.3. ASAP voluntary reporting via the Safety Reporting App or website (<https://asap.safety.af.mil>) documents hazards and errors. ASAP reports can provide a firsthand perspective of events, plus recommended corrective actions. ASAP reports may correlate similar hazards or errors being investigated by a SIB. ASAP reports may be located using the Search ASAPs page in AFSAS at <https://afsas.safety.af.mil>. Abbreviated and sanitized ASAP summaries may be found by visiting the ASAP Scoreboard at <https://afsas.safety.af.mil/asap>.

6.5.9. Surveys can substitute for observations and interviews. Surveys are useful when SIBs require a large sample to determine cultural norms or interpretation of guidance.

6.5.9.1. SIBs should create surveys that meet the requirements of reliability and validity. Surveys can be as simple as asking yes-no questions or as complex as multi-item branching questions with combinations of forced choice, narrative, and Likert-type responses. SIBs should contact AFSEC Human Performance (see **Attachment 2**) for assistance when creating and conducting a survey.

6.5.9.2. The AF Combined Mishap Reduction System (AFCMRS) is another type of survey and can provide information to SIBs. SIBs should contact AFSEC Human Performance (see **Attachment 2**) for AFCMRS data and information.

6.5.9.3. SIBs should avoid creating privileged surveys. A promise of confidentiality would not be appropriate for a survey because of the requirement for witness reluctance. Additionally, survey questions should avoid incorporating SIB analysis because safeguarding privileged safety information from inadvertent disclosure would be difficult.

6.6. Transferring and Disposing of Evidence. Once the SIB has completed their investigation and safety report, all non-privileged evidence must be either provided to the Accident Investigation Board or other legal board, the host installation staff judge advocate, or returned to the owning organization. **(T-1)** In addition to DAFI 91-204 guidance, the below addresses transfer or return of evidence.

6.6.1. If the mishap organization requests the return of records or equipment in order to complete the mission use guidance in DAFI 91-204. If the mishap organization requests the return of records for other reasons (e.g., medical care, training), and if the BP determines it is appropriate, the SIB will retain the original documents and provide copies to the requesting organization. **(T-1)** The SIB will document the return of records or equipment using the “Evidence Transfer Memo - No AIB” signed by the BP and the owning organization commander. **(T-1)** The SIB must use the template located in the SIB Go Package. **(T-1)**

6.6.2. SIBs may provide non-privileged safety information to a legal investigation as it becomes available, but not to the detriment of the SIB. This information includes, but is not limited to, aircraft maintenance records, toxicological results, flight records, non-privileged technical analysis reports, non-privileged photographs, and medical records. All information provided to a legal investigation prior to the formal handover will be documented using the “Evidence Transfer Memo” signed by the BP and a representative of the legal investigation. **(T-1)** The SIB must use the template located in the SIB Go Package. **(T-1)** When determined they are no longer needed by the SIB, the BP will release witnesses, participants, and interviewees (e.g., mishap pilot, mishap maintainer, mishap flight engineer) to a legal investigation. **(T-1)**

6.6.3. SIBs will not release analysis, findings, causes, recommendations, or privileged witness statements. **(T-0)** Do not release recordings of simulated, computer-generated, animated, or reenacted portions of the mishap if they involve privileged analysis. **(T-0)**

6.7. Temporary De-Convening. SIBs may request to de-convene the investigation for one of the following reasons: waiting to outbrief the CA, waiting on technical analysis, or waiting on wreckage recovery. The CA must approve the SIB’s request to de-convene. **(T-2)**

6.7.1. Prior to de-convening while waiting on technical analysis or wreckage recovery, the SIB should upload all available exhibits and draft the narrative with all available information. The SIB should include placeholders in the narrative for results of analysis or wreckage

recovery. The SIB should develop a plan that allows enough time to finish the investigation and complete the safety report and briefing. While de-convened, the SIB remains the members' primary duty. They are not relieved of their investigative responsibilities and must continue to monitor investigation-related activities. **(T-2)** The SIB must reconvene in person or via video or teleconference to complete the investigation. **(T-1)**

6.7.2. Prior to de-convening while waiting to outbrief the CA, the SIB should upload all exhibits and complete required data field entries in AFSAS. Prepare the final message in AFSAS, but do not select "Submit for Release" to the CA. The SIB should complete the Mishap Quality Control Checklist located in the "QC & MOFE" folder of the SIB Go Package. **(T-1)** The SIB should notify the CA safety office once all exhibits have been uploaded, the final message prepared, and the Mishap Quality Control Checklist is complete. The CA safety office will review all products for quality control purposes. **(T-1)** Guidance on quality control requirements is provided in DAFI 91-204.

6.8. SIB Conclusion. At the conclusion of the investigation, the SIB, CA safety staff, and AFSEC/SEF will ensure the following actions are accomplished:

6.8.1. Transfer or dispose of all non-privileged evidence in accordance with DAFI 91-204. SIBs will use the "Evidence Transfer Memo – No AIB" or the "Evidence Transfer Memo" templates located in the SIB Go Package. **(T-1)** The SIB will hand over privileged safety information evidence not uploaded in AFSAS to the CA's safety staff. **(T-1)** The CA safety staff will maintain the privileged safety information evidence until the Memorandum of Final Evaluation is published. **(T-1)**

6.8.2. The SIB President or IO may keep an electronic copy of all working files, exhibits, etc. in the event any material is needed between when the SIB de-convenes and the final message is accepted by AFSEC. The SIB President or IO copies will be erased or destroyed after the CA accepts the results of the investigation and the final message is accepted by AFSEC. **(T-1)**

6.8.3. Delete all network files, folders, e-mail, and backup copies used by the SIB once the investigation is complete.

6.8.4. The SIB will ensure the host wing/delta-supplied computers used by the SIB are reformatted immediately prior to their departure. **(T-2)** Alternatively, military-approved "wiping" software can be used on properly partitioned hard-drives.

