



Accident Investigation and Reporting Procedures Handbook

General Guidelines

Classifying Army Accidents

The primary mission of a safety program is to prevent accidents. In the event of an accident, this handbook provides guidance for the investigation and reporting of accidents within the US Army. The purpose of this handbook is to supplement AR 385-40 and DA Pam 385-40. Where discrepancies exist between this handbook and the above publications, directives outlined in AR 385-40 and DA Pam 385-40 will be followed. The proponent agency for this manual is the US Army Safety Center (USASC).

Accidents are caused by uncontrolled hazards. The controls are either inadequate, known and not enforced, or not known. Accident causes can be further classified into three basic factors. Factors contributing to an accident consist of environmental conditions, material failures, human errors or any combination of these factors.

Environmental factors are those environmental elements or conditions such as noise, illumination, space, and weather conditions (for example, precipitation, temperature, humidity, pressure, wind, and lightning, and so forth) having an adverse effect on the performance of the individual or equipment so that an accident results or could result. Environmental cause factors can be divided into those which could not have been avoided and those for which precautions could have been implemented to reduce or eliminate its adverse effect on personnel and / or equipment. An environmental deficiency should not be assessed as a causal factor if it was known and could have been avoided before the accident.

A material failure or malfunction is defined as a tangible or intangible element that did not operate as intended or designed and caused, allowed, or contributed to a material failure or malfunction. The inadequacies may come from incorrect design or improper materials. Improper maintenance or incorrect installation would not fall into this category but would instead be considered human error. Once identified, corrective actions can be taken to prevent the probability of similar material failures and malfunctions in the future.

Human cause factors are interactions of man, machine, and environment. In short, a mistake at some level was made. As much as 85% of all accidents involve human error. Regardless of the task involved, the explanation of how it was improperly performed must identify the directive, standard and performance deviated from or not complied with or the lack of such directives or standards.

The goal of an investigation is not only determining the cause of an accident but also to identify controls to prevent future accidents. These controls are then implemented through control mechanism(s) -

standard, training, leader, individual, material. With this in mind, the investigator(s) should look for accident cause factors that fit into the following categories: Found; Primary Cause, Found; Contributing, Found; Not Contributing but Increasing Severity of Damage / Injuries, or Found; Not Contributing but if left uncorrected could cause an accident in the future.

Accident and Incident Classes

Accident classes are used to determine the appropriate investigative and reporting procedures. Accident classes are as follows:

1. **Class A Accident:** An Army accident in which the resulting total cost of property damage is \$1,000,000 or more; an Army aircraft or missile is destroyed, missing, or abandoned; or an injury and/or occupational illness results in a fatality or permanent total disability.
2. **Class B Accident:** An Army accident in which the resulting total cost of property damage is \$200,000 or more, but less than \$1,000,000; an injury and/or occupational illness results in permanent partial disability, or when five or more personnel are hospitalized as inpatients as the result of a single occurrence.
3. **Class C Accident:** An Army accident in which the resulting total cost of property damage is \$10,000 or more, but less than \$200,000; a nonfatal injury that causes any loss of time from work beyond the day or shift on which it occurred; or a nonfatal occupational illness that causes loss of time from work (for example, 1 work day) or disability at any time (lost time case).
4. **Class D Accident:** An Army accident in which the resulting total cost of property damage is \$2,000 or more but less than \$10,000.

Note. Nonfatal injuries/illnesses (restricted work activity, light duty, or profile) will only be recorded in ASMIS in conjunction with recordable property damage accidents.

5. **Class E Aviation Incident:** An Army incident in which the resulting damage cost and injury severity do not meet the criteria for a Class A-D accident (\$2,000 or more damage; lost time/restricted activity case). A Class E aviation incident is recordable when the mission (either operational or maintenance) is interrupted or not completed. Intent for flight may or may not exist. An example of a recordable Class E incident is: during a maintenance operational check (MOC) the engine quits. Examples of non-recordable Class E incidents are: chip detector light illumination and the component is not replaced; mission interrupted/aborted because of weather, unless mission is canceled; failure of Fair Wear and Tear (FWT) items found on pre- or post-

flight inspection; radio failure where radio is replaced; closing a door found open in flight.

6. **Foreign Object Damage (FOD) Aviation Incident (Also known as Class F incident):** Recordable incidents confined to aircraft turbine engine damage (does not include installed aircraft Auxiliary Power Units (APU)) as a result of internal or external FOD, where that is the only damage. These incidents will be reported using DA Form 2397-AB-R; Check "F" in the " Accident Classification" block.

Note. When appropriate, it is the unit commander's responsibility to ensure that an SF 368, or EIR for Category II, or message for Category I is completed and forwarded to the appropriate agency per AR 750-6, DA Pam 738-750, or DA Pam 738-751. The USASC and the appropriate MACOM will be information addressees on all Category I EIRs and DRs.

What to Report

Commanders will investigate and report, as required, unplanned events (accidents) that result in one or more of the following:

1. Damage to Army property (including Government-furnished material (GFM), or Government-furnished property (GFP), or Government-furnished equipment (GFE) provided to a contractor).
2. Injury (fatal or nonfatal) to on- or off-duty military personnel.
3. Injury (fatal or nonfatal) to on-duty Army civilian personnel, including non-appropriated fund (NAF) employees, and foreign nationals employed by the Army when the accident is incurred while performing duties in a work compensable status.
4. Occupational injury or illness (fatal or nonfatal) to Army military personnel and Army civilian employees, NAF employees, and foreign nationals employed by the Army.
5. Any injury (fatal or nonfatal) or illness to non-Army personnel or any damage to non-Army property as a result of Army operations.
6. Class E aviation incident.
7. FOD incidents (Class F).

Types of Accidents and Incidents

The various types and specific exceptions follow: When two or more types of Army vehicles, such as an Army Motor Vehicle (AMV) and an Army Combat Vehicle (ACV) are involved in an accident, the type of equipment operated by the individual deemed most responsible will

determine the accident type. This process is also true for other types of accidents (for example, fire, marine, explosives).

Army Aircraft Accidents

1. **Flight Accidents.** Those accidents in which intent for flight exists, and there is reportable damage to the aircraft itself. Intent for flight begins when aircraft power is applied, or brakes released, to move the aircraft under its own power with an authorized crew. Intent for flight ends when the aircraft is at a full stop and power is completely reduced. (Explosives, chemical agent, or missile events that cause damage to a Army aircraft with intent for flight are categorized as flight accidents to avoid dual reporting.)
2. **Flight-Related Accidents.** Those aircraft accidents in which there is intent for flight and no reportable damage to the aircraft itself, but the accident involves a fatality, injury to air crew, ground crew, or passengers, or other property damage. These accidents are not to be used in the calculation of flight accident rates. (For example: unintentional cutting of a hoist cable; failure, or malfunction of a hoist system to include related equipment; unintentional jettisoning of cargo hook load or external stores.)
3. **Aircraft Ground Accidents.** Injury or property damage accidents involving Army aircraft in which no intent for flight exists, and the engine(s) is/are in operation.

AMV Accidents.

1. An accident involving a motor vehicle may be classified as an AMV accident if the vehicle meets the following criteria:
2. The vehicle is owned, leased (includes General Services Administration (GSA) and Government-owned, contractor-operated vehicles that are under full operational control of the Army; for example, hand receipt or like document), or rented by DA (not an individual), to include Reserve components.
3. The vehicle is primarily designed for over-the-road operation.
4. The vehicle's general purpose is the transportation of cargo or personnel. Examples are passenger cars, station wagons, trucks, ambulances, buses, motorcycles, fire trucks, and refueling vehicles.
5. AMV accidents involve the operation of an AMV when one or more of the following occur:
 - a) Collision with other vehicles, objects, or pedestrians.
 - b) Personnel injuries or property damage due to cargo shifting in or falling from a moving vehicle.

- c) Personnel injuries occurring in moving vehicles or caused by falling from moving vehicles.
- d) Accidents occurring when a vehicle is being towed or pushed by another vehicle.
- e) Other injuries and property damage as described above.
- f) Accidents involving AMVs not reportable as AMV accidents. The following accidents, although reportable, are not considered AMV accidents. They are reportable under other accident types.
 - (1) Personnel injuries that occur while loading or unloading or mounting or dismounting a motor vehicle that is not moving.
 - (2) Injury or property damage occurring solely from repair or service work. Examples include a vehicle falling off a jack or hoist, a tire explosion during inflation, or a finger cut off by a fan belt.
 - (3) Damage to a properly parked AMV unless it is damaged by another AMV.
 - (4) Cargo directly damaged by environmental factors.
 - (5) Damage to an AMV resulting solely from environmental factors (act of nature).
 - (6) Damage to an AMV being handled as a commodity and not being operated under its own power (excludes towing or pushing accidents).
 - (7) Damage to a moving or parked AMV caused by objects thrown or propelled into it.
 - (8) Damage to an AMV by fire when no AMV accident occurred (where the primary cause of the damage is the fire) when the vehicle was not in operation.
 - (9) Malfunction or failure of component parts, if that is the only damage.
- g) Accidents involving a privately owned vehicle (POV) and an AMV in which the AMV driver is not at fault will be reported to the local safety office. However, these accidents will not be recorded in ASMIS unless recordable injuries are incurred by Army personnel or recordable Army damage occurs.

ACV Accidents

These accidents occur incident to the operation of an ACV or combat equipment, such as a tank, self-propelled weapon, armored personnel carrier, or amphibious vehicle ashore. Additionally, injuries and property damage incurred during operation of installed ACV armament systems also qualify as an ACV accident (even if the vehicle is not in motion).

Other Army Vehicle Accidents

These Army accidents involve the operation of an Army vehicle other than those cited in a through c above (for example, aircraft tugs, bulldozers, forklifts, trains, and similar vehicles).

Note. For Army train/rail accidents, additional technical information and assistance is available from:

U.S. Army Aviation and Troop Command,
ATTN: AMSAT-I-MMWR,
DSN 693-9218,
Commercial (314) 263-9218.

Army Operated Vehicle Accidents

Any vehicle accident not identified in other categories (for example, GSA, POV on official business), that is being operated in an official capacity (for example, vehicles on temporary loan (not on a hand-receipt) from another government agency).

POV Accidents

These accidents involve the operation of a motor vehicle (not on official business), privately owned by an individual, other than an Army vehicle that results in:

1. A fatality or lost-workday case injury to Army military personnel, on or off duty.
2. Injury to Army civilian personnel while performing duties in a work compensable status.

Fire

A fire is the unintentional, destructive, and uncontrolled burning of combustible solids, liquids, or gases. Fire accidents involve:

1. **Equipment fires.** At a minimum, units will ensure that all fires are reported to the installation safety office. AR 420-90 requires all fires that cause damage to Army equipment to be reported on DD Form 2324 (DOD Fire Incident Report). This is generally done

through the installation fire department, although the unit experiencing the fire may initiate the DD Form 2324. In addition, a completed DA Form 285 will be submitted for recording in ASMIS on those equipment fires and explosions listed below if there is fire damage to:

- a) Wheeled vehicles or components thereof
 - b) Tracked vehicles or components thereof.
 - c) Aircraft (ground) (excludes those reported on the DA Form 2397-R-series (Technical Report of U.S. Army Aircraft Accident) or DA Form 2397-AB-R.
 - d) Ammunition/explosive fires (production, use, storage, and so forth).
 - e) Missiles, to include subsystems.
 - f) Tents.
 - g) Space heaters.
 - h) Generators.
2. **Facility fires.** A DD Form 2324 will be submitted for fire accidents involving Army-owned or -leased fixed facilities and physical property except where the fire was willfully and maliciously ignited (arson). A DA Form 285 will not be submitted in addition to DD Form 2324 for fires listed below unless those fire accidents result in a lost time or greater injury or occupational illness.
- a) Family quarters (rent free, mobile home, leased).
 - b) Bachelor enlisted quarters, bachelor officer quarters, barracks.
 - c) Industrial buildings.
 - d) Public assembly buildings and areas.
 - e) Grass, forests, and ranges.
 - f) Warehouse and storage buildings.
 - g) Administrative offices.
 - h) Schools.
 - i) Health care and day care facilities.
 - j) Vacant structures.
 - k) Aircraft hangars.
 - l) USAR centers (leased or Government-owned).

- m) Area maintenance support activities (leased or Government - owned).

Personnel Injury--Other.

These accidents involve injury to Army personnel and non-Army personnel as a result of Army operations not covered by any other accident type and injury to off-duty military personnel not covered by any other accident type.

Property Damage--Other Accident

These accidents involve property damage not covered by any other accident type. Drone aircraft/Remotely piloted vehicle (RPV)/Unmanned Aerial Vehicle (UAV) is also in this category. When manned, these will be regarded as aircraft, and accidents will be reported accordingly. When unmanned and operated as a remote controlled aircraft, accidents will be reported using the DA Form 285.

Commercial Carrier/Transportation Accidents

These accidents involve the operation of a commercial motor vehicle, plane, helicopter, train, or vessel (including those under contract to the Army) which transport Army personnel and result in:

1. A fatality or lost-workday case injury to Army military personnel, on or off duty.
2. Injury to Army civilian personnel while performing duties in a work-compensable status.

Fratricide

Fratricide (also known as Friendly Fire) accidents are special situations that must be reported promptly and thoroughly investigated.

1. Fratricide accidents will be reported and investigated as an accident under the provisions of this regulation.
2. Fratricide accidents must also be reported and investigated as a collateral investigation under the provisions of AR 385-40 and AR 15-6.

Occurrences Not Constituting an Army Accident

Combat Losses

Damage or injury as a direct result of action by an enemy force is not an Army accident. It is termed a combat loss when one or more of the following conditions exist:

1. Damage, loss, or injury directly caused by enemy action or sabotage.
2. Damage, loss, or injury due to evasive action taken to avoid enemy fire.
3. Loss of equipment in combat or failure of an individual to return from a combat mission when the last known position was in or over enemy territory.

Malfunction or Failure of Component Parts

Malfunctions or failure of parts that are normally subject to fair wear and tear (FWT) and have a fixed useful life less than the complete weapon system or unit of equipment are not considered accidents if the malfunction or failure is the only damage and the sole action is to replace or repair that component part. (The only exception is that all fires or fire damage involving vehicle component parts must be reported.) Although these occurrences do not constitute an Army accident, they may meet the criteria of a Class E aviation incident and should be reported accordingly. When a malfunction or failure of a component part results in damage to another component, this paragraph does not apply.

Expected Damage

Damage to Army equipment or property which is planned, intended, or expected during authorized testing or intentional destruction is not considered an accident. "Planned and intended" means that the damage was specifically required in order to accomplish the objectives of a formally authorized test or was the desired outcome of an authorized destruction or disposal of property. Any unplanned and unintended damage incurred during these operations will be reported as an accident.

Property Damage as a Result of Vandalism, Riots, Civil Disorders, or Felonious Acts Such as Arson

Damage to Army aircraft, vehicles, or any other property which occurs after an aircraft or vehicle has been stolen is not reportable as an accident. Damage to Army aircraft, vehicles, or any other property which occurs when an individual misappropriates an aircraft or vehicle not authorized to be flown or driven by the individual will not be reported as an accident.

Deliberate Damage to Aircraft or Equipment or Injury to Aircraft or Equipment Occupants

Such damage and injury:

1. Will be reported to the military police (MP) or the Criminal Investigation Division (CID) for investigation.
2. Will also be investigated by a collateral board which will determine responsibility.

Accidents Occurring During the Transportation of Army Materiel by Commercial Carriers

Any accident that occurs during the transportation of Army material by a commercial carrier is not recordable as an Army accident and is the responsibility of that carrier.

Reportable Accidents

All Army accidents and incidents, including occupational illnesses and injuries, regardless of how minor, are reportable to the unit/local safety office.

Injury

An injury must be reported if it results in:

1. A fatality, regardless of the time between the initial injury event and death.
2. Permanent total disability or permanent partial disability.
3. A lost-time case involving time away from work.
4. Restricted work activity.
5. A first-aid injury.

Missing Personnel

Persons who are missing, and presumed dead, as the result of an accident will be reported as fatalities.

Note. This is not related to, nor does it affect, the legal status of missing persons for purposes of casualty reporting notification of the next of kin (NOK).

Occupational Injury/Illness

All Class A through C occupational injury/illness to Army military personnel must be reported on DA Form 285/Abbreviated Ground Accident Report (see app E). Class A through D occupational

injury/illness to Army civilian personnel will be reported on Department of Labor (DOL) Forms CA-1, Federal Employees' Notice of Traumatic Injury and Claim for Continuation of Pay/Compensation, CA-2, Notice of Occupational Disease and Claim for Compensation, or CA-6, Official Superiors' Report of Employees' Death. Occupational illnesses will also be reported through medical channels if they result in:

1. A fatality, regardless of the length of the illness.
2. A permanent total disability or permanent partial disability.
3. A lost-time case involving time away from work.
4. A restricted work activity.

Medical Injuries Treatment

An injury requiring treatment at a medical facility that involves prescription drugs or follow-up treatments.

First-Aid Injuries

An injury requiring local first-aid only without any subsequent medical treatment.

Non-reportable Injuries and Illnesses

Non-occupational Injuries/Illnesses

These include injuries/ illnesses associated with non-occupational diseases where the disease itself, not the injury/illness, is the proximate cause of the lost time (for example, a minor cut suffered by a hemophiliac which results in time away from work).

Self-inflicted Injuries

Suicides, suicide attempts, or voluntary self-inflicted injuries (for example, Russian roulette).

Criminal Assault

Injuries that result from criminal activity where there was intent to inflict injury (for example, a fistfight, or a brawl). Injuries due to arson are not recordable unless they are incurred by personnel who are employed as firefighters, in which case the injury would be an occupational injury.

Prior-service Injuries

Injuries sustained before entry into service or employment, unless they are specifically aggravated by current tenure of service.

Ineffective and Parasitic Diseases and Poisonings

Illnesses caused by specific organisms and toxins (such as food-borne disease), unless the disease is directly related to or the result of the worker's employment. (For example, acute respiratory diseases in employees, particularly in basic trainees, are not Army accidents because of the inability to separate occupational from other environmental causes of these diseases, however, hepatitis in an employee working with hospital instruments or involved in waste disposal processes would be considered an Army accident.)

Strains

When these result from preexisting musculoskeletal disorders or minimal stress or strain (for example, simple, natural, nonviolent body positions or actions such as coughing or sneezing). These are injuries unrelated to accident-producing agents or environments normally associated with active participation in daily work or recreation.

Hospitalization (Observation Only.)

Hospitalization of a person solely for observation and subsequent release.

Escape From Custody

Injuries or fatalities to persons in the act of escaping from or eluding military or civilian custody or arrest.

Death

Death due to natural causes unrelated to the work environment (for example, heart attack during PT).

Adverse Reactions

Adverse bodily reactions resulting directly from the use of alcohol or other drugs not administered by or under the direction of competent medical authority.

Pre-existing Injuries or Illnesses

Such conditions might include back pain/injury experienced by individuals suffering from a degenerative disease as identified/diagnosed by a physician authorized to treat the case.

Recordable Accidents and Incidents

A recordable accident meets the criteria of Class A-D accidents and Class E and FOD incidents, or results in a recorded lost time or fatal injury/illness claim at DOL. Reports are to be sent through channels to USASC for recording in ASMIS per this manual and AR 385-40. The following types are included:

1. Accident Classes A-D, Class E aircraft incident, and Class FOD incidents.
2. Accidents that result in occupational illnesses, injuries, or fatalities to civilian employees of an Army organization while in on-duty status (compensable status) will be submitted through channels to Office of Workers Compensation Programs (OWCP) on appropriate DOL Forms CA-1, CA-2, and CA-6.

Minimum Reporting Requirements for on-Duty Injuries

1. Fatality, permanent total or permanent partial disabling injury. The unit will submit a fully completed DA Form 285 to its designated safety office. For military lost-time cases, the DA Form 285-AB-R will be completed. The safety office will forward the report (see app E) to USASC for recording in ASMIS. For Army civilians, DOL Forms CA-1 and CA-6 must be submitted.
2. Occupational illnesses will be reported through medical channels, and, in addition, will be reported on DA Form 285 (fatality, permanent total, or permanent partial disabling injury), DA Form 285-AB-R, the military lost-time injury, or DOL Forms CA-2 and CA-6 for civilians.

Minimum Reporting Requirements for Military Off-Duty Injuries:

1. The unit will submit a fully completed DA Form 285-AB-R to its designated safety office (the safety office will forward the report to USASC for recording in ASMIS) when either of the following occur:
 - a) Fatal injuries to off-duty military personnel.
 - b) A lost-time or greater non-fatal injury to off-duty military personnel.
2. POV accident reports will include information on type of vehicle involved, seatbelts/helmets, drugs/alcohol, and type of driver training completed.

Required Forms

1. Accidents will be reported on the appropriate forms as discussed below. In overseas commands, locally developed forms, equivalent to the CA forms and approved by OWCP, may be used in lieu of CA forms. Deviations in the use of these forms will be requested from:

HQDA (DACS-SF)
WASH DC 20310-0200.
 - a) Ground accidents will be reported on DA Form 285 or DA Form 285-AB-R as prescribed in this regulation and per the instructions on the form. These forms are available through either normal publications channels or in reproducible format in DA Pam 385-40. Detailed instructions for the forms are located in DA Pam 385-40.
 - b) Class A and B flight and flight-related Army aircraft accidents will be reported on DA Forms 2397-R- through 2397-14-R per this regulation and the instructions in DA Pam 385-40. Aircraft ground accidents (regardless of Class), Class C and D flight and flight-related accidents, and Class E and FOD incidents, will be reported on DA Form 2397-AB-R per this regulation. Copies of these reproducible forms are located in DA Pam 385-40.
 - c) Injuries, occupational illnesses and fatalities to DA civilians and direct hire foreign nationals (DHFNs) are reported on DOL Forms CA-1, CA-2, and CA-6.
2. Additional reporting requirements for specific types of accidents are contained in other chapters of this regulation.

Civilian Employee Catastrophic Accidents

This paragraph fulfills the DOD and OSHA requirements for formal notification of this type of accident. A civilian employee fatality or the hospitalization of five or more persons (any combination of Department of the Army (DA) civilian, military, contractor, or public, as long as one DA civilian is involved) from the same occurrence/accident is considered a catastrophic accident. "Civilian employee" is defined in the glossary.

1. The MACOM will notify the USASC telephonically within 24 hours of a death or hospitalization in accordance with the above requirements and this regulation. Telephone numbers are:

COMMERCIAL: (205) 255-3410 / 2660
DSN: 558-3410 / 2660

The following additional information will also be provided:

- a) Social Security Number.
 - b) Job series and title.
 - c) Age of the civilian fatality.
2. Accidents not immediately reportable, but which result in death within six months of the date of the accident, will be reported within 24 hours of the time the organization becomes aware of the death.
 3. The MACOM will submit a written summary report of the accident investigation within 30 days of the accident to:

Commander, USASC
ATTN: CSSC-P
Fort Rucker, AL 36362-5363

The summary report will contain, at a minimum, the following information:

- a) Date and time of the accident.
- b) DOD Component (such as, Army, Navy,) and unit identity.
- c) Exact location of the accident.
- d) Personnel involved (Category (employee, public, etc.) and consequences). Include the social security number, job series, title, and age of the civilian fatality or fatalities.
- e) Description of the operation.
- f) Description of the accident.
- g) Standards involved (this item shall be limited to factual information and validated findings): applicable standards (only OSHA or approved alternate agency standards shall be cited, (for example, 1910.26), or any violations of the standards and recommendations (if any) for standards improvement.
- h) Corrective actions recommended by investigator.
- i) MACOM point of contact name, address, and phone number.

Safety and Occupational Health Program

Each DA installation is required to maintain a log of occupational injuries and illnesses. The log should provide a quick and current view of workplace safety and health throughout the installation. Automated systems are authorized for this injury/illness log. The following guidance should be used in maintaining these logs:

1. DA installations will enter on an appropriate log (such as OSHA Form 200 Log of Federal Occupational Injuries and Illnesses) each

recordable Army injury or occupational illness for the following personnel classifications:

- a) Civilians covered by FECA.
 - b) Recordable on- and off-duty military injuries.
2. At a minimum, all fatalities, injuries, occupational illnesses/injuries for which DOL Forms CA-1, CA-2, CA-6, DA Form 2397, DA Form 2397-AB-R, DA Form 285, DA Form 285-AB-R is filed with the installation and will be entered into the log within 6 working days of receipt. Civilian injuries and illnesses should be maintained on a separate log from military injuries and illnesses. If a FECA claim results in a scheduled award, it will be logged as a lost-time case.
 3. The summary portion of the log, showing the total numbers of injuries, illnesses, and fatalities will be conspicuously posted on all official bulletin boards no later than 45 days after the close of each fiscal year, and will remain posted for at least 30 days.
 4. OSHA 2014, Recordkeeping and Reporting Guidelines for Federal Agencies, available from regional OSHA offices, contains a format as well as definitions and guidelines and the revised DOL Forms CA-1, CA-2, and CA-6, with instructions for their completion.

Personnel Classifications and Special Cases

The following personnel classifications are used in reporting Army accidents:

1. Active Army personnel.
2. Army civilian personnel.
3. Army contractor personnel.
4. NAF employees.
5. Other U.S. military personnel. This includes members of other DOD components on full-time duty in active military service.
6. Reserve Officer Training Corps (ROTC).
7. Military dependents. Army family members.
8. ARNG personnel.
9. USAR personnel.
10. Direct hire foreign nationals (DHFN).
11. Foreign Nationals, indirect hire.

12. Foreign Nationals, Korean Augmentation to the U.S. Army (KATUSA) (Korean nationals assigned to the U.S. Army in a military status).
13. Foreign military personnel assigned to Army units.
14. Public. This category includes all persons not specifically covered above.

Reporting of Special Cases that Include:

1. Accidents involving persons in temporary duty (TDY), pass, or leave. Such accidents:
 - a) Will be investigated by the commander of the Army installation located closest to the accident. The appropriate reporting forms will be sent to the safety staff of the command sustaining the loss.
 - b) Will be included in the experience of the activity or MACOM to which the person is permanently assigned. For the military, permanently assigned means on the Standard Installation/Division Personnel System (SIDPERS) unit strength report. For civilians, it means assigned by current SF 50-B (Notification of Personnel Action).
 - c) Involving injury/illness to Army civilians on TDY will be reported by and included in the experience of the MACOM to which the individual is assigned.
 - d) Involving Army and foreign military students on TDY which is scheduled for more than 30 days at an Army school will be reported by and included in the experience of the school's MACOM. Foreign students will be reported at installation-level, but not submitted unless actual loss of Army manpower or materiel resources occurs.
2. Accidents involving military personnel in permanent change of station (PCS) status (with or without leave) or civilians in PCS status. Such accidents will be reported directly to Commander, USASC. The commander of the Army installation closest to the accident will send the report; however, the losing unit will sustain the loss. Accordingly, the identification code of the unit sustaining the loss will be entered on DA Form 285-AB-R and applicable DOL forms (for civilians). PCS status ends on assignment order reporting date or arrival date, whichever occurs first. A copy of the accident report will be provided to the losing unit.

Injury and Accident Rates

These rates include fatalities, permanent total and permanent partial disability injuries, lost-workday injuries, and/or accidents with property damage meeting the criteria for reporting as Class A-C accidents. To convert the rates obtained in the following formulas (except aviation) to an annual rate for comparison of any time period, multiply the rate obtained by 12 and then divide by the number of months covered.

Injury Rates

1. Active Army military injury rate. The Active Army injury rate is based on the total number of recordable injuries for each 1,000 personnel during a specified period. Injury rates are computed from the following formula: Injuries times 1,000, divided by personnel strength.
2. USAR and ARNG military injury rates. The USAR and ARNG injury rates are the total number of recordable injuries for each 1,000 personnel during a specified period. Injury rates are computed from the following procedure:
 - a) Prorated strengths are computed by subtracting the Active Guard Reserve (AGR) population from the Selected Reserve strength, multiplying the result by 0.1068, and then adding this last result to the AGR population.
 - b) Multiply the number of injuries over a specified time period by 1,000, divide by the prorated strength as computed above.
3. Army Civilian Employee (FECA) injury rate. The Army civilian employee injury rate is the total number of recordable fatal/lost-time injuries for each 1,000 civilian personnel during a specific period of time. Rates are computed from the following formula: number of fatalities/lost-time injuries times 1,000, divided by the Army civilian strength.

Accident Rates

1. Army ground accident rate. This rate is the total number of Army ground accidents (Class A or Class A through C) for each 1,000 personnel over a specific time period. Rates are computed from the following formulas:
 - a) Active Army ground accident rate. Number of accidents times 1,000, divided by personnel strength.
 - b) USAR and ARNG ground accident rate. Number of accidents times 1,000, divided by prorated personnel strength.

