



## Civil and Military Aircraft Accident Procedures for Police Officers and Emergency Services Personnel



Australian Government  
Australian Transport Safety Bureau



Australian Government  
Department of Defence



**Australian Government**

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Department of Defence  
Directorate of Defence Aviation  
and Air Force Safety

# **Civil and Military Aircraft Accident Procedures for Police Officers and Emergency Services Personnel**

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Produced jointly by the Australian Transport Safety Bureau (ATSB) and the  
Directorate of Defence Aviation and Air Force Safety (DDAAFS)

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## FOREWORD

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**T**he first people to arrive at an aircraft accident site can significantly help minimise injury and loss of life, reduce property loss through damage and fire, and prevent loss of clues and evidence as to the factors that contributed to the accident.

To preserve evidence for an effective investigation, it is essential to appropriately manage and control the accident site.

Often, emergency services (police, fire brigades and ambulance) are the first trained personnel at aircraft accident sites.

This booklet, jointly produced by the Australian Transport Safety Bureau (ATSB) and the Directorate of Defence Aviation and Air Force Safety (DDAAFS), assists you, in your emergency services role, to better understand the essential procedures as well as the many hazards on aircraft accident sites.

The booklet also provides guidance to civil authorities, the military, or others arriving at an aircraft accident site.

It supersedes the joint ATSB/DDAAFS booklet: *Civil and Military Aircraft Accident Procedures for Police Officers and Emergency Services Personnel (Editions 1, 2, 3 and 4)*.

This booklet also features a 'what to do' checklist in its centre pages for easy reference.

The checklist should help personnel undertake essential actions as safely as possible.

For both civilian and military aircraft, accidents must be reported within 24 hours. The contact details are:

**CIVIL:** All civil aircraft accidents are required, by law, to be reported to the ATSB: **1800 011 034**.

**MILITARY:** All military aircraft accidents are required to be reported to the DDAAFS Duty Officer on **0410 626 357** and, IF PRACTICABLE, the nearest military base.

For the Department of Defence, this booklet is a supplement to the *Defence Aviation Safety Manual (DASM)*, and the *Defence Safety Manual, Volume 3 Part 2 – Aircraft Accident Occupational Health and Safety*.

# ACCIDENT PROCEDURES

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## Roles of the ATSB and DDAAFS

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**CIVIL:** The Australian Transport Safety Bureau (ATSB) is an independent Commonwealth Government statutory Agency. The ATSB is governed by a Commission. The ATSB is Australia's prime agency for transport-safety investigations, which it undertakes in accordance with the Australian Government *Transport Safety Investigation Act 2003* and in conformity with international agreements. The ATSB is responsible for investigating civil aviation accidents and incidents, marine incidents involving Australian-registered ships and foreign-flag ships within Australian waters, and rail incidents on the Defined Interstate Rail Network. The ATSB investigates using a 'no blame' systemic approach to prevent or minimise repeat occurrences. The ATSB's investigators have broad powers to secure accident sites, protect and retain evidence, enter premises and conduct interviews.

The international standards and recommended practices for aircraft-accident and serious-incident investigations are covered under Annex 13 to the *Chicago Convention of 1944*, to which Australia is a signatory. The ATSB is entirely separate from the Civil Aviation Safety Authority, Airservices Australia, the Australian Maritime Safety Authority, and State and Territory rail safety regulators. The ATSB has its head office in Canberra and regional offices in Perth, Brisbane, and Adelaide.

**MILITARY:** The Minister for Defence has established the Directorate of Defence Aviation and Air Force Safety (DDAAFS) operating under the authority and guidance of the Chief of Air Force (CAF). DDAAFS has responsibilities for investigating Australian and foreign military aircraft accidents in Australia. DDAAFS coordinates and advises the Service Chiefs on aviation safety issues relevant to their respective Service recognising that aviation safety remains a Command responsibility within the individual Services. DDAAFS advises the individual Services regarding accident investigation and reporting. DDAAFS investigates using a 'no blame' whole-of-system approach to prevent or minimise repeat occurrences. DDAAFS is staffed with trained aviation safety investigators to independently investigate any ADF aviation accident. In the event of an accident involving a civil-registered ADF-operated aircraft investigated by the ATSB, the provisions of the ATSB/ADF Accident Investigation Memorandum of Understanding will apply.

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The Australian Defence Force (ADF) maintains a multi-tiered aviation safety organisation:

- **DDAAFS** maintains a 24-hour rapid response Aviation Accident Investigation Team (AAIT).
- **BASE AND UNIT AVIATION SAFETY OFFICERS.** All military bases from which aviation activities take place maintain qualified personnel available to assist at accident sites. These personnel are often the first personnel to arrive at the scene of a military accident and, accordingly, are normally authorised by DDAAFS or the Officer-In-Charge (OIC) of the AAIT to undertake certain on-scene activities until relieved by the arrival of the AAIT.

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## About these guidelines

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These guidelines assist you, in your police or emergency services role, to respond to a civilian or military aircraft crash in your area.

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## Accident reporting

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Both the ATSB and DDAAFS operate 24-hour contact numbers to enable reporting of accidents and incidents.

ATSB Duty Officer: 1800 011 034, DDAAFS Duty Officer: 0410 626 357.

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## What is an aviation accident?

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**CIVIL:** An accident for the purposes of these guidelines is covered under Part 1, Section 3 of the *Transport Safety Investigation Act 2003*.