6.8.5. The SIB will bring any Opportunity to Submit Additional Comments letters (if applicable) to the CA outbrief. **(T-1)** The CA safety staff will route these letters to the appropriate individual. **(T-1)** Guidance on routing Opportunity to Submit Additional Comments letters is provided in DAFI 91-204.

6.8.6. The SIB will complete the Mishap Quality Control Checklist and upload it as an exhibit in AFSAS in the Investigation Products exhibit group. **(T-1)**

6.8.7. The CA safety staff will conduct a quality control of the safety report (exhibits, AFSAS entries, and final message narrative) in accordance with DAFI 91-204 and this manual prior to approving the final message for release. **(T-1)** The SIB will correct any errors found before re-submitting the final message for release. **(T-1)**

6.8.8. Following release of the final message, AFSEC/SEF conducts a quality control review of the safety report. If the final message is returned, further coordination between the SIB and

the CA is required. Following a return, the SIB must make corrections and submit another final message within 10 business days. **(T-1)**

Chapter 7

SAFETY REPORTS

7.1. Safety Reports. Safety reports present privileged and/or non-privileged safety information in a structured format. A safety report is comprised of the narrative, findings, recommendations, exhibits, and AFSAS data entries. In addition to DAFI 91-204 guidance, the information in this chapter provides content and formatting requirements for the safety report.

7.1.1. Report Narrative. The narrative is the culmination of the investigation and provides a complete picture of what happened and why it happened. It is based on the weight of evidence, professional knowledge, and good judgment of the SIB. AFSAS provides SIBs a step-by-step process for entering relevant information and a framework for providing consistent and quality report requirements. AFSAS will combine appropriate information to create the narrative and streamline the entry process for investigators. SIBs will not refer to exhibits in the report narrative. **(T-1)** The safety report narrative includes the following sections: Sequence of Event, Background Information, Factors, Investigation Conclusions, Acronyms, Documents Reviewed, and Referenced Reports. For directions on how to complete the narrative, see DAFI 91-204, the Detailed Instructions in AFSAS, the SIB Go Package, and the information below.

7.1.1.1. The Sequence of Event section is a chronological narrative of significant events and/or actions that led to the mishap. The SIB will not include analysis in this section. **(T-1)**

7.1.1.1.1. For flight and flight-related mishaps, SIBs will write this section beginning with the briefing, through the mishap sequence, continuing until the damage or injury has occurred and the aircraft is on the ground. **(T-1)** If applicable, the SIB will include search and rescue of the crew. **(T-1)**

7.1.1.1.2. For AGO mishaps with no aircrew involvement, SIBs will write this section beginning when the maintainers were assigned the task, through the mishap sequence, and continue until the damage or injury occurred. **(T-1)**

7.1.1.1.3. For AGO mishaps with aircrew involvement, SIBs will write this section beginning with the aircrew briefing through the mishap sequence and continue until the damage or injury occurred. **(T-1)**

7.1.1.2. The Background Information section includes three sub sections: General Background Information, Object Background Information, and Person Background Information.

7.1.1.2.1. SIBs should use the General Background Information section to provide context and understanding of the systems, processes, or unusual organizations involved in the mishap. SIBs will not include systems, processes or organizations that are not discussed in factors. **(T-1)** SIBs may add photographs, diagrams, publication screenshots, etc. if they aid in describing systems, processes, or organizations. SIBs will not include analysis in this section. **(T-1)**

7.1.1.2.2. In the Object Background Information section, SIBs will include details about the mishap aircraft and/or equipment that were damaged or caused damage or injury in the mishap. **(T-1)** SIBs will not include analysis in this section. **(T-1)**

7.1.1.2.2.1. For the mishap aircraft, include the date(s) of last major maintenance action(s) (e.g., depot modification, phase inspection) and synopsis of last 30 days flying and maintenance history. The SIB will always assign the DAF mishap aircraft as “Object 1” in AFSAS. **(T-1)**

7.1.1.2.2.2. For mishap aircraft components (e.g., engine, landing gear), include when the component was installed on the aircraft, overhaul status, and any other significant maintenance actions related to that component. For other equipment (e.g., aircraft ground equipment, fuel trucks), include when the DAF accepted/received the equipment and any significant maintenance. It is not necessary to include every component that received damage in the Object Background Information section (i.e., parts that were damaged because of the initial failed object).

7.1.1.2.3. SIBs will provide background information on personnel who were operating or maintaining the mishap aircraft or were factors in the mishap in the Person Background Information section. **(T-1)** SIBs will not include analysis in this section. **(T-1)**

7.1.1.2.3.1. The SIB will include duty history, significant training, and upgrades/skill level. **(T-1)**

7.1.1.2.3.2. AFSAS includes the question “Is the 72-hour/7-day History Remarkable?” If the SIB answers “yes” include factual data that made the history remarkable. **(T-1)** If the SIB answers “no,” no other medical information should be included in this section.

7.1.1.2.3.3. For aircrew, AFSAS will populate the total flying hours, total flying hours in this MDS, and total flying hours and sorties in the last 30/60/90 days from data entered elsewhere in AFSAS. If aircrew have recent time in an MDS other than the mishap aircraft, include total flying hours in the MDS, and total flying hours and sorties in the last 30/60/90 days.

7.1.1.3. The Factors section includes factors, causal factors, and non-factors worthy of discussion.

7.1.1.4. The Investigation Conclusions section includes a brief summary of why the mishap occurred. SIBs will not include detailed information in this section. **(T-1)** Detailed information is written in the causal factors.