2. Army aircraft accident rate. The rates for Army rotary wing and fixed wing, and other types of Army aircraft will be computed on the number of aircraft accidents (Class A, B, and/or C) per 100,000 aircraft flight hours. These rates will include flight accidents only.

On / Off Duty Injury and Accident Rates

These rates are computed by multiplying the on/off duty number of injuries/accidents by 1,000, and dividing by the respective Active Army or prorated USAR/ARNG personnel strengths.

Accident Investigation

MACOM commanders will ensure written requirements (for example, regulation, letter of instruction, or an approved supplement) are established to implement the accident investigation program within their command. As a minimum, these requirements will specify:

1. Initial accident notification procedures.
2. Accident site security responsibilities.
3. Installation-level safety office responsibilities.
4. Format and content of orders appointing investigation boards.
5. Authority of board presidents for determining the scope, equipment, technical assistance, and other support necessary to accomplish investigations.
6. Those installation-level organizations required to support investigations and the type of support required.
7. Provisions for command review and briefings.

Investigation Boards

1. The following accidents will be investigated by a board consisting of a minimum of three members. The members should be officers, warrant officers, or DA safety and occupational health specialists/managers/engineers, GS-018/803-11/12/13/14.
 - a) All Class A and B accidents, except those involving off-duty military fatalities/injuries not involving military operations.
 - b) Any accident, regardless of class, that an appointing authority believes may involve a potential hazard serious enough to warrant investigation by a multimember board.
2. Class C aircraft accidents (flight, flight related, or aircraft ground) will be investigated by a board of at least one officer, warrant officer, or DA safety and occupational health specialists/managers/engineers, GS-018/803-9/11/12/13/14 (DA safety professional must directly manage an aviation safety program).
3. When an accident involves Army property and another U.S. Military Service's property, a single joint board may be convened. Board members may be from the two Services involved. Appointment of the members and identification of a senior member as president will be made by mutual agreement between the commanders of the two Safety Centers. For uniform reporting

within each service, the board's proceedings will be recorded in the format required by each service.

4. When an Army aircraft accident involves a civil aircraft or function of the FAA, compliance will be per AR 95-30. Army aircraft accidents that involve aircraft of treaty nations will be investigated IAW AR 385-42.

Other Accident Investigations

The following accidents will be investigated by one or more officers, warrant officers, safety officers/NCOs, supervisors, or DA safety and occupational health specialist/manager/engineer, GS-018/ 803-9/11/12/13/14:

1. Class C accidents. (Excluding aircraft accidents described above).
2. Class D accidents, Class E, and FOD incidents.

Accident Investigation Boards

1. The commander responsible for the operation, personnel, or equipment involved in accidents not investigated by a board of officers or single-officer board will ensure the accident is thoroughly investigated by a qualified safety person.
 - a) Personnel appointed as members will be voting participants. Therefore, members will be from organizations other than the activity or unit incurring the accident and will be screened to ensure that no member of the board has an interest in the accident that may bias the outcome of the investigation.
 - b) Field requests for assistance in investigating an accident may be made to USASC; however, USASC is the sole authority for requesting outside Government, public, or private agency assistance.
 - c) Personnel appointed as advisors are nonvoting participants. Local advisors function to enhance and expedite accident investigation and reporting. Local advisors will normally consist of the safety office POC and a POC from the organization incurring the accident. In cases where equipment involved is unique to one organization or activity at a location, technical personnel from the organization incurring the accident may be used in an advisory status at the discretion of the board president.
2. Personnel of other Services may be used as members of Army accident investigation boards; however, a participant from another Service will not be designated as president of the board.

Investigation and reporting will conform to this regulation and DA Pam 385-40. If assistance is required in obtaining members from other services, the request will be forwarded to USASC.

3. For Class A and B accidents not selected for investigation under CAI procedures, the investigation board will be composed of a minimum of three individuals.
 - a) The president of the board will be a field grade officer (W5 is considered field grade) or a DA civilian, familiar with the type of operation, in the grade of GS-12 or higher. For aircraft accidents, the ranking commissioned Army aviator will be the board president. This officer will be equal to, or senior, in grade to the operator(s) of the aircraft involved in the accident.
 - b) The president of the board will appoint one member to act as recorder. Normally, this will be the board member junior in rank.
 - (1) One member will be a qualified maintenance officer or technician.
 - (2) One member may be a medical officer (or flight surgeon for aircraft accidents) as defined in AR 40-5.
 - (3) One member may be a qualified weather officer if/when weather is a suspected factor.
 - c) A flight surgeon (if a flight surgeon is not available, an Army medical officer may be appointed) is required to be a board member when an aviation accident involves:
 - (1) Personal injuries.
 - (2) Problems (including injuries) associated with personnel protective equipment, egress from the aircraft, MEDEVAC, rescue, or survival.
- Note:** For aircraft accidents, at least two board members will be Army aviators currently on flight status. One of the aviators will be a master or senior Army aviator. At least one of the board members will be qualified in the mission, type, design, and series of the aircraft involved. As deemed necessary by the president of the board, one board member will be a flight surgeon or medical officer. For watercraft accidents, at least one board member will be an Army marine warrant officer. Individuals appointed as board members will not be from the unit which incurred the accident (that is, same company/battery/troop or detachment).
4. In the case of Class C accidents, when more than one individual is on the board, the president will be an Army officer, senior warrant (W4, W5), or a full-time ARNG or USAR technician.

- a) Personal injuries.
- b) Problems (including injuries) associated with personnel protective equipment, egress from the aircraft, MEDEVAC, rescue, or survival.

Note: For an Aircraft Accident the board president must be a rated aviator or a safety and occupational health specialist/manager/engineer, GS-018/803-11/12/13/14, who directly manages an aviation safety program. In the case of a single member board, he or she must be senior to the members involved in the accident. A flight surgeon--if a flight surgeon is not available, an Army medical officer may be appointed--is required to be a board member when an aviation accident involves:

Class A and B Accident Investigations

Accidents that meet the criteria for either Class A or B require investigation by a board, except off-duty military. Two types of boards may be convened, either centralized accident investigation (CAI) or installation-level accident investigation (IAI). Upon notification of a Class A or B accident, the Commander, USASC will determine whether a CAI or IAI will be conducted. Specific duties and responsibilities of board members are outlined in DA Pam 385-40.

Centralized Accident Investigation

1. USASC will provide the following information to the board appointing authority:
 - a) Name, rank, security clearance, and SSN of USASC board members.
 - b) The special requirements and desired qualifications for local board members (for example, IP, flight surgeon, vehicle technician).
2. The board appointing authority will--
 - a) Appoint a member of the local safety office to serve as POC for the board.
 - b) Assure that preliminary actions required by this regulation are initiated before arrival of the USASC board members. At a minimum, these actions will include, but not be limited to, the following:
 - (1) Administratively and logistically support the investigation board.

- (2) Fund all support costs other than travel and per diem costs of USASC personnel and those other Government, public, or private agency personnel specifically requested by USASC to provide assistance.
- (3) Secure accident scene and take action as required.
- (4) Obtain copies of personnel, medical, and training records (to include OF 346 (U.S. Government Motor Vehicle Operator's Identification Card) and DA Form 348 (Equipment Operator's Qualification Record Except Aircraft), if appropriate) for all personnel directly involved in the accident.
- (5) Identify and notify local board members.
- (6) Publish orders appointing investigation board.
- (7) Confirm personnel security clearances as necessary and obtain any special clearances necessary for access to the accident scene by all board members.
- (8) Provide logistical support to include equipment to recover wreckage and resources necessary to ship components to appropriate Army depot or lab for tear-down analysis, and arrange for special transportation such as tactical vehicles or aircraft, if required, to transport the board members to the accident scene.
- (9) Obtain the following witness information: name, rank, unit, and telephone number.
- (10) Obtain Serious Incident Report (SIR), MP, and CID reports, if completed.
- (11) Obtain name of medical officer conducting autopsy and the date, time, and location it will be/was performed and results. Obtain a 1:50,000 tactical map that includes accident site.
- (12) Obtain directives that pertain to the operation that resulted in the accident.
- (13) Obtain weather statements (signed by forecaster).

Installation-level Accident Investigation

1. The appointing authority will appoint on orders a board consisting of three or more members to investigate all Class A and B accidents except those:
 - a) Investigated by USASC accident investigation boards.
 - b) Involving only an off-duty fatality/injury.

2. The appointing authority will ensure an in-depth investigation is performed by a board of any accident designated by HQDA or a MACOM.
3. In addition to the above requirements, the appointing authority may elect to conduct IAI (board mandatory or board optional) of any type of accident.
4. The following personnel may serve on Army accident investigation boards:
 - a) Army officers or warrant officers (Army aviators for aircraft accidents).
 - b) DA safety and occupational health specialist/manager/ engineer, GS-018/803-11/12/13/14 (for aircraft accidents, one who directly manages an aviation safety program).
 - c) Full-time technicians who hold current federally recognized officer or warrant officer status.
 - d) DOD medical officers or DOD contracted medical officers (flight surgeons are preferred for aircraft accidents).
 - e) Qualified maintenance personnel.
 - f) DOD weather officers.
 - g) Any other personnel approved by Commander, USASC.

Support of Army Accident Investigations

Army medical treatment facility commanders will support accident investigations as required by accident investigation board presidents. This will include, but not be limited to, the following:

1. Evaluating human and environmental factors that contributed to the accident.
2. Providing medical, dental, and medical service corps personnel such as flight surgeons, radiologists, pathologists, dentists, industrial hygienists, and psychiatrists to serve as members or advisors to accident investigation boards.
3. Performing biochemical testing of personnel involved in or contributing to a Class A, B, or C aviation accident, or when deemed appropriate by the commander or physician. Consult with the Armed Forces Institute of Pathology (AFIP):
Commercial: (202) 576-3232
DSN: 291-3232
4. Performing physical examinations of surviving accident victims (per AR 40-501, paragraph 10-26 g(3)).

5. Autopsies on the remains of air crewmembers are mandatory (per AR 40-21). In other cases, the Armed Forces Medical Examiner (AFME) may authorize an autopsy in accordance with DOD Directive 6010.16 and AR 40-57. This may be done where the Federal Government has exclusive jurisdictional authority, and where the circumstances surrounding the death are suspicious, unexpected, or unexplained. This includes unnatural or violent deaths resulting from known or suspected accident; that is, deaths specifically resulting from vehicular, aircraft, vessel, or other aviation/ground accidents. Additionally, pursuant to AR 40-2, the Army Medical Treatment Facility (MTF) commander may direct an autopsy when it is considered necessary for the protection of the welfare of the military community to determine the true cause of death or to secure information for the completion of military records. In cases where the accident investigation board concludes that an autopsy is necessary, consistent with the above guidelines, the Commander, USASC, will consult with the MTF commander nearest to the scene of the accident or where the body is located. In other cases, consent of the next of kin (NOK) is required in accordance with AR 40-2.
 - a) When possible, autopsies should be performed by AFIP.
 - b) If AFIP personnel cannot perform an autopsy, it will be performed by personnel in the following order of precedence:
 - (1) Military forensic pathologist.
 - (2) Army pathologist or civilian forensic pathologist.
 - c) The individual conducting the autopsy will consult with the staff of the Office of the Armed Forces Medical Examiner, AFIP, by calling:

Commercial: (202) 576-3232 / 3233 / 3234
DSN: 291-3232.
6. Assisting in obtaining results of autopsies conducted by civilian authorities.
7. Conducting detailed external examinations (to include photographs) and full body x-ray examinations. Samples of blood, urine, and other body fluids of deceased accident victims will be obtained for laboratory testing when permission for an autopsy is refused.

The Army Provost Marshal Office

The Army Provost Marshal Office (PMO) will support investigations as required. This support will include providing accident information

from DA Form 3946 (Military Police Traffic Accident Report) and daily blotters.

Installation Organizations

All installation organizations (for example, Director of Industrial Operations (DIO), and Director of Engineering and Housing (DEH)) will support accident investigations as required.

Accident Scene Preservation

A concerted effort is required by all to ensure that each group of investigators is able to collect the information and evidence required to properly conduct its investigation.

1. When the situation permits preservation of the accident scene, only those actions necessary for rescue or recovery of victims and the initial on-site investigation by MP/CID will be allowed. Whenever possible, photographs of the location of victims should be made before the victims are moved. Access will be restricted to those commanders and personnel directly involved in investigating the accident. Before the arrival of the accident investigation board at the accident site, MP/CID personnel should remove only those items of evidence which would be destroyed by time or the elements. During the on-site investigation, the safety board will be accompanied by MP/CID personnel who know the nature and location of evidence removed prior to the board's investigation. The board should also be assisted by personnel who directed the rescue operations and who can discuss damage to or movement of wreckage which occurred during the rescue operation.
2. When the situation does not permit preservation of the accident scene, MP/CID personnel will remove all items of evidence needed for their investigation. Photographs of items before they are collected will be made whenever possible. All components, wreckage, and debris that must be moved will be stored in a secure area and guarded until released by the board president. Personnel involved in the recovery operation and knowledgeable of the resulting damage to the wreckage will be available during the accident investigation board's preliminary inspection of the wreckage. The appointing authority will ensure that photos are taken and a sketch of the scene is made with sufficient detail and measurements to allow a scale drawing to be made. All wreckage, damage, and ground markings incident to the accident will be identified and photographed before measurement and cleanup of the accident scene. The sketch and photographs will be provided to the president of the board as soon as possible after his or her arrival.

3. The accident investigation board will be allowed to inspect physical evidence collected by MP/CID personnel. The board president is responsible for ensuring that no member of the board takes any action that would destroy the evidence or would compromise the legal chain of custody of those items.

Accident Scene Investigation

Procedures for accident scene investigation are contained in this manual and DA Pam 385-40.

Access to Information from Other Investigations

The accident investigation board will have access to all evidence, photographs, and witness statements collected by MP/CID investigators. The accident investigation board will also have access to all personnel and medical records of personnel involved in the accident and maintenance records on the equipment involved in the accident. If evidence is forwarded to CID laboratories for analysis, the board president will be provided a copy of the laboratory report. Whenever possible, CID personnel will advise the board president of laboratory determinations which may be received from the laboratory by telephone. The board president may determine that additional information is necessary for the investigation. When this occurs, the board president will request additional analysis by the laboratory. The results of the additional testing are considered common source factual data available for use by all investigators.

Access to Accident Investigation Board Information

1. Other Army-authorized investigators will be given access to:
 - a) Reports received pursuant to submission of equipment to Army depots for tear-down and analysis.
 - b) Command-directed fitness-for-duty examinations.
 - c) Official records on personnel and equipment involved if not available from other sources.
 - d) Photographs of the accident scene.
 - e) Witness lists (on request).
2. Other investigators will not be given access to:
 - a) Witness statements taken by board members.
 - b) Preliminary or final board findings and recommendations.
 - c) Recordings/transcripts of intra-cockpit communications.

3. For all Classes of accidents, where it is applicable, the accident investigation officer or the president of a board of officers should:
 - a) Obtain the name and unit address of the collateral investigation officer or board president.
 - b) Provide the collateral investigation officer or board president with all factual material considered in the accident investigation.

Actions When Criminal Activity is Suspected

1. If evidence of criminal activity (other than negligence, dereliction of duty, or disobedience of an order), is discovered during the initial investigation, by either MP/CID or the accident board, the board president will be notified immediately. After notification / consultation with the Commander, USASC, and the local commander, the board president will discontinue the investigation if no further need is present. If the accident investigation does continue, it will be secondary to MP or CID investigations insofar as access to witnesses, accident scene, and evidence is concerned.
2. If, during the investigation, the board discovers evidence of criminal activity (other than negligence, dereliction of duty, or disobedience of an order), the board president will provide the following to MP/CID investigators
 - a) If the evidence is physical or is a common source item, MP/CID investigators will be notified. The evidence will be surrendered to MP/CID personnel, and the board members will provide the documents necessary to establish the chain of custody.
 - b) If the evidence is based upon witness statements obtained on a promise that the information would be used within DOD only for accident prevention purposes, the board president will provide a list of personnel interviewed and copies of all common source materials. The board president will not discuss individual statements or specific comments which led to the board's suspicion of criminal activity.

Safety-of-Use / Safety-of-Flight Notification System

The findings of an accident board may identify a safety hazard or hazards which needs immediate action to prevent the recurrence of a similar accident. The board president or accident investigator would need to contact the system Program Manager (PM) and the USASC

DSN: 558-3650, ground
DSN 558-3262, air

to discuss the hazard and then complete a Category I EIR/DR to energize the Ground Safety Notification System (Safety-of-Use) or the Safety-of-Flight System. Further instructions and guidance for the Ground Safety Notification System are contained in AR 750-6; for Safety-of-Flight they are located in Chapter 6, AR 95-1.

Initial Actions

General

The safety and well being of individuals involved in an accident is the primary consideration when arriving at an accident site. Once the health and welfare of these individuals have been accommodated, initial arrival personnel shall use the **Initial Actions Checklist** for remaining site procedures. Listed below are some general guidelines for initial actions at accident sites.

1. Remain outside secured area until site photography is completed and cleared into area by board president or material factors group leader.
2. Do not move (or touch) any item (parts, pieces, controls, etc.) or disturb ground scars or marks until properly documented and until the site is released by the investigator in charge.
3. Systematically record instrument readings, control positions, switch positions, avionics equipment settings as soon as possible.
4. Systematically inventory aircraft parts / components to determine if all are accounted for.
5. Determine if engineer support is required for wreckage distribution diagram preparation.
6. Following the board's viewing of the accident site, data collection will continue as directed by the work group leaders.
7. Keep an open mind; don't speculate or draw conclusions. Gather facts and data, then analyze.
8. Utilize instrument work sheet.

Special Precautions for Composite Material Equipment

Safety Personnel

1. Safety personnel must evaluate all accidents (both air and ground) for the need to ensure that composite material will not result in endangerment to investigative personnel. Additionally, safety personnel will ensure the following:
 - a) That a Composite Material Safety Kit is issued to the Board President of an investigation team where safety from composite material is determined to be required.
 - b) That coordination is made with the activity having the accident so that on-site personnel can properly equip themselves to prevent injury.

2. **Board President:** The accident team Board President has the overall responsibility to ensure personnel are properly attired and equipped for an investigation involving composite materials. Specifically, he will:
 - a) Ensure only properly equipped board members enter the accident site area.
 - b) Ensure that recovery team support is properly attired to prevent composite material injury or illness.
3. **Individual board members:** Board members have the responsibility to ensure they use the appropriate protective equipment when subjected to fragmentation and/or burning of composite materials.

Background

Accidents involving composite materials which fragment or burn upon, or after, impact or collision may pose a significant health threat to investigation teams. Those aircraft and vehicles which contain a potentially damaging quantity of composite materials include

- a) UH-1
- b) AH-1
- c) AH-64
- d) CH-47D
- e) OH-58D
- f) RAH-66
- g) UH-60
- h) V-22
- i) HMMWV
- j) M-1 Abrams
- k) M-2 / M-3 Bradley
- l) M-9 ACE
- m) M-109 Howitzer
- n) M-113 APC

To preclude potential harm, certain actions must be taken by investigating personnel to minimize danger. This section explains those actions.

Equipment to be used by investigation teams

1. Upon the determination that a composite material hazard exists, a Composite Material Safety Kit will be issued and will contain the following:

- a) Two NIOSH approved respirators (full face, dual filter) to be used when fire has consumed composite materials or fragmentation exists.
 - b) Tyvek Disposable Coveralls (two sets for each investigator). These will be used when a fire has involved composite materials.
 - c) Four sets of leather gloves to be used whenever fire has occurred or fragmentation is present.
 - d) Four sets of rubber surgical gloves to be used as inserts to the leather gloves.
 - e) Copy of USASC information packet "Composite Accident Investigations.
2. With the exception of the respirators, all equipment must be discarded after use to prevent potential subsequent injury.

Evaluation criteria for issue of Composite Material Safety Kit

In evaluating an accident where composite material is involved, the following must be considered:

- a) Fire
- b) Fragmentation

If either of the above are involved, then a Composite Material Safety Kit must be issued.

Proper equipment use

To ensure that all personnel are adequately protected, the following guidelines must be adhered to:

1. **Burning aircraft or ground vehicles / equipment** Only emergency rescue personnel or fire fighters should be in the immediate vicinity of the accident site during the burning and smoldering phases.
2. **Previously burned composite materials (fire extinguished, no smoldering):** All protective equipment, to include respirators, coveralls, and leather gloves with inserts, will be worn at the accident site.
3. **Fragmented composite materials (no fire involved):** Leather gloves, with inserts, are to be worn as a minimum. However, if composite materials are to be moved, then coveralls and respirators will also be worn.

On-site procedures

These are procedures designed to minimize the dangers of composite material fragmentation to personnel in the vicinity of the accident site.

1. **Security:** The accident site must be cordoned off with a single entry and exit point. All unauthorized personnel must be restricted from the accident site and personnel should avoid downwind locations.
2. **Post-accident fire:** Once the fire has been extinguished, the wreckage cooled, and no smoke exists, the composite materials must be sprayed with a fixate. A fixate is similar to an acrylic floor wax which can be locally purchased or commercially procured. Alternatively, polyacrylic acid (B. F. Goodrich XL-II) can be used. Either product is satisfactory and must be sprayed on the entire area consumed by fire. By doing this, the composite material fragments are held in place.
3. Prior to shipment of composite materials, ensure they are heavily wrapped in plastic.
4. All personnel must shower in cool water as soon as reasonably possible after working with burned composite materials.
5. All equipment (except the respirators) must be discarded as hazard waste material after use (see installation industrial hygienist for correct method of destruction). Respirators will be serviced by the safety officer upon completion of the safety investigation.

Initial Arrival Checklist

Initial On-site Action

- Secure Accident Site.
- Witness information:
 - Name
 - Telephone number
 - Summary statements
- Photographs

Notify Appropriate Personnel

- Notify command / USASC using the DA Form 2397-SMS-TAN-R

Additional On-site Actions (Ensure completed)

- Oil / Fuel / Hydraulic Samples
 - Oil analysis records and samples.
 - Fuel analysis records and samples.
- Survey of mishap site / wreckage (wreckage diagram).

Additional Items to Complete (Ensure completed)

- Medical Tests
 - Blood & urine samples. (*within 2 hours if possible*)
 - Tissue samples.
 - Lactic acid (*fatalities only*)
- Aircraft Recovery Team.
- Weather observation at time of mishap.
- Estimated cost of damage (ECOD).

Information to Gather and Secure

- Mishap Flight Data
 - Flight plan or log.
 - Weight and Balance

- Weather Reports
- ATC tapes if applicable.
- PPC
- Briefing forms / data
- Aircraft Records
 - Aircraft Logbook
 - Aircraft Weight and Balance File
 - Aircraft 6 - month file
 - Aircraft Historical Records
 - Inventory of Aircraft
- Crew Members
 - Individual flight records
 - Individual Maintenance / technical manual records
 - Individual personnel record(s)
 - Individual medical records / autopsy results
- Organization and parent organizations SOPs to include:
 - Training.
 - Safety.
 - Maintenance.
 - Quality Control
 - Pre-Accident Plan
 - Crew endurance
 - Crew selection.
- Directives / policy letters / supplements to regulations that pertain to:
 - That particular operation.
 - Assignment of tasks / missions.
 - US Army Flight Regulations.
 - Training manuals.
- Safety meeting minutes / council meeting minutes (if applicable)
- 1:50,000 map which includes location of accident site.

Information to Gather and Secure (continued)

- 10 Operators Manual
- Checklist.
- Maintenance / technical manual
- Parts "P" Manual
- Monthly maintenance report
- Operations information.

Notification of Army Accidents or Incidents

Persons involved in, or aware of, an accident will report it immediately to the commander or supervisor directly responsible for the operation, materiel, or person(s) involved.

Commander's Responsibility

The commander who first becomes aware of any Class A or B Army accident or Class C Army aviation (flight, flight related, or aircraft ground) accident will, through their existing chain-of-command, immediately notify:

1. The immediate commander of all personnel involved.
2. Commander, USASC by telephone
3. DSN: 558-2660 / 3410
4. Commercial: (205) 255-2660 / 3410
 - a) Ground accidents. At a minimum, notification will include the information on DA Form 7305-R, Worksheet for Telephonic Notification of Ground Accident (This form will be locally reproduced on 8-1/2 X 11-inch paper. A copy for reproduction purposes is located at the back of this regulation.).
 - b) Aviation accidents. At a minimum, notification will include the information on DA Form 7306-R Worksheet for Telephonic Notification of Aviation Accident (This form will be locally reproduced on 8-1/2 X 11-inch paper. A copy for reproduction purposes is located at the back of this regulation.).
5. Immediate telephonic notification of accidents will be followed by CAI or Installation-level Accident Investigation (IAI) completion of DA Form 285 or DA 2397-R-series forms for Class A and B accidents and DA Form 2397-AB-R for Class C aviation accidents per this regulation.

Additional Responsibility

1. If Safety-of-Use and Ground Precautionary Message information is identified, notify USASC immediately by telephone or other means. Instruction and guidance for Safety-of-Use and Ground Precautionary Messages can be found in AR 750-6.
2. DA Forms 285-AB-R will be submitted for all ground Class C and D accidents within 30 calendar days of accident occurrence. No follow-up is required unless new information is discovered which

relates to Safety-of-Use, changes the accident classification, or there are significant changes in the information already submitted.

Aviation Class D Accidents and Class E / FOD Incidents

1. If Safety-of-Flight information is identified, notify USASC immediately by telephone or other means.
2. DA Forms 2397-AB-R will be submitted for all aviation Class D accidents and Class E and FOD incidents within 10 calendar days of the accident/incident occurrence. No follow-up is required unless new information is discovered which relates to Safety-of-Flight, changes the accident classification, or there are significant changes in the information already submitted.

Accidents Occurring in Combat

Notification and reporting procedures for Class A and B accidents will be per other sections of this regulation unless the senior tactical commander determines that the situation, conditions and/or time does not permit normal investigation and reporting. Notification and reporting procedures for Class C and D accidents and Class E and FOD incidents will be per other sections of this regulation. The only exception is that time for submission of DA Form 285-AB-R for ground Class C and D accidents is extended to within 30 calendar days of the accident occurrence.

1. Authority to waive normal investigation and reporting procedures for Class A and B accidents is delegated to the senior tactical commander at the level determined appropriate by the MACOM, Theater Army, or equivalent level. Whenever possible, normal investigations should be conducted on all accidents with potential Army wide impact (for example, materiel failure accidents). In cases in which normal investigation and reporting will not be performed, DA Form 285-AB-R or DA Form 2397-AB-R will identify that fact and the name and rank of the official who authorized the waiver.
2. Notification will be immediate and by radio-teletype message (via Defense Data Network (DDN) or telephone to the USASC designated contact (USASC Forward or Rear). The notification will include as much of the information required by the telephonic worksheet as can be determined.
3. A completed DA Form 285-AB-R or DA Form 2397-AB-R must be submitted as soon as conditions permit, not later than within 30 calendar days, and will serve as the official accident report. No follow-up DA Form 285 or DA Form 2397-R-series is required.

4. USASC Accident Investigation Teams deployed into a combat zone for Army accident investigation purposes will be attached (for all administrative and logistical support) to the highest level of Army command having responsibility for theater.

Table 1

AVIATION ACCIDENTS Notification & Reporting Requirements & Suspense					
Accident Class	Peacetime			Combat*	
	Notification	Reporting		Notification	Reporting
	Telephonic Worksheet	DA Form 2397	AAA Report	Telephonic Worksheet	AAA Report
A	Immediate - To USASC (telephonic notification - no hardcopy required)	(CAI / IAI) 90 Calendar days	Aircraft ground accidents only - 30 days	Same as peacetime to USASC or safety rep.	(Only when commander determines DA Form 2397 investigation / report not feasible) submit as soon as conditions permit, not to exceed 30 days
B	Immediate - To USASC (telephonic notification - no hardcopy required)	(CAI / IAI) 90 Calendar days	Aircraft ground accidents only - 30 calendar days	Same as peacetime to USASC or safety rep.	(Only when commander determines DA Form 2397 investigation / report not feasible) submit as soon as conditions permit, not to exceed 30 days
C	Immediate - To USASC (telephonic notification - no hardcopy required)	N/A	30 calendar days	Same as peacetime to USASC or safety rep.	Same as peacetime
D	N/A (unless SOF issue)	N/A	10 calendar days	Same as peacetime	Same as peacetime
E	N/A (unless SOF issue)	N/A	10 calendar days	Same as peacetime	Same as peacetime
F	N/A (unless SOF issue)	N/A	10 calendar days	Same as peacetime	Same as peacetime
Submission Methods	Class A-C Telephonic (Immediate) Class D, E, F - if SOF	Mail	Typed or hand printed AAA reports by mail, fax, or message format.	Same as peacetime	Same as peacetime
* Only when the senior commander determines that the situation, conditions, and / or time does not permit normal peacetime investigating and reporting					

Table 2

GROUND ACCIDENTS Notification & Reporting Requirements & Suspense*					
Accident Class	Peacetime			Combat²	
	Telephonic Worksheet	AGAR	DA Form 285	Telephonic Worksheet	AGAR
A	Immediately ¹	Not Required	IAI / CAI - 90 days	Immediately ¹	As Time permits (not to exceed 30 days)
B	Immediately ¹	Not Required	IAI / CAI - 90 days	Immediately ¹	As Time permits (not to exceed 30 days)
C	Not Required	Within 30 days	Not Required	Not Required	As Time permits (not to exceed 30 days)
D	Not Required	Within 30 days	Not Required	Not Required	As Time permits (not to exceed 30 days)
<i>Off Duty</i>					
A	Immediately ¹	Not Required	Not Required	Immediately ¹	As Time permits (not to exceed 30 days)
B	Immediately ¹	Not Required	Not Required	Immediately ¹	As Time permits (not to exceed 30 days)
C	Not Required	Within 30 days	Not Required	Not Required	As Time permits (not to exceed 30 days)
D	Not Required	Within 30 days	Not Required	Not Required	As Time permits (not to exceed 30 days)
Note:	1. USASC must be notified immediately by phone: DSN 558-2660 / 2539 / 3410. 2. Only when the senior commander determines that the situation, conditions, and / or time does not permit normal peacetime investigating and reporting. * Army civilian injury only accidents should be reported on appropriate Department of Labor forms.				