An accident means an investigable matter involving a transport vehicle where:

- a) a person dies or suffers serious injury as a result of an occurrence associated with the operation of the vehicle; or*
- b) the vehicle is destroyed or seriously damaged as a result of an occurrence associated with the operation of the vehicle; or*
- c) any property is destroyed or seriously damaged as a result of an occurrence associated with the operation of the vehicle.*

**MILITARY:** An accident for the purposes of these guidelines is covered under the *Defence Aviation Safety Manual (DASM)*. An accident means an aviation occurrence that resulted in the loss/destruction of the Aviation System (i.e aircraft) or death of any person.

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## Reporting an aviation accident

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It is possible that by the time you are advised of an accident, someone else may have already reported it to the ATSB or military authorities. You should still contact the ATSB or military yourself as quickly as possible with your appraisal of the situation and provide as much information as possible.

**CIVIL:** All civil aircraft accidents must be reported to the ATSB. Call the toll free number to make your report: 1800 011 034.

**MILITARY:** Contact the DDAAFS Duty Officer on mobile: 0410 626 357, or by other methods as detailed in this publication.



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## Who must report an aviation accident?

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**CIVIL:** Under the *Transport Safety Investigation Act 2003* and regulations, the owner, operator or crew of the aircraft must report the accident immediately to the ATSB. However, sometimes the owner and/or operator may not learn of the accident until some time after the event. The crew may also be unable to notify the ATSB due to personal injuries. Therefore, anyone learning of an aviation accident should report the accident to the ATSB immediately, as well as alerting emergency services as required.

While the ATSB does not investigate all accidents and incidents, you should notify the ATSB of all aviation accidents and serious incidents involving civil registered aircraft.

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**MILITARY:** As required by the DASM, the aircraft captain and/or operating unit must report the military aviation accident to DDAAFS. Should any person witness an aviation accident and there is reason to suspect that an Australian or foreign military aircraft has been involved, contact the Duty Officer at your nearest military base and DDAAFS should be advised as soon as possible. DDAAFS maintains a 24-hour Duty Officer, who will activate the military aviation accident response plan.

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## What the ATSB or DDAAFS need to know

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You should immediately report the following details where possible:

1. Aircraft type and its registration letters.
  - For Australian **CIVIL** aircraft this normally begins with VH followed by three letters. If no VH prefix is apparent, the aircraft may be a foreign civil or a sports aviation aircraft, although it is possible that fire may have consumed the VH prefix. The registration may appear on the side of the fuselage (main body), the fin/rudder combination and the wings. For a foreign civil aircraft, provide as much information as possible.
  - For Australian **MILITARY** aircraft, aircraft type, serial number, and side number. There may be an N prefix (Navy) or A prefix (Air Force or Army) on the side of the fuselage (main body) as well as some form of squadron or unit identification on the fin/rudder combination. It is difficult to predict how a foreign military aircraft may be identified, but as a rule military aircraft serial numbers are painted on either side of the fuselage.
2. Name of the owner or operator, or military operating unit.
3. Names of the pilot/crew and any other people on board. (name, rank, and serial number for military).
4. Date and time of the accident.
5. Aircraft's last departure point and its destination.
6. Location of the accident, including directions on how to reach the scene.
7. Extent of any injuries to the occupant(s) or others.
8. Nature of the accident. (Phase of flight, mission, and description of occurrence.)
9. Extent of damage to the aircraft.
10. Action taken to prevent disturbance of the wreckage until either an ATSB investigator or authorised military personnel arrive.
11. Name and telephone number of the originator of the advice.

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## Are all aviation accidents investigated?

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**CIVIL:** No, the ATSB does not investigate all aviation accidents. Section 21 of the *Transport Safety Investigation Act 2003* defines the powers of the Chief Commissioner of the ATSB to investigate aircraft accidents. The ATSB records data from aircraft accidents and incidents for possible future safety analysis and selectively investigates (within its finite budget) those serious occurrences including fatal accidents that the ATSB believe will yield the most useful safety benefits especially for fare-paying passengers.

Generally, the ATSB does not investigate sports aviation accidents or those involving amateur built or experimental category aircraft. The ATSB will inform the appropriate sporting body and the police that the ATSB is not investigating. The police will normally coordinate the accident investigation. Consequently, the ATSB will not attend the scene or conduct an investigation.

The police may wish to utilise the expertise of the organisations involved in sports aviation to assist their investigation. These bodies include:

- Gliding Federation of Australia
- Recreational Aviation Australia
- Australian Parachuting Federation
- Australian Sport Aviation Confederation
- Australian Sports Rotorcraft Association

**MILITARY:** All military-aviation accidents will be investigated. Additionally, the relevant military controlling authority may direct that a Board of Inquiry (BOI) be formed to investigate the circumstances of an accident. This BOI is a legal process separate to the AAIT.

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## Accident site coordination and security

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The emergency organisation that arrives at an aircraft accident site first could be a volunteer or permanent fire brigade, or a Defence fire brigade unit, which could call for assistance from other local brigade units. In any case, initiative and liaison are essential, particularly in the early stages when fire ground control is critical.

As a rescue officer you should be careful to avoid becoming a casualty yourself. In the heat of the moment and the desire to alleviate suffering and minimise casualties, individuals sometimes place themselves at considerable personal risk of injury or death.

# ACCIDENT PROCEDURES

By being cautious and aware of the hazards at aircraft accident sites, you will be better prepared for the tasks at hand.