7.1.1.5. SIBs will include a list of all acronyms used in the narrative in the Acronyms section. **(T-1)**

7.1.1.6. SIBs will include any other AFSAS reports used during the investigation in the Referenced Reports section. **(T-1)**

7.1.2. **Findings.** See DAFI 91-204 for guidance on writing findings. Examples of properly written causal findings are:

7.1.2.1. Due to failure to follow Technical Order 1F-XXC-6WC-1, Mishap Maintainer 1(MM1) failed to remove the intake cover prior to engine start.

7.1.2.2. Due to limited recent flying experience, the Mishap Pilot (MP) became task saturated managing multiple systems and failed to lower the flaps prior to landing.

7.1.2.3. Due to ineffective program management, the Mishap Squadron Commander failed to ensure recurring training was accomplished and tracked.

7.1.2.4. For an undetermined reason, AF Life Cycle Management Center (AFLCMC)/XXX failed to include panel 101 fastener torque values in Technical Order 1C-XXXX-2-32-JG-00-1.

7.1.2.5. Due to a lack of oversight, the commander of the training squadron failed to ensure the simulator syllabus included engine-out emergency landing procedures.

7.1.2.6. During the mishap landing, the left main landing gear wheel departed the Mishap Aircraft (MA) most likely for one of the following reasons: improperly torqued locking nut, fatigue crack propagation in the axle, or axle materiel deficiencies.

7.1.3. **Recommendations.** See DAFI 91-204 for guidance on writing recommendations. Examples of properly written recommendations and ORS are:

7.1.3.1. Update Technical Order 1F-XXC-32-JG-00-1 section 1.5, panel 101 installation procedures, to include torque values for all 31 fasteners.

7.1.3.2. Add engine-out emergency landing procedures to the F-35 simulator syllabus.

7.1.3.3. Install a crash survivable flight data recorder in all T-38 aircraft.

7.1.4. **DoD Human Factors Analysis and Classification System (HFACS).** Mishaps may have HFACS associated with either a person(s) or at the event level. SIBs will input HFACS associated with factors or causal factors in AFSAS. **(T-0)** See the SIB Go Package for the latest HFACS guide.

7.1.5. **Managing Exhibits.** See DAFI 91-204 for a complete list of exhibit groups. For Class A and B mishaps most exhibit groups are required. However, for any mishap class or event, SIBs will upload exhibits that support their analysis and conclusions. **(T-1)** In addition to the guidance in DAFI 91-204 the following applies to files uploaded to exhibit groups in AFSAS:

7.1.5.1. SIBs will request exhibit waivers when the SIB has exhausted all options for collecting the data for a required exhibit. **(T-1)** SIBs will use AFSAS to request and route exhibit waivers through the CA to AFSEC/SEF. **(T-1)** AFSEC/SEF is the exhibit waiver concurrence authority.

7.1.5.2. When uploading files as exhibits to AFSAS, a single .pdf is preferred, multiple .pdfs are acceptable, and when necessary, multiple file types are allowed. If two or more files are combined into a single file, SIBs should include a table of contents to aid reviewers. SIBs will not upload .zip files as exhibits. **(T-1)**

7.1.5.3. If a file contains privileged safety information but there is no place to add the privilege safety information statement, SIBs will create a .pdf file or PowerPoint® slide(s) or other type document and add the privileged safety information statement. **(T-1)**

7.1.5.4. SIBs will not redact any portion of documents uploaded. **(T-1)**

7.1.5.5. Specific Exhibit Guidance:

7.1.5.5.1. Diagrams. SIBs should include diagrams that increase understanding by showing equipment layout, damage, impact areas, flight path, etc. Ensure diagrams are self-explanatory and indicate direction with a northward pointing arrow. If practical, indicate scale. Diagrams include civil engineering plots, aerial photographs, topographical maps, etc. Do not include diagrams depicting the location of human remains in the Diagrams exhibit group. If they support the SIB's analysis upload such diagrams in the Medical Information exhibit group. **(T-1)**

7.1.5.5.2. Evidence Transfer Documents. SIBs will include either "Evidence Transfer Memo – No AIB" and/or the "Evidence Transfer Memo" signed by the BP and receiving agent, indicating transfer of evidence to any legal board, legal office, safety office, owning organization, etc. **(T-1)**

7.1.5.5.3. Guidance, Official. SIBs will include highlighted portions of official guidance (AFIs, AFMANs, technical orders, manufacturer's manuals, etc.) that were discussed in the safety report narrative or recommendations or ORS. **(T-1)**

7.1.5.5.4. Guidance, Unofficial. Unofficial guidance includes any type of product that is not published or approved by an authorized source. SIBs will upload unofficial guidance such as unit-unique checklists, "how to" guides, individual or unit-created maintenance files, etc., if they were discussed in the safety report. **(T-1)**

7.1.5.5.5. Investigation Products. Investigation products may include risk acceptance documents, policy letters, etc. that influenced factors in the mishap. SIBs will upload these products if they support their analysis. **(T-1)** Only include files in this exhibit group if they are not addressed in other exhibit groups. **(T-1)** SIBs will not include files that support mishap cost information. **(T-1)** After the report narrative, findings, recommendations, and HFACS are completed and entered into AFSAS, and all exhibits are completed and uploaded in AFSAS, SIBs will upload a completed Quality Control Checklist to this exhibit group. **(T-1)**

7.1.5.5.6. Maintenance and Equipment Records. SIBs will include records that were in place at the time of the mishap. **(T-1)** If the mishap aircraft had any approved time change extension letters, the SIB will include them as exhibits. **(T-1)** If aircraft ground equipment was a factor in the mishap, SIBs will include the AFTO Form 244, *Industrial/Support Equipment Record*, as an exhibit. **(T-1)** Other than laboratory results of equipment tested after the mishap, SIBs will not include records that were accomplished after the mishap occurred (e.g., aircraft or equipment impoundments, corrective actions taken after the mishap). **(T-1)** SIBs will not include files describing post-mishap repair procedures or requests for repair procedures. **(T-1)** SIBs will not include files that support mishap cost information. **(T-1)**

7.1.5.5.7. Medical Information. For Class A and B mishaps and physiological events reported in accordance with [Table 3.1](#), SIBs will include lab and toxicological test results for involved personnel. **(T-1)**

7.1.5.5.8. NDAs. SIBs will include all signed NDAs the ISB or SIB signed or collected. **(T-1)** These include "SIB Member Guidance and NDA," "Non-Disclosure Agreement-Safety Investigation-DoD Personnel," and "Non-Disclosure Agreement-

Safety Investigation-Contractor Rep” agreements. It is preferred that the SIB combine all NDAs into a single document (see [paragraph 7.1.5.2](#)).