Wreckage Distribution Diagrams

The wreckage diagram details the location of all the pieces of wreckage found at an accident site. Additionally, the wreckage diagram catalogs witness location, ground scars, and direction of travel / flight path of the equipment involved in the accident. This information is drawn to scale using a graph ruled format. When possible, use DA Form 2397-5-R to record the wreckage diagram.

Orient the flight path / direction of travel (at instant of initial impact) along the horizontal or vertical axis of the grid and show direction of true north, oriented to the top of the page, with an arrow. This procedure eases the task of locating the equipment component(s) laterally and longitudinally along the crash path. A suggested scale of 40 feet per inch is recommended. Actual scale used is to be recorded. Show wind direction with an arrow pointed in the direction of the wind flow. Identify wind direction in degrees and velocity in knots.

Record the following information to scale on a grid ruled format:

- a. Location of all major and significant equipment components.
- b. Obstacles struck by equipment in crash sequence; i.e., structures, trees, power lines, etc.
- c. Terrain marks made by the equipment in crash sequence; i.e., earth gouge length, width, and depth, snow or earth pushed in front of aircraft, etc.
- d. A profile view of the wreckage distribution, especially if the impact occurs on sloped terrain or on obstacles in the accident path.
- e. If necessary, use more than one form to show the profile view of the crash sequence. (*For aircraft accidents, this is especially important if the initial impact occurs on a tall tree or power line where a large vertical axis is needed.*)
- f. For midair collisions or multiple vehicular collisions, construct a composite diagram (wreckage distribution of both pieces of equipment superimposed on the same plot).
- g. For a widely scattered wreckage distribution, use a larger grid sheet if needed, and attach to DA Form 2397-5-R.
- h. If the equipment rolls over or noses over one or more times along the crash path, so indicate by use of curved arrows.
- i. Identify initial, major, and secondary impact points, as applicable.
- j. Show location of key witnesses.
- k. Show location of personnel thrown or ejected from the aircraft.

Note: A polar diagram is another acceptable method of diagramming accident sites. The top of the diagram can represent north. A readily identifiable portion of the wreckage e.g., structure, fuselage, nose, wing, etc. can serve as a point of origin or pole for the diagram. Choose a scale that will allow plotting of the whole accident scene. Determine the compass heading of the equipment at its final resting place and position of the equipment on the diagram so debris can be plotted from that point. Determine the compass heading and distance of pieces of wreckage from the main body of the wreckage. Number the location of each piece of wreckage at the position it was found relative to the main wreckage. Define the numbers with a legend that identifies each piece of wreckage and shows its direction and distance from the main wreckage.

Photographing the Accident Scene

Photographic prints, slides, video images, and / or digital images shall be used to record the conditions at the accident site. If an installation photographer is provided, he should be supervised by the accident investigator in charge of photographs. Remember, it is always better to have too many photos rather than not enough.

Use the photographic checklist below to track the required photographs:

Table 3

Photos Needed		Ground	Air
<input type="checkbox"/>	Aerial view from four directions (N, S, E, W).	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Ground view from four directions (N, S, E, W).	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	General overview of wreckage. Begin at nose and circle clockwise taking a photograph every 45°	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Photos of any ground scars.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Photos of major components.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Instrument panels and consoles.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Cockpit / cabin / cab areas.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Canopy / ejection seat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Detailed photos of suspected failed parts.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Other photos deemed necessary.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Gathering Data

Human Factor Data

The human factors investigation work group is responsible for the identification of human factors data which relates to the accident sequence or accident personnel. The work group is normally composed of at least two people, the work group leader and an instructor pilot. The work group should also contain a flight surgeon if available. The first order of business for the work group leader is to review the work to be completed and to make general assignments of duties. The following duties are suggested assignments at the discretion of the group leader.

Responsibilities

Work Group Leader. Conduct witness interviews.

1. Complete DA Form 2397-3-R, Human Factors Investigation Narrative.
2. Edit witness statements, but retain critical information.
3. Collect supporting documents as necessary.
4. Ensure human factors materials are turned in to the recorder.
5. Evaluate Training failures.
6. Evaluate Leader failures.
7. Evaluate Standards failures.
8. Evaluate Design failures.
9. Evaluate Individual failures.

Instructor Pilot

Conduct the investigation and data collection in terms of operations and training pertinent to the accident personnel. Normally performs the following actions:

1. Review individual flight records.
2. Review crew training records.
3. Complete the crew information sheet.
4. Review organization and higher SOPs as they apply to this accident.
5. Review the following for possible accident involvement:
 - a) Crew rest policy.

- b) Crew selection.
 - c) Crew coordination.
 - d) Briefing / back-briefing.
 - e) Weather and weather briefing.
 - f) Flight plan.
 - g) Preflight planning.
 - h) Urgency of mission.
 - i) Pre-accident plan.
6. Complete DA Form 2397-8-R on all crewmembers plus all others definitely contributing or suspected of contributing.
 7. Conduct post-accident evaluation checkride.
 8. Compute an aircraft weight and balance form (DA Form 365-4) and the performance planning card (PPC) data for the mission aircraft.

Flight Surgeon

Conduct that portion of the investigation pertaining to the medical aspects of the human factors investigation, which will normally include the following:

1. Blood / urine analysis sample.
2. Review medical / dental records for significant entries.
3. Assist in or observe any autopsy, if possible.
4. Conduct post-accident, medical / psycho-physiological examination as necessary.
5. Review use and effects of survival / life support equipment.
6. Document survival equipment problems.
7. Review MEDEVAC actions or problems.

Witness Interviews

Enter general occupation of the witness and duty being performed at time of the incident.

Enter date(s) statement(s) was/were made.

Summarize aviation experience and background; e.g., “aviator 10 years. Total flight hours 3,500 (RW 3,000; FW 500).” Indicate FAA ratings and approximate flight hours for nonmilitary pilot witnesses. Indicate duty descriptions and approximate total flight hours for non-aviator crewmembers drawing incentive pay.

Enter location of witness at the time of the incident relative to flight path/impact of aircraft.

Enter name of person in charge of interview. If witness is interviewed by different person in charge on separate occasions, list all interviewers in charge and prefix each name with “1st,” “2d,” “3d,” etc., to designate which interview session the interviewer conducted.

Complete the summary of interview block as follows:

- a. *Multiple interviews, same witness* Prefix the summary of each interview with the date and indicate if the statement is the 1st, 2nd, 3rd, etc.
- b. *Comprehensiveness* As a general rule, the interview summaries of persons occupying crew stations aboard the aircraft during the incident should be summarized in greater detail than the statements of others. This is because the crewmembers are the best source of information pertaining to the incident chronology of events. The chronology for the “history of flight,” DA Form 2397-2, will most often be obtained from the crew and should be used as a guide in determining what elements of information to include in the interview summaries. If crew error appears to be involved in the incident, the mistake / error s and control failure(s) listed in the instructions for completing the DA Form 2397-1 are useful for determining what should be addressed in the crewmember witness summaries.
- c. *Consolidating.* When several witnesses, other than crewmembers, provide essentially the same observations, it is not necessary to prepare a separate DA Form 2397-3 for each witness except for statements made with a promise of confidentiality. List the names of the witnesses and summarize their collective observations.
- d. *Format.* The proper format is a concise summary of information elements. An example is as follows: “This witness was occupying a passenger seat (identify location in passenger compartment) in the aircraft at the time of the incident. His account of the incident essentially agreed with the “history of flight” portion of DA Form 2397-2. Additionally, he heard a grinding noise in the area of the aircraft’s transmission and felt a high frequency vibration where his boots contacted the floor of the airframe in the passenger’s compartment”. In cases where such is essential, limited direct quotes of a witness (together with the specific questions they are in response to) may be used. This, again, should be done sparingly and only when necessary. It is important that the statement be the investigator’s summarization and not an exact verbatim transcript of what the witness said. The summary should be written in the

third person (“the witness said,” “he said”), and not the first person (“I saw,” “I heard”).

Human Factors Work Group -- Leader Checklist

The human factors work group leader will ensure that the following checks are completed and appropriate comments turned into the board president prior to deliberations.

- 1. Personnel background information
- 2. Personnel management
- 3. Aircraft suitability
- 4. Communications / air traffic services
- 5. Navigational aids
- 6. Meteorological information
- 7. Ground support services
- 8. Crashworthiness
- 9. Personnel egress
- 10. Special investigation
- 11. Witness investigation

This checklist is intended to ensure that minimal information is obtained to complete DA Form 2397-3-R, Narrative, in accordance with DA Pam 385-40.

The human factors work group leader will ensure that the following checks are completed and appropriate comments are turned into the board president prior to deliberations.

Human Factors Worksheet

Preflight Phase

Crew Rest Deficiencies	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Crew Selection Adequate	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Adequate Weather Brief	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Adequate Mission Brief	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Adequate light Plan	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Adequate PPC	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Urgency of Mission	<input type="checkbox"/> Normal <input type="checkbox"/> Abnormal <input type="checkbox"/> See Comments
Adequate Aircraft Preflight	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Comments	

Flight Phase

Adequate Performance Check	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Errors Committed by Pilot	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Errors Committed by Copilot	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Errors Committed by ATC	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Errors Committed by Tower	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Errors Committed by Support	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Errors Committed by Others	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Comments	

Post-Accident Phase

Egress Problems	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Survival Equipment Problems	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Medevac Problems	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Adequate Crash Plan	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Post-accident Evaluation	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments

Crashworthiness by Design	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Design Errors	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Comments	

SOP Review

Discrepancies	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Comments	

Flight Records Review

Discrepancies	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Comments	

Maintenance / technical manual Review

Discrepancies	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Comments	

Medical Records Review

Waivers	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Abnormalities	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Comments	

Crew Information

Name		Grade		SSN	
Height <i>(inches)</i>		Weight		Birth date	
Security Clearance					
Duty During Accident		Organization			
Service / Agency					
Date Rated in Aircraft					
Date of most recent flight this aircraft series <i>(Prior to accident date)</i>					
Duration of most recent flight this aircraft series <i>(Prior to accident date)</i>					Hrs Minutes
Date of last standardization flight this aircraft series <i>(Prior to accident date)</i>					
Date last leave ended.					
Leave Type		Number Days			
Hours Flown Past 24 Hours					
Hours Flown Past 48 Hours					
Hours Flown Past 72 Hours					
Hours Worked Past 24 Hours					
Hours Worked Past 48 Hours					
Hours Slept Past 24 Hours					
Hours Slept Past 48 Hours					
Hours Slept Past 72 Hours					
Hours Continuously Awake Prior to Accident					
Hours of Last Sleep Period					
Date of Last Physical Exam					
Do you smoke tobacco?	<input type="checkbox"/> Yes <input type="checkbox"/> No				
If yes, how much per day			Cigarettes / Day	Cigars / Day	
Total Flight Time Prior to Last Flight					

Instrument Qualification Date					
Years Education					
Physiological Training		<input type="checkbox"/> Altitude <input type="checkbox"/> Survival <input type="checkbox"/> Overwater <input type="checkbox"/> Other			
Number and Date of Previous Accidents					
Local Address					
Telephone Number					
Helmet Type		Visor Clear or Tinted		Up or Down	
Glasses	<input type="checkbox"/> Regular -- Clear <input type="checkbox"/> Regular -- Tinted <input type="checkbox"/> Prescription -- Clear <input type="checkbox"/> Prescription -- Tinted <input type="checkbox"/> Required <input type="checkbox"/> Worn				
Underwear	<input type="checkbox"/> Cotton <input type="checkbox"/> Wool	Socks	<input type="checkbox"/> Cotton <input type="checkbox"/> Wool	Jacket	<input type="checkbox"/> Nylon <input type="checkbox"/> Nomex
Did the shoulder harness inertial reel lock?				<input type="checkbox"/> Yes <input type="checkbox"/> No	
Where were you located in the aircraft?					
Order of exit (<i>first, second, third, etc</i>)					
Aircraft qualified in when assigned					
Aircraft since assignment					
Major duties at the time of the accident.					
Percent of time spent on duties.					

Material Factors Investigation

The material factors investigation work group is responsible for the identification of material factors data which relates to the accident sequence or accident equipment / material. The work group is normally composed of one or two people, the work group leader and a mechanic / maintenance technician. The first order of business for the work group leader is to review the work to be completed and to make general assignments of duties.

Material Factors Work Group -- Leaders Checklist

The material factors work group leader will ensure that the following checks are completed and appropriate comments turned into the board president prior to deliberations.

Aircraft airworthiness

- 1. Inventory all major systems / components assigned to aircraft.
- 2. Inventory material issued to crewmember for mission.
- 3. Were all material systems in operating condition as indicated by records checks?
- 4. Dates of last maintenance / inspection on material systems specific to aircraft and crewmembers.
- 5. Any indication of chronic malfunctions of systems as evidenced by maintenance records.
- 6. Types and reasons for last maintenance actions.

Materiel systems normal flight operations

- 1. Material discrepancies noted during preflight. Returned to operating control? If not, other systems affected or limitations on mission by this discrepancy.
- 2. Any caution of advisory indications noted during flight operations. Action taken to correct or disable.

Airframe (Includes landing gear, flight controls)

- 1. Is airframe intact?
- 2. If not intact, where is the failure?
- 3. Did failure occur in the air?
- 4. Did failure occur at impact?
- 5. Was the failure a contributing factor in the accident (initial)?
- 6. Was the failure a result of another failure (secondary)?
- 7. Was the aircraft carrying an internal load? If yes, what type?
- 8. Was load properly placed and secured?
- 9. Was aircraft within CG and gross weight limits?
- 10. Is there evidence of other than ground impact?
- 11. Have measures been taken to ensure that both sides of a fracture have been completely examined?
- 12. Are all parts present? If not, has a search been initiated to find them?
- 13. Is a metallurgical analysis necessary?

14. What was position of following (as applicable) at time of accident?
- Gear _____ gear indicator _____
- Flaps _____ flap indicator _____
15. The following items should be checked for breakage, misalignment, and/or jammed parts of control linkages?
- a. All control surfaces.
 - b. Hinges, bell cranks, "push-pull" tubes, cables, pulleys, balances, and tab mechanisms.
 - c. Rotor head and quadrant assemblies.
 - d. Linear actuators and bungle assemblies.
 - e. Hydraulic servos/actuators.
 - f. Magnetic stop organizations and hydraulic accumulators.
 - g. Transmission and drive shafts.
 - h. Rotor blade pitch change links.
16. Is it probable that failure of any parts resulted from improper design wear neglect impact
17. Were there external appendages? If so, could they have possibly adversely affected flight characteristics?
18. Has complete control system been traced and carefully inspected for evidence of separation and / or bending? If evidence exists, determine if it was caused prior to or because of impact forces.
19. Check all control surfaces for proper installation and attachment.
20. Check and record surface travel for the following components:
- | | |
|-------------------|--------------------------------|
| rudder _____ | cyclic control _____ |
| elevator _____ | collective pitch control _____ |
| aileron _____ | anti-torque rotor _____ |
| anti-torque _____ | rotor pedals _____ |
21. Determine if aircraft was subjected to extreme gusts while moored without proper control locks installed.
22. Determine, if possible, whether aircraft was subjected to high aerodynamic forces caused by violent flight maneuvers or in-flight turbulence.
23. Has aircraft recently been operated from rough unimproved fields?
24. Have other abnormal forces been applied to the landing gear or skids?
25. Is there evidence of repeated abnormal contact of control surfaces against their stops

and/or evidence of hard landing?

26. Has aircraft been operated extensively in tropics or near salt water?

Ejection seats.

1. If occupant did not eject, determine, if possible, if ejection was attempted.
2. Is ejection seat in safe condition? If it has not been fired, have it disarmed by qualified personnel prior to moving.
3. Is seat to primary charge in normal position?
4. What is position of upper and lower firing handles?
5. Check for position of the trip rods.
6. Determine, when possible, if the seat fired from impact forces or from being activated by the occupant.
7. If ejection accomplished successfully, determine the following: means of escape, upper, or lower handle.

Was canopy released prior to ejection? _____

Aircraft speed at ejection. _____

8. If fire consumed an electrical component, obtain a complete story of the condition existing before and at time of failure.
9. If faulty wiring is a factor, check terminal connectors, routing, clamping, chafing, deterioration, etc.
10. Was suspected system protected by a circuit breaker or fuse.
11. Check rotating electrically operated equipment to determine if operating at impact.

Communication, instrument, and electrical systems.

1. Determine and record the settings of pertinent switches, dials, and controls and note installation and location of antennas.
2. Determine if crewmembers, crash rescue personnel, or early arrivals at the scene moved any of the controls, installation, or switches.
3. Check maintenance forms and obtain assistance of communications or electronics experts as necessary.
4. Check reliability of radios, electronic equipment, and use of other navigational aids.
5. Determine, if possible, navigational aids used.
6. If necessary, carefully inspect both engine and navigational instruments and record the readings.
7. Check maintenance history, accuracy, and possible inadvertent misuse of suspected engine and navigational instruments.

- 8. Photograph instrument panel for later use.
- 9. If necessary, utilize ultraviolet light on instrument face to establish needle position at impact. (Ultraviolet light may also be used to read burned aircraft records.)

Engine / Power-plant.

- 1. Were propellers bent upon impact? Forward or backwards?
- 2. Check and record propeller blade angle settings.
- 3. Check propeller hub and teeth of blade segment gears and master drive gear for indentations. Compare worked teeth with an undamaged gear to identify blade angles at impact.
- 4. Check propeller marks on ground or other objects.
- 5. Check any objects for possible rotor blade contact prior to impact.
- 6. Preserve and pay particular attention to ground scars made by main rotor or tail rotor.
- 7. Compare blade strikes on fuselage with section of main rotor or tail rotor that made contact.
- 8. Check attaching areas of main rotor blade for: continuity fatigue failure proper security of all fittings
- 9. Check power train for torsional twisting.
- 10. Are all major pieces of main and tail rotor blades accounted for?
- 11. Has every effort been made to determine the cause of engine failure while at the accident scene?
- 12. Determine engine components, if any, to be sent to CCAD / OEM for analysis. Monitor closely.
- 13. Engine examined in the field, obtain the following:
 - a. Serial number
 - b. Manufacturer, type, and model _____
 - c. Pertinent information from flight _____
- 14. When engine examined in the field, accomplish the following:
 - a. Locate all accessories and components pertinent to engine operations.
 - b. Check position of primary and secondary controls to determine the position of the various valves controlling the flow of fuel to the engine, including the primer.
 - c. Obtain pertinent engine operation data prior to the accident.
 - d. Determine duration of flight before accident to determine if fuel exhaustion may be involved.
 - e. Obtain information from witnesses about engine operations such as smoke, fire

explosion, or unusual noise.

- f. If fire was a factor, was it located in the fuselage or nacelle position of the aircraft?
- g. Check the system for leaks or obstructions from fuel tanks to combustion chamber.
- h. Check fluid carrying lines for improper installation or signs of malfunction.
- i. Check oil strainer and sump for foreign particles.
- j. Check the ignition system to include magnetos, switches, spark plugs, and leads.

Materiel / Systems (rotors or propellers).

- 1. Collect and inventory; reconstruct the whole assembly if possible.
- 2. Examine damage / scarring to determine if systems were turning at impact and if power was applied at impact.
- 3. Examine all linkage from cockpit controls to systems for continuity/disconnect, all bearing assemblies and / or blade grips for failure prior to impact.
- 4. Check for serial numbers of blades / propellers against historical records.

Transmission / Gearboxes

- 1. Determine if CCAD / OEM teardown is necessary.
- 2. Determine if any damage was the result of or was a cause factor in the accident.
- 3. Check witnesses to determine if operating properly; i.e., grinding noises, smoking, etc.
- 4. If a factor, check all linkages and connectors for breakage, etc.
- 5. Check for oil. Take sample.
- 6. Check sumps, extensions, mounting, gears, vents, etc.
- 7. Check chip detectors for chips.
- 8. Check for heat discoloration.
- 9. Check cases for cracks or distortion.
- 10. Check control linkage or cables for continuity.

Material Factors Worksheets

Material Inspection

Failure or Malfunction	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Design Errors	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Comments	

Maintenance SOP Review

Adequate	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Followed	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Comments	

Weight and Balance Records Review

Discrepancies	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Comments	

Maintenance Records Review (Current & Six Month)

Discrepancies	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Comments	

Historical Records Review

Discrepancies	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Serial Numbers Check	<input type="checkbox"/> Errors <input type="checkbox"/> No Errors <input type="checkbox"/> See Comments
Comments	

POL Analysis

Discrepancies	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Comments
Comments	

Instrument and Controls Setting Worksheet

Flight Controls

ITEM	POSITION / SETTING	REMARKS
Cyclic / Yoke		
Throttle / Quadrant		
Collective		
Flaps		
Landing Gear		

Flight Instruments:

ITEM	POSITION / SETTING	REMARKS
Airspeed		
Vertical Speed		
RMI		
Magnetic Compass		
Altimeter (Altitude)		
Altimeter (Kolsman Window)		

Engine Instruments (List)

ITEM	POSITION / SETTING	REMARKS
1.		
2.		
3.		
4.		
5.		

Avionics (Navigation)

ITEM	POSITION / SETTING	REMARKS
ADF #1		
ADF #2		
Marker Beacon		

VOR / ILS		
GPS		

Avionics (Communications)

ITEM	POSITION / SETTING	REMARKS
VHF #1		
VHF #2		
UHF #1		
UHF #2		
FM #1		
FM #2		

Avionics (Miscellaneous)

ITEM	POSITION / SETTING	REMARKS
Radar Altimeter		
Autopilot		
Other		
Other		

Miscellaneous (i.e., Switches)

ITEM	POSITION / SETTING	REMARKS
Fuel Switch		
External Lights		
Internal Lights		
Other		
Other		

Analyzing and Reporting Data

Accident Causes

Once information related to an accident is gathered, it must be analyzed. The information gathered from accident investigations is of little use unless it is properly analyzed. The analysis of this data will indicate root cause systemic defects. When analyzing this data it should be categorized into one of four categories;

1. Found; Primary Cause of Mishap
2. Found; Contributing to Mishap
3. Found; Increasing Severity of Damage / Injuries
4. Found; Not Contributing but if left uncorrected could cause an accident in the future

When analyzing this data it is important to understand what causes accidents. As previously stated, accidents are caused by uncontrolled hazards. The controls are either inadequate, known and not enforced, or not known. It may be relatively easy to identify errors, but the control failure(s) / systemic defect(s) is / are the real issue and often the most difficult to determine.

There are five mechanisms through which we control hazards. These are leader, training, standards, support / engineering, and individual. If a mechanism for controlling a hazard is not properly addressed, then an accident could occur. Through the hazard identification process used by the Safety Management System, control mechanism failures, and the reason for failure, are identified. The following is a detailed listing of the five control mechanisms and the reasons these controls fail.

Standards Failure

Inadequate written standards

Inadequate written standards become the root causes when they lead to accident-causing mistakes or materiel failure / malfunctions.

Support Failure

Inadequate facilities or services

Inadequate facilities or services become root causes when the maintenance, space and/or support provided for personnel and materiel to accomplish their functions cause mistakes or failures / malfunctions that lead to accidents. (Examples of facilities or services are recreation areas, POL services, housing, medical clinics / hospitals, weather services, storage areas, maintenance facilities, and property disposal).

Inadequate or improper equipment design or equipment not provided

Improperly designed equipment and materiel or lack of equipment or materiel become root causes when the design or lack of equipment leads to accident-causing personnel errors or materiel failures / malfunctions.

Insufficient number or type of personnel

Insufficient number or type of personnel becomes a root cause when people make accident-causing mistakes or materiel fails / malfunctions because the number or type of personnel provided was insufficient.

Inadequate quality control, manufacture, packaging, or assembly

The inadequate manufacture, assembly, packaging, or quality control of materiel becomes a root cause when it leads to accident-causing personnel errors or materiel failures / malfunctions. (Note: Includes original manufacture and rebuild).

Inadequate maintenance

Inadequate maintenance (inspection, installation, troubleshooting, record keeping, etc.) becomes a root cause when it leads to accident-causing personnel errors or materiel failures/malfunctions.

Training Failure

Inadequate school training

School training becomes a root cause when people make accident causing mistakes because the school training was inadequate in content or amount.

Inadequate organization/on-the-job training

Organizational or on-the-job training becomes a root cause when people make accident-causing mistakes because the training provided was inadequate in content or amount.

Inadequate experience

Supervised on-the-job experience is the follow-up to school and organization training programs. Experience becomes a root cause when people make accident-causing mistakes because the experience provided was inadequate in content or amount.

Habit interference

Habit interference becomes a root cause when a person makes an accident-causing error because task performance was interfered with the way he usually performs similar tasks.

Leader Failure

Inadequate or improper supervision by higher command

Lack of supervision by battalion or higher command regarding individual or collective tasks.

Inadequate or improper supervision by management staff.

Lack of supervision by company command regarding individual or collective tasks.

Inadequate or improper supervision by departmental managers

Lack of supervision by platoon level leadership regarding individual or collective tasks.

Inadequate or improper supervision by direct supervisor

Lack of supervision by immediate supervisor regarding individual or collective tasks.

Note: Inadequate supervision becomes a root cause when it leads to accident-causing personnel mistakes or material failure/malfunctions. Inadequate supervision is more clearly identifiable at the immediate supervisor level.

Individual Failure

Fear, Excitement, or Anger (inadequate composure)

Each person is a part of the system. Therefore, his state of mind is a system element. Inadequate composure is a temporary state of mind that becomes a root cause when a person makes an accident-causing error because of fear, excitement, or some related emotional factor made clear, rational thought impossible.

Overconfidence or complacency in abilities

Overconfidence is a temporary state of mind that becomes a root cause when an accident is caused by a person's unwarranted reliance on: his own ability to perform a task, the ability of someone else to perform a task, the performance capabilities of equipment or other materiel.

Lack of confidence

Lack of confidence is a temporary state of mind that becomes a root cause when an accident is caused by a person's unwarranted lack of reliance on: his own ability to perform the task, the ability of someone else to perform the task, the performance capabilities of equipment or other materiel.

Haste or Attitude (poor motivation)

Haste or attitude (poor motivation) is a temporary state of mind that becomes a root cause when a person makes an accident-causing mistake because he or she is in a hurry (haste), or has a poor or bad attitude.

Fatigue (self-induced)

Fatigue is a temporary physical and / or mental state that becomes a root cause when a person makes an accident-causing error because of reduced physical or mental capabilities resulting from previous activity and / or lack of rest.

Effects of alcohol, drugs, illness

The temporary effects of alcohol, drugs, or illness become a root cause when a person makes an accident-causing error because of reduced physical or mental capabilities resulting from one or more of these effects.

Environmental conditions

Unknown or unavoidable conditions, which result in materiel failure or induce human error.

Developing the Analysis Paragraph

The analysis paragraph should summarize the first three paragraphs of the narrative to include the opinions and conclusions of the board and must conclusively show the cause and effect relationship of the evidence gathered during the incident investigation. The analysis should also discuss those potential factors considered but not supported or determined not to be factors by investigation board. The analysis discusses the influence of command activity or lack thereof in the occurrence or potential prevention of incidents. Subparagraph headings in the analysis may coincide with pertinent subparagraphs in the first three sections of the narrative, with the exception of command influence, which is reserved for the analysis paragraph only. As a

minimum, the analysis part of the narrative will provide the following information:

- a. Identify the Human errors, materiel failures, or environmental factors involved in the incident in the context of the incident sequence of events.
- b. Discuss the results/effects of the errors/materiel failures/environmental factors.
- c. Identify the control failure(s) that caused or permitted the errors/materiel failures/environmental factors or injuries to occur.
- d. Report preventable injuries in the context of crash survivability/egress/rescue, and explain how they occurred.
- e. Discuss the command influence in the incident sequence of events, or the prevention of potential incidents.