It is vital that any hazards are detected and secured. **STANDARD HAZMAT PROCEDURES SHOULD BE FOLLOWED.**

*All accident sites must be secured to prevent unauthorised persons from entering the area. The secure area should normally extend to at least 50 m from the edge of the wreckage.*

It is important to prevent unauthorised people from entering an accident site due to:

- respect for casualties
- protection of valuable and important or classified equipment
- preservation of evidence to establish the factors that contributed to the accident
- prevention of exposure to hazards.

When the ATSB arrives on site it will coordinate with the site commander to take control of the site which means:

- only authorised personnel will be admitted to the accident site
- bystanders will be kept outside the established zone of safety.

You do not require the ATSB's permission to:

- ensure the safety of persons, animals or property
- remove deceased persons or animals from the accident site
- move the aircraft, or the wreckage of the aircraft, to a safe place if the wreckage poses a risk to the public, or there is a risk that significant evidence could be lost
- protect the environment from significant damage or pollution.



## Rescue of personnel from crashed aircraft

**Note:** Parts of this section provide guidance for non-trained personnel, emergency services personnel should follow their well-founded processes and procedures. If they see any contradictions they should contact DDAAFS or the ATSB.

Without endangering yourself, rescue and care of survivors are the priorities at an aircraft accident site. If you see survivors in the aircraft and rescue seems possible, you should consider the following issues:

1. Be careful when approaching the wreckage by vehicle, particularly if the approach is along the crash path, as survivors may have ejected or been ejected from the aircraft. If you are the first on the scene you may find no one else present. This could be because: the occupants have parachuted to safety or have survived and left the scene, to seek assistance.
2. Approach the site from upwind (with the wind at your back) and downhill if possible to avoid inhalation of burning materials,

**CAUTION:** Common dangers with crashed aircraft include hazards associated with fuel, radioactive components, oxygen systems, hydraulic accumulators, winching (hoisting) equipment and explosive cargo. These aircraft will also invariably be constructed partially of toxic or extremely irritating composite fibre material.

- If in doubt, remain clear of wreckage.
- For military aircraft, care should be taken in regards to explosive devices used with ejection seats and explosive ordnance.
- In no case should any ammunition, rockets, missiles, bombs or ejection seats be handled by anyone other than qualified military personnel. If armament is in the wreckage, cool its entire surface with available fire-extinguishing agents as soon as they are found and set markers for the avoidance of access to nonessential personnel.
- Initiate standard hazmat procedures and establish zones or call for hazmat assistance.

# ACCIDENT PROCEDURES

some of which are toxic, others of which can be very irritating to the breathing tract. Look around the crash site, along the crash path, and maintain a clear observation of the accident site and associated hazards.

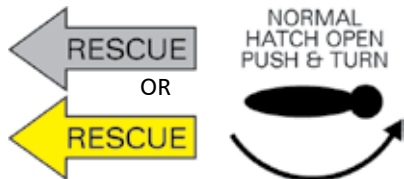
3. Wear appropriate Personal Protective Equipment (PPE), including class P2 breathing protection. The aircraft may be made from composite fibre material, which will splinter if fractured. If burning has taken place the composite fibre and dust will present a toxic hazard.
4. Render first aid and care to survivors until medical personnel arrive.
5. Attempt to account for all occupants. If the aircraft disintegrated in flight, the wreckage, survivors and casualties may be scattered over a large area.
6. Summon medical assistance if required and verify that this assistance has been sought. Consider shelter for casualties if the accident site poses potential hazards.
7. If you see evidence of a spreading post-accident fire or possible explosion from fuels or armaments, move survivors a safe distance from the scene. Only remove survivors from the scene if necessary. If survivors require immediate evacuation to medical facilities, they should ideally be decontaminated of hazardous materials before being moved. For example, military aircrew life vests, which contain explosives and hazardous materials, should be put in a safe location at the accident site.
8. Stay clear from wing-mounted tanks, armour, landing gear struts (OLEOS) (example pictured at right) and PRESSURE VESSELS (gas bottles). These assemblies can explode with devastating violence if disturbed following impact damage and particularly if fire is present. **DO NOT DISTURB ARMAMENT** thrown clear from aircraft. (See pages 28–31 for more detailed information on aircraft explosive devices, pyro-technics and armament, and page 32 for more detailed information on aircraft fuel hazards.)



9. The following military jet aircraft have two ejection seats fitted: BAeS Hawk and some F/A-18 Hornet. The turbo-prop PC9/A trainer also has two ejection seats. The F-111 fighter-bomber, while fitted with two seats, has a totally ejectable cockpit. These aircraft also usually have an in-built explosives system for emergency jettisoning of canopies. You should be extremely careful when you see ejection seats among the wreckage. These ejection seats must be treated as 'live'. You should leave the 'safing' of ejection seat-fitted aircraft to trained personnel. However, if you urgently need to unstrap and remove survivors from an aircraft, use utmost care and avoid interfering with items colour coded with yellow and black stripes. (See page 30 and/or refer to Australian Defence Force Publication Safetyman Vol 3 Part 2 – Aircraft Accident OHS Information if held, for more detailed information on ejection seats and explosive canopies.) Additionally, the DDAAFS Duty Officer (telephone 0410 626 357) will assist.

10. For the purpose of rescue the location of access doors, hatches, break-in points and

cutout panels are indicated on the external surfaces of military aircraft by a yellow arrow, bordered black (as illustrated).