7.1.5.5.9. Parametric Data. If uploading reports containing parametric data specifically requested by the SIB (e.g., over-Gs by tail number, selected parameters from the mishap aircraft or unstable approaches at a particular location) select the attribute “reflects investigative deliberations” and ensure the report is marked as containing privileged safety information. **(T-1)**

7.1.5.5.10. Photographs. SIBs will include photographs that increase understanding by showing equipment layout, damage, impact areas, metal fractures, etc. **(T-1)** Combining privileged photographs into a single document may aid the SIB to add privileged safety information labels more easily. The SIB should minimize each photograph file size to aid combining photographs into a single document and uploading into AFSAS.

7.1.5.5.10.1. SIBs will not upload every photograph they receive. **(T-1)** Only upload enough photographs to aid the reader in understanding the SIB’s analysis and conclusions. **(T-1)**

7.1.5.5.10.2. SIBs shall not unnecessarily show evidence of human injury (e.g., bloody aircraft parts, human remains). **(T-1)** Due to their sensitivity, SIBs will upload photographs of deceased personnel or injuries in the Medical Information exhibit group only if they support findings or recommendations. **(T-1)** If the SIB determines it is absolutely necessary to disseminate an injury photograph to illustrate the mishap, consider using a black and white photograph. SIBs will obscure the face if visible. **(T-1)**

7.1.5.5.10.3. For non-privileged photographs, SIBs will label each image or name each file to aid reviewers. **(T-1)** Labels (or file names) include name or description and where applicable, the direction the photograph is facing (e.g., debris field looking west). SIBs will not include information in the label that shows analysis such as “cowling damage caused by blade failure” in the label (or file name). **(T-1)** Use “cowling damage” instead. **(T-1)**

7.1.5.5.10.4. For privileged photographs, SIBs will label each image or name each file to aid reviewers. **(T-1)** Labels (or file names) include name or description of the photograph (e.g., cowling damaged by blade failure, failed landing gear bolt). SIBs will mark them as containing privileged safety information and select the attribute “reflects investigative deliberations” in AFSAS. **(T-1)** Photographs staged for analysis are considered privileged and SIBs will mark them as such. **(T-1)** Depictions of cockpit indications for a given set of assumptions made by the SIB or described in witness testimony are staged photographs. Pointing with a finger or other device at a portion of wreckage by itself does not make a photograph staged.

7.1.5.5.11. Radar Data and Plots. The SIB should coordinate with AFSEC/SEF Engineering Technical Assistance Duty Officer (see [Attachment 2](#)) and 84th Radar Evaluation Squadron at Hill AFB (DSN 777-5251, DSN 586-7900, or Comm 801-586-7900) to determine availability of radar data to aid the investigation.

7.1.5.5.12. Technical and Engineering Reports. In addition to the guidance in DAFI 91-204, the following applies to technical and engineering reports:

7.1.5.5.12.1. Include egress system specialist analysis if aircrew egress may have been attempted, was attempted, or was completed.

7.1.5.5.12.2. Include technical analysis of crashworthiness for aircraft such as helicopters and cargo airframes, where aircrew or passenger survivability is connected to the aircraft's crashworthiness features. This analysis is generally not relevant to ejection seat-equipped aircraft or severe situations where crashworthiness features would not have made a difference in the outcome of the mishap.

7.1.5.5.12.3. If a SIB primary or secondary member writes one of these reports, it is considered analysis and is privileged safety information. When uploading a report written by a SIB primary or secondary member in AFSAS as an exhibit select the attribute "reflects Investigative Deliberations." (T-1)

7.1.5.5.13. Testimony and Statements. Testimony and statements are derived from interviews with witnesses or involved individuals. These include statements solicited by the SIB or unsolicited statements voluntarily provided by individuals.

7.1.5.5.13.1. Transcribing interviews is a time intensive task and should be started early in the investigation. If necessary, request additional personnel (including contracted services) to help with transcription. Avoid using DAF legal office personnel, including court reporters, whenever possible to avoid the appearance of a conflict of interest with any legal investigation or other action. SIBs must review and verify the accuracy of all transcripts. (T-1)

7.1.5.5.13.2. If information from an interview is referenced in the SIB's analysis, it will be transcribed and included as an exhibit. (T-1) If testimony is not used to support the SIB's analysis, the SIB will not include it as an exhibit. (T-1)

7.1.5.5.13.3. SIBs will not upload interview audio or video files as exhibits. (T-1) **Exception:** If a privileged interview (with a promise of confidentiality) is only partially transcribed SIBs will include the entire audio or video recording in the Testimony and Statements exhibit group. (T-1)

7.1.5.5.13.4. If non-privileged interviews (no promise of confidentiality) are transcribed, the SIB must transcribe the complete testimony. (T-1) SIBs will not summarize the witness's testimony. (T-1)

7.1.5.5.13.5. SIBs will label each transcription file with the date of the interview and who was interviewed (e.g., 1 Jan 21 Mishap Pilot Interview). (T-1)

7.1.5.5.13.6. SIBs will upload a signed Privileged or Non-Privileged Witness Agreement with each written statement or transcribed interview. (T-1) SIBs will use the most current documentation for interviews and written statements found in the ISB or SIB Go Packages. (T-1) Label each Witness Agreement file with the date of the interview and who was interviewed (e.g., 1 Jan 21 Mishap Pilot Witness Agreement). (T-1) Combining the signed witness agreement with the associated written statement or transcribed interview into a single document is recommended.