To fulfill these information requirements, the board should review all the evidence relating to the incident disclosed during the human, environment and materiel factors investigations. This may require reasserting specific paragraphs contained in the narrative and indicating the relationships between the facts disclosed and the errors/failures/environmental factors that occurred. From this review, the board should consider a logical development of the various circumstances and events that may have existed. This process of deductive reasoning should lead to the formulation of an explanation (or explanations) concerning what caused the incident and preventable injuries, if they occurred, and why they happened. The explanation(s) should be discussed and tested against the evidence gathered during the investigation. If it is necessary to develop hypothesis, it is important for the board to state why a particular hypothesis was or was not supported by the evidence.

To initially outline and structure the correlation of cause-related errors/materiel failures/environment factors and associated control failure(s), the board will find it useful to review the definitions and examples of mistakes/errors, control failure(s), and remedial measures, before composing the narrative part of the analysis. When the outline has been completed, the narrative rationale and conclusions should be composed using the following examples as a guide:

Begin the paragraph by specifying the scope and conclusion of the investigation. In all cases, begin the paragraph with these words: "After analyzing the human, materiel, and environmental data collected during the investigation, the board concluded the incident was caused by..." Complete the sentence by specifying the factor(s) (human, materiel, or environmental) which caused the incident, e.g., "...human error-leader failure."

- a. Describe when or where the error/failure/injury/environmental factor occurred in the context of the incident chronology of events; e.g., “before the mission,” “during takeoff,” “during an NOE deceleration,” “while installing a hydraulic line,” “during the in-flight ejection,” “during the crash sequence,” etc.
- b. Identify the duty position of the person who erred, became injured, or the name and part number of the national stock number (NSN) of the part, component or system that failed; e.g., “the pilot”; “the mechanic”, “the fuel control, NSN 2915-00-157-2313”; the input bevel gear, part number 2040405009;” etc.
- c. Identify the error in the context of a listed mistake / error category; e.g., “incorrectly diagnosed the emergency at hand,” “failed to assign responsibilities,” “failed to detect,” e.g., “overheated,” “vibrated,” “frayed”, “decayed,” etc. If an injury is being reported, explain if the individual “struck” or “was struck by” the injury-causing agent.
- d. Cite the directive or standard the mistake / error category failed to comply with. In the absence of written guidance/standards for a mistake / error , evaluate the task in terms of how other equally qualified and prudent personnel would perform the same task under similar circumstances. If the error represents performance that is unacceptable, it is contrary to common practice.
- e. Describe the specifics of the error; e.g., “he failed to initially increase collective to maintain the altitude of the tail rotor,” “he excessively torqued the nut, PN 12345;” etc.
- f. Describe the consequences of the error, materiel failure, environmental factor, or the resulting injury; e.g., “as a result, when he applied aft cyclic to slow to a full stop, the tail rotor struck the ground, damaging the tail rotor blades and causing a loss of anti-torque control;” “as a result, the aircraft landed hard;” “as a result, the pilot sustained a compression fracture of the T12-L1 vertebrae;” etc.
- g. A complete error statement could read as follows: “During an NOE deceleration, the pilot improperly responded to the emergency as described for standard 2, task No.5007, technical manual. That is, he failed to initially increase collective to maintain sufficient altitude for tail rotor clearance of the terrain. As a result, when he applied aft cyclic to slow to a full stop, the tail rotor struck the ground damaging the tail rotor blades and causing a loss of effective anti-torque control.”
- h. A complete materiel failure statement could read as follows: “During cruise flight, a section of the input bevel gear, PN

2040405009, eroded through. As a result, the continuity of the tail rotor drive system was interrupted, causing a loss of effective anti-torque control.”

Each statement of error, materiel failure, environmental factor or injury will be followed by statements identifying the control failure(s) that caused or permitted the error/failure/injury to occur or an environmental factor to become a cause. The control failure(s) statements are the most important part of the analysis. This is because the control failure(s) causing or permitting an error, failure, or injury to occur or an environmental factor to become a cause are more important from a remedial standpoint than the error, failure, injury, or environmental factor itself. Each control failure(s) statement will contain the following information:

- a. A transition phrase to tie the control failure(s) to the error/failure/injury; i.e., “the pilot improperly responded to the emergency because,” “the bevel gear eroded to a point of failure because,” “the pilot sustained the back injury because,” etc.
- b. Identification of the control failure(s) category(ies); e.g., “because of inadequate motivation/mood (attitude),” “inadequate supervision by the organization operations officer,” “because of inadequate seat design,” etc.
- c. An explanation of how or why each control failure(s) caused or permitted the error/failure/injury/environmental factor: e.g., “During the pilot’s last standardization flight evaluation, the IP told the pilot he did not perform the NOE deceleration properly and needed additional dual instruction. Regardless, the pilot chose to practice the maneuver by himself before he was given additional training. The IP contributed to the error because he graded substandard performance of the maneuver satisfactory during the standardization flight evaluation and he did not follow up the additional training. The organization operations officer contributed to the error because he schedule the pilot for a tactical training mission before ensuring the pilot had received the mission training;” “the manufacturer’s quality control procedures failed to detect a machine defect on the surface of the gear that became the source of progressive fatigue mechanisms;” etc.

Once the preceding elements of information are reported for each error, failure, injury, or environmental factor in the manner stated, the resulting conclusions (findings) can stand on their own. The example of human error used in these instructions ties three control failure(s) to the error. There would be more or less control failure(s) depending upon the circumstances. The point to be made is that control failure(s)

causing or permitting an error, failure, or environmental cause must be made visible before effective corrective actions can be recommended.

The analysis part of the narrative does not have to be limited to explaining and concluding what caused or contributed to the incident or injuries. The analysis may also address present but noncontributing hazards if they could adversely affect the safety of aviation operations. There are provision for reporting non-cause-related hazards. They are contained in the instructions for completing the DA Form 2397-1.

1. **Historical Records.** Examination should include an evaluation of all historical records to include weight and balance, MWOs, and safety-of-flight messages. Include aircraft serial number, organization of assignment, home station, and total flight time (airframe) hours at the time of the accident.
2. **Maintenance Records.** Examination should include an evaluation of the current maintenance records, to include all logbook forms, six-month file, and corrected/uncorrected faults. Particular attention should be spent on technical publications not complied with.
3. **Adequacy of Preflight.** Was an adequate preflight inspection conducted? Was the organization following standard maintenance procedures?

Aviation Accident Narrative Details

The accident investigator(s) will report, in narrative form, the facts, conditions, and circumstances as established during the investigation and present this information in four sections (history of flight, human factors, materiel factors and analysis). The first three sections will contain factual data. The analysis section is reserved for the board's documentation of its conclusions/opinions concerning the incident cause relationships. Additional subheadings may be added as deemed necessary. It is important that the narrative address all of the chronological events and evidence that had a bearing on the cause of the incident and/or have the potential for adversely affecting safety of future operations. For incidents in which the investigation board determines that human error, material failure/malfunction or environmental conditions were a factor, that portion of the narrative will be completed in its entirety, as specified in the instructions below. The history of flight, personnel background, personnel management, meteorological, airworthiness, laboratory analysis, and analysis portions will be completed for all incidents. For the remaining subheadings which the investigation board determines were not a factor, enter after the subheading "Investigation revealed not a factor" and proceed to the next subheading. Opinions concerning the incident cause relationship of evidence cited throughout the narrative will be discussed only in the analysis section. Use letter-size paper for continuation sheets as required.

Discuss each item in narrative form. Don't just answer the questions. Discuss only those items applicable to the type accident. If a paragraph does not apply, use the standard statement, "Not a causal factor in this accident" or N/A to so note.

Preflight Phase

1. What was the type of mission?
2. What was the purpose of the mission?
3. How did the organization become tasked with the mission?
4. Who or what activity authorized the mission?
5. Identify the crewmembers selected for the mission.
 - a) Duty assigned.
 - b) Crewmember station.
 - c) How / when / where they were informed of the mission.
6. What action did crewmembers take in mission preparation?

- a) Preflight planning (weather, fuel, PPC, etc.).
 - b) Weight and balance determinations.
 - c) Briefings.
 - d) Filing.
 - e) Inspecting aircraft.
 - f) Other.
7. Was there a sense of urgency associated with the mission?
 8. Were there delays prior to the flight's departure?

Flight Phase

1. When did the aircraft depart on the mission?
2. Chronologize each routine flight segment and ground stop, if any, prior to the accident flight segment.
 - a) If accident segment contained an in-flight emergency, describe the event in detail to include:
 - b) Onset.
 - c) When it occurred.
 - d) Symptoms.
 - e) Warnings.
 - f) Instrument readings.
 - g) Actions / reactions of aircraft.
 - h) Actions / reactions of crewmembers from onset until aircraft is at rest at the conclusion of the flight.

Post-flight Phase

1. Brief description of condition of aircraft immediately after accident.
2. Brief description of condition of occupants immediately after accident.
3. Note: (Reserve details for those parts of the report that are applicable.)
4. If post-crash fire, explain.
5. How / when was the fire extinguished.
6. Summarize occupants' egress.
7. Summarize search and rescue efforts.

Note: (Reserve details of egress, search and rescue for parts of report that are applicable.)

Human Factors for Aviation Accidents

Summarize background and qualifications for all persons with access to flight controls and anyone associated with or who may have played a part in the accident (those who made, caused or contributed to the errors), i.e., commanders, operations personnel, passengers, etc. (Only on personnel directly involved with the accident).

For incidents resulting from causes other than human factors, the human factors part of the narrative may be sharply reduced to negative comments for the subheadings except for subheadings addressing personnel background information, personnel management, and meteorological conditions.

Personnel Background Information

1. Describe each aviator crewmember's aviation qualifications and readiness to perform the mission.
2. Was he qualified and current in the MTDS used?
3. Explain any irregularities in the training folder.

For example:

- a) Accomplished minimums.
 - b) Instrument renewal.
4. Indicate if requirements were met and when.
 5. If post-accident evaluation was given, summarize results.
 6. Highlight weaknesses in proficiency, if appropriate.

Note: (Emphasize those tasks duplicating those involved in the accident).

7. Describe experience in mission aircraft.
8. Initial qualification.
9. Total time.
10. Flight time last 3 months.
11. Background report. Include:
 - a) Evidence of flight safety violations.
 - b) Flight evaluation boards.
 - c) History of prior accident involvement. Explain role.
12. Were aviator crewmembers physically qualified?

13. Discuss currency of flight physical.
14. Waivers, other medical irregularities.
15. Professional reputation in organization, opinions of peers, subordinates, and others who have flown with them, etc.
16. Review:
 - a) Social habits.
 - b) Financial status.
 - c) Marital well-being.
 - d) Sleep / dietary habits.
 - e) Off-duty schooling.
 - f) Recreational activities.Note: Explain irregularities. If none, so state.
17. Medication. Was an aviator crewmember receiving any? Prior to accident? If so, report:
 - a) Type.
 - b) Source.
 - c) Dosage.
 - d) Side effects.
 - e) Possible effects on performance.
18. Fatality? Summarize autopsy report, AFIP tissue specimen and other analysis results available. Explain any irregularities.
19. Injuries? Summarize in terms of body aspect, causative agent, etc.
 - a) Were injuries related to aircraft crashworthiness?
 - b) Were problems associated with:
 - (1) Escape.
 - (2) Survival.
 - (3) Rescue.Note: Make brief comments on this part of narrative detail in specific sections devoted to these phases.
20. Non-rated/passenger occupants.
21. Was non-rated/passenger at controls or aerial observer, or other cause-related role?
 - a) Summarize background and qualifications.

- b) Summarize background and qualifications of any personnel not aboard the aircraft if they played a part, i.e.,
 - (1) Commanders.
 - (2) Operations personnel.
 - (3) ATC personnel.
 - (4) Weather personnel.
 - (5) Maintenance personnel.
 - (6) Others, as applicable.

Note: Extremely important. Use all resources to obtain.

Personnel Management

- 1. How did organization manage each individual involved in accident?
- 2. Begin with date of assignment to current organization.
 - a) Review:
 - (1) Experience upon assignment.
 - (2) Qualifications upon assignment.
 - b) Report how individual was:
 - (1) Tasked.
 - (2) Trained.
 - (3) Managed to date of accident.
 - c) Discuss additional duties and percent of time given versus time given to primary duty.
 - d) Report qualifications acquired since assignment:
 - (1) Checkouts in additional aircraft.
 - (2) Appointments:
 - (3) IP.
 - (4) SIP.
 - (5) IFE.
 - (6) PIC.
 - (7) UT.
 - (8) Etc.
 - e) Review procedures involved with mission crew selection.
 - (1) Evaluate timeliness of notification.

- (2) Crew / mission compatibility.
- (3) Relative flight experience of pilots (if more than one).
- f) Review organization crew rest policy.
 - (1) In effect?
 - (2) Being monitored?
 - (3) Being complied with?

Aircraft Suitability

1. Discuss suitability of accident aircraft to perform mission.
2. Consider:
 - a) Flight and navigational instrumentation regarding prevailing weather.
 - b) Fuel consumption relative to range.
 - c) Power available relative to:
 - (1) Gross weight.
 - (2) Density altitude.
 - (3) Aircraft design limitations IAW aircraft operations manual (Configurations, etc.).

Communications / Air Traffic Services

1. Communications equipment (visual/electronic signals, etc.)
2. Communications occurring:
 - a) Among the crew.
 - b) Between the crew and passengers.
 - c) Between the crew and outside services; e.g.,
 - (1) ATC.
 - (2) Operations.
 - (3) FSS.
 - (4) Command and control.
 - (5) Miami Caribbean Trans-Oceanic.
 - (6) Pathfinders, etc.
3. Consider language difficulties and:
 - a) Understanding spoken word.

- b) Adequacy and precision of instruction, etc.

Navigational Aids

1. Discuss adequacy of navigational aids to include:
 - a) VOR.
 - b) NDB.
 - c) ILS, etc.
2. Consider FAA or other agency involvement, NOTAMS, PIREPS, etc.

Meteorological Information

1. Discuss weather conditions prevailing throughout mission.
2. Include:
 - a) Sky condition.
 - b) Visibility.
 - c) Winds.
 - d) Icing.
 - e) Turbulence.
 - f) Any significant weather conditions.
3. Consider weather observations by:
 - a) Trained weather observers.
 - b) Witnesses in the area.
4. Discuss accuracy of forecast received by crew. If actual weather differed significantly from forecast, include discussion of information available to forecaster.
5. If mission involved NVG operations, obtain details of moon glow, local resolution, etc.

Ground Support Services

1. Discuss evidence relating to ground support services in the accident.
2. Consider:
 - a) POL.
 - b) Ground guides.

- c) Fire guards, etc.

Crash Survival

1. Discuss evidence relating to crashworthiness.
2. Include:
 - a) Performance of restraint systems.
 - b) Aircraft structure.
 - (1) Occupiable space.
 - (2) Attenuation.
 - (3) Seats.
3. Performance of personal protective equipment, i.e.,
 - a) Helmet.
 - b) Visor.
 - c) Clothing, etc.

Emergency Egress, Survival and Rescue

1. Include:
 - a) Ejection/bailout.
 - b) Survival/rescue.
2. Discuss difficulties encountered by survivors and rescuers.
3. Include information on:
 - a) Training.
 - b) Equipment used (type).
 - c) Any failure/malfunction of equipment used.

Witness Investigation.

1. Briefly indicate number of witnesses interviewed.
2. Identify each by duty position.
3. Indicate whether or not witnesses generally agree.
4. Discuss credibility.

Special investigation.

Reports results of any special investigations that were conducted because of the incident. If, for example, during the investigation, it is found that helmet mounted display or night vision systems were a factor in the incident, the applicable agency/program manager should be notified and a determination made as to their involvement.

Material Factors for Aviation Accidents

Describe fully the observations made by the materiel factors work group. Refer to wreckage distribution diagram, photographs, other diagrams, records, reports, and technical publications. All items will be addressed with P/N, NSN full maintenance / technical manual DATA, DATES, PAGES, FRAMES, ITEM, PARAGRAPH (as appropriate).

Report results of materiel factors investigation in the appropriate subparagraphs. Those incidents that do not involve materiel failure/malfunctions may be abbreviated to include negative reports, if applicable, for all subheadings except aircraft airworthiness and laboratory analysis. Identify and discuss damage resulting from precrash materiel failure/malfunctions and omit damage that resulted from crash forces exceeding design limits. References can be made to the wreckage distribution diagram, photographs, reports, records, etc. Include the following areas:

Aircraft airworthiness.

Describe the airworthiness of the aircraft. Investigation should include, but not be limited to, maintenance records, historical records, interviews with maintenance personnel, weight and balance records, conduct of preflight, etc. Identify all deficiencies/discrepancies that had a role in the incident. Discuss those technical publications not complied with or inadequate in any manner.

Flight Data Recorders

Report information obtained from flight data recorders, if applicable. The board's analysis of this data, however, should be included in the analysis portion of the report.

Specify type and serial number. Discuss significant data recorded and its relation to the onset, corrective actions taken, and results of the emergency. List all instrument indications and switch positions below.

Airframe

Use subparagraphs to report evidence obtained in the examination of the airframe structure and landing gear components.

1. Present a brief description of the aircraft impact sequence from initial impact to final rest position. If major impact and initial impact are different, so state.
2. Conditions of aircraft during impact and after impact. Include wreckage distribution, ground impact marks, and distortion of

aircraft to obtain a general picture of the probable attitude during impact and crash scenario.

NOTE: An inventory should be made for parts accountability.

3. Landing gear / skids. Determine position of landing gear, compression stroke of gear, deformation of skids, and condition prior to accident.

Systems

Report in subparagraphs evidence obtained:

1. Fuel system. Discuss the ability of the crash-worthy fuel system or its failure to retain fuel onboard at impact. Break-away fittings should also be addressed.
2. Warning system. Determine what warned the crew of the impending emergency and specify the particular systems activated at the time of the mishap sequence. Include lights on/off and gauge indications.
3. Flight control system. Check all controls from cockpit to control surfaces for continuity and position. Of particular importance is the induced flight control movement due to seemingly insignificant impacts. An example is an UH-1 which strikes a tree while "traveling" down a valley. The aircraft's right synchronized elevator struck a large tree branch. This caused the synchronized elevator to be pulled back into the tail rotor control tube resulting in a right pedal input. Qualify deformation by both degrees and linear measurement.
4. Hydraulic system. Expand on the operation of the hydraulic system to include leakage, break-away fittings, and evidence of pre-accident deficiencies.
5. Electrical system. Check for the following:
 - a) Availability of electrical power at the time of the accident.
 - b) Electrical fire.
 - c) Proper or improper wiring.
 - d) Lightning strike. If struck by lightning, trace
 - e) path, check magnetic compass for induced field, check antennas, and verify radios operate properly.
 - f) Check all primary lights and use filament examination to determine operation (if required).
6. Stability augmentation, SCAS, autopilot. Determine its operation at the time of the accident and potential roles it may have played.

7. Night vision systems. Discuss operational status of system if it was a factor in the accident or was in use at the time of the accident.
8. Armament system. Discuss status of the system and its contribution to the accident. If applicable, specify system in use, ammo being used and its involvement.
9. Other.

Power Plant

Report evidence obtained during examination. Specifically:

1. Check power plant for mounting (check tail rotor drive shaft).
2. Evaluate all linkages.
3. Check for evidence of overtemp, internal damage, i.e., molten metal in tail cone, oil leaking from exhaust, discoloration, damage to power turbines, etc.
4. Obtain all serial numbers and locate all components.
5. What was the engine's operation prior to the mishap?
6. Check the fuel system for leaks, but ensure the engine's fuel filters are examined.
7. Are turbine wheels free to turn?
8. Examine and report on engine with regard to the compressor, combustion, turbine, exhaust, accessory, and fuel control sections.

Rotor System or Propeller.

1. Was the rotor or propeller under power at the time of the accident? If so, how much (if possible)?
2. Elaborate on all major blade or propeller strikes in relation to accident sequence.

Transmission / Gearboxes and Drive Train

Report evidence obtained during examination. List all discrepancies and their effect.

1. Check chip detectors and remove all screens
2. Check for foreign material.
3. Check all internal lubrication lines.
4. Check for mounting and fractures.

Laboratory analysis

Report results of:

1. Fuel, oil, hydraulic, chemical
2. Teardown analysis, i.e., CCAD / OEM

Accident Site 'Information

Discuss adequacy; include:

1. Location (i.e., grid coordinates and by reference to common features) .
2. Dimensions.
3. Lighting / marking.
4. Obstructions.
5. Type of surface and condition, slopes, etc.

Fire

Discuss role of fire, to include:

1. When did it occur?
2. How was it detected?
3. Ignition source.
4. Combustible materials.
5. Location.
6. Propagation.
7. Attempts to extinguish.

Electromagnetic environmental effects

E³ Check, within 5 miles, all RF emitters and their relation to the accident aircraft. A diagram should be included as a Tab. Determine with systems assistance the RF emitters' effect upon the aircraft.

Non-Aviation Accident Narrative Details

Discuss each item in narrative form. Don't just answer the question. Do not restate the question. Discuss only those items applicable to the type accident. If a paragraph does not apply (i.e., shooting instead of vehicle), use the standard statement: Not a causal factor in this accident or N/A.

Pre-accident Phase (Use tabs to amplify)

1. State the mission.
2. Discuss the purpose of the mission.
3. Who tasked the organization/individual with the mission.
4. Identify the individual that authorized the mission.
5. Identify the personnel involved in the mission (do not include N/A).
 - a) Duty assigned.
 - b) Personnel position.
 - c) How/when were they informed of the mission.
6. Discuss mission preparations. Include:
 - a) Pre-mission planning.
 - b) Orders.
 - c) Briefings.
 - d) Equipment inspections.
 - e) Dispatching of vehicles / systems / equipment.
 - f) Identify equipment--include serial/lot numbers.
7. Was there a sense of urgency associated with the mission?
8. Were there any delays prior to vehicle departure?
9. Elaborate on mission sequence of events to the time of the accident. Include:
 - a) Wake-up times.
 - b) Meal times (if appropriate).
 - c) Workday termination times.
 - d) Departure times.
 - e) Identification of element involved in accident.
 - f) Accident location (grid, post, road, etc.).

Accident Phase.

1. Time the vehicle / system / equipment departed on the mission.
2. Describe any emergency encountered - sequence of events leading to and including the accident.
 - a) When it started.
 - b) What was done.
 - c) Consequences.
 - d) Symptoms.
 - e) Warnings.
 - f) Actions / reactions of personnel or equipment.
3. Time of the accident.

Post-accident Phase.

1. Injuries sustained in the accident.
 - a) Location of personnel / equipment at the conclusion of the accident.
 - b) Summary of individual injuries.
2. Condition of the vehicle / system / equipment, i.e., overturned, engine still running.
3. Reactions of personnel/equipment after the accident. Include who discovered the accident victim(s).
4. Summarize how the victim(s) were evacuated and survival/rescue.
5. Rescue and first aid efforts.
 - a) Who gave first aid / CPR. If neither were administered, determine why.
 - b) MEDEVAC / ambulance.
 - (1) Who called the MEDEVAC / ambulance and when.
 - (2) Time of arrival on the scene.
 - (3) Were first aid / rescue efforts continued en route to the hospital.
 - (4) Was more than one MEDEVAC / ambulance utilized.
 - (5) If so, why.
 - (6) Time of arrival of the patient(s) at the hospital and explanation of any en route delays.

- (7) Condition / status of patient(s) at hospital time of death (if applicable).
- (8) Identify all medical facilities that provided treatment.

Human Factors Investigation for Non-Aviation Accidents

Summarize background and qualifications on anyone associated with or who may have played a part in the accident (those who made, caused or contributed to the errors), i.e., commanders, operations personnel, passengers, etc. (Only on personnel directly involved with the accident).

Personnel Background Information

1. Brief personal history.
 - a) Date and place of birth.
 - b) Civil schools, i.e., high school, college, trade school, with dates of completion (only if it has a bearing on this particular accident).
 - c) Civil work/employment (only if it has a bearing on this particular accident).
 - d) When they entered the service (if applicable).
2. Brief US Army history (if applicable). Include:
 - a) Time of entry until assigned to present organization.
 - b) Training/MOS assignment, qualifications, and current promotion.
 - c) Schools attended and completion dates.
3. Describe each person's qualifications and readiness to perform the mission.
4. Was the operator qualified.
5. Explain any irregularities.
6. Experience level with vehicle/system/equipment.
7. Briefly discuss the person's professional reputation in organization using opinions of peers, subordinates, supervisors and others who have worked with them.
8. Background report. Include:
 - a) Evidence of vehicle / system / equipment safety violations.
 - b) Evaluation boards, i.e., re-up, promotion, etc. (if applicable to accident).
 - c) History of prior violations or accident involvement - explain.
 - d) Physically qualified to do the job.

9. Explain irregularities. If none, so state. Include:
 - a) Social habits.
 - b) Financial status.
 - c) Marital well-being.
 - d) Off-duty schooling.
 - e) Recreational habits.
 - f) Sleep / dietary habits.
 - g) Disciplinary actions and awards (if applicable).
10. Medical information. Discuss:
 - a) The individual's medical history. Include medical abnormalities (psychological or physiological) which may have impaired their actions.
 - b) Determine the date of his/her last physical examination.
 - c) Are they on any type of medication? If so, what type, source, side effects, dosage, and effects it may have on performance.
 - d) Determine the blood/alcohol level.
 - e) Drug screen - urine samples must be sent to a contract hospital or AFIP for testing. Include statement of results.
 - f) Injury / fatality information.
 - (1) Were injuries related to vehicle/system/equipment survivability.
 - (2) Were problems associated with escape - survival rescue.
 - (3) Explain how the individual was injured (what caused the injury) and what the injuries were.
 - (4) How long will the individual be hospitalized.
 - (5) Fatality - explain fatal injuries and how they were caused.
 - (6) Summarize the autopsy report to explain fatal injuries.

Personnel Management.

1. How did the organization manage/use the individuals who caused, contributed, or who was a victim of the accident.
2. Begin with the date of assignment to current organization.
 - a) Review.
 - (1) Experience upon assignment.

- (2) Qualifications upon assignment.
- b) Report how individual was:
 - (1) Tasked.
 - (2) Trained.
 - (3) Managed up to the date of the accident.
- c) Discuss additional duties; percent of time given versus time given to primary duty.
- d) Report qualifications acquired since assignment.
- e) Review procedures involved with mission crew / personnel selection.
 - (1) Evaluate timeliness of notification.
 - (2) Personnel/mission compatibility.
 - (3) Experience of individuals.
- f) Evaluate fatigue factors which may have had an effect on the mission.
- g) Review organization sleep/work plan.
 - (1) In effect.
 - (2) Being monitored.
 - (3) Being complied with.

Vehicle / System / Equipment Suitability.

1. Discuss suitability of accident vehicle/system/ equipment to perform the mission.
2. Primary purpose of vehicle / system / equipment.
3. Design limitations of vehicle/system/equipment as found in applicable operators manuals.
4. Brief description of condition of vehicle / system / equipment and if use exceeded its limitations.

Communications.

1. Discuss evidence relating to:
 - a) Communications equipment (visual or electronic signals, etc.)
 - b) Communications occurring:
 - (1) Among the crew / personnel.

- (2) Between the crew / individuals and passengers.
 - (3) Between the crew / individuals and outside services, i.e., operations, command and control.
 - (4) Agency-to-agency / service-to-service.
2. Language difficulties.
 3. Clarity of verbal / written communications.
 4. Time delays and reasons for delays.
 5. Communications adequacy.

Environmental Conditions.

1. Weather:
 - a) Weather conditions prevailing at the time of the accident (include previous weather conditions, if applicable) and where obtained.
 - b) Applicable sky conditions, visibility, winds (surface and altitude), and contributing conditions such as rain, snow, smoke, etc.
 - c) Paragraph should be written in easy to understand terms and not in aviation terms.
 - d) If mission involved night operations, details of available illumination should be added if it applied to the accident.
 - e) For parachute accidents. Determine winds aloft (drop altitude) and surface winds.
2. Other Than Weather. Evaluate other factors which may have been present. Examples:
 - a) Dust / obscurant.
 - b) Night vision.
 - c) Heat / cold.
 - d) Surface / terrain conditions.

Support Services.

1. Ground.
 - a) Discuss evidence which relates to role in accident, i.e., ground guides, road guards, traffic signs/ signals, etc.
 - b) Dispatch procedures, if applicable.
2. Air. Aircraft.

Accident Survivability.

1. Accident survivability of vehicle/system/equipment in terms of accident sequence, impact conditions, accident forces.
 - a) Occupant injury relationship to survivability.
 - b) Restraint systems / rollbar protection (use/nonuse) (equipped/non-equipped).
 - c) Protection clothing / equipment.
 - d) Backup / emergency systems (reserve parachute).
2. Design of vehicle / system / equipment.