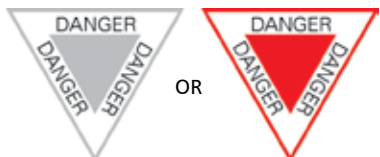
At access doors and hatches the arrow will indicate the external controls with the operating instructions for the controls nearby (see example).

11. At break-in points and cutout panels the arrow will indicate an area delineated by a broken line (usually yellow).



This area can be cut out to gain entry to the aircraft's interior if the access doors are blocked or inoperative (see example). When using cutting devices you should use caution to avoid igniting spilled fuel.

12. Systems requiring extra care in their operation or handling due to their containing an explosive device are indicated by a red or grey triangle (see examples at right).



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13. The position of any emergency equipment on an aircraft accessible from outside is indicated by a silhouette with an associated description (see examples). If a first-aid kit is carried, its marking (see example) will be found adjacent to an access panel or exit from which the kit is accessible.



14. To minimise the risk of fire or further fires, establish a no smoking zone around the accident site. Volatile/flammable materials may have been scattered over a wide area. If you need to evacuate homes in the accident area, make every effort to do so without undue alarm; panic can cause injury.
15. To prevent the ingestion of harmful materials, including biological hazards, establish a no eating zone around the accident site.
16. Keep bystanders well clear of the accident site and wreckage, and upwind if possible.

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## Protection of aircraft wreckage

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The ATSB and Defence understand that police and emergency services personnel need to take immediate action when arriving at the scene. However, it is important that wreckage, ground scars and the accident site are disturbed as little as possible. This will ensure that investigators are able to determine the factors that contributed to the accident.

**CIVIL:** Under the *Transport Safety Investigation Act 2003*, the ATSB may issue a 'Protection Order' for the accident site. When a 'Protection Order' has been issued, relevant personnel including emergency services will be notified. In such cases, no one can interfere with or remove the aircraft, or its wreckage unless authorised by the Chief Commissioner or an authorised ATSB Transport Safety Investigator.

**MILITARY:** Wreckage should not be removed unless permission is received by the Director, Defence Aviation and Air Force Safety, or the military AAIT. However, if safety is at risk of compromise if the wreckage is not removed as quickly as possible, then permission for such removal is not required.

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## Coroners

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Coroners may request the custody of wreckage and any other item carried on the aircraft at any stage of the investigation. If custody is requested in writing, the requested items would normally be released on completion of the ATSB's examination.

The Coroner's Office should be contacted on all matters relating to an inquest or inquiry. Coronial services can also offer face-to-face assistance and advice, and some coronial jurisdictions provide grief counselling and other support by trained professionals.

Police officers, fire officers and emergency personnel are usually on the scene before the ATSB Investigator, or the DDAAFS OIC AAIT, or authorised military personnel. During this period the following steps should be taken to assist the ATSB and DDAAFS to preserve and record evidence:

1. Define the accident site by placing a cordon around all scattered wreckage as well as other evidence such as marks made by the aircraft and ground scars.
2. If someone must disturb the wreckage, try to photograph, sketch, or mentally note the original state of the wreckage. The same applies to any safety harnesses undone to remove an individual. Do not try to restore the wreckage to its original state unless the ATSB Investigator, or the DDAAFS OIC AAIT, asks you to do so.
3. Carefully record, as soon as possible, the positions in the aircraft-wreckage where any survivors of the accident were assisted. This helps injury prevention research if deceased person/s remain in their original place until a pathologist can examine them. If this procedure is likely to distress the public or relatives of the deceased (the police, the coroner or the pathologist can advise on this), allow the bodies to be removed. If you need to remove a body before the pathologist arrives, first carefully record its position and posture and attach the record to the body.  
**PLEASE NOTE:** it is not essential to the investigation for bodies to be left in-situ for the benefit of the ATSB Transport Safety Investigator, or the DDAAFS OIC AAIT.
4. Take photographs or sketches beforehand if anything (eg, removing the bodies, the weather) is likely to obliterate or alter any marks on the ground or on the wreckage before the ATSB Investigator DDAAFS OIC AAIT arrives.

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5. Secure the wreckage, including any scattered wreckage away from the main accident site, and any of the aircraft's contents or papers against loss or further damage.
6. Note the names, addresses, contact details (particularly telephone numbers), and intended movements of any witnesses.

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## Recovery and salvage of the wreckage

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Flight recorders provide vital, but perishable, evidence of a flight's last moments. Unless authorised by the ATSB or DDAAFS investigators these units are not to be moved or accessed.

**CIVIL:** After the on-site investigation or after the ATSB decides that no on-site investigation will take place, the ATSB's Chief Commissioner through the Transport Safety Investigator in charge of the investigation will advise the owner that the ATSB no longer requires control over the aircraft, or the aircraft wreckage. The owner can then begin salvage or clean up (at the owner's expense).

If the ATSB needs all or part of the wreckage for off-site examination, Transport Safety Investigators will work with the owner, probably through the insurer, to arrange for recovery. The ATSB is normally only responsible for costs that directly arise from the investigation.

If the coroner or any federal, state or territory government require any item of wreckage to investigate, they must make a written request to the ATSB prior to any ATSB decision for relinquishing control of the wreckage.

**MILITARY:** DDAAFS has responsibility for military aircraft crash site mapping, and the DDAAFS OIC AAIT will ensure adequate mapping is completed to satisfy Defence, the coroner and other agencies. After the on-site investigation has been completed, recovery and salvage of the aircraft, with associated costs, remains the responsibility of the ADF. The OIC AAIT and operating unit will initiate recovery and salvage action.