When uploading a signed privileged witness agreement SIBs will select the attribute “obtained with a Promise of Confidentiality.” **(T-1)**

7.1.5.5.14. Training Records. For flight and flight-related mishaps, and AGO mishaps with aircrew involvement, SIBs will include the aircrew training records. **(T-1)** Aircrew training records include the following: Certificate of Aircrew Qualifications, Letter of X’s, 30/60/90 Flying History Report, Individual Data Summary, Flying History Report, Flight Record Report, AF Form 942, *Record of Evaluation*, and any records showing recent upgrades or flight crew student training. For AGO mishaps without aircrew involvement, SIBs will include the training records of the maintainers operating or working on the aircraft at the time of the mishap. **(T-1)** If other personnel are factors in any mishap and their training records support the analysis, SIBs will include them and select the attribute “reflects Investigative Deliberations.” **(T-1)**

7.1.5.5.15. Transcripts (Not Interviews). CVR and other recordings and transcripts do not contain privileged safety information. SIBs will transcribe audio recordings and include them as exhibits if they support their analysis and conclusions. **(T-1)** SIBs will include a key describing who is speaking (e.g., air traffic control, mishap pilot, fire chief). **(T-1)** Limit the transcript to periods of time relevant to the mishap sequence of events, but indicate breaks in the transcript. SIBs will not summarize, paraphrase, or otherwise alter the recording when transcribing. **(T-1)** **Exception:** SIBs can replace profanity with “[expletive]”. The DAF does not release the audio recordings of the voices of the mishap crew to the public due to the privacy interests of the crewmembers or the surviving family members. Including recorded voices of the mishap crew in animations, simulations, or reenactment videos does not, in itself, make them privileged.

7.1.5.5.16. Videos. SIBs will only upload videos that are relevant to the mishap and aid the reader in understanding the analysis and conclusions. **(T-1)** SIBs will not upload every video they received. **(T-1)**

7.1.5.5.16.1. The SIB will not unnecessarily show evidence of human injury (e.g., bloody aircraft parts, human remains). **(T-1)** Due to their sensitivity, SIBs will upload videos of deceased personnel or injuries in the Medical Information exhibit group, but only if they support findings or recommendations. **(T-1)** SIBs will obscure the face if visible. **(T-1)**

7.1.5.5.16.2. Videos are considered privileged if they are staged for SIB analysis and SIBs will mark them as such. **(T-1)**

7.1.5.5.16.3. If applicable, include the final version of the releasable and/or privileged animations. Releasable animations are typically built with readily available software tools, incorporate an intuitive visual presentation, and are based on selected recorded data. Releasable animations are produced without any input or direction from the SIB and before their creators are exposed to privileged safety information.

7.1.5.5.17. Weather. SIBs will include weather briefings, actual weather observations, or other weather products if they support the SIB’s analysis and conclusions. **(T-1)**

7.1.6. **Safety Report Authentication.** Primary members authenticate the safety report by concurring or non-concurring in AFSAS. If a primary member non-concurs in whole or in part with the safety report, the member will submit a Minority Report in AFSAS. **(T-1)**

7.2. Class A and B SIB Safety Reports. SIBs should forward draft copies of the narrative as soon as available to the CA Flight Safety Staff for review. Additionally, SIBs supported by AFSEC (on-site or telephonically), should forward draft copies of the narrative to AFSEC/SEF for review. Other SIBs may request a review through the AFSEC Flight Safety Investigations Branch (AFSEC/SEFF). This review should normally be requested on or before day 25 of the investigation. The SIB should allow at least two duty days for the CA Flight Safety Staff and AFSEC/SEFF reviews. These reviews ensure compliance with DAFI 91-204 and this DAFMAN. They also ensure the analysis supports the SIB's findings, cause(s), and recommendation(s). Narrative review comments should be shared between AFSEC and CA flight safety staffs. Reviewers may not direct SIBs to change their conclusions, but may direct SIBs to provide more analysis to support conclusions. Other than AFSEC involvement, the investigation will not be staffed outside of the CA safety office during this review process.

Chapter 8

OTHER REPORTING REQUIREMENTS

8.1. HATR and CMAV Reporting Procedures. Any person (e.g., air traffic controller, pilot, safety personnel, airfield operations personnel) aware of an event listed in **Table 3.6** will report a HATR or CMAV event. **(T-1)** Individuals reporting a HATR or CMAV event will report the details through one of the following: AF Form 651, *Hazardous Air Traffic Report (HATR)*, AF Form 457, *USAF Hazard Report*, or through the Safety Reporting App or website (<https://asap.safety.af.mil>). **(T-1)**

8.1.1. If an aircrew experiences a HATR or CMAV and circumstances permit, they will immediately (i.e., while airborne) inform the nearest ATC agency, civil aviation authority for overseas events, or flight service station. **(T-1)** The aircrew will report the information listed in **Table 8.1**. **(T-1)**

Table 8.1. HATR or CMAV Immediate Reporting Elements.

Description
Identification or call sign.
Time and place (name of Navigation Aid, radial and distance, and Global Positioning System coordinates, if available) of event.
Altitude or flight level.
Description of other aircraft in the event.
Advise the controlling agency a written report will be filed and request all available data be saved.

8.1.2. The unit safety office is responsible for ensuring all aircrew members, ATC, and other personnel controlling aircraft (e.g., Tactical Air Control Party personnel) are aware of HATR reporting requirements. Aircrews who experience a near mid-air collision under Federal Aviation Administration (FAA) control should immediately request that facility initiate an FAA Near Miss report.