Rescue Operations.

1. Describe factors that may have enhanced or inhibited the success of the survival / rescue situation.
2. Describe the individuals location.
3. How did they exit and any difficulties encountered.
4. Position of the vehicle / system / equipment at the time of egress.
5. How and when MEDEVAC was requested and if needed.
6. Times of response, pickup and delivery of the victim(s).
7. Type / methods of first aid and CPR treatment prior to and during MEDEVAC.

Accident Site Information

Fully describe the accident site and any peculiarities found. Note whether the site was preserved. Describe in detail slopes, obstacles, conditions, drainage, composition, vegetation, etc.

Special Investigation

Report the results of any special investigation conducted, i.e., so many like vehicles were checked for similar problems on the same installation, special tests or studies conducted by other agencies (private, government) for the board.

Witness Investigation.

1. Briefly indicate number of witnesses interviewed.
2. Identify each by duty position.
3. Indicate whether or not witnesses generally agree.

4. Discuss conflicts.
5. Discuss credibility.

Materiel Factors Investigation for Non-Aviation Accidents

Describe fully the factual observations made by the materiel factors work group. Refer to wreckage distribution diagram, photos, other diagrams, records, reports and technical publications. Describe whether damage was a result of normal operations or the accident.

Vehicle/System/Equipment Worthiness.

1. Investigation should include, but not be limited to, complete technical inspection, covering such areas as:
 - a) Maintenance records.
 - b) Historical records.
 - c) Interviews with maintenance personnel.
 - d) Operator prevention maintenance.
 - e) Dispatch records.
2. Discuss all recorded and unrecorded faults that had a role in the accident.
3. Discuss those technical publications not complied with or found inadequate. Indicate technical reference manuals (dates of the manual, chapter/page, etc., include manual extracts).

Systems

Note all discrepancies and their effect on the operation of the vehicle/system/equipment. Use photographs to report evidence obtained in the examination of the following:

1. Engine.
2. Transmission.
3. Steering / control.
4. Brake.
5. Fuel.
6. Electrical.
7. Hydraulic.
8. Frame.
9. Suspension.
10. Tires.
11. Weapons.

Laboratory analysis.

1. Report results of laboratory tests.
2. If a teardown analysis of materiel has been completed, report the results in this paragraph.

Fire.

1. When did it occur.
2. How was it detected.
3. Ignition source.
4. Combustible material.
5. Location.
6. Propagation.

Attempts to extinguish.

Accident Cost Calculations:

Army accident costs are based on the severity of injury, occupational illness, or property damage (Army and non-Army) resulting from Army operations. For accident reporting purposes, the logistical disposition of damaged property/equipment (whether or not it is repaired or replaced) will not negate the requirement to report the accident.

Injury and Illness Costs

These costs are used solely to provide total accident cost since cost is generally proportional to severity of injury. They are not used for determining accident classifications. Actual time lost may not be known at the time the accident report is submitted. If it is not known, an official estimate of lost workdays, made by a competent medical authority, will be used in computing the cost. The cost data in table 4 is used to compute the cost of injuries and occupational illnesses to Army personnel for safety/accident reporting purposes only.

1. The figures include the cost of pay while away from work, medical treatment, hospitalization, dependent survival, unused training costs, gratuities, compensation, disability retirement, and burial.
2. The figures do not include indirect costs associated with the accident such as wages lost to employees not injured (production loss), cost of hiring and training new employees, cost of investigating the accident, public liability costs, and costs to lease equipment if applicable.

Table 4

	Submarine and/or Flying Officer	Other Officer	Enlisted Personnel / Cadets	Civilian Employees ⁴	Program Youth and/or Student Assistance Program Employees and Foreign Nationals
Fatality	\$1,100,000.00	\$395,000.00	\$125,000.00 \$270,000.00 ¹	\$460,000.00	\$270,000.00
Permanent Total Disability ³	\$1,300,000.00	\$845,000.00	\$500,000.00	\$385,000.00	\$390,000.00
Permanent Partial Disability ³	\$210,000.00	\$145,000.00	\$115,000.00	\$250,000.00	\$180,000.00
Lost Time Case	\$425.00 / day	\$425.00 / day	\$375.00 / day	\$350.00 / day	\$300.00 / day
Days Hospitalized ⁵	\$466.00 / day	\$466.00 / day	\$466.00 / day	\$466.00 / day	\$466.00 / day
Restricted Work Activity	\$120.00 / day	\$120.00 / day	\$120.00 / day	\$120.00 / day	\$120.00 / day

1. Non-flight crew member fatality.
2. Flight crew member fatality.
3. Total costs, including days involving lost time and days hospitalized.
4. For civilian employees, use actual worker compensation costs when available.
5. Includes cost for days involving lost time.

Damage Costs

Costs of damage to Army property and equipment will be computed using criteria in AR 735-11, to include such things as actual cost of new or used parts or materials and labor cost at the standard rate of \$16 per hour, unless the actual labor cost rate is available within the reporting time limits. When damaged equipment or facilities will not be repaired or replaced, the cost reported will be the acquisition cost (Army Master Data File (AMDF)) plus the estimated cost to clean up the site. Credit should be taken for the estimated scrap value of the parts that can be reused.

Costs Peculiar to Aircraft Accidents

Destroyed, missing, or abandoned aircraft cost. The cost of destroyed, missing, or abandoned Army aircraft is to be computed per current aircraft cost tables. The cost of aircraft repair will be updated if the depot's estimated cost of damage (ECOD) is significantly different (10 percent or non-repairable) from the initial or reported ECOD. Include the cost of all modifications.

Army Parts Cost

1. For destroyed parts or components, the cost of replacement per current AMDF or Base Master Data File (BMDF), which can be found in technical supply or direct support units.
2. The cost to repair damaged parts.

Direct Man-hour Costs

For Class A and B accidents, these man-hours will be reported on DA Form 2404 (Equipment Inspection and Maintenance Worksheet). DA Form 2404 will accompany the appropriate DA 2397-R-series form, and will indicate the total cost of direct man-hours and replacement parts necessary to make the aircraft flyable. For Class C and D accidents and Class E and FOD incidents, this information will be reported on DA Form 2397-AB-R. Direct man-hours include:

1. The cumulative (estimated) man-hours required to remove, repair, and replace damaged aircraft assemblies, subassemblies, or components.
2. Man-hours required to restore the aircraft to serviceable condition if economically repairable.
3. Man-hours expended in removing and replacing undamaged aircraft components in order to remove, repair, or replace damaged components.

4. Man-hours required to remove and replace a part that is not economically repairable.
5. Man-hours expended to determine damage amount.

Man-hours not Included in Aircraft Accident Cost.

1. Depot and contract overhaul man-hours.
2. Time used in setting up equipment preparatory to actual repair of the aircraft.
3. Man-hours used in removing, replacing, and inspecting undamaged parts and components solely to satisfy technical manual inspection requirements.

Replacement of Damaged Components

Removing a damaged component and replacing it with a new component to decrease the number of man-hours and costs for purposes of accident classification is prohibited. If another like component is available, it may be installed so that the aircraft will be available for flight. However, the total best available estimated man-hour costs to remove, replace, and repair the damaged component will be included for accident classification.

Cost Computation of Aircraft Engine

When an aircraft engine is damaged as a result of the accident sequence to the extent that it must be returned to a depot, the cost of such damage or inspection will be computed at 17 percent of the unit cost.

Cost Computation of Helicopter Main Rotor Blades

The cost of damaged helicopter main rotor blades will be computed at the actual cost to repair (if known), ECOD, or AMDF costs for replacement.

Cost Computation of Other Aircraft Components

When a major aircraft component (as defined in the appropriate maintenance Technical Manual (TM)) is damaged to the extent that it must be returned to depot for overhaul or inspection, the reported cost for repair will be computed at 15 percent of the unit cost. Examples of aircraft major components are as follows:

1. Helicopter tail booms or empennages.
2. Aircraft wings or fuselage.
3. Helicopter main rotor heads.

4. Main transmission or gearbox(es).
5. Landing gear assemblies (exclusive of wheels, brakes, tires, outriggers, or protective gear, helicopter skids, cross tubes, and tail gear).
6. Vertical stabilizer (exclusive of rudder), horizontal stabilizer (exclusive of elevator), and stabilators or similar devices.

Damage not Included in Aircraft Accident Costs.

1. Fair wear and tear.
2. When a malfunction or failure of a component part results in damage to another component, the FWT exception does not apply.
3. Damage to helicopters incurred solely from flying debris during operations in confined areas and unimproved landing sites is considered FWT.
4. Discovery of cracks, breaks, wrinkles, or ruptures during required periodic or scheduled inspections is considered FWT. They will be reported per DA Pam 738-751.
5. Damage to an aircraft as a direct result of action by an enemy force or terrorist group (considered "combat loss").
6. Intentional in-flight controlled jettison or release of mission essential, aircraft equipment/stores that are not essential to flight (for example, canopies, doors, drag chutes, hatches, life rafts, auxiliary fuel tanks, missiles, drones, rockets, non-nuclear munitions, and externally carried equipment). Intentional emergency jettison of cargo (internal or external) when aircraft control is essential. (There must be no injury, or reportable damage to the aircraft or other property. Also, intentional controlled jettison of missiles, drones, or non-nuclear munitions must not have resulted from their malfunction.)
7. Planned destruction of Army experimental or prototype aircraft during authorized testing or combat training.
8. Authorized intentional destruction of Army property or equipment.
9. Aircraft FOD (other than engine(s)) discovered during scheduled maintenance.

Findings and Recommendations

Instructions for narratively reporting findings and recommendations. Findings will be categorized as Found; Primary Cause, Found; Contributing, Found; Increasing Severity of Damage / Injuries, or Found; Not Contributing. Each cause-related finding must be substantiated.

Findings

- a. An explanation of when and where the error, material failure, or environmental factor occurred in the context of the accident sequence of events; e.g., “during preflight,” “while driving,” etc.
- b. Identification of the individual involved by duty position; or the name and part number or national stock number of the part, component, or system that failed; or a description of the environmental factor, as appropriate.
- c. For human error, identify the task or function the individual was performing and an explanation of how it was performed improperly. The error could be one of commission or omission; e.g. individual performed the wrong task or individual incorrectly performed the right task. In the case of material failure, identify the mode of failure; e.g. corroded, burst, twisted, decayed, etc.
- d. Identification of the directive (i.e. Maintenance / technical manual, SOP, etc.) or common practice governing the performance of the task or function.
- e. An explanation of the consequences of the error, material failure, or environmental effect. An error may directly result in damage to equipment or injury to personnel, or it may indirectly lead to the same end result. A material failure may have an immediate effect on equipment or its performance, or it may create circumstances that cause errors resulting in further damage / injury inevitable.
- f. Identification of the reasons (failed control mechanisms) the human, material, environmental conditions caused or contributed to the incident. Refer to the control mechanism failures found Appendix A.
- g. A brief explanation of how each reason contributed to the error, material failure, or environmental factor.
- h. Instructions for reporting findings that did not cause or contribute to the incident, but did adversely affect the severity of the accident results. The board should report those factors that contributed to the severity of the injury or the extent of the damage. Personnel injuries attributable to defects in life support equipment, personal

protective clothing and equipment, i.e., seatbelts, must also be addressed. The findings and recommendations fitting this category will be separated from those that caused the incident and preceded by the following statement **THE FINDING(S) LISTED BELOW DID NOT DIRECTLY CONTRIBUTE TO THE CAUSAL FACTORS INVOLVED IN THIS INCIDENT; HOWEVER, IT (THEY) DID CONTRIBUTE TO THE (SEVERITY OF INJURIES) OR (INCIDENT DAMAGES).**

- i. Instructions for reporting findings that did not cause or contribute to the incident nor to the severity of injuries or damage. The board should report errors, material failures, or other hazards that did not contribute to the incident but have a high potential for causing other incidents or adversely affecting the safety of operations and individuals if not corrected. Reporting these deficiencies will ensure they receive the attention of leadership and safety personnel throughout the Department of State. The findings and recommendations fitting this category will be separated from those that caused the incident or those that did not cause the incident but contributed to the severity of injuries / damage. They will be preceded by the following statement **THE FINDING(S) LISTED BELOW DID NOT CONTRIBUTE TO THE THIS INCIDENT; HOWEVER, IF LEFT UNCORRECTED, IT (THEY) COULD ADVERSELY AFFECT THE SAFETY OF OPERATIONS AND PERSONNEL.**

Recommendations

Each finding will be followed by recommendations having the best potential for correcting or eliminating the reasons for the error, material failure, or environmental factor that caused or contributed to the incident. Recommendations will not focus on organizational steps addressing an individual's failure in a particular case. To be effective at preventing incidents in the future, recommendations must be stated in broader terms. The board should not allow the recommendation to be overly influenced by existing budgetary, material, or personnel restrictions. In developing the recommendations, the board should view each recommendation in terms of its potential effectiveness. Each recommendation will be directed at the level of command / leadership having proponency for and is best capable of implementing the actions contained in the recommendation.

Processing and Command Review of Accident Reports

All accident investigation reports will be processed by each reviewing agency.

1. Initial review. The initial reviewing official will normally be the commander of the unit involved or the commander of the supervisor directly responsible for the operation, material, or persons involved in the accident. This official will review the accident report, provide written concurrence or non-concurrence with the findings/recommendations, ensure that factual data are circulated within the unit, ensure recommendations which can be put into effect at the unit level are implemented, and forward the original through the designated MACOM chain of command to the approving authority.
2. Installation-level safety manager review. The installation-level safety manager will ensure that the entire accident report and the SAFETY OFFICE USE ONLY section of each form (DA 2397-R-series form, DA Form 2397-AB-R, DA Form 285, or DA Form 285-AB-R) is prepared per instructions, and accident data are analyzed for prevention purposes. (This function may be performed at tenant activity level if the organization has a full-time safety and occupational health professional assigned.)
3. Approving authority. MACOM commanders or their designated representatives will approve or disapprove each finding and recommendation made by the accident investigation board as amended by reviewing officials. The MACOM safety office will ensure that the accident report is complete and take additional actions when required. MACOM-level recommendations will be tracked using the MACOM RTS. Recommendations for action by higher headquarters or other agencies may also be included.

Reports prepared by USASC

Reports prepared by USASC investigators (CAI) will be completed within 60 days and returned through the chain of command. The original and one copy of the report will be forwarded to the unit experiencing the accident; another copy will be forwarded directly to the appropriate MACOM. Commanders will review the original report, concur or non-concur in writing, and return the report through channels to the MACOM. The MACOM will ensure the original copy of the report is returned to USASC within 90 calendar days from the date of the USASC letter of transmittal.

Processing accident reports

Prepare one original and two copies of the appropriate forms (DA Form 285, DA 2397-R-series form, DA Form 2397-AB-R, or DA Form 285-AB-R) and supporting documents. Copies will be retained by the appointing authority's Safety Office and any other offices as directed by the MACOM.

Note: In actual combat situations, use of carbon paper is authorized. Send ARNG accident reports through:

ARNGRC
ATTN: NGB-AVN-S
111 South George Mason Drive
Arlington, VA 22204-1382
to Commander, USASC.

Aviation Accidents and Incidents

1. Class A and B. The original aviation accident reports (DA 2397-R-series forms) will be forwarded through channels to the appointing authority's MACOM and mailed to:

Commander, USASC
ATTN: CSSC-I
Fort Rucker, AL 36362-5363

within 90 calendar days after the accident.

2. Class C. The original or electronic copy of DA Form 2397-AB-R will be forwarded to Commander, USASC, to arrive within 30 calendar days of the accident.
3. Class D, E, and FOD. The original or electronic copy of DA Form 2397-AB-R will be forwarded to the Commander, USASC, within 10 calendar days of the accident.

Ground accidents

1. Class A and B on-Duty. The original DA Form 285, completed per this regulation and prepared by an accident board (CAI/IAI), will be forwarded through channels to the appointing authority's MACOM and mailed to:

Commander, USASC
ATTN: CSSC-I
Fort Rucker, AL 36362-5363

within 90 calendar days after the accident.

2. Class A and B off-duty and all Class C and D. The original or electronic copy of DA Form 285-AB-R will be forwarded to the Commander, USASC, within 30 calendar days of the accident.

Changes to Accident Reports and Request for Extension

1. A change to an accident report will be submitted when:
 - a) An event occurs that changes the classification of an accident (for example, from Class C to Class B, or Class B to Class A).
 - b) Additional information is discovered that was not known when the initial report was submitted. Changes to reports will not be submitted for changes in number of days lost or property damage estimates, except as indicated previously.
2. Requests for extension beyond the accident report due date will be made telephonically to the Quality Control Section, USASC:

Commercial: (205) 255-9137 / 3493

DSN: 558-9137 / 3493

by the MACOM Safety office.

HQDA Accident Report Evaluation, Review, and Action

The USASC will review all recordable accident reports for regulatory and technical compliance.

1. The USASC will evaluate all recordable DA-level recommendations for entry into the RTS. USASC will also
 - a) Establish and maintain a formal automated system to track actions on DA-level recommendation(s) from accident reports.
 - b) Provide written notification to the command, organizations, or agency responsible for implementing or initiating corrective action on DA-level accident recommendation(s).
2. MACOM, Program Executive Officers (PEO), and DA Staff Agencies and Activities will
 - a) Establish and maintain a formal system to track actions taken on DA-level recommendation(s) from accident reports for which they are responsible.
 - b) Establish and maintain a formal system to track actions taken on unit level and higher level recommendation(s) from Class A, B, and C accident reports for units, organizations, agencies, or activities under their respective command or control.
3. Acknowledgments: upon receipt of written notification of recommendations, the responsible DA-level organization will

provide an initial response to the USASC within 60 calendar days as to corrective action(s) initiated or planned. Interim and follow-up reports are required every 90 days after initial response until the action(s) is closed.

4. Return non-concurrence or rebuttals: all DA-level recommendations not accepted or implemented by the responsible command, organization, agency, or activity will be returned to the Commander, USASC, with support rationale within 60 calendar days after initial notification.

Accident Records

The Commander, USASC, will receive Army accident data, control its quality, and enter it into the ASMIS. The Commander, USASC, will also act as the official Army custodian and repository for all recordable Army accident information.

Access to and safeguarding of accident records

1. For regulatory guidance regarding safeguarding of accident records, see AR 385-40, Chapter 1.
2. For regulatory guidance regarding FOIA, see AR 385-40, Chapter 1.

Maintaining accident records

All recordable records required by this regulation and maintained by USASC will be retained at least 10 years. The current historical data will include the current fiscal year and the previous 5 fiscal years.

Appendix A

The forms contained in this manual are for proof of concept only. **Do not use these forms to submit accident reports!**

DA Form 2397-SMS-R (Consolidated Accident Report)

This appendix contains the completion instructions for the U.S. Army Consolidated Accident Report (DA Form 2397-SMS-R). This report may only be used in conjunction with the Safety Management System. Use the Safety Management System to print standard accident reports as required by AR 385-40. For instructions on completing supplemental DA Form 2397 series reports, see DA Pamphlet 385-40.

Block 1. Enter the year, month, and day (YYMMDD) of the accident in block a and the local time of the accident in block (use 24 hour clock).

Block 2. Check the boxes of the appropriate classification and category as defined above.

Block 3. Check the appropriate box. Dawn is that period of time between beginning of morning nautical twilight (BMNT) and official sunrise. Dusk is that period of time between sunset and end of evening nautical twilight (EENT).

Block 4a. Enter the equipment type that was involved in the accident. Type Equipment codes are listed in the next section.

Block 4b. Enter the total number of aircraft or other pieces of equipment involved in the accident and complete an additional DA Form 2397-SMS-R for each piece of equipment. In completing additional DA Form 2397-SMS-R forms, there is no need to duplicate that data already provided in the initial form.

Block 5. Enter the name of the nearest military installation / facility from the accident site.

Block 6. Check the appropriate boxes to indicate whether or not the accident occurred on or off post and on or off an airfield.

Block 7a. Enter the exact location of the accident (e.g. building number, distance from nearest landmark, map coordinates).

Block 7b. Enter the code the best represents the primary function of the location where the accident occurred. Type Location codes are listed in the next section.

Block 7c-e. Enter the name of the closest city and state to the accident site. Enter the name of the country if outside the United States.

Block 8a. Check the appropriate box that indicates if the accident occurred during duty hours.

Block 8a. Check the appropriate box that indicates if the accident occurred during combat.

Block 8c. Check the appropriate box that indicates if explosives or ammunition were involved in the accident.

Block 8d. If “Yes” was checked in block 8a, enter the national stock number of the explosive or ammunition that was involved in the accident.

Block 9. Enter information pertaining to the lowest organization to which the equipment involved in the accident is assigned or hand-received at the time of the accident.

Block 10. Enter information pertaining to the organization most responsible / accountable for the accident. If the organization is the same as in block 9, leave blank.

Block 11. Pertains to the estimated accident / accident damage cost. Do not include those items excluded from accident costs as outlined in AR 385-40. Enter in blocks 11c through 11h only the cost associated with the equipment to which this form pertains.

Block 11a. Check the appropriate box that indicates if the equipment for which this form pertains is totally destroyed. If “Yes,” enter the replacement cost per TB 43-0002-3 or other applicable publication in block 11c and do not fill in blocks 11d and 11e.

Block 11b. Enter the complete serial number associated with the equipment to which this form pertains.

Block 11c. Enter the cost of the equipment and component damage, excluding man-hour cost.

Block 11d. Enter only man-hours required to repair the equipment damage.

Block 11e. Enter the actual cost of man-hours used for the repair of equipment damage. If actual man-hour costs are not available, use the standard rate as outlined in AR 385-40. Other man-hour costs will be entered in block 11g.

Block 11f. Enter the cost to other military / DoD property resulting from the accident (includes inoperative aircraft).

Block 11g. Enter the damage cost to Non-DoD property.

Block 11h. Enter the total of blocks 11c through 11g.

Block 11i. Enter the sum of total equipment cost(*block 11h*) from supplemental DA Form 2397-SMS-R.

Block 12. Blocks 12a - 12c are for aviation accidents only. Complete the general data blocks as follows:

Block 12a. Enter the mission code as shown on the DA Form 2408-12. Also, check the appropriate box to indicate whether the mission was a single- or multi-ship operation.

Block 12b. Check the appropriate box that indicates the type of flight plan the aircraft was on.

Block 12c. Check the appropriate box to indicate whether a flight data recorder was installed.

Block 12d. Check the appropriate box to indicate whether night vision device(s) / system (NVD) was in use at the time of the accident. If "Yes," specify type NVD used.

Block 12e. Check the appropriate box to indicate the type of fire when the fire started. In the remarks section, identify the combustible material and the ignition source of the fire.

Block 12f. If "Yes" is checked for Class C and above accidents, complete DA Form 2397-6-R and attach it to the report. For Class D, E, and F, explain in block 13 the type and source of spillage.

Block 12g. Check the appropriate box to indicate whether the equipment / individual was involved in tactical training.

Block 12f. Check the appropriate box to indicate whether the equipment / individual was participating in a field training exercise (FTX). If "Yes" enter the name of the FTX in the space provided.

Block 13. Enter the event parameters at the times indicated. Event parameters pertain to both flight and non-flight operations. Event Parameter Codes are listed in the next section.

Block 13a. Enter the event parameters at the onset of the emergency.

Block 13b. Enter the event at the time of the first major impact / accident. Exception: If an in-flight strike occurred, resulting in a second impact, record the second impact here. This block can duplicate block 13a (emergency phase).

Block 14. Enter up to three Event Codes from the list in the next section that best categorize(s) the accident. Enter the event code that best describes the accident in the first space.

Block 15. Enter "D," "S," "U" or "N" in the appropriate block to indicate whether human, materiel, or environmental factors played a definite, suspected, undetermined, or no role. Each indicated contributing factor will be substantiated by the findings (block 28) for all Class A and B accidents, all Class C and above aviation accidents, and all accidents involving human error.

Block 16. Enter a concise summary of events from the initial onset of the emergency until the aircraft / equipment / individual is at rest, to

include injuries resulting from the accident. For D, E, and F accidents not involving human error, describe the materiel failure or environmental conditions. Use a continuation sheet if necessary.

Block 17. Enter up to 3 Control Mechanism Failure Codes for all accidents. Codes must support items checked in block 15. Codes indicate controls mechanisms that failed or that were not in place. Control Mechanism Failure Codes are listed in the next section.

Block 18. This block must be completed if a materiel factor was indicated in block 15b. For all material failure / malfunctions accidents involving power and drive trains (e.g. engine, transmission, gearboxes, etc.), complete a DA Form 2397-7-R and attach it to the report.

Block 18a. Enter the code that best describes the system that had a material failure. Material System Codes are listed in the next section.

Block 18b. Enter the requested data for materiel failure / malfunction resulting from fair wear and tear (FWT), maintenance or manufacture error, and / or design deficiency. For maintenance error over which the Army has control, block 22 must also be completed. Material Failure Cause Codes are listed in the next section.

Block 18c. Enter the appropriate material failure code for each item listed in block 18a. Material Failure codes are listed in the next section.

Block 18d. QDRs / EIRs are required only on those items involving the power and drive trains; e.g., engine, transmission, gearboxes, combining transmissions, etc.

Block 19a-c. Enter the environmental codes that represent the conditions at the time of the accident and check the appropriate box that indicates if this condition contributed to the accident. Enter up to three environmental conditions codes with the most significant listed first. Environmental Conditions codes are listed in the next section.

Block 19d-f(Flight and Flight Related accidents only). Check the appropriate blocks to reflect the environmental conditions present at the time and location of the accident.

Block 31. For Class C and above accidents, enter the data for the investigation board president. For Class D, E, and F accidents, enter the safety officer or point of contact submitting the report.

NOTE: For Class D, E, and F reports not involving human error or injury, no further entry is required.

Block 20. Complete this block for night Class D and above accidents or night accidents involving human error, when NVD or environmental factors were present and contributing to the accident.

Block 21. Complete this block for all wire strike(*aviation accidents only*).

Block 22. Enter individual's personal information for all individuals with access to flight controls, vehicle drivers, personnel injured, or personnel having a contributing role in the accident. Complete a DA Form 2397-8-R for all Class C and above accidents involving human error. Use a separate DA Form 2397-8-R for each individual having a contributing role in the accident

Block 22d. Enter the duty position code from the Duty Position Code list in the next section.

Block 22e. Enter this individual's role, "D" definite, "S" suspected, "U" undetermined, or "N" no role, as a contributing factor to the accident. Block 16 and block 28 must support all findings of "D" or "S".

Block 23. Enter information related to individual personal injuries. List information related to the two most significant injuries in order of severity. A DA Form 2397-9-R is required for each fatality, permanent disability, and / or each additional injured individual.

Block 23a. Enter the individual's social security number. For foreign nationals enter a personal identification number(*e.g. for KATUSAs, enter their Korean identification number*)

Block 23b. Enter the number of days the individual listed in block 23a was hospitalized not counting the day of the injury. Do not include these days in block 23c.

Block 23c. Enter the number of days the individual listed in block 23a was absent from work due to an injury not counting the day of the injury. Do not include days from block 23b.

Block 23d. Enter the number of days the individual listed in block 23a is restricted from normal duties.

Block 23e. Enter the appropriate injury code for each individual listed. Injury Codes are listed in the next section.

Block 23f. Enter the type of injury. Type Injury Codes are listed in the next section.

Block 23g. Enter the body region affected by the injury. Body Region Codes are listed in the next section.

Block 23h. Enter the injury cause factors. Injury Cause Codes are listed in the next section.

Block 24. This block pertains to Class C and above accidents and all accidents involving hostile acts against the aircraft or its personnel.

Block 24a. Check the appropriate box indicating any deformation of occupiable space. Any deformation of occupiable space constitutes a compromise for the purpose of this report. If “Yes”, complete DA Form 2397-6-R.

Block 24b. Check the appropriate box indicating whether post-crash escape, rescue, survival difficulties were a factor for this accident. If “Yes”, complete DA Form 2397-10-R.

Block 24c. Check the appropriate box indicating whether protective or restraint equipment functioned as designed. If “No”, complete DA Form 2397-10-R.

Block 25. List all related information concerning personal protective equipment as it pertains to this accident.

Block 25b. Enter the type of protective equipment code from the Protective Equipment Code list found in the next section.

Block 26. Check the appropriate box indicating if the individual was licensed or certified to operate the equipment listed on block 4a. If “No”, explain in block 28.

Block 27. Check the appropriate box indicating if the alcohol or drugs was a involved. If “Yes”, explain in block 28.

Block 28. For Class C and above accidents enter findings and recommendations. For Class D-E human error accidents, briefly describe causes and actions taken or planned and recommended actions to correct the deficiency.

Block 29. List substantiating data submitted with the DA Form 2397-SMS-R.

Block 30. For all Class C and above accidents only.