These materials can be toxic and may irritate the breathing tract. Look around the crash site, along the crash path, and keep a clear view of the accident site and associated hazards.

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## Preventing further damage to wreckage

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You rarely need to disturb the aircraft wreckage once survivors or bodies have been removed. The pilot, crew, owner(s), media and insurance representatives will not have access to the wreckage unless the ATSB Investigator in Charge, or the DDAAFS OIC AAIT, approves it.

In exceptional circumstances, where the aircraft or associated property faces further critical damage, and following consultation with the ATSB or DDAAFS, the owner or a representative, under police or other supervision, may access the wreckage to prevent further damage.

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## How to prevent unauthorised access

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The aircraft and any of its wreckage at an accident site should be treated as if it were the property of either the ATSB or Defence. You should therefore, prevent souvenir hunting. Heavy trampling of the site may also obscure ground scars that are important to the investigation. In inclement weather, you can protect and preserve vital areas such as the cockpit, lighter pieces of wreckage and ground scars by covering them with a tarpaulin. If coverings are not available, you can use news media photographers to record perishable evidence.

When emergency services and those assisting a coroner to identify and remove the deceased have completed their activities, the ATSB or Defence may use the police or other suitable personnel to secure the accident site pending the arrival of the ATSB or Defence investigation team. If this security is in place, no one can enter or remain on the accident site without the permission of the ATSB Investigator In Charge or Defence OIC AAIT.

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## Eyewitnesses to an accident

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Eyewitnesses are extremely important in helping determine the factors that contributed to the accident. The names and addresses of witnesses should be noted and the list given to the ATSB Investigator or DDAAFS OIC AAIT when they arrive at the accident site.

Preliminary eyewitness recollections detailing first reactions can be valuable to investigators. They will normally be untainted by reflection, rumour or exposure to the news media. These recollections should include:

- eyewitness names, addresses (telephone numbers)
- position from which the eyewitness observed the event
- time of accident
- weather conditions at time of accident
- direction aircraft was heading and what it appeared to be doing
- estimate of aircraft's height (estimate of angle above surrounding terrain from observer's position using trees and buildings as a reference where appropriate)
- if the aircraft was on fire in flight

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- what sounds were heard
- what the impact angle of the aircraft was
- if any objects fell from the aircraft before impact
- if objects did fall from the aircraft, what the flight path of the Aircraft was at the time (i.e. level, climbing, diving).

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## Dealing with the media

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The media have a job to do and deserve access to certain information in order to do that job. However, if these representatives arrive before ATSB or military authorities, for their own safety they must remain outside the secured area. Names of casualties will not be given to the news media by the ATSB or military investigators. This information will be released by the appropriate authorities and this will happen only after next of kin have been informed.

Investigators will not provide access to the media to photograph survivors or deceased persons. Care should be exercised in the use of mobile telephones or radios to discuss the accident or the personnel involved as the media may be capable of monitoring communications frequencies. The news media may be prevented from flying over or hovering over the accident site in the interests of safety. A restricted, no fly zone above and around the site may be declared and



promulgated to pilots by means of a 'Notice to Airmen' – NOTAM. This zone will normally be a radius of 1 km and 500 ft vertically.

**CIVIL:** The ATSB may release information arising from a civil aviation accident investigation. ATSB Investigators are authorised to answer media questions in factual terms at the accident scene during the early part of an investigation. Later releases of information relevant to the ATSB investigation must be cleared by the ATSB's media unit (telephone 1800 020 616). Police or other organisations should confine their comments to their own work and follow the advice of their own media departments.

The ATSB will not release to the public or media the names of the crew, passengers, the aircraft owner or the operator. You can obtain the name of the aircraft owner from the Australian Aircraft Register on CASA's website at [www.casa.gov.au](http://www.casa.gov.au). The coroner releases the names of the deceased persons and will often use the police as agents.

**MILITARY:** The release of information arising from a military aviation accident investigation will be through the Defence Single Service Command Public Relations representative, assisted by the Department of Defence Coordination and Public Affairs (CPA) Organisation. Accordingly, the OIC AAIT and AAIT members are NOT authorised to answer any media questions regarding the accident during the early part of an investigation. Formal and subsequent releases of information relevant to the military investigation must be cleared through the appropriate Single Service headquarters, supported by CPA (24-hour media liaison telephone number 0408 498 664).

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## Coordinating with police inquiries

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**CIVIL:** If an aircraft accident investigation involves other police inquiries (e.g. for the information of a coroner or a criminal investigation), the ATSB will assist where possible, within the constraints of the legislation, provided this does not compromise their own investigation. If early evidence suggests the accident was the result of unlawful interference such as sabotage, the police would normally direct the investigation and the ATSB would not investigate.

The Investigators' main responsibility is to prepare a report of the investigation for the ATSB's Chief Commissioner, for approval to publicly release the final report.

Aviation safety information attracts substantial protection under the TSI Act. For example, sensitive safety information known as 'Restricted Information' cannot be disclosed for the purpose of a criminal inquiry. This is because, in the interest of future safety, the ATSB requires ready access to all evidence and if used for the purposes of blame, or to determine a liability, such information or evidence may not be so fully available in the future. Organisations that ascribe blame or liability must undertake their own separate investigation.

If necessary, the ATSB may appear as an expert witness in any coronial inquiry.