8.1.3. Within 24 hours after notification of the event, the safety office receiving the report determines which safety office is responsible for the investigation and transfers the investigation to the appropriate safety office. **(T-2)** The responsible office is determined in the following order:

8.1.3.1. If applicable, comply with host nation agreements or other international agreements (e.g., International Civil Aviation Organization agreements). **(T-0)** If unable to determine agreements, contact the pertinent overseas MAJCOM/FLDCOM Safety Office or the AF Forces Safety (AFFOR/SE).

8.1.3.2. If foreign ATC or aircraft are involved, the responsible office is the unit involved in the event in conjunction with the overseas MAJCOM/FLDCOM/SEF, or the AFFOR/SE.

8.1.3.3. For local hazardous events, the responsible office is the DAF safety office at that installation.

8.1.3.4. If no DAF safety office is available or if an airborne report is initiated by pilot or aircrew, the originator's home station or deployed location is the responsible office. The originator's home station safety office will then forward the report to the appropriate agency for investigation. **(T-1)**

8.1.4. The investigating safety office will:

8.1.4.1. Determine if the reported event merits a HATR or CMAV. **(T-1)** Notify the individual or unit that filed the report of this determination and the pending actions. **(T-1)**

8.1.4.2. If the event is reportable, document the event in AFSAS. **(T-1)**

8.1.4.3. Determine which organizations were involved and request those offices' assistance with the investigation. **(T-1)** Notify the following organizations:

8.1.4.3.1. The base Airfield Operations Flight Commander (AOF/CC), or equivalent, if DAF ATC, Tactical Air Control, 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 45 days. Due to various types of recording equipment installed, review of ATC recordings is best conducted at the ATC facility. Coordinate times for review with the AOF/CC in order to minimize impact on support of flight operations.

8.1.4.3.2. If ATC or airfield management personnel are contributory to the event, the IO will contact the AOF/CC to discuss the investigation and get advice on ATC or Airfield Management procedures. **(T-1)** At the conclusion of the investigation, AOF/CC concurrence or non-concurrence with the IO's report must be input to AFSAS. **(T-1)** If the AOF/CC non-concurs, their rationale with corrective actions must also be input in AFSAS. **(T-1)** If the event takes place at a non-DAF base (e.g., US Navy base or civilian airfield), contact the AOF/CC equivalent. If no AOF/CC equivalent can be identified (e.g., contingency operations at a foreign airfield), contact the AF organization responsible for coordination with the airfield owner or operator. If unable to identify an appropriate organization, contact the MAJCOM/FLDCOM safety staff for assistance.

8.1.4.3.3. The base Operations Support Squadron Commander if navigation aids were likely involved.

8.1.4.3.4. The flying unit if local base aircraft were involved. If transient aircraft were involved, notify the aircrew's unit of assignment safety office. **(T-1)**

8.1.4.3.5. The FAA facility or Flight Standards District Office if FAA ATC or civil aircraft were involved. Contact the AOF/CC or FAA AF representative for help in notifying the proper facility or Flight Standards District Office. See DAFMAN 13-201, *Airspace Management*, for which AF representative to contact. The AF Representative at FAA Regional Offices reviews HATR and CMAV events in their region involving FAA ATC or civil aircraft and provides assistance when requested. Include the AF Representative in these investigations as needed, especially if you are having difficulty getting information from the FAA.

8.1.4.3.6. Headquarters AF Flight Standards Agency uses AFSAS to administer program oversight for AF review of Airfield Operations related HATRs. Coordinate

with MAJCOM/FLDCOM Airfield Operations staffs to reconcile any discrepancies in conclusions and recommended corrective actions for AF-wide trends. Coordinate safety reviews, evaluations, recommendations, and time critical notifications with AFSEC/SEF.

8.2. BASH Reporting Procedures. Safety staffs will report all damaging BASH events as the applicable mishap class and all non-damaging BASH events as hazards. **(T-0)**

8.2.1. Owing organization flight safety staffs will report wildlife strikes sustained by their aircraft. **(T-1)** This allows for universal reporting standards for all mishap classes for non-expeditionary forces. For effective program management and analysis, report all non-DAF bird and wildlife strikes that occur at their installation in AFSAS as hazard events. **(T-1)**

8.2.2. When aircraft are under the operational control of an expeditionary organization, Class E mishap and hazard bird and wildlife strikes to aircraft will be reported by the owning expeditionary force flight safety staff to facilitate timely reporting. **(T-1)** The owning expeditionary force organization will be the accounting organization and CA for these events. **(T-1)**

8.2.3. For every bird strike, safety offices or SIBs will send samples of the remains (if available) to the Smithsonian Institution's Feather Identification Lab (see [paragraph 8.2.3.4.3](#)) for identification. **(T-1)** Digital photographs may be used when whole carcasses of diagnostic species are available to assist in bird/wildlife identifications. While photographs do not replace the need to submit wildlife remains for most bird strikes, they may prevent the need to send whole or partial carcasses. Do not use photographs for minute samples or single feathers, or for impact point identifications (ghost birds). Use the following procedures when collecting and shipping remains:

8.2.3.1. Coordinate with aircraft maintenance personnel prior to collecting remains from aircraft surfaces. For whole or partial bird carcass, pluck a variety of feathers from the head, breast, back, body, and tail if possible.

8.2.3.2. Investigators should not delay recovering and shipping remains to the Feather Identification Lab, as the DNA in the sample could degrade.

8.2.3.3. Collect all blood, tissue, or fluid remains for DNA analysis. Exercise caution when handling wildlife remains, especially in or from regions of the world that may have disease transmission concerns (e.g., Avian Flu).