Block 31. For Class C and above accidents, enter the data for the investigation board president. For Class D, E, and F accidents, enter the safety officer or point of contact submitting the report.

Supplemental CIR

Follow-up data (e.g., CCAD / OEM, DR, or tear-down results) are to be submitted as required. Complete only block 1 (case number) and those blocks to which the supplemental data applies.

U.S. Army Consolidated Accident Report

For use of this form, see Safety Manager's Guide; Accident Investigation Handbook

REQUIREMENTS CONTROL SYMBOL
CSOCS-309

Complete blocks 1-18 for all accidents. No further entry is required for Class D, E, and F aircraft accidents not involving human error / injury.

1. DATE/CASE NO. OF ACCIDENT		a. (YYMMDD)		b. Time (Lcl)		2. a. Classification <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/> E <input type="checkbox"/> F	
3. PERIOD OF DAY <input type="checkbox"/> Dawn <input type="checkbox"/> Day <input type="checkbox"/> Dusk <input type="checkbox"/> Night		4. a. Type Equipment		5. Nearest Military Installation		6. a. <input type="checkbox"/> On-Post <input type="checkbox"/> Off-Post	
		b. Number Aircraft				b. <input type="checkbox"/> Flight <input type="checkbox"/> Flight Related <input type="checkbox"/> Equipment Damage <input type="checkbox"/> Personal	
7. a. Exact Location of Accident		b. Type Location		c. City (Nearest to acdt site)		d. State	
						e. Country (If not USA)	
8. a. Occured During Duty Hours? <input type="checkbox"/> Yes <input type="checkbox"/> No		b. Occured During Combat: <input type="checkbox"/> Yes <input type="checkbox"/> No		c. Explosives / Ammunition Involved? <input type="checkbox"/> Yes <input type="checkbox"/> No		d. NSN of Explosive / Ammunition:	
9. ORGANIZATION INVOLVED							
a. Name of Unit		b. UIC (6 Digit Unit Id Code)		c. Home Station		d. MACOM	
10. ORGANIZATION DEEMED ACCOUNTABLE (If same as block 9, leave blank)							
a. Name of Unit		b. UIC (6 Digit Unit Id Code)		c. Home Station		d. MACOM	
11. ESTIMATED ACCIDENT COST		a. Total Loss <input type="checkbox"/> Yes <input type="checkbox"/> No		b. Equipment Serial Number:			
c. Equip Damage (Excl man hr) \$		d. No. Man Hrs		e. Man Hr \$		f. Other Damage Mil \$	
						g. Civilian Damage \$	
						h. Total (This equip) \$	
						i. Total(All equip) \$	
12. GEN. DATA		a. Msn		(1) Type (Tng, Svc, etc.)		(2) <input type="checkbox"/> Single-ship <input type="checkbox"/> Multi-ship	
						b. Flight Plan <input type="checkbox"/> NA <input type="checkbox"/> VFR <input type="checkbox"/> IFR	
						c. Flight Data Recorder Installed <input type="checkbox"/> Yes <input type="checkbox"/> No	
						d. Night Vision Device/System In use <input type="checkbox"/> Yes <input type="checkbox"/> No If "Yes" Specify type _____	
e. Fire <input type="checkbox"/> None <input type="checkbox"/> Inflight <input type="checkbox"/> Structural <input type="checkbox"/> Postcrash <input type="checkbox"/> Equipment <input type="checkbox"/> Other		f. Flammable Fluid Spillage (If Yes, attach DA Form 2397-6) <input type="checkbox"/> Yes <input type="checkbox"/> No		g. Tac. Training <input type="checkbox"/> Yes <input type="checkbox"/> No		h. Field Training Exercise (FTX) <input type="checkbox"/> Ye <input type="checkbox"/> No If "Yes" Name FTX _____	
13. FLIGHT DATA		Flight Duration		Event Parameter / Collision Code (Enter max of 3 codes)		Altitude AGL	
a. At Emergency		Hours Tents				Airspeed KIAS	
b. At Impact/Acadt		Hours Tents				Aircraft Weight	
						Overgross for Conditions	
						14. TYPE EVENTS (Enter max 3 codes from fig 3-4 DA Pam 385-40 or specify type event or action which best describes the acdt/incdt, e.g., tree strike, generator failure, eng overspeed, hard landing fuel exhaustion, dropped cargo, oil cooler bearing failure, etc.)	
15. ACCIDENT CAUSE FACTORS (Enter		a. Human Error (If D or		b. Materiel Failure/Malfunction		c. Environmental	
16. SUMMARY (Enter summary of acdt sequence from onset of emergency through termination of flight. For Class D, E, and F, include the type of materiel failure and/or environmental factors)							
17. Failed Control Mechanisms (Blk 28 must support all cause factors) a. b. c.							
18. Component and Part Failure / Malfunction Data (Enter information for part that initiated failure/malfunction. Use DA Form 2397-7 for materiel failures that meet definition in AR 385-40)							
a. Material System		b. Material Failure Cause		c. Material Failure Code		d. QDR / EIR Submitted	
						<input type="checkbox"/> No <input type="checkbox"/> Yes	
						<input type="checkbox"/> No <input type="checkbox"/> Yes	
19. ENVIRONMENTAL (Check conditions at time of incident.)				Present		Contributing	
a. Environmental Condition 1						<input type="checkbox"/> No <input type="checkbox"/> Ye	
b. Environmental Condition 2						<input type="checkbox"/> No <input type="checkbox"/> Ye	
c. Environmental Condition 3						<input type="checkbox"/> No <input type="checkbox"/> Ye	
d. General <input type="checkbox"/> IMC <input type="checkbox"/> VMC <input type="checkbox"/> Unknow				e. Aircraft Icing <input type="checkbox"/> No <input type="checkbox"/> Yes		f. Turbulence <input type="checkbox"/> No <input type="checkbox"/> Ye	
31. BOARD PRESIDENT/ASO/POC (Name, Signature, and Date)				Date:		Address and Tel No. (DSN and Com)	

This Space for Binding

Complete blocks 20-29 for all class A through C incidents involving human error / injury.

20. MOON ILLUMINATION DATA (For night Class A, B, C, and D accidents. If block a is "no", no other entry is required.)

a. Moon Above Horizon <input type="checkbox"/> Yes <input type="checkbox"/> No	b. Moon Visible <input type="checkbox"/> Yes <input type="checkbox"/> No	c. Moon (Degree Above Horizon)	d. Percent of Moon Illumination %	e. Moon (Clock Position from Flight Path/Nose of Act)
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21. WIRE STRIKE DATA (Complete for aviation accidents involving wire strikes. If "no" in blk a, no other entry is required)

a. Wire Strike <input type="checkbox"/> Yes <input type="checkbox"/> No	b. WSPS Installed <input type="checkbox"/> Yes <input type="checkbox"/> No	c. WSPS Engaged Wire <input type="checkbox"/> Yes <input type="checkbox"/> No	d. WSPS Cut Wire <input type="checkbox"/> Yes <input type="checkbox"/> No	e. WSPS Functioned as Designed <input type="checkbox"/> Yes <input type="checkbox"/> No	f. Wires Struck No. _____ Dia (inches) _____
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22. PERSONNEL DATA (Complete for each person injured, having access to flight controls, or having a contributing role in the accident.. Use DA Form 2397-8-R if required by Accident Invest. Handbook.)

a. Name	b. SSN	c. Sex	d. Duty	e. Role	f. Hrs Worked	g. Hrs Flown	h. Total Flight	i. Flight Status
								<input type="checkbox"/> Ye <input type="checkbox"/> No
								<input type="checkbox"/> Ye <input type="checkbox"/> No
								<input type="checkbox"/> Ye <input type="checkbox"/> No
								<input type="checkbox"/> Ye <input type="checkbox"/> No

23. Personal Injuries (For all fatalities, permanent disabilities, and additional injured individuals complete DA Form 2397-9-R)

a. SSN	b. Days Hosp.	c. Days Lost	d. Days Rest.	e. Degree Injury	f. Type Injury	g. Body Region	h. Cause

24. Impact / Protective / Escapes / Survival / Rescue Data (For Class A, B, and C accidents)

a. Act Occupiable Space Compromised (If "yes", complete DA Form 2397-6-R) <input type="checkbox"/> Yes <input type="checkbox"/> No	b. Escape/Survival Difficulties (If "yes", complete DA Form 2397-10-R) <input type="checkbox"/> Yes <input type="checkbox"/> No	c. Protective/Restraint Equip Functioned as designed (If "No", complete DA Form 2397-10-R) <input type="checkbox"/> Ye <input type="checkbox"/> No
--	---	--

25. Personal Protective Equipment

a. Required <input type="checkbox"/> Yes <input type="checkbox"/> No	b. Type of Equip #1 _____ #2 _____	c. Available #1 <input type="checkbox"/> #2 <input type="checkbox"/>	d. Used #1 <input type="checkbox"/> #2 <input type="checkbox"/>	26. Licensed on Equipment: <input type="checkbox"/> Yes <input type="checkbox"/> No
				27. Alcohol Involved <input type="checkbox"/> Yes <input type="checkbox"/> No

28. FINDINGS AND RECOMMENDATIONS (See instructions in Accident Investigation Handbook for writing findings and recommendations. Use additional sheet if required)

29. LIST OF ATTACHMENTS (CCAD, DA Forms 2397-4, 8, 9, etc.)

30. COMMAND REVIEW (Required for Class A and B combat and all Class C acdts. Use separate sheet for non-concurrence, additional findngs, and recommendations.)

REVIEWER	Organization	Name (Typed/Printed)	Rank	Signature	Comments
a. Unit					<input type="checkbox"/> Concur <input type="checkbox"/> Non-concur
b. Reviewing					<input type="checkbox"/> Concur <input type="checkbox"/> Non-concur
c. Approving					<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved
d. DA Review	US Army Safety Center				Approved for entry into ASMIS (YYMMDD)

31. BOARD PRESIDENT/ASO/POC (Name, Signature, and Date)	Date:	Address and Tel No. (DSN and Com)
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Consolidated Accident Report (DA Form 2397-SMS-R) Codes

Type Equipment (Block 4a)

00	Not applicable	15	Other fixed wing aircraft
01	AH-1	16	Tracked vehicle
02	AH-6	17	Wheeled vehicle
03	AH-64	18	Other government vehicles
04	CH-47	19	Privately owned vehicles
07	MH-6	20	Ground support equipment
08	MH-47	21	Warehoused inventory
09	MH-60	22	Other government owned equipment
10	UH-1	23	Structure / Facility / Real Property
11	UH-60	24	Other (<i>explain in summary</i>)
12	Other rotary wing aircraft		
13	C-12		
14	U-21		

Type Location (Block 7b)

00	Not applicable / not addressed	B6	Railroad
A1	Vehicle facility (motor pool, maintenance shop)	C1	Office building
A2	Aircraft facility	C2	Communications facility
A3	Vessel facility (boat overhaul / rebuild facility)	C3	Construction site
A4	Engineer facility (carpentry / electrical / plumbing shop)	C4	Security / law-enforcement facility
A5	Other maintenance facility	C5	Bridge
B1	Pedestrian way (sidewalk)	C6	Dam
B2	Vehicle trail (tank trail)	C7	Navigation locks
B3	Roadway (street, curb, shoulder, driveway)	C8	Barge
B4	Parking lot	C9	Dredge
B5	Aircraft way (flight line, runway)	C10	Floating plant
		C11	Vessel (not elsewhere coded)
		C12	ARNG / Reserve armory

D1	Range - small arms / individual weapons	F6	Lake shore / beach storage area
D2	Range - crew served weapons	G1	Storage buildings (bunker, warehouse, barn, storage shed)
D3	Range - aerial firing / bombing	G2	Outside storage area (POL dump, property disposal area)
D4	Range - infiltration course	H1	Heating plant
D5	Dedicated non-firing training area (obstacle course, drop zone, etc.)	H2	Printing plant
D6	Temporary training area (organization assembly area, bivouac area)	H3	Electric generating plant (includes power substations)
D7	Range - EOD	H4	Ammunition / Weapons manufacturing plant
E1	Library	H5	Other industrial plants and factories
E2	Chapel / church	I1	Indoor facilities (bowling alley, gym, movie theater, swimming pool)
E3	Child-care center	I2	Outdoor facilities (playing fields, golf course, swimming pools)
E4	Post office	J1	Family housing
E5	Laboratory	J2	Individual housing (barracks, BOQ, rooms)
E6	Medical care facility	K1	Airport / airfield (includes control tower)
E7	Fire station	K2	Rail station / yard
E8	Commissary	K3	Port / dock / wharf
E9	Post / Base Exchange	K4	Vehicle terminal (bus station, truck terminal)
E10	Dining facility	L1	Kindergarten through grade 12
E11	Exchange Gas station / service station	L2	Government technical / occupational training facilities / classrooms
E12	Museum	L3	Non- Government -operated technical / occupational training facilities / classroom
E13	Animal-care facility	M1	Auto hobby shop
E14	Refuse disposal area	M2	Woodworking hobby shop
E15	Laundry / cleaning facility	M3	Other hobby shop
F1	Sloped terrain (ditch, mountain)		
F2	Wooded terrain (forest, swamp, march)		
F3	Open terrain (field, desert)		
F4	Moving bodies of water (creek, stream, river)		
F5	Standing bodies of water (pond, lake, ocean)		

Event Parameter Codes (Block 13)

- | | |
|--|---|
| O Not addressed / not applicable | U Undetermined / Unknown |
| A Starting engine / run-up | V Power recovery (from practice auto) |
| B Stationary (engines running) | W Training Non-Standard Maneuvers |
| C Taxi | X Formation |
| D Takeoff | Y Preflight activity |
| E Hover IGE | Z Refueling |
| F Climb | ZA Going forward and collided with moving vehicle |
| G Cruise | ZB Going forward and collided with parked vehicle |
| H Combat Maneuver | ZC Collision while backing |
| I Descent | ZD Collision with pedestrian |
| J Approach | ZE Collision with object other than vehicle / pedestrian |
| K Emergency Autorotation | ZF Overturned |
| L Go-Around | ZG Ran off road |
| M Landing | ZH Jackknifed |
| N Low Level | ZI Going forward and rear-ended moving vehicle |
| O Contour | ZJ Going forward and rear-ended stopped vehicle |
| P NOE | ZK Collision while turning |
| Q Hover OGE | ZL Other (specify) |
| R Crash | |
| S Aerobatics | |
| T Termination with power (for practice autos) | |

Event Codes (Block 14)

The following terms and definitions are provided to categorize accidents by the type of event(s) involved. Select the event(s) that best categorize the accident and enter the code(s).

Aviation Event Codes

01 Precautionary landing (PL):A landing resulting from unplanned events occurring while the aircraft is in flight that make further flight *inadvisable*. This event is to be used for PLs where no other event applies or in conjunction with other materiel-failure events.

02 Forced landing (FL):A landing caused by failure or malfunction of engines, systems, or components that makes continued flight *impossible*. This event is to be used in conjunction with other materiel-failure/malfunction events.

03 Aborted takeoff: An unplanned event that occurs before takeoff that interrupts a planned flight. This event is to be used for aborted takeoffs where no other event applies or in conjunction with other materiel-failure events.

04 Human factor event: A psychological, physiological, or pathological condition that occurs to personnel when intent to fly exists and results in interference with a crew member's duties during aircraft operations or mission being delayed, diverted, or aborted.

05 Cargo event: Injury or property damage resulting from cargo-related accidents; e.g., intentional or unintentional jettisoning of cargo hook load.

06 Personnel-handling event:Injury or property damage accidents involving personnel-handling.

07 External-stores event:Injury or property damage resulting from external-stores handling errors or equipment failures.

08 Multiple-aircraft event:Injury or property damage resulting from the interactions of two or more aircraft. To qualify as a multiple aircraft event, two or more active aircraft must be involved. An inoperative aircraft (engine not

running) struck by an operating aircraft (engine running) does not qualify in this context.

09 Misappropriated aircraft:An aircraft accident that occurs during the operation of an aircraft that has been misappropriated, regardless of aircrew designation. Intent to fly must exist.

10 Drone aircraft: Drone aircraft have a 'Q' designator, are flown or operated by a rated aviator or ground personnel, or can be flown or operated by remote control. When manned they will be regarded as aircraft and will be reported accordingly.

11 Contractor aircraft accident:An aircraft accident that occurs as a result of a Government contractor's operation in which there is damage to DoD property or injury to DoD personnel. Included is non-delivered equipment for which the DoD has assumed responsibility.

12 Aircraft ground accident:Injury or property damage involving a DoD aircraft in which no intent to fly exists and the engines are in operation.

13 Laser induced/related:Damaged to property or injury to personnel resulting from / relating to laser operations.

14 Fratricide: The employment of friendly weapon (with the intent to kill enemy or destroy enemy equipment or facilities) that results in death, injury, or damage to friendly, neutral, or noncombatant personnel, equipment, or facilities

15-19 Reserved for future additions

20 Refueling accident: Damage incurred during refueling operations on the ground or in flight.

21 Midair collision: Two or more aircraft collide in flight. Hover is considered in flight. Damage does not have to be done to both

aircraft (will be used in addition to "08 multiple aircraft event").

22 Helocasting: Property damage or personnel injury occurring during helocasting operations.

23 Hard landing: Damage incurred due to excessive sink rate on landing touchdown. Includes autorotation landings when skids are damaged; main rotor blade flexing into tail boom; tire blowing on touchdown; landing gear driven into fuselage; fuselage, wing, etc., buckling. Note: The landing area must be suitable for a probable successful landing.

24 Wheels-up landing: Aircraft equipped with retractable landing gear in the wells. Includes intentional gear-up landings, crew forgetting to lower gear, and gear not extending when gear handle placed down.

25 Landing gear collapse / retraction: During takeoff, landing, or taxi, the gear collapses for any reason or the crew inadvertently retracts or retracts too soon on takeoff (does not include gear shearing due to hard landing).

26 Undershoot: When an approach is being made to a prepared area of field and the aircraft touches down short of the suitable landing surface. (Does not include striking wires, trees, etc., on approach except an aircraft striking an airport boundary fence.)

27 Overshoot or overrun: Landing in which the aircraft runs off the end of the runway because of touchdown speed, too-short runway, touching down too long, or failure of brakes.

28 Ditching: Landing in a controlled attitude in water. (Does not include creeks, streams, etc., or those landings to ships or barges in which the aircraft crashes in the water.)

29 Ground loop / swerve: Aircraft damage is incurred because absolute directional control is not maintained (intentional or unintentional). Includes F/W ground loops; R/W autorotational landings; R/W running landings due to anti-torque failures; aircraft running off side of runway.

30 Collision with ground / water: Accidents in which the aircraft strikes the ground or water unintentionally. Includes crashing into a mountain under IFR, IMC, or night; inadvertent flight into the ground or water, such as making a gun run and failing to pull up; low-level flight resulting in striking ground or water.

31 Aircraft collisions on the ground: Accidents in which two or more aircraft collide on the ground. None of the aircraft can be in flight. (Used in addition to 08 multiple aircraft event.)

32 Other collisions: An aircraft collides with something not accounted for by other type events listed.

33 Rotor over-speed: Main rotor rpm exceeds the allowable limits for continued flight.

34 Fire and / or explosion on the ground: Accidents that are initiated by a fire or explosion. The damage incurred must be prior to lift-off on takeoff and / or after touchdown.

35 Fire and / or explosion in the air: Same as on the ground except damage must be after lift-off and before touchdown.

36 Equipment loss or dropped object: Accidents in which some part of the aircraft or attached equipment is lost in flight, other than cargo and external stores.

37 In-flight breakup: Accidents in which aircraft begins to break up in flight. In these accidents, any type of landing is not expected. Includes loss of main rotor blades and loss of wing.

38 Spin or stall: Fixed wing only accidents resulting in stalling and/or spinning due of loss of airspeed or excessive angle of attack.

39 Abandoned aircraft: Accidents in which all flight crew members eject or parachute.

40 Flight-related accident: Damage to property or injury to personnel without damage to aircraft.

41 Instrument meteorological conditions (IMC): Aircraft must be in IMC conditions when the accident occurs. This is a condition event and should not be used in the first position.

42 Rappelling: Property damage or personnel injury occurs during rappelling operations.

43 STABO: Property damage or personnel injury occurs during STABO operations.

44 Overstress: Stress damage to aircraft as a result of operating aircraft outside design limitations.

45 FOD accident: Internal or external FOD damage confined to turbine engines only.

46 Rotor/prop wash: Property damage or personnel injury results from rotor / prop wash (does not include damage incurred by event 75).

47 Engine overspeed / overtemp: Engine rpm or temperature exceeds the allowable limits for continued operations.

48 Brownout: Loss of visual reference to the ground or horizon caused by rotor wash swirling dust around the aircraft. (This is a condition event and should not be used in the first position.)

49 Bird strike: Any part of the aircraft collides with a bird while in flight.

50 Tree strike: Aircraft strikes vegetation during any phase of flight.

51 Wire strike: Aircraft strikes any kind of wires during any phase of flight.

52 In-flight breakup: Main rotor separates as result of mast bumping.

53 Missing aircraft: Aircraft does not return from a flight and is presumed to have crashed.

54 FOD: Accident in which foreign object damage is the only damage incurred.

55 Dynamic rollover: Main rotor blades strike terrain as a result of dynamic rollover.

56 MOC: Accidents that occur during an MOC while the engine(s) is in operation and / or rotors turning.

57 Weapons related: Property damage or injury to personnel as a result of weapons operations.

58 Lightning strike: Damage to aircraft or injury to occupant because of lightning strike(s).

59 Rescue operations: Property damage or personnel injury occurs during rescue operations.

60 Object strike: Aircraft or aircraft component strikes object other than ground, trees, or objects included in other events.

61 Air to ground collision: Aircraft in the air collides with or strikes aircraft on the ground.

62 Stump strike: Aircraft contacts stump during routine landing.

63 Antenna strike: Aircraft damage caused by contact with an antenna.

64 Engine overtorque / overload: Engines are subjected to torque loads beyond power limits specified, or engine loses rpm because of overload of aircraft for density altitude.

65 Whiteout: Loss of visual reference to the ground or horizon caused by rotor wash swirling snow around the aircraft. (This is a condition event and should not be used in the first position.)

66 Tie-down strike: Damage to aircraft caused by main rotor tie-down device attached to main rotor during engine start.

67 Parachute: Accidents involving paratroop operations inside or still attached to the aircraft.

68 Mast bumping: Damage resulting from contact between the main rotor and mast but not resulting in rotor separation.

69 Structural icing: Formation of ice on aircraft structures, to include the rotor systems. Does not include carburetor, induction, or pitot static system icing.

70 Engine failure: Engine fails to develop sufficient power to maintain flight or internal failure of powerplant. Excludes fuel starvation or fuel exhaustion and FOD.

71 Transmission failure: Internal failure of a main transmission.

72 Vertical fin strike: Damage caused by tail rotor blades coming in contact with vertical fin on single-rotor helicopters.

73 Spike knock: Damage occurs when the transmission spike contacts the striker plate with sufficient force to cause damage.

74 Seatbelt / restraint harness strike: Damage caused by unsecured seatbelt/restraint harnesses.

75 Blade flapping: Damage resulting from wind or rotor wash from other aircraft that causes the main rotor blades to flap to the extent that damage occurs.

76 Fuel exhaustion: Power loss resulting from using all usable fuel aboard an aircraft.

Materiel Factor Events

In addition to events 65 and 66 listed above, the following terms and definitions are used to categorize materiel factor related mishap events. The event applies regardless of the cause of the failure or malfunction (FWT, maintenance, design or manufacture).

82 Airframe: Failure or malfunction of any airframe structure to include doors, windows, fairings, canopies, etc., to include hardware.

83 Landing gear: Failure or malfunction of any landing gear part exclusive of the hydraulics.

84 Power train: Failure or malfunction of any part or component of the power train except when events 42 and 65 applies.

85 Drive train: Failure or malfunction of any part or component of the drive train except when events 81 and 66 apply.

86 Rotor / propellers: Failure or malfunction of rotor or prop assemblies, hubs, blades, etc.

77 Fuel starvation: The result of fuel ceasing to flow to the powerplant while fuel is still on board the aircraft. Example: The pilot fails to switch tanks when one runs dry or blockage of fuel lines occurs because of contamination.

78 Animal strike: During takeoff or landing, an animal is struck by any part of the aircraft.

79 Battery fire / overheat: A fire in the battery compartment or overheated battery, usually resulting in electrical failure.

80 Excessive yaw / spin: May occur on the ground or in the air (helicopter only). A maneuver where the aircraft yaws excessively or spins when power is added without adequate anti-torque input, or a loss of anti-torque control

81 Tail-boom strike: Main rotor contacts tail curs, boom on the ground due to wind conditions. Excludes hard landings and damage caused by rotor wash.

Excludes other drive train part failures; e.g. gearboxes, mast, etc.

87 Hydraulics system: Failure or malfunction of any hydraulic part. The failure of other systems resulting from hydraulic initiated will be coded as hydraulic.

88 Pneumatic system: Failure or malfunction of any pneumatic part. The failure of any other system resulting from pneumatic initiated will be coded as pneumatic.

89 Instruments: Failure or malfunction of any part of the instrument system that results in a faulty instrument indication.

90 Warning system: Failure or malfunction of any part of the warning system that results in a false indication of a failure or malfunction. Includes electrical components of the warning system.

91 Electrical system: Failure or malfunction of any part of the AC or DC electrical systems. Includes current-producing, transforming, converting and amplifying parts; e.g., battery, generator, alternator, relay, etc.

92 Fuel system: Failure of any part of the fuel system. Does not include the fuel metering or fuel control organization which will be reported as part of the engine.

93 Flight control: Failure or malfunction of any part of the system. Excludes hydraulic part failures.

94 Utility / environmental control system: Failure or malfunction of any part of the system.

95 Avionics: Failure of any part of the radio navigation or communication equipment.

96 Cargo-handling equipment: Failure of the cargo-handling equipment attached to the aircraft only.

97 Armament: Failure of any part to include the aiming and firing system.

98 Night Vision Device: Failure or malfunction of night vision device.

Non-Aviation Event Codes

100 Physical training:

101 Weapons handling:

102 Engineering or construction:

103 Communications:

104 Security / law enforcement:

105 Fire-fighting:

106 Patient care:

107 Test / study / experiments:

108 Educational:

109 Pest / plant control:

110 Operating vehicle or vessel:

111 Handling animals:

112 Maintenance / repair / servicing:

113 Fabrication:

114 Handling material / passengers:

115 Janitorial / housekeeping:

116 Food / drink preparation:

117 Supervisory:

118 Office:

119 Counseling / advisory:

120 Sports:

121 Hobbies:

122 Passenger:

123 Human Movement:

124 Horseplay:

125 By-standing / spectating:

126 Personal hygiene / eating / sleeping:

127 Parachuting:

Control Mechanism Failure Codes (Block 17)

Leader

- 01 Inadequate or improper supervision by higher command**
- 02 Inadequate or improper supervision by management staff.**
- 03 Inadequate or improper supervision by departmental managers**
- 04 Inadequate or improper supervision by direct supervisor**

becomes a root cause when it leads to accident-causing personnel mistakes or material failure/malfunctions. Inadequate supervision is more clearly identifiable at the immediate supervisor level.

Note: Inadequate supervision

Training

- 05 Inadequate school training:** School training becomes a root cause when people make accident causing mistakes because the school training was inadequate in content or amount.
- 06 Inadequate organization/on-the-job training:** Organizational or on-the-job training becomes a root cause when people make accident-causing mistakes because the training provided was inadequate in content or amount.
- 07 Inadequate experience:** Supervised on-the-job experience is the follow-up to school and organization training programs. Experience becomes a root cause when people make accident-causing mistakes because the experience

- provided was inadequate in content or amount.
- 08 Habit interference:** Habit interference becomes a root cause when a person makes an accident-causing error because task performance was interfered with the way he usually performs similar tasks.

Standards

- 09 Inadequate written standards:** Inadequate written standards become the root causes when they lead to accident-causing mistakes or

materiel failure / malfunctions.

Support

- 10 Inadequate facilities or services:** Inadequate facilities or services become root causes when the maintenance, space and/or support provided for personnel and materiel to accomplish their functions cause mistakes or failures / malfunctions that lead to accidents. (Examples of facilities or services are recreation areas, POL services, housing, medical clinics / hospitals, weather services, storage areas, maintenance facilities, and property disposal).
- 11 Inadequate or improper equipment design or equipment not provided:** Improperly designed equipment and materiel or lack of equipment or materiel become root causes when the design or lack of equipment leads to accident-causing personnel errors or materiel failures / malfunctions.
- 12 Insufficient number or type of personnel:** Insufficient number or type of personnel becomes a root cause when people make accident-causing mistakes or materiel fails / malfunctions because the number or type of personnel provided was insufficient.