**MILITARY:** If an aviation accident investigation involves other police inquiries (e.g. for the information of a coroner or a criminal investigation), the OIC AAIT will assist where possible provided this does not compromise its own investigation. If early evidence suggests the accident was the result of some criminal act, Defence would cooperate and investigate as appropriate and as agreed with police authorities. It is Defence's contention that military aviation safety investigations are conducted to determine the cause(s) and prevent further accidents. Therefore, the OIC AAIT, and team members are responsible to provide a report to the Convening or Appointing Authority requiring the accident investigation.

The DDAAFS OIC AAIT should not appear as an expert witness in any coronial inquiry. Defence Inquiry Regulations provide for the formation of a military BOI which completes a formal report.

Evidence collected by an AAIT during an aviation safety investigation is usually not collected in a form readily usable in a court of law. AAIT members, for example, do not take formal statements under the rules of evidence from witnesses. This is because, in the interest of future safety, the DDAAFS requires ready access to all evidence. However,

a military BOI may take statements under the rules of evidence from witnesses. Organisations that may wish to ascribe blame or liability must undertake their own separate investigation.

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## Post-mortem matters

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In the event of an aircraft accident, particularly one involving fatalities, the civil police on behalf of the state or territory coroner have jurisdiction (even on Australian Government property). Emergency services personnel and other authorities should work closely together with civil police and coronial authorities.

Deceased persons should not be moved until a specialist doctor (or other medical authority with aviation medical experience) has examined them. They should only be moved under police supervision.

Clothing or safety equipment should not be removed from the deceased before specialist medical examination and recording. To prevent the spread of contaminants, whenever practical all items should be decontaminated of hazardous materials before they are removed from the accident site. Human remains must be handled and transported in accordance with standard coronial procedures.

Crew and passengers killed in a civil or military aircraft accident receive a post-mortem examination by the relevant coronial authorities.

The aim is to:

1. identify the deceased
2. determine either a pre-existing disease or the nature of the injury in the case of crewmembers
3. clarify any injury mechanisms (to help prevent future accident injuries).

Ideally, the pathologist responsible for a post-mortem involving aircraft accident-related deaths should have some knowledge of aviation-related injuries or be provided with guidance about aviation medical aspects. In some areas, the pathologist will travel to the accident site with the coroner's investigating officer and use the local morgue. In some states, bodies may be transported to the State capital for post-mortem examination.

The ATSB and Defence will always assist, when requested, in a coronial inquiry relating to an aviation accident. ATSB Investigators and the OIC AAIT will attempt to contact the coroner through the attending police officer during the early stages of the investigation.

Police officers preparing material for a coronial inquiry should be aware that it may be some time before the ATSB and Defence complete their

# ACCIDENT PROCEDURES



investigations and the findings of the investigation are released. For the more complex investigations, the ATSB will release a Preliminary Factual Report covering verified factual information, usually within 30 days of the accident. Regular Interim Factual Reports will be released (usually every six months) after the release of the Preliminary Report until the investigation is completed. These reports cover factual information, but not analysis or findings.

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## Assistance to emergency services

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**MILITARY:** Some major ADF air bases can offer periodic orientation courses in military equipment to groups such as police, civil firemen, Transport Patrol Officers, Civil Defence workers and others as may be appropriate. Additionally, Defence bases regularly test their Airfield Emergency Plans. The inclusion of local and State emergency services within these plans is essential. The opportunity to liaise and refine requests for such assistance should be referred to the nearest military base or the Deputy Director Aviation Safety (02) 6266 2647.

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## Dangerous Materials

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Damage to modern aircraft can result in the release of dangerous materials at an accident site, for example:

- airborne synthetic products similar in nature to asbestos fibres;
- toxic materials that may inadvertently be inhaled or affect the skin;
- potentially explosive devices such as oxygen bottles, high-pressure tyres, hydraulic accumulators and rocket deployed parachute systems;
- for military aircraft, rocket-powered or explosive cartridge powered ejection seats, pyrotechnics and unexploded high explosive ordnance stores;
- pathogenic (body) products; and
- radioactive materials.

Only those personnel essential to perform immediate actions to extricate survivors, for the protection of the wreckage from destruction by fire or other causes, and the prevention of danger to other transport or the public should enter an accident site. Aerospace vehicles may also be involved in an accident on Australian soil. These vehicles may vent dangerous gases for some time after landing and contain unfired retrorockets. A vehicle may also contain a nuclear power source.

### CAUTION:

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#### Preserving evidence

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Many modern aircraft systems include computer technology containing information that may be vital to the investigation. It is therefore important to preserve information contained on computer 'chips'. These chips can be sensitive to heat, shock, and electronic fields. If possible, please be careful when moving wreckage to perform any immediate actions required, such as the prevention of danger, preserving life or removing victims.

If possible, please do not move this material until an ATSB Transport Safety Investigator or DDAAFS AAIT member can provide technical advice. It is realised; however, that care and respect towards the victims of an accident have immediate priority and this may make it difficult to preserve some evidence.

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#### Remember

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If evidence must be disturbed before an ATSB Transport Safety Investigator (civil) or DDAAFS AAIT military member arrives, any photographs or detailed documentation that can be made available can be vital in determining factors that led to the accident.