8.2.3.3.1. Spray the area with ethyl alcohol (ethanol) or 70% isopropyl alcohol and wipe with a clean paper towel or use pre-packaged alcohol wipes. If there is a concern over using alcohol on certain aircraft surfaces, use a dry cloth. Use water and a clean paper towel as a last resort. Ethanol is preferable to isopropyl alcohol but both types of alcohol are preferable to water.

8.2.3.3.2. Treat collected remains according to the current Animal and Plant Health Inspection Service shipping permit if remains are recovered outside the continental United States. **(T-0)** All wildlife remains shipped from outside the continental United States must include: 1.) a copy of the Animal and Plant Health Inspection Service shipping permit; 2.) Certificate of Origin; and 3.) Certificate of Treatment. **(T-0)** Copies of these documents can be found on the AFSEC BASH Team website

(<https://www.safety.af.mil/Divisions/Aviation-Safety-Division/BASH/>) and AF Portal Page (<https://www.my.af.mil/gcss-af/USAF/ep/globalTab.do?channelPageId=s6925EC1334F60FB5E044080020E329A9>). Allow all bird strike remains to completely dry, fold the paper towel, and place remains into a labeled re-sealable plastic bag (primary container).

8.2.3.4. Place the plastic bag(s) containing the sample(s) inside a second plastic bag or envelope (secondary container) and affix an international biohazard label to the secondary container. Multiple primary containers can be contained within a single secondary container. Place the secondary container inside a rigid fiberboard outer shipping container that is at least 3.9” x 3.9” on its largest surface.

8.2.3.4.1. In accordance with United States Postal Service Publication 52, *Hazardous, Restricted, and Perishable Mail*, paragraphs 346.12 and 346.326, label the outer shipping container with “EXEMPT ANIMAL SPECIMEN” on the address side of the container (between the return address and address is preferred).

8.2.3.4.2. For hazard reports, attach a copy of the corresponding BASH shipping sheet to all types of wildlife strike evidence and ship to the following address: Smithsonian Institution, Feather Identification Lab; E-600 MRC 116; P.O. Box 37012; Washington, DC 20013-7012. The BASH shipping sheet is available from AFSAS after entering all BASH information for the event and selecting the “Make Available to Smithsonian” from the event menu in AFSAS.

8.2.3.4.3. For damaging mishaps, attach a copy of the corresponding BASH shipping sheet and ship to the following address: Feather Identification Lab, MRC 116; National Museum of Natural History; 1000 Constitution Ave, NW; Washington, DC 20560, (202) 633-0801. For damaging strikes, use of a shipping courier (UPS, FedEx, DHL) or US Postal Service with a tracking number is recommended. The BASH shipping sheet is available from AFSAS after entering all BASH information for the event and selecting the “Make Available to Smithsonian” from the event menu in AFSAS.

8.2.4. Collect and submit a hazard report for all wildlife remains, whether whole or in part, found on the airfield within 250 feet of a runway or within 1,000 feet of a runway end, unless the animal’s death may be definitively attributed to another source. If a complete bird carcass in good condition is found on the airfield, freeze the remains, and contact the Smithsonian Institution Feather Identification Lab at (202) 633-0801 to see if the museum would like to have the specimen for their collection.

8.2.5. For wildlife strikes other than birds, gather samples of skin, hair, teeth, or other non-fleshy remains following procedures in [paragraph 8.2.3](#) While physical evidence is preferred, gathering remains of wildlife other than birds may not be practicable. In these cases, photographs will be accepted. E-mail an electronic image of the carcass or remains to the Smithsonian Institution Feather Identification Lab at whattonj@si.edu.

JEANNIE M. LEAVITT, Major General, USAF
Chief of Safety

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

DoDI 6055.07, *Mishap Notification, Investigation, Reporting, and Record Keeping*, 6 June 2011

United States Postal Service Publication 52, *Hazardous, Restricted, and Perishable Mail*, April 2022

DAFI 91-225, *Aviation Safety Programs*, 31 January 2022

DAFI 91-204, *Safety Investigations and Reports*, 10 March 2021

AFI 13-210_IP, *Joint Airdrop Inspection Records, Malfunction/Incidents, Investigations and Activity Reporting*, 22 June 2009

AFI 33-322, *Records Management and Information Governance Program*, 28 July 2021

DAFMAN 13-201, *Airspace Management*, 10 December 2020

Technical Order 00-35D-54, *USAF Deficiency Reporting, Investigation, and Resolution*, 15 April 2021

DAFI 90-160, *Publications and Forms Management*, 14 April 2022

DAFMAN 90-161, *Publishing Processes and Procedures*, 15 April 2022

Prescribed Forms

None

Adopted Forms

AF Form 457, *USAF Hazard Report*

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

AF Form 942, *Record of Evaluation*

AFTO Form 244, *Industrial/Support Equipment Record*

DAF Form 847, *Recommendation for Change of Publication*

Abbreviations and Acronyms

AF—Air Force

AFCMRS—Air Force Combined Mishap Reduction System

AFE—Aircrew Flight Equipment

AFI—Air Force Instruction

AFLCMC—AF Life Cycle Management Center

AFMAN—Air Force Manual

AFR—Air Force Reserve

AFSAS—Air Force Safety Automated System
AFSEC—Air Force Safety Center
AFTO—Air Force Technical Order
AGO—Aviation Ground Operations
AMIC—Aircraft Mishap Investigation Course
AMIP—Aircraft Mishap Investigation and Prevention Course
ANG—Air National Guard
ASAP—Aviation Safety Action Program
ATC—Air Traffic Control
BASH—Bird/wildlife Aircraft Strike Hazard
BP—Board President
BPC—Safety and Accident Investigation Board President Course
CA—Convening Authority
CMAV—Controlled Movement Area Violation
CSO—Combat System Operator
CVR—Cockpit Voice Recorder
DAF—Department of the Air Force
DAFI—Department of the Air Force Instruction
DAFMAN—Department of the Air Force Manual
DoD—Department of Defense
DR—Deficiency Report
FAA—Federal Aviation Administration
FDR—Flight Data Recorder
FLDCOM—Field Command
GCS—Ground Control Station
GLOC—**G**—induced Loss of Consciousness
HATR—Hazardous Air Traffic Report
HFACS—Human Factors Analysis and Classification System
IO—Investigating Officer
ISB—Interim Safety Board
LOSA—Line Operations Safety Audit
MA—Mishap Aircraft