- 13 Inadequate quality control, manufacture, packaging, or assembly:** The inadequate manufacture, assembly, packaging, or quality control of materiel becomes a root cause when it leads to accident-causing personnel errors or materiel failures / malfunctions. (Note: Includes original manufacture and rebuild).
- 14 Inadequate maintenance:** Inadequate maintenance (inspection, installation, troubleshooting, record keeping, etc.) becomes a root cause when it leads to accident-causing personnel errors or materiel failures/malfunctions.

Individual

- 15 Fear, Excitement, or Anger (inadequate composure):** Each person is a part of the system. Therefore, his state of mind is a system element. Inadequate composure is a temporary state of mind that becomes a root cause when a person makes an accident-causing error because of fear, excitement, or some related emotional factor made clear,

rational thought impossible.

- 16 Overconfidence or complacency in abilities:** Overconfidence is a temporary state of mind that becomes a root cause when an accident is caused by a person's unwarranted reliance on: his own ability to perform a task, the ability of someone else to perform a task, the performance capabilities of equipment or other materiel.

- 17 Lack of confidence:** Lack of confidence is a temporary state of mind that becomes a root cause when an accident is caused by a person's unwarranted lack of reliance on: his own ability to perform the task, the ability of someone else to perform the task, the performance capabilities of equipment or other materiel.
- 18 Haste or Attitude (poor motivation):** Haste or attitude (poor motivation) is a temporary state of mind that becomes a root cause when a person makes an accident-causing mistake because he or she is in a hurry (haste), or has a poor or bad attitude.
- 19 Fatigue (self-induced):** Fatigue is a temporary physical and / or mental state that becomes a root cause when a person makes an accident-causing error because of reduced physical or mental capabilities resulting from previous activity and / or lack of rest.

- 20 Effects of alcohol, drugs, illness:** The temporary effects of alcohol, drugs, or illness become a root cause when a person makes an accident-causing error because of reduced physical or mental capabilities resulting from one or more of these effects.
- 21 Environment conditions:** Unknown or unavoidable conditions, which result in materiel failure or induce human error.
- 97 Insufficient information to determine system inadequacy or cause**

Material System (Block 18a)

- | | | | |
|-----------|----------------------------|-----------|-------------------------------------|
| 00 | Not applicable | 07 | Steering system |
| 01 | Engine / motor | 08 | Fire suppression system |
| 02 | Rotor / propeller | 09 | Electrical system |
| 03 | Drive train / transmission | 10 | Hydraulic system |
| 04 | Tires / wheels | 11 | Fuselage / structure / frame / body |
| 05 | Suspension system | 12 | Other |
| 06 | Flight controls | | |

Material Failure Cause (Block 18b)

- | | | | |
|-----------|--------------------------------|-----------|-------------|
| 00 | Not applicable / not addressed | 03 | Design |
| 01 | Material | 04 | Manufacture |
| 02 | Maintenance | | |

Material Failure / Malfunction Codes (Block 18c)

- | | | | |
|------------|--|------------|--|
| 00 | Not applicable / not addressed | M10 | Compressed / hit / punctured: Steady or abrupt application of force that presses/impacts materiel or equipment causing it to fail or malfunction. |
| M01 | Overheated / burned / melted: Excessive heat caused materiel or equipment to fail or malfunction. | M11 | Bent / warped: Changing materiel or equipment from an original straight, level, or even condition through the application of force to such an extent that it failed or malfunctioned. |
| M02 | Froze (temperature): Excessive cold caused material/equipment to fail/malfunction. | M12 | Sheared / cut: Failure or malfunction was caused by steady or abrupt force applied to materiel, resulting in a break with the two parts sliding parallel to each other in different directions. |
| M03 | Obstructed / pinched / clogged: function of materiel or equipment was hindered or completely cut off by an obstacle. | M13 | Decayed / decomposed: Chemical or biological action resulted in a gradual decline in materiel or equipment strength to such an extent that it failed or malfunctioned. |
| M04 | Vibrated: Side-to-side or forward-and-back movement of materiel or equipment caused it to fail or malfunction. | M14 | Electric current action: Action of electric current caused materiel or equipment to fail or malfunction. |
| M05 | Rubbed / worn / frayed: Friction-producing movement was applied to materiel or equipment to such an extent that it failed or malfunctioned. | M97 | Insufficient information to determine type of failure |
| M06 | Corroded / rusted / pitted: Gradual wearing away (usually by chemical action) of materiel or equipment to such an extent that it failed or malfunctioned. | | |
| M07 | Overpressured / burst: Steady or abrupt force was applied over the surface of materiel or equipment to such an extent that it failed or malfunctioned. | | |
| M08 | Twisted / torqued: Steady or abrupt application of twisting forces caused materiel or equipment to fail or malfunction. | | |

Environmental Condition Codes (Block 19)

- | | |
|---|--|
| 00 Not applicable, i.e. DoD not at fault | 15 Holes / rocky / rough / rutted / uneven |
| 01 Clear / dry | 16 Inclined / steep |
| 02 Bright / glare | 17 Slippery (not due to precipitation) |
| 03 Dark / dim | 18 Air pressure (explosion, decompression, hypoxia, etc.) |
| 04 Fog / condensation / frost | 19 Electricity (lightning, surge, grounding, etc.) |
| 06 Mist / rain / sleet / hail | 20 Electromagnetic radiation |
| 07 Snow / ice | 21 Animals |
| 08 Contaminants (fumes, dust, FOD, etc.) | 22 Fowl |
| 09 Noise / bang / static | 23 Chemicals |
| 10 Temperature / humidity | 24 Acceleration / deceleration |
| 11 Storm / hurricane / tornado | 97 Insufficient information |
| 12 Wind / turbulence | |
| 13 Vibration / shimmy / sway / shake | |
| 14 Radiation (sunlight, laser, etc.) | |

Duty Position Codes (Block 22d)

- | | |
|--|---|
| ABC Aviation Battalion Commander | FFT Crash rescue / firefighters |
| ADC Approach departure controller | FI Flight engineer instructor |
| AMC Air mission commander | FSP Flight service personnel |
| AO Aerial observer | FTM Fuel team member |
| AOT Aerial observer trainee | FTS Fuel team supervisor |
| AUC Aviation organization commander | GC Ground organization commander |
| AVT Avionics technician | GCA Final controller |
| CE Crew chief flight engineer | GG Ground guide/"Follow Me" |
| CET Combat equipped troops / jumpers | GM General mechanic |
| CP Copilot | GSY Other ground support personnel |
| DCO DA/DoD-level commander / supervisor | IE Instrument flight examiner |
| DEP Design / engineering personnel | IP Instructor pilot |
| DO Director of Operations | LCO Local commander/supervisor |
| FCO Flight leader | MCO Major commander/supervisor |
| FCT Weather personnel | ME Maintenance test flight evaluator |
| | MFP Manufacturing/rework personnel |

MO	Flight surgeon/ medical attendant	PT	Pilot trainee
MP	Maintenance test pilot	PTM	Power train mechanic
MS	Maintenance supervisor	PTO	Pilot trainee observer
OAY	Others aboard aircraft	PTR	Pilot trainee, rated
OGY	Other personnel not aboard aircraft	SI	Standardization flight engineer instructor
OP	Operations Officer	SM	Structure/airframe mechanic
OPN	Operations dispatcher, other operations personnel	SP	Standardization instructor pilot
OR	Gunner/technical observer/maintenance personnel / photographer	TI	Technical inspector
PAX	Passenger	TWC	Tower personnel
PC	Pilot in command	UNK	Unknown
PF	Pathfinder	UT	Organization trainer
PI	Pilot	XP	Experimental test pilot
PPM	Powerplant mechanic	ZR	Rated passenger

Injury Codes (Block 23e)

00	No injury	04	Lost workday
01	Fatal	05	Restricted work activity
02	Permanent total disability	06	Medical treatment; no restrictions
03	Permanent partial disability	07	Local first aid only

Injury Type (Block 23f)

00	None / not applicable	B04	4th Degree
A00	Burns, (Chemical)	B05	Burns, Thermal NFS
A01	First Degree	B06	1st & 2nd Degree
A02	Second Degree	B07	1st & 3rd Degree
A03	Third Degree	B08	2nd & 3rd Degree
A04	Fourth Degree	B09	3rd & 4th Degree
A05	Burns, Chemical, NFS	C00	Dismemberments, General
B00	Burns, (Thermal)	C01	Amputation
B01	1st Degree	C02	Avulsion (Evisceration)
B02	2nd Degree	C03	Decapitation
B03	3rd Degree	D01	Decompression / Bends

D02 Frostbite	H01 Abrasions (Scraping)
D03 Heat Exhaustion	H02 Bites
D04 Heatstroke	H03 Blister
D05 Hypothermia	H04 Confusion (Bruise, Hematoma)
D06 Immersion Foot	H05 Crushed
D07 Noise Injury	H06 Laceration / Cut
D08 Radiation (Other than Burns)	H07 Puncture, Perforation, or Penetration
D09 Exposure, NFS	H08 Transection (Cut across)
E01 Asphyxiation	H09 Wounds, NFS
E02 Hypoxia	I01 Collapsed Lung
E03 Ingestion	I02 Concussion
E04 Aspiration (Suffocation)	I03 Dermatitis
E05 Inhalation	I04 Exhaustion (Physical Exhaustion Not Related to Heat or Cold)
F00 Fractures, General	I05 Foreign Object Retained
F01 Chip / Wedge	I06 Herniation / Rupture
F02 Compound (open)	I07 Inflammation (Irritation)
F03 Compression	I08 Multiple Fatal Injuries
F04 Crushed / Depressed	I09 Internal Injury, NFS
F05 Incomplete (Greenstick)	I10 Multiple Injuries, NFS
F06 Simple (closed)	I11 Flail Chest
F07 Fracture, NFS	I96 Injury, NFS
F08 Transverse	J01 Sprain / strain
F09 Oblique	K01 Cuts / lacerations
F10 Linear	L01 Contusion
F11 Stellate	M01 Puncture wound
F12 Comminuted	N01 Hernia rupture
F13 Fracture-Dislocation	O01 Frostbite
F14 Blowout	P01 Heatstroke
G01 Dislocation-Strain	Q01 Heat exhaustion
G02 Sprain (wrenching of joint with stretching or tearing of ligaments)	R01 Noise / injury
G03 Strain (stretched ligaments or muscles)	S01 Other (Specify in Remarks)
G04 Stress Injury, NFS	

Body Region (Block 23g)

00 None / not applicable	B31 Lacrimal
A00 Body in general	B32 Palatine
B00 Head, General	B33 Zygoma / Malar
B01 Head less face	B34 Temporal
B02 Brain	B35 Parietal Area
B03 Ears	B36 Multiple Bones (Face)
B04 Hair	B37 Multiple Bones (Calvarium)
B05 Scalp	B38 Multiple Bones (Basilar)
B06 Skull	B39 Multiple Bones (Other)
B07 Temple	B40 Orbit
B08 Head less face	C00 Neck, General
B10 Face, General	C01 Esophagus
B11 Cheeks	C02 Larynx
B12 Eyes	C03 Trachea
B13 Forehead	C04 Vertebra, Cervical
B15 Lips	C05 Neck, NFS
B16 Mouth	C06 Vertebra
B17 Nose	C07 Vertebra C2
B18 Teeth	C08 Vertebra C3
B19 Tongue	C09 Vertebra C4
B20 Gums	C10 Vertebra C5
B21 Chin	C11 Vertebra C6
B22 Face, NFS	C12 Vertebra C7
B23 Frontal	C13 Invertebral Disk
B24 Ethmoid	C14 Odontoid (Atlanto Multiple Axial)
B25 Spheroid	C15 Atlanto-occipital
B26 Vomer	C16 Jugular Vein
B27 Occipital Area	C17 Carotid Artery
B28 Mandible	D00 Trunk, General
B29 Maxilla	D10 Abdomen, General
B30 Nasal	D11 Colon

D12 Gall Bladder	D61 Vertebra T2
D13 Intestines, General	D62 Vertebra T3
D14 Kidney	D63 Vertebra T4
D15 Liver	D64 Vertebra T5
D16 Pancreas	D65 Vertebra T6
D17 Spleen	D66 Vertebra T7
D18 Stomach	D67 Vertebra T8
D19 Abdomen, NFS	D68 Vertebra T9
D20 Intestines, (large)	D69 Vertebra T10
D21 Intestines, (small)	D70 Vertebra T11
D30 Back, General	D71 Vertebra T12
D31 Scapula	D72 Vertebra, Multi-Lumbar
D32 Spinal Cord, General	D73 Vertebra L1
D33 Vertebra, Multiple	D74 Vertebra L2
D34 Back, NFS	D75 Vertebra L3
D40 Chest, General	D76 Vertebra L4
D41 Clavical	D77 Vertebra L5
D42 Diaphragm	D78 Sacrum
D43 Heart	D79 Coccyx
D44 Lungs	D80 Invertebral Disc
D45 Mammary	D81 Vena Cava
D46 Ribs / Sides	E00 Upper Extremities, General
D47 Sternum	E10 Upper Arm, General
D48 Chest, NFS	E11 Shoulder
D49 Aorta	E12 Elbow
D50 Pelvis, General	E20 Lower Arm, General
D51 Bladder	E21 Wrist
D52 Buttocks	E30 Hand, General
D53 Genitalia	E31 Finger(s)
D54 Hip	E33 Thumb
D55 Rectum / Anus	E34 Hand, NFS
D59 Vertebra, Multi-Thoracic	F00 Lower Extremities, General
D60 Vertebra T1	F10 Leg Upper, General

- | | |
|-------------------------------|-------------------------|
| F11 Knee | F33 Heel |
| F20 Leg Lower, General | F34 Toes |
| F21 Ankle | F35 Foot, NFS |
| F22 Leg Lower, NFS | X97 Not Reported |
| F30 Foot, General | Y99 Other |
| F31 Arch | Z98 Unknown |
| F32 Ball | |

Injury Cause (Block 23h)

- | | |
|---------------------------------------|--------------------------------------|
| 00 None / not applicable | 09 Bodily reaction |
| 01 Caught in / under / between | 10 Overexertion |
| 02 Exposure | 11 External contact |
| 03 Struck Against | 12 Ingested |
| 04 Struck by | 13 Inhaled |
| 05 Thrown from | 97 Not Reported |
| 06 Fell from elevation | 98 Unknown |
| 07 Fell from same level | 99 Other (Specify in Remarks) |
| 08 Rubbed / abraded | |

Protective Equipment (Block 25b)

- 00** Not applicable / not addressed
- 01** Seatbelt
- 02** Helmet
- 03** Goggles / Safety Glasses
- 04** Gloves
- 05** Earplugs
- 06** Protective Body Armor
- 97** Other (*specify*)

Appendix B

DA Form 7305-R (Telephonic Notification of Aviation Accident)

Completion instructions for DA Form 7305-R.

Block 1. Enter the name, primary duty, and telephone number of the point of contact for this accident.

Block 2. Check the appropriate box that indicates the accident's classification.

Block 3. Enter the date of the accident using *YYDDMM* format. Enter the local time of the accident using the 24 hour clock.

Block 4. Enter the complete serial number of the aircraft.

Block 5. Enter the type of aircraft (mission, design, and series) listed in block 4.

Block 6. Check the appropriate box indicating the time of day. Dawn is that period of time between beginning of morning nautical twilight (BMNT) and official sunrise. Dusk is that period of time between sunset and end of evening nautical twilight (EENT).

Block 7. Enter the mission code as shown on the DA Form 2408-12. Also, check the appropriate box to indicate whether the mission was a single- or multi-ship operation.

Block 8. Check the appropriate box indicating whether the aircraft was performing nap-of-the-earth (NOE) operations.

Block 9. Check the appropriate box to indicate whether night vision device(s) / system (NVD) was in use at the time of the accident. If "Yes," specify type NVD used.

Block 10. Enter the name and address of the unit that owns the aircraft.

Block 11. Enter the name of the major command (MACOM) associated with the unit in block 10.

Block 12. Enter the name of the closest military installation to the accident site.

Block 13. Enter the exact location of the accident. You may use latitude / longitude or any other method to exactly identify the accident location.

Block 14. Check the appropriate box indicating if this accident involves material that is explosive, hazardous, or sensitive.

Block 15. If "Yes" was checked in block 14, check the appropriate box indicating if the material was secure.

Block 16. Check the appropriate box indicating if the accident site was secure IAW AR 385-40.

Block 17. Check the appropriate box indicating if the accident site was disturbed.

Block 18. If “Yes” was checked in block 17, check the appropriate box indicating if photos were taken prior to the site being disturbed.

Block 19. Check the appropriate box indicating if a flight data recorder was installed in the aircraft.

Block 20. Check the appropriate box indicating the type of flight plan / clearance for this flight.

Block 21. Enter the number of personnel involved in the accident. Identify individuals by position and indicate highest ranking individual.

Block 22. Enter the number of injuries by type as appropriate.

Block 23. Enter a brief synopsis of events from the initial onset of the emergency until the aircraft is at rest, to include injuries resulting from the accident.

Block 24. Check the appropriate box indicating if the news media is aware of the accident.

Block 25. Enter the name and ICAO identifier of the nearest commercial airport that is large enough to accommodate international flights (must be capable of handling a C-12).

Block 26. USASC use only: Check the appropriate box indicating who will perform the accident investigation.

WORKSHEET FOR TELEPHONIC NOTIFICATION OF AVIATION ACCIDENT/INCIDENT

For use of this form, see AR 385-40; the proponent agency is OCSA

<i>SHADED BLOCKS ARE FOR</i>	A. ASMIS CASE NUMBER		B. TIME & DATE OPS RECEIVED REPORT			
			a. Year	b. Month	c. Day	d. Time (local)
NOTE: ITEMS 24 AND 25 ARE NOT REQUIRED FOR CLASS C ACCIDENT						
1. POINT OF CONTACT FOR ACCIDENT INFORMATION						
<input type="checkbox"/> Commander <input type="checkbox"/> Safety Officer <input type="checkbox"/> Other (Specify)		c. Phone Number		DSN:		Commercial:
2. ACCIDENT CLASSIFICATION <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C		3. TIME & DATE OF ACCIDENT		4. AIRCRAFT SERIAL NUMBER		5. TYPE OF AIRCRAFT
		a. Year	b. Month	c. Day	d. Time (local)	
6. PERIOD OF DAY <input type="checkbox"/> Dawn <input type="checkbox"/> Dusk <input type="checkbox"/> Day <input type="checkbox"/> Night		7. MISSION BEING PERFORMED				8. NOE
		a. Type (Training, Svc, etc.)		b. Operation	<input type="checkbox"/> Single-Ship <input type="checkbox"/> Multi-Ship	<input type="checkbox"/> Yes <input type="checkbox"/> No
9. NIGHT VISION DEVICE		10. UNIT OWING AIRCRAFT		11. MACOM		
a. In Use <input type="checkbox"/> Yes <input type="checkbox"/> No		b. If Yes <input type="checkbox"/> ANVIS <input type="checkbox"/> FLIR <input type="checkbox"/> AN/PVS-5 <input type="checkbox"/> LLTV				
12. MILITARY INSTALLATION NEAREST ACCIDENT SITE				13. EXACT ACCIDENT LOCATION		
CHECK "YES" or "NO" FOR QUESTIONS 14 THROUGH 19				Yes	No	
14. EXPLOSIVE/HAZARDOUS/SENSITIVE MATERIALS INVOLVED?						21. PERSONNEL INVOLVED a. No. of Personnel by Rank/Category _____ Officer _____ WO _____ Enlisted _____ Army Civilian _____ Non-Army Civilian c. Highest Rank
15. IF YES TO #14, ARE THEY SECURE?						
16. ACCIDENT SITE SECURED IAW DA PAM 385-40?						
17. HAS ACCIDENT SCENE BEEN DISTURBED?						
18. IF YES TO #17, WERE PHOTOS, ETC. MADE BEFORE DISTURBING THE SCENE?						22. INJURIES (Enter # of each) _____ Fatalities _____ Non-Fatal Injuries As soon as possible, the following additional information is required on all injured personnel; name, personnel classification, degree of injury, and SSAN.
19. FLIGHT DATA RECORDER INSTALLED?						
20. CLEARANCE WAS: <input type="checkbox"/> VFR <input type="checkbox"/> IFR						
23. ACCIDENT SYNOPSIS (What Happened)						
24. NEWS MEDIA AWARE OF ACCIDENT <input type="checkbox"/> Yes <input type="checkbox"/> No		25. NEAREST AIRFIELD		a. Nearest that can handle C-12 (4,000 ft. min.)		
		b. Nearest commercial airfield				
26. WHO WILL INVESTIGATE?		a. Installation Level Accident Investigation (IAI) Board Appointed		<input type="checkbox"/> Yes <input type="checkbox"/> No	b. CAI Team Dispatched	
					<input type="checkbox"/> Yes <input type="checkbox"/> No	Team:

DA Form 7306-R (Telephonic Notification of Ground Accident)

Completion instructions for DA Form 7306-R.

Block 1. Enter the name, primary duty, and telephone number of the point of contact for this accident.

Block 2. Check the appropriate box that indicates the accident's classification.

Block 3. Enter the date of the accident using *YYDDMM* format. Enter the local time of the accident using the 24 hour clock.

Block 4. Check the appropriate box indicating the time of day. Dawn is that period of time between beginning of morning nautical twilight (BMNT) and official sunrise. Dusk is that period of time between sunset and end of evening nautical twilight (EENT).

Block 5. Check the appropriate box indicating if the individual(s) involved in the accident was / were on or off duty.

Block 6. Enter the type of equipment, if any, involved in the accident.

Block 7. Enter the name and address of the unit of the individual(s) involved or the unit owning the equipment in block 6.

Block 8. Enter the name of the major command (MACOM) associated with the unit in block 7.

Block 9. Check the appropriate box to indicate whether night vision device(s) / system (NVD) was in use at the time of the accident.

Block 10. Enter the exact location of the accident. You may use latitude / longitude or any other method to exactly identify the accident location.

Block 11. Check the appropriate block indicating whether the accident occurred on or off post.

Block 12. Enter the name of the closest military installation to the accident site.

Block 13. Check the appropriate box indicating if this accident involves material that is explosive, hazardous, or sensitive.

Block 14. If "Yes" was checked in block 13, check the appropriate box indicating if the material was secure.

Block 15. Check the appropriate box indicating if the accident site was secure IAW AR 385-40.

Block 16. Check the appropriate box indicating if the accident site was disturbed.

Block 17. If “Yes” was checked in block 16, check the appropriate box indicating if photos were taken prior to the site being disturbed.

Block 18. Enter the weather conditions at the time of the accident.

Block 19. Enter the number of personnel involved in the accident. Identify individuals by position and indicate highest ranking individual.

Block 20. Enter the number of injuries by type as appropriate.

Block 21. Enter a brief synopsis of events from the initial onset of the emergency until the aircraft is at rest, to include injuries resulting from the accident.

Block 22. Check the appropriate box indicating if the news media is aware of the accident.

Block 23. Enter the name and ICAO identifier of the nearest commercial airport that is large enough to accommodate international flights (must be capable of handling a C-12).

Block 24. USASC use only: Check the appropriate box indicating who will perform the accident investigation.

DA Form 2397-6-R; Crash Damage Data Details

Completion instruction for DA Form 2397-6-R, Crash Damage Data.

Block 1. This block is required for in-flight collisions, such as a midair collision, wire strike, bird strike, tree strike, etc. If doubt exists as to whether this block or block 2 should be used, both blocks can be completed. For example, the aircraft may strike a structure during an approach and continue under control some distance forward and crash; thus, in-flight and terrain collisions are involved. Near simultaneous impacts with trees, structures, etc., and the ground require block 2 to be completed. In other cases, such as a bird strike, in which a subsequent routine landing is made, only block 1 would be checked. If the information desired in these blocks cannot be determined, so state in the box(es) provided for the information.

Block 1a. Estimate or analytically determine and enter the airspeed (knots) just before impact.

Block 1b. Estimate or analytically determine and enter the vertical speed (feet per minute) just before impact, and check whether “up” or “down.” If zero, enter “0” in space provided and do not check “up” or “down” box.

Block 1c. Enter the flight path angle (degrees) at major impact and check whether “up” or down.”

Block 1d. Enter the pitch and roll angles (degrees) at moment of impact and check the appropriate direction.

Block 1e. Check obstacle(s) struck while aircraft was in flight. For example, contact with a hangar building would be checked as “Other.” Also enter collision height above the ground.

Block 1f. Check box to identify area of aircraft that sustained the strike. If aircraft sustained a strike at more than one location, check several boxes and indicate 1st, 2nd, 3rd, to show strike sequence.

Block 1g. Check the appropriate box to reflect the wire/cable(s)/obstacle consciousness to the pilot under the environmental conditions and terrain at the time of the incident.

Block 1h. Enter the outside diameter for the type cable/bundle struck. The outside diameter of the wire bundle/cable including insulation is desired, not the individual wire inside the bundle or cable. Enter the number of wires struck in the impact; i.e., in a five-cable power transmission line, only three cables may be struck.

Block 1i. Check whether or not a wire strike protection system (WSPS) was installed. Also check whether or not the WSPS cut the wire.

Block 1j Enter outside diameter of tree limb, pole, bush, etc., that was struck, if applicable.

Block 2. Complete this block to show terrain collision kinematics at instant of major impact. If block 1 was filled out and aircraft continues under control after in-flight collision and then sustains further damage upon ground impact, complete block 2 also. If aircraft sustains in-flight damage such as from a bird strike and then makes a routine landing, block 2 does not have to be filled out.

Block 2a. Estimate or analytically determine and enter the ground/horizontal velocity (knots) at the instant of the major impact. The horizontal velocity is desired. This value is not to be confused with airspeed or resultant velocity. The ground speed vector combined with the vertical speed vector can be used to determine the resultant velocity as shown for sample high angle and low angle impacts.

Block 2b. Estimate or analytically determine and enter the vertical speed (feet per minute) just before impact and check whether “up” or “down.” The vertical speed at impact can be combined with ground speed to yield the resultant velocity as discussed above.

Block 2c. Enter the flight path angle (degrees) just before impact and check whether “up” or “down.”

Block 2d Indicate by check marks which two of the three parameters above are the most accurate. Since any two items can determine the third, it is necessary to determine which two (a or b, b and c, or a and c) the investigator feels are most accurate. Check only two boxes.

Block 2e. Enter the impact angle (degrees).

Block 2f. Enter the pitch, roll, and yaw attitude (degrees) of aircraft at the instant of impact.

- 1) *Pitch.* Enter degrees and check “up” or “down” pitch in appropriate box.
- 2) *Roll.* Enter degrees and check “Left” or “Right” roll in appropriate box.
- 3) *Yaw.* Enter degrees and check “Left” or “Right” yaw as appropriate. If nose is to left of flight path, check “Left” box; if nose is to the right, check “Right” box.

Block 3a. Check the appropriate box indicating of the aircraft rotated about a major axis after impact.

Block 3b. Enter the roll in degrees for the appropriate direction if the aircraft rolled significantly after the major impact. A value should be entered even if the aircraft comes to rest in the original attitude after it has rotated during the crash sequence.

Block 3c. Enter the yaw in degrees for the appropriate direction if the aircraft yawed significantly after the major impact. A value should be entered even if the aircraft comes to rest in the original attitude after it has yawed during the crash sequence.

Block 3d. Enter the pitch in degrees from the horizontal (level) attitude if the aircraft pitched (nose up or down) after major impact and check the appropriate box to indicate if the pitch was up or down. For example, if an aircraft rotates forward about the nose as a fulcrum; i.e., a forward pitching motion, check “down.”

Block 4a. Estimate or analytically determine and enter the vertical force (g's) at the aircraft center of gravity (CG). Check whether the force was “up” or “down.”

Block 4b. Estimate or analytically determine and enter the longitudinal force (g's) at the aircraft CG. Check whether the force was “fore” or “aft.”

Block 4c. Estimate or analytically determine and enter the lateral force (g's) at the aircraft CG. Check whether the force was “left” or “right.”

Block 5. Enter the case number as shown on the DA Form 2397.

Block 6. Use only for aircraft other than “case aircraft” in incidents involving more than one aircraft. Enter serial number of other aircraft only on each DA Form 2397-6 that applies to other aircraft.

Block 7. This block shows fuselage structural deformation or collapse and its relation to personnel impact injuries. The areas of fuselage most likely to be deformed are stated in items a through f. The location of the deformation is indicated in the four columns labeled cockpit, forward, middle and rear cabin. If the deformation or collapse caused injuries to personnel, the appropriate box of item 7 should be checked.

Blocks 7a-e. Check column(s) 1 through 4 to show the location of deformation for each fuselage area. As a general rule, deformation of 3 inches or less is not enough to be recorded because injuries are not likely to result from such movement. If personnel injuries were caused by fuselage structural deformation, columns 5 through 8 should be checked in the appropriate box. Injuries caused by nonuse of restraint and seat failure and other injuries not related to fuselage deformation are not to be recorded here.