## **Dangers associated with accidents involving civil aircraft fitted with rocket-deployed emergency recovery parachutes**

Some civil general aviation aircraft types are fitted with rocket-deployed emergency recovery parachute systems. These parachute systems are designed to recover the aircraft and passengers to the ground if a serious in-flight emergency arises. The parachute rocket units contain explosives and are a hazard at an accident site if the system has not been activated.

Systems currently used are mainly from the manufacturers Ballistic Recovery Systems (BRS) and Galaxy Recovery Systems (GRS). However, there are also parachutes from other manufacturers installed in aircraft in Australia.

Aircraft types fitted with rocket-deployed emergency recovery parachute systems in Australia are the composite structured Cirrus Design SR20 and SR22, Pipistrel Virus and Sinus and the Sting TL-2000. These aircraft are fitted with rocket-deployed emergency recovery parachute systems when manufactured. Others types such as the Cessna 150/152, 172 and 182 series of aircraft can be retro-fitted with BRS systems. There are currently about 100 different mounting installations for ultra-light and other types of aircraft such as hang gliders and gyrocopters listed by BRS.



Cirrus aircraft



There is little consistency across aircraft types about warning markings on parachute systems and they are not always readily identifiable as a warning. Some carry black text warnings on the external fuselage while others have warning decals on windows adjacent to the parachute exit point.



Cirrus aircraft warning decal



Pipistrel Virus aircraft warning decal

## Mis-identification or mishandling of these devices could prove fatal!

The rocket-deployed emergency recovery parachute systems are often cable activated by the pilot via a red handle. The Cirrus Airframe Parachute System (CAPS) has a red CAPS Activation T-handle positioned in a recess in the cabin ceiling lining above the front seats. The T-handle is concealed by a placard that must be removed before the handle can be pulled for CAPS operation and has provision for a safety pin. That pin is normally removed by the pilot before flight. The GRS and BRS rocket-deployed parachute units in other aircraft types are activated in the same way.

# ACCIDENT PROCEDURES



Cirrus aircraft CAPS activation handle and cover

If the parachute has not been deployed during an accident the deformed fuselage can put the activation cable under abnormally high tension. This results in the activation device ready to be triggered by any further movement of the wreckage.

BRS and Cirrus Design both indicate that the parachute's rocket will accelerate to well over 160 kph in the first one tenth of a second following activation. Rocket ignition temperatures are in excess of 500° F (260° C).

Aircraft accident sites are often contaminated with flammable materials and with flammable liquids such as petroleum products due to the destruction of aircraft integral fuel tanks in wings and fuselages.

Rescue organisations, police and investigators need to be vigilant about the type of equipment used on site, including the use of mobile telephones and flash-proof torches, as they could cause a fire. Any inadvertent activation of a ballistic parachute rocket could present a direct ignition source for these materials and liquids, and could be hazardous for on-site personnel and accident survivors.

Personnel attending an accident involving an aircraft fitted with a rocket-deployed emergency recovery parachute system fitted to it should always take appropriate measures to ensure their own safety. This may mean leaving the aircraft on site and cordoning it off until appropriate personnel arrive.

## For further information

- BRS Inc. publish a document for Emergency Personnel on its website [www.brsparachutes.com](http://www.brsparachutes.com)
- Cirrus Design Corporation; SR20, SR22, CAPS parachute information:

### **Australia:**

Cirrus Aircraft  
Bldg 15, Cnr. Grenier Drive and Hudson Place,  
Archerfield Airport, QLD 4108  
Ph: (07) 3272 9043  
Fax: (07) 3272 9066  
Mobile: 0412 373 173  
Email: [steve@cirrusaircraft.com.au](mailto:steve@cirrusaircraft.com.au)

### **USA:**

Director Air Safety  
Cirrus Design  
Ph: (218) 529 7227 (direct call)  
Mobile: (218) 391 8835 (emergency cell phone)  
Email: [Mbusch@CirrusDesign.com](mailto:Mbusch@CirrusDesign.com)

A DVD titled Cirrus Airframe Parachute System, Advisory DVD for First Responders is available from Cirrus Design. The DVD demonstrates the dangers associated with the CAPS fitted to the SR20 and SR22 at an accident site.

**X-Air Australia;** distributor for Sting TL-2000, Pipistrel Virus and Sinus aircraft and Galaxy Recovery Systems (GRS):

X-Air Australia  
Gold Coast, Australia  
Ph: 0418 168 665  
Ph: 0417 040 052

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## First-responder reference guide for aviation inflatable seatbelt restraints

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This information is specific to the AmSafe Aviation Inflatable Restraints (AAIR®). Information and photos have been drawn from the AmSafe publication 'First-Responder Reference Guide'. Additional information should be obtained from AmSafe – [www.amsafeaviation.com](http://www.amsafeaviation.com)

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Inflatable seatbelt restraint systems are a self-contained (not connected to aircraft power systems), aircraft restraint system with an airbag built into the restraint webbing, which is designed to deploy in a significant crash event to provide torso and head protection for aircraft crew and passengers.

The restraint system can be incorporated into 3, 4 and 5 point harnesses and may be installed in a variety of general and commercial aviation aircraft.

The system consists of the following components:

- Electronic Module Assembly (EMA) – sensing system & power supply.
- Inflator Assembly – gas canister containing 6250 psi compressed helium to inflate the airbag during a crash event. When the gas is released into the Seatbelt Airbag Assembly via the inflator hose, the gas will be released at ambient temperature.
- Seatbelt Airbag Assembly (SAA) – aircraft restraint system with airbag built into the webbing to provide enhanced occupant protection during an aircraft crash event.
- Interface Cable Assembly – cable which connects the EMA, inflator and SAA.