MAAF—Mishap Analysis & Animation Facility
MAJCOM—Major Command
MDS—Mission Design Series
MFOQA—Military Flight Operations Quality Assurance
MM1—Mishap Maintainer 1
MP—Mishap Pilot
NDA—Non-Disclosure Agreement
OPR—Office of Primary Responsibility
ORS—Other Recommendation of Significance
SE—Safety
SEF—Flight Safety
SIB—Safety Investigation Board
SNCO—Senior Non-Commissioned Officer
sUAS—Small Unmanned Aircraft System
UAS—Unmanned Aircraft System
UAV—Unmanned Aerial Vehicles
USAF—United States Air Force
USSF—United States Space Force

Office Symbols

AF/SEI—Issues Division of the Office of the Chief of Safety
AFFOR/SE—AF Forces Safety
AFSEC/SEF—AF Safety Center Flight Safety Division
AFSEC/SEFE—AF Safety Center Flight Safety Engineering Branch
AFSEC/SEFF—AF Safety Center Flight Safety Investigations Branch
AOF/CC—Airfield Operations Flight Commander

Terms

Causal Finding—Deficiencies in the mishap sequence, which if corrected, eliminated, or avoided, would likely have prevented or mitigated the damage or injury.

Cause—A deficiency, which if corrected, eliminated, or avoided, would likely have prevented or mitigated mishap damage or injury.

Class A Mishap—See DoDI 6055.07, *Mishap Notification, Investigation, Reporting, and Record Keeping*.

Class B Mishap—See DoDI 6055.07.

Class C Mishap—See DoDI 6055.07.

Class D Mishap—See DoDI 6055.07.

Class E Mishap—See DAFI 91-204.

Engine-Confined Damage—Applies when an aircraft turbine engine experiences Class C or higher mishap damage that is confined to the engine and integral engine components. Damage is considered confined to the engine if there is less than Class D damage external to the engine. If the total cost of all damage external to the engine is equal or greater than the Class D damage threshold, then the mishap is not engine-confined, regardless of the comparative extent of engine damage cost.

Event—A broad term used to describe an occurrence, a series of occurrences, or a condition which has implications for the safety community. Aviation events include mishap, hazard, and safety study.

Exhibits—A document or file (including photographs, videos, etc.) uploaded in AFSAS as supporting evidence for a safety report.

Factor—Any deviation, out-of-the-ordinary or deficient action, or condition, discovered in the course of an investigation that contributed to the eventual outcome.

Flameout—An instance of the flame in the combustion chamber of a jet engine being extinguished, with a resultant loss of power.

Hazard—Any real or potential condition that can cause injury, damage, or occupational illness.

Human Factor—A multidisciplinary study of the interactions between an individual and their environment, hardware, software, and other individuals that affects decision making and action execution which impacted human performance. Human Factors may exist at the individual (acts, preconditions) or the event level (supervision, organization).

Human Factors Analysis and Classification System (HFACS)—A coding system of the human factor findings established by the DoD in DoDI 6055.07.

Intent for Flight—Intent for flight is considered to exist when aircraft brakes are released and/or takeoff power is applied for commencing an authorized flight. Intent for flight continues until either the fixed-wing aircraft 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 is physically off the active runway. Hover taxi is considered flight.

Letter of Xs—A list of aircrew certifications/qualifications.

Mishap—In addition to the definition in DoDI 6055.07, mishaps are classified by total direct mishap cost and the severity of injury/occupational illness.

Mission Design Series—The official designation for aerospace vehicles used to represent a specific category of aerospace vehicles for operations, support, and documentation purposes.

Privilege—A common law doctrine or statutory rule of evidence that protects certain communications and products from being used as evidence in court or otherwise released.

Privileged Safety Information—Information that is reflective of a deliberative process in a mishap investigation or given to a safety investigator pursuant to a promise of confidentiality, which the safety privilege protects from being released outside safety channels or from being used for any purpose except mishap prevention. For those types of investigations (Class A-E mishaps and certain safety studies that used privileged source information), it includes products such as draft and final findings, evaluations, opinions, preliminary discussions, conclusions, mishap causes, recommendations, analyses, and other material that would reveal the deliberations of safety investigators, including reviews and endorsements. It also includes information given to a safety investigator pursuant to a promise of confidentiality and any information derived from that information or direct or indirect references to that information.

Attachment 2

ORGANIZATION CONTACT INFORMATION

Table A2.1. AFSEC Contact Information.

Organization	Address	Contact Information
AFSEC/SEF Engineering Technical Assistance Duty Officer	9700 G Avenue SE Kirtland AFB NM 87117- 5670	DSN 246-5867 or Commercial (505) 846-5867 After hours (505) 220-0183 Alternatively, call the Kirtland AFB operator at: 877-809-6989 (toll free), ask to be connected to the Command Post and then ask for the AFSEC Technical Assistance Duty Officer.
AFSEC/SEF Duty Officer	9700 G Avenue SE Kirtland AFB NM 87117- 5670	DSN: (312) 263-6175 or Commercial (505) 853-6175 After hours (505) 269-9583
AFSEC Human Performance	9700 G Avenue SE Kirtland AFB NM 87117- 5670	DSN: (312) 263-3513 or Commercial (505) 853-3513