Block 7f. Check box to indicate whether the floor was deformed locally under the seat structure. This type deformation may occur as a

result of external rock or tree stump impact. For example, if one seat leg floor fitting is pushed upward by at least e inches with respect to the other three fittings, check the box. The same applies to sideward or fore / aft movement of the seat leg floor fittings. (NOTE: Photographs should be made of the deformed areas checked under items a through f. At least two photos should be obtained, and they should be taken along mutually perpendicular axes to help offset the effect of distortion.)

Block 8. This block indicates the displacement of heavy aircraft components so their potential for injury or for ignition of fires may be evaluated. Only those components expected to be a major hazard are listed under items a through e. Block f provides for the displacement of other heavy components such as engines, prop blades, electrical boxes, etc., which could be a hazard to personnel. Columns 1 through 4 describe the displacement of the components from their normal position.

Blocks 8a-d. These components are potentially the most hazardous on rotary-wing aircraft. Displacement of single rotor transmission and/or rotor blades are to be checked in items a and c while tandem rotor aircraft are to be checked in items a, b, c, and d as appropriate. In the main rotor hub(s) remain attached to their blades, the hub is assumed an integral part of the blade(s) and is checked under item c or d. If the hub(s) remain attached to the transmission(s), the hub is assumed an integral part of the transmission and displacement is checked under item a or b.

Block 8e. Check landing gear displacement. Specify which landing gear, wheel, or skid displaces by simply stating the location on the aircraft; i.e., left front, center front, right front, left rear, center rear, right rear. If more than one gear displaces, continue the identities show above in remarks block (block 11) to indicate the displacement.

Block 8f. Check this box(es) to identify displacement of heavy component(s) not shown above. If more than one mass is involved, explain in block 10.

- 1) *Column 1.* Check box(es) in this column if sufficient displacement has occurred to cause the component to be hazardous even though injuries may not be present. For helicopter transmissions, it is probable that a 10 degree tilt of the transmission and rotor mast will result in a hazardous condition due to fuselage rotor blade strike potential. Likewise, a 6-inch displacement of the transmission, along any axis, will probably result in a hazardous condition. Check the box for rotor blade(s) (item c or d) if it is determined that further blade rotation would result in an occupiable volume blade strike.

- 2) *Column 2.* Check box if a major component is separated completely from its normal structural attachment even though the component may still be held by flexible attachments such as control cables or rods and electrical wires.
- 3) *Column 3.* Check this box if component actually deformed or penetrated the cockpit “container” sufficiently to create a hazard.
- 4) *Column 4.* Check this box if component actually deformed or penetrated the cabin “container” sufficiently to create a hazard. Photographs should be made of the displaced components checked under items a through f. At least two photos should be obtained, and they should be taken along mutually perpendicular axes to help offset the effect of distortion.

Block 9a. Check whether or not aircraft is equipped with crash resistant fuel system.

Block 9b. If aircraft is equipped with crash-worthy fuel system, check to determine whether the breakaway valves in the fuel system did separate.

Block 9c. Check whether or not flammable fluid spillage occurred. If “yes” box is checked, complete block e.

Block 9d. Check whether or not aircraft was equipped with auxiliary fuel tanks and indicate if the tanks were internal or external. Also, check the appropriate box which best describes the crashworthiness of the tanks. If the tanks are partially crash-worthy, check “No” and explain in the remarks.

Block 9e. In the space corresponding with the amount of flammable fluid spilled, enter the type of fluid which was spilled e.g., Jet-A, JP-8, etc. Example: 15 gallons of JP-8 fuel was spilled, enter JP-8, under the fuel column, adjacent to the >10-20 amount line. The amount of spilled fluid can be estimated by:

- 1) The difference between quantity of fluid remaining and fluid before incident, and;
- 2) A knowledge of the probable mode of failure in the fluid system; i.e., did fluid trickle out at slow rate or did it gush out all at once?

Block 10. Identify one or more spillage sources by writing the name of the part causing or permitting leakage. Rows 7,8, and 9 may be used to list other sources such as coolers, accumulators, etc. Also, write in the manufacturer’s part number and the NSN. The exact identity of the part causing leakage is desired, not the component or assembly. State cause of fluid spillage in REMARKS. For example, a shift of cargo may have crushed the internal auxiliary fuel tanks.

Block 11. Explain in remarks any additional data the investigation board deems appropriate.

**TECHNICAL REPORT OF U.S. ARMY AIRCRAFT ACCIDENT
PART VII - IN-FLIGHT OR TERRAIN IMPACT AND CRASH DAMAGE DATA**

For use of this form, see AR 385-40 and DA Pamphlet 385-40; the proponent agency is OCSA

**REQUIREMENTS CONTROL
SYMBOL
CSOCS-309**

1. IN-FLIGHT COLLISION KINEMATICS AT INSTANT OF IMPACT

<p>a. Airspeed At Impact (<i>knots</i>) _____</p> <p>b. Vertical Speed (<i>feet per minute</i>) <input type="checkbox"/> Up <input type="checkbox"/> Down _____</p> <p>c. Flight Path Angle (<i>degrees</i>) <input type="checkbox"/> Up <input type="checkbox"/> Down _____</p> <p>d. In-Flight Attitude At Impact</p> <p>(1) Pitch Angle _____ (2) Roll Angle _____</p> <p>Degrees _____ <input type="checkbox"/> Up <input type="checkbox"/> Down Degrees _____ <input type="checkbox"/> Left <input type="checkbox"/> Right</p>	<p>f. Obstacle Strike Sequence (<i>Enter 1, 2, 3, etc. to show sequence of strike</i>)</p> <table style="width:100%;"> <tr> <td>_____ Prop/Rotor</td> <td>_____ Landing Gear</td> </tr> <tr> <td>_____ Rotor Mast</td> <td>_____ Wing</td> </tr> <tr> <td>_____ Tail Rotor</td> <td>_____ Empennage</td> </tr> <tr> <td>_____ Tail Boom</td> <td>_____ WSPS</td> </tr> <tr> <td>_____ Windscreen</td> <td>_____ FLIR</td> </tr> <tr> <td>_____ LWR Nose/Gun Turret</td> <td>_____ Other (<i>Specify</i>)</td> </tr> </table> <p>g. Obstacle Conspicuity (<i>Within accident distance from pilot's position, the obstacle in its surroundings was obscured</i>) (1) <input type="checkbox"/> Completely (2) <input type="checkbox"/> Partially (3) <input type="checkbox"/> Not Obscured</p> <p>h. Wire or Cable Description</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:50%;">Type</th> <th style="width:25%;">Dia In Inches</th> <th style="width:25%;">No. Struck</th> </tr> </thead> <tbody> <tr> <td>(1) Power Transmission</td> <td></td> <td></td> </tr> <tr> <td>(2) Telephone or TV</td> <td></td> <td></td> </tr> <tr> <td>(3) Bracing (<i>guy/support</i>)</td> <td></td> <td></td> </tr> <tr> <td>(4) Other (<i>Specify</i>)</td> <td></td> <td></td> </tr> </tbody> </table> <p>i. WSPS (1) Installed <input type="checkbox"/> Yes <input type="checkbox"/> No (2) Cut Wire <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>j. Obstacle Struck Other Than Wire (<i>diameter in inches</i>) _____</p>	_____ Prop/Rotor	_____ Landing Gear	_____ Rotor Mast	_____ Wing	_____ Tail Rotor	_____ Empennage	_____ Tail Boom	_____ WSPS	_____ Windscreen	_____ FLIR	_____ LWR Nose/Gun Turret	_____ Other (<i>Specify</i>)	Type	Dia In Inches	No. Struck	(1) Power Transmission			(2) Telephone or TV			(3) Bracing (<i>guy/support</i>)			(4) Other (<i>Specify</i>)		
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<p>e. Obstacle Identity And Collision Height</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:30%;">Obstacle</th> <th style="width:70%;">Collision Height Above Ground (<i>feet</i>)</th> </tr> </thead> <tbody> <tr> <td>(1) <input type="checkbox"/> Birds</td> <td></td> </tr> <tr> <td>(2) <input type="checkbox"/> Aircraft</td> <td></td> </tr> <tr> <td>(3) <input type="checkbox"/> Wires/Cables</td> <td></td> </tr> <tr> <td>(4) <input type="checkbox"/> Vehicles</td> <td></td> </tr> <tr> <td>(5) <input type="checkbox"/> Tree</td> <td></td> </tr> <tr> <td>(6) <input type="checkbox"/> Other</td> <td></td> </tr> </tbody> </table>	Obstacle	Collision Height Above Ground (<i>feet</i>)	(1) <input type="checkbox"/> Birds		(2) <input type="checkbox"/> Aircraft		(3) <input type="checkbox"/> Wires/Cables		(4) <input type="checkbox"/> Vehicles		(5) <input type="checkbox"/> Tree		(6) <input type="checkbox"/> Other															
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2. TERRAIN COLLISION KINEMATICS AT INSTANT OF MAJOR IMPACT

<p>a. Ground Speed at Impact _____ (<i>knots</i>)</p> <p>b. Vertical Speed <input type="checkbox"/> Up <input type="checkbox"/> Down _____ (<i>FPM</i>)</p> <p>c. Flight Path Angle <input type="checkbox"/> Up <input type="checkbox"/> Down _____ (<i>degrees</i>)</p>	<p>d. Indicate by Check Marks Which Two of The Three Preceding Parameters (<i>a, b, c</i>) Are The Most Accurate a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/></p> <p>e. Impact Angle _____ (<i>degrees</i>)</p>
<p>f. Attitude at Major Impact</p> <p>(1) Pitch _____ (2) Roll _____ (3) Yaw _____</p> <p>Degrees _____ <input type="checkbox"/> Up <input type="checkbox"/> Down Degrees _____ <input type="checkbox"/> Left <input type="checkbox"/> Right Degrees _____ <input type="checkbox"/> Left <input type="checkbox"/> Right</p>	

3. ROTATION AFTER MAJOR IMPACT

<p>a. Did Aircraft Rotate About Any Axis After The Above Major Impact (<i>If yes, complete items b, c, and d</i>) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown</p>		
<p>b. Roll Degrees <input type="checkbox"/> Left <input type="checkbox"/> Right Degrees _____</p>	<p>c. Yaw Degrees <input type="checkbox"/> Left <input type="checkbox"/> Right Degrees _____</p>	<p>d. Pitch Degrees <input type="checkbox"/> Up <input type="checkbox"/> Down Degrees _____</p>

4. IMPACT FORCES RELATIVE TO AIRCRAFT AXES (G's)

<p>a. Vertical (G's) <input type="checkbox"/> Up <input type="checkbox"/> Down G's _____</p>	<p>b. Longitudinal (G's) <input type="checkbox"/> Fore <input type="checkbox"/> Aft G's _____</p>	<p>c. Lateral (G's) <input type="checkbox"/> Left <input type="checkbox"/> Right G's _____</p>
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5. CASE NO.	a. Date (YYMMDD)	b. Time	c. Acft Serial No.	6. OTHER ACFT SERIAL NO.
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DA Form 2397-7-R; Maintenance and Material Data Details

Completion instructions for DA Form 2397-7-R, Maintenance and Material Data.

Block 1. Applies to the aircraft and not the component or part that failed. Enter data from aircraft records. If additional DA Form 2397-7-Rs are needed for multiple failed parts from the same aircraft, it is not necessary to duplicate this information.

Block 1a. Enter the total on the airframe until the time of the incident. Obtain data from DA Form 2408-13 (Status Information).

Block 1b. Obtain data from DA Form 2408-15 (Historical Record for Aircraft).

Block 1c. Enter the date of the last phase inspection. Obtain data from DA Form 2408-15.

Block 1d. Enter the hours flown since the last phase inspection.

Block 1e. Enter the organization that performed the last phase inspection.

Block 2. This block shows the causative role of material, maintenance, design and manufacture as they pertain to the major component/part reported in block 3 of this form.

Block 2a. Check the appropriate box to show whether or not material failure/malfunction of the component/part in block 3 had a causative role in the incident.

Block 2b. Check the appropriate box to show whether or not a maintenance act of omission or commission had a causative role in the incident.

Block 2c. Check the appropriate box to show whether or not design had a causative role in the incident. Design is a factor when the component/part failed to perform its specified function because of design inadequacies.

Block 2d. Check the appropriate box to show whether or not manufacture had a causative role in the incident. Manufacture is a factor when the component/part was not manufactured to meet proper design specifications.

Note: If maintenance was checked as a cause factor in block 2, explain in block 6 or continuation sheet the technical manual or other directive requirement for the maintenance and how the error committed or the omission of a requirement(s) related to the major component/part shown in block 3.

Block 3. Fill out major component and part columns in complete detail for each item of material whose failure or malfunction contributed or is suspected of contributing to the cause of the incident. Blocks a-k apply to the component or part, not the aircraft.

Blocks 3a and b. Obtain from appropriate parts manual. When the major component is an engine, transmission, or gearbox and the aircraft is equipped with more than one like item, identify which major component is listed; e.g., No1 engine, forward transmission, 42-degree gearbox, etc.

Block 3c. The part number should be taken from the part or component if possible. The maintenance / technical manual will be used as a source for the part number only if it cannot be determined from the part.

Block 3d and e. Obtain from appropriate maintenance / technical manual.

Block 3f. Enter the serial number from the item of material. If the number differs from that contained in the Form 2408-16, state this fact in block 6 or on a continuation sheet.

Block 3g. Obtain from appropriate maintenance / technical manual.

Block 3h. Extract this information from DA Form 2408-16 and DA Form 2410 (Component Removal and Repair/Overhaul Records). Enter the type, date, and hours since the last special inspection on the listed item of material; e.g., "overspeed," "hard landing," etc. For components/parts installed during aircraft production, enter "N/A."

Blocks 3i and j. Enter the type and cause of failure codes found Appendix A.

Block 3k. Obtain from Standard Form 368 (Deficiency Report).

Block 4a. Check the appropriate block to show status of aircraft warning system(s) for the failed part at time of emergency. If inoperative is checked, explain in block 6 or on a continuation sheet.

Block 4b. Check the appropriate box to indicate if the warning systems indication of the failure/malfunction provided to the crew was correct for the failed part. If incorrect, explain in block 6 or on a continuation sheet.

Block 4c. Check the appropriate block indicate the initial indication of the failure; e.g., a hydraulic warning light illuminates followed by stiffness in the controls, check the warning system block to indicate what first alerted the crew to a failure/malfunction.

Block 5a. Specify the organization/laboratory that performed the teardown analysis.

Block 5b. Enter the control number, if applicable.

Block 6. Explain delays in shipment of failed part, fluid samples, or any other material related data deemed appropriate by the board president. If additional space is required, attach continuation sheet.

Block 7. Enter the case number shown on the DA Form 2397.

Block 8. Use only for aircraft other than “case aircraft” in incidents involving more than one aircraft. Make entry only on the form identifying the maintenance and material data for other aircraft.

DA Form 2397-8-R; Personal Data Details

Completion instructions for DA Form 2397-8-R, Personnel Data.

Block 1a. Check “definitely” box if person made an error that caused or contributed to the incident. Do not check the “definitely” box unless the relationship of the error to the incident is fully substantiated in the findings of DA Form 2397-1 and analysis part of the DA Form 2397-2. Check the “suspected” box if the individual committed an error that is suspected to have caused or contributed to the incident. Check “no” or “undetermined” box as appropriate.

Block 1b. Check the appropriate box.

Block 2. Most items are self-explanatory. Record hours and tenths of hours as appropriate. For items d through l, the 24-, 48-, and 72-hour periods are calculated to the time of the incident.

Block 3. Most times in block 3 are self-explanatory. The sources for this information will be the individual’s aircrew training folder and the LAS Individual Flight Record. Those items requiring further explanations are indicated below.

Block 3l. Enter the Maintenance / technical manual task number that best describes flight profile (takeoff, climbs, turns, straight and level, hovering autorotation, etc.) that was in progress when the emergency situation developed. An event becomes an emergency whenever an error by the crew, a materiel failure, an obstacle strike, or other unpredictable event creates a need for an emergency response. If no Maintenance / technical manual task applies, leave blank and explain the flight profile/activity in block 9.

Block 3m. Pertains to the Maintenance / technical manual task required to cope with the emergency. A tail rotor strike may result in a loss of anti-torque control, thereby requiring the performance of the task procedures prescribed for an anti-torque malfunction. If no Maintenance / technical manual task applies, leave blank and explain the flight profile/activity in block 9.

Block 3n. If “yes” box is checked, identify in block 9 the condition for which the waiver was fronted and the office authorizing the waiver. If waiver data clarification is needed, enter a brief explanation in block 9.

Block 3o. Report an “S” for satisfactory or “U” for unsatisfactory. If result is “U”, enter a brief explanation in block 9. If the evaluation has been delayed, enter a “dash” to indicate information is not available and explain the delay in block 9.

Block 3p. Enter date of post-incident medical examination or admission to a medical facility for treatment of injuries resulting from the incident. For non-survivors, enter date of autopsy.

Block 3q. Check the appropriate box to indicate if the blood and urine laboratory test required was accomplished.

Block 4. Flight and crew duty experience will be completed for all crewmembers. The source of this data is the individual's DA Form 759 Individual Flight Record. Flight experience will be recorded to the nearest hour (no tenths).

Block 4a(1). Pertains to flight experience, involving US Army operations, by category of aircraft. Combat, imminent danger, and flight experience in incident aircraft is also recorded in this block.

Block 4a(2). Flight experience regardless of duty, not involving US Army operations, e.g., flying clubs, instructional, hobby, pleasure, commercial, etc., is to be entered in this block by category of aircraft.

Block 4a(3). Total time. Self explanatory.

Blocks 4b and e. Duty experience. Block b pertains to rated aviator duties and item e pertains to other crew duty experience. Enter the total time for the duty listed. The source of this information is the individual's DA Form 759 Individual Flight Record.

Block 4c. Flight condition experience. Enter the total flight hour experience in block 4c(1) for flight conditions listed. The source of this information is the individual's DA Form 759 Individual Flight Record.

Block 4d. Monthly flight hours. Pertains to flight time in incident aircraft for the current calendar month plus the preceding 30, 60, and 90 days up to and including the incident flight.

Block 5. Pertains to maintenance, medical, support, and other non-rated personnel only. The information source is the individual's personnel qualification record.

Block 6. Enter the case number shown on the DA Form 2397.

Block 7. Use only for aircraft other than "case aircraft" in incidents involving more than one aircraft. Make entry only on the form identifying the personnel associated with other aircraft.

Block 8. Record toxicological laboratory analysis results. In the "specimen tested" column, enter "blood", "urine", etc., to indicate the source of the specimen; if no specimen was tested, enter "none". Enter "Pos" in the results block for drugs identified as present and the drug name in the appropriate box. If drug(s) was/were administered by medical personnel following the accident but prior to collection of the test specimen, record this information in block 10. Use standard

terminology to report methods and results. Tests are MANDATORY for ALL crewmembers and/or any fatality involved in any Class A through Class C flight or property damage incident even if there seems to be no apparent likelihood of positive results. Timeliness of test is important and the specimens should be acquired as soon as possible following the incident. Significant results should be briefly explained in block 10 and thoroughly discussed in the analysis part of the narrative (DA Form 2397-2). If specimen testing was required but not accomplished, explain why it was not accomplished in block 10.

Block 9. Complete block 9 if block 3n is checked “yes” or autopsy report reveals significant findings of pre-existing diseases or defects.

Block 10. Enter significant medical history pertinent to the accident investigation.

Block 11. Enter the name of the individual referenced in this report.

Block 12. Enter the social security number (SSN) of the individual named in block 11.

Block 13. Enter the pay grade of the individual named in block 11.

Block 14. Enter the sex of the individual named in block 11.

Block 15. Enter the MOS / duty position of the individual named in block 11.

Block 16. Enter the personnel service code from Appendix A of the individual named in block 11.

Block 17. Enter the unit identification code (UIC) of the individual named in block 11.

**TECHNICAL REPORT OF U.S. ARMY AIRCRAFT ACCIDENT
PART IX - PERSONAL DATA**

For use of this form, see AR 385-40 and DA Pamphlet 385-40; the proponent agency is OCSA

*REQUIREMENTS CONTROL SYMBOL
CSOCS-309*

1. ROLE OF THIS INDIVIDUAL

a. Errors That Caused/Contributed to Accident <input type="checkbox"/> Definitely <input type="checkbox"/> Suspected <input type="checkbox"/> None <input type="checkbox"/> Undetermined	b. On Controls When Accident Occurred <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Undetermined
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2. BACKGROUND DATA

a. Age		g. Hours Worked Last 24 Hours	
b. Hours Awake Prior to Accident		h. Hours Worked Last 48 Hours	
c. Hours Duration Last Sleep Period		i. Hours Worked Last 72 Hours	
d. Hours Slept Last 24 Hours		j. Hours Flown Last 24 Hours	
e. Hours Slept Last 48 Hours		k. Hours Flown Last 48 Hours	
f. Hours Slept Last 72 Hours		l. Hours Flown Last 72 Hours	

3. CREWMEMBER DATA

a. Primary Acft MTDS		j. NVG Qualified	<input type="checkbox"/> Yes <input type="checkbox"/> No
b. Alternate Acft MTDS		k. Date Qualified In Acft MTDS (YYMMDD)	
c. Additional Acft MTDS		l. ATM Task Number Associated With Initial Indication of Emergency	
d. FAC		Last Performed (YYMMDD)	
e. RL In Accident Acft MTDS		m. ATM Task Number Involved In Response To Emergency	
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> NA		Last Performed (YYMMDD)	
f. APART Completed (YYMMDD)		n. Medical Waiver	<input type="checkbox"/> Yes <input type="checkbox"/> No
g. Physical Exam Completed (YYMMDD)		o. Post-Accident Flight Eval (YYMMDD) Result	
h. Most Recent Evaluation Flight In Accident MTDS Acft (YYMMDD)		p. Post-Accident Medical Exam/Autopsy (YYMMDD)	
i. MTDS Acft Flown In Last 60 Days	(1)	q. Required Lab Tests Accomplished	
	(2)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	(3)		

4. FLIGHT AND CREW DUTY EXPERIENCE (Round off to the nearest hour)

a. Type Experience And Time	Rotary Wing	Fixed Wing	Total	Imminent Danger	Combat	Acft Aircraft Hrs Design	Series				
(1) Military											
(2) Civilian											
(3) Total Hours											
b. Duty Experience											
Duty	CP	PI	PC	UT	IP	IE	SP	MP	ME	XP	
Total Hours											
c. Flight Condition Experience											
Condition	D	N	H	W	NG	DG	NS	DS	TR	AA	
Total Hours											
d. Monthly Flight Hours Past 3 Months In Accident Acft MTDS				e. Other Crew Duty Experience							
Date	Prev 90	Prev 60	Prev 30	This Mo.	Duty	CE	OR	AO	MO	FI	SI
Hours					Total Hours						

5. MAINTENANCE AND SUPPORT PERSONNEL DATA

a. PMOS	Title	f. Civilian Job Series or Title
b. SMOS	Title	
c. DMOS	Title	
d. Deficient Task No.		
e. MOS Verification		Performance Standards Met For This Task <input type="checkbox"/> Yes <input type="checkbox"/> No
(1) SQT/SDT <input type="checkbox"/> Go <input type="checkbox"/> No Go		
(2) Overall Percentile _____ %		

6. CASE NO.	a. Date (YYMMDD)	b. Time	c. Acft Serial No.	7. OTHER ARCFT SERIAL NO.
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8. LABORATORY TESTS								
Type Test	Specimen Tested	Results	Name of Drug		USASC Code Block			
a. Carbon Monoxide								
b. Alcohol/Volatiles								
c. Drug Screen								
d. Other								
9. HISTORY OF DISEASES/DEFECTS								
Diagnosis	Method of Discovery				Waivers		USASC Code Block	
	Anl Phy	Sick Call	Autopsy	Other	Auth.	Date (YYMMDD)		
10. REMARKS								
11. NAME (Last, First, MI)		12. SSN		13. GRADE	14. SEX	15. DUTY	16. SVC	17. UIC

DA Form 2397-9-R; Injury / Occupational Illness Data Details

Completion instructions for DA Form 2397-8-R, Personnel Data.

Block 1. Check the appropriate box indicating the highest degree of injury for this individual.

Block 2. If block d or e was checked in block 1, enter the number of days away from work, the number of days hospitalized, and the days of restricted work activity in the spaces provided. Ensure the days away from work is not inclusive of days hospitalized.

Block 3. If the person was unconscious, enter the duration in hours and minutes and show the cause mechanism, if known, in block 5. If none, check none.

Block 4. If amnesia was present, show duration and explain in block 6. If amnesia was not present, check none.

Block 5. Describe individual injuries in descending order of severity and associated cause factors, using the applicable information codes found in DA Pam 385-40.

Block 6. Enter additional information which further clarifies information coded on this form. For instance, if the flight surgeon / physician feels the available codes do not sufficiently describe the injuries or mechanisms involved then he / she may details these items in the space provided. Additional comments may be included on plain paper.

Block 7. Check the appropriate box indicating whether an autopsy, if applicable, was performed. If an autopsy was not performed explain why in block 6.

Block 8. Report the official cause of death, if applicable.

Block 9. Check the appropriate duty status of the individual listed in block 10.

Block 10 through 16. Enter the appropriate information for the individual concerned.

Block 17. Enter the case number as shown on DA Form 2397.

Block 18. Use only for aircraft other than "case aircraft" in incidents involving more than one aircraft. Make entry only on the form identifying the personal injuries associated with other aircraft.

Block 19. Enter the injury / fatality cost in accordance with table 4 of this manual.

TECHNICAL REPORT OF U.S. ARMY AIRCRAFT ACCIDENT

PART X - INJURY/OCCUPATIONAL ILLNESS DATA

For use of this form, see AR 385-40 and DA Pamphlet 385-40; the proponent agency is OCSA

REQUIREMENTS CONTROL SYMBOL

CSOCS-309

1. DEGREE OF INJURY <i>(Check only the most severe injury)</i>													
a. <input type="checkbox"/> Fatal			d. <input type="checkbox"/> Lost Workday <i>(Days away from work)</i>			g. <input type="checkbox"/> First Aid Only							
b. <input type="checkbox"/> Permanent Total Disability			e. <input type="checkbox"/> Workday of Restricted Activity			h. <input type="checkbox"/> Missing and Presumed Dead							
c. <input type="checkbox"/> Permanent Partial Disability			f. <input type="checkbox"/> No Lost Workday or Restricted Activity										
2. NUMBER OF LOST WORKDAYS		a. Days Away From Work			b. Days Hospitalized			c. Days of Restricted Activity					
3. UNCONSCIOUS		Hrs		Min		<input type="checkbox"/> None		4. AMNESIA		Hrs			
										Min <input type="checkbox"/> None			
5. INJURIES		Injuries				Mechanism		Cause Factors					
Seq No. a.	Body Region b.	Primary Aspect c.	Secondary Aspect d.	Inj Type/Result e.	Abbreviated Injury Scale f.		Action g.	Qualifier h.	Subject i.	Action j.	Qualifier k.		
6. REMARKS <i>(Use additional sheet if required)</i>													
7. AUTOPSY PERFORMED		a. <input type="checkbox"/> Yes		8. CAUSE OF DEATH						9. DUTY STATUS		a. <input type="checkbox"/> On Duty	
		b. <input type="checkbox"/> No										b. <input type="checkbox"/> Off Duty	
10. NAME <i>(Last, First, MI)</i>				11. SSN			12. GRADE	13. SEX	14. DUTY	15. SVC	16. UIC		
17. CASE NO.	a. Date <i>(YYMMDD)</i>		b. Time		c. Acft Serial No.			18. OTHER ACFT SERIAL NO.		19. INJURY COST			

DA Form 2397-SMS-15-R; Estimated Cost of Damage

Completion instructions for DA Form 2397-SMS-15-R, Estimated Cost of Damage (ECOD).

Block 1a. Enter the description or nomenclature of the item that needed replacement due to damage.

Block 1b. Enter the part number or national stock number if applicable of the damaged item.

Block 1c. Enter the replacement cost of the damaged equipment.

Block 1d. Enter the cost of damage done as a result of this accident to other / additional Department of Defense equipment / facilities.

Block 1e. Enter the cost of damage done as a result of this accident to non-Department of Defense equipment / facilities.

Block 2a. Enter the subtotals of blocks 1c, 1d, and 1e accordingly.

Block 2b. Enter the total manhours expended as a result of this accident. Include manhours for equipment repair, inspection, and accident clean-up. Do not include any medical manhours or search and rescue manhours.

Block 2c. Enter the average cost per manhour. If exact manhour costs were used for every individual, leave this block blank and record total manhour costs in block 2d.

Block 2d. Enter the total manhour costs based on exact manhour calculations or based on manhours X average cost per manhour (2b X 2c).

Block 3. Enter applicable remarks.

Block 4. Enter the case number and related information as shown on the DA Form 2397.