The system is designed so that after deployment in a crash event, the airbag will deflate in less than 10 seconds to ensure passengers are not blocked trying to egress the aircraft.

### **Scenario 1: Aircraft crash occurs, which causes the inflatable seatbelt restraint to deploy**

When the system is deployed in an aircraft crash, the system is rendered inert because the helium-filled inflator assembly has expended its contents.

**NOTE:** Some aircraft have multiple seat placements. Depending upon the particular crash event criteria, all airbags may not have deployed. Be sure to check all seat positions in the aircraft for inflatable seatbelt restraints.

# AIRCRAFT

Basically, it is distinguishable from a standard seatbelt restraint by its material covering over the airbag on the webbing (see arrows).



## Scenario 2: The inflatable seatbelt restraint does not deploy following an aircraft crash

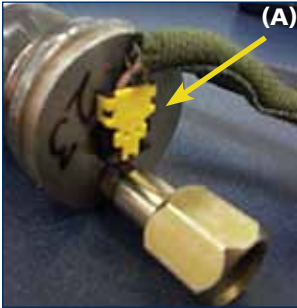
If an inflatable seatbelt restraint system has not deployed following an aircraft crash, be sure to follow the steps below to reduce the risk of deploying the system:

- Disconnect the cable assembly from the Electronic Module Assembly (EMA). The EMA is typically installed under the seat and in some cases is attached to or secured below the floor of the seat.



# ACCIDENT PROCEDURES

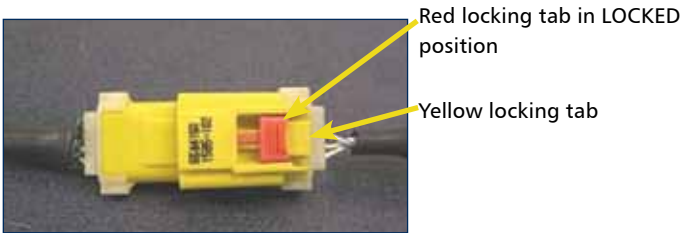
- Disconnect the connector from the Inflator Assembly, which is typically installed on, below, or just behind the seat.
- Squib connector, squeeze connector sides to release. (A)



- If access to either of these connectors is not possible due to deformation of the seat assembly or the fuselage, it is acceptable to cut the cable that connects to the inflator assembly.

OR

- Access SAA connector (yellow) to Cable Interface Assy and disconnect by sliding the red locking tab backwards to the unlocked position, depressing the yellow tab, and then pulling apart both connector halves.



### Scenario 3: Inflatable seatbelt restraint does not deploy and there is a fire following an aircraft crash

If a fire occurs after an aircraft crash, the Inflator Assembly will autoignite at approximately 230° C or 446° F and will release the stored helium gas to render the system inert and reduce the risk of injury.

Note: At the time of publishing this was the only such equipment known to the ATSB.

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## Rescue from aircraft fitted with ejection seats and explosive canopies

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The Hawk 127, turbo-prop PC-9/A and the PC-21 operated by the RSAF in Perth have two ejection seats. The F/A-18 Hornet jet fighter may have one or two ejection seats. The F-111 jet fighter-bomber is fitted with two seats contained within a totally ejectable cockpit module. Ejection seats may be activated by a seat-pan initiating handle, normally located between the legs of the seat occupant.

When rescuing occupants from military aircraft fitted with ejection seats, you must be extremely careful to avoid injuring yourself and the seat occupant. Depending on the type of aircraft, as well as ejection seats, the canopy will have either an explosive canopy jettison or canopy disintegration system fitted. These can be actuated to gain access to seat occupants but are only used if the manual cockpit opening system is inoperative.

Instructions to use the canopy jettison or canopy disintegration system will be printed next to their external controls. You can see these controls in the cockpit. Read the instructions carefully. The canopy or canopy debris will be displaced violently when the system is actuated and can kill or injure unprotected bystanders.

If the manual canopy opening system is inoperative, no post-accident fire is evident, and the seat occupants do not appear to require immediate medical assistance, you should consider waiting for specialist military rescue personnel to gain entry to the cockpit area. If you successfully gain access to the seat occupants **DO NOT RAISE, MOVE, PULL OR TAMPER** with any handles painted yellow and black on the ejection seats or anywhere else in the cockpit. These fire or eject the seat or some other safety device posing extreme danger to yourself and seat occupants. If possible, and with the assistance of crewmembers, insert safety pins into ejection seat systems to render them inoperable.

Before attempting to remove seat occupants remember to unfasten seat, shoulder and parachute harnesses, radio cords and oxygen leads. Take extreme care to ensure that the yellow and black coloured ejection seat actuating handles are not snagged when removing the seat occupant from the cockpit.

# ACCIDENT PROCEDURES

**NOTE:** These actions should only take place if absolutely necessary, where danger to the occupant is evident. Safety pins are normally fitted into seat parts to prevent accidental operation of explosive devices when the aircraft is not in use. It is unlikely that the safety pins will be in place. The ejection seats should always be considered to be 'live' until specialist military personnel advise otherwise.



Two examples of ejection handles - ANY handle painted yellow and black should be treated with EXTREME caution.

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**REMEMBER**  
Spinal injury is common  
in ejection accidents.  
Use care in handling  
casualties

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## **Explosive stores hazards**

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Under broad headings, the following can be expected in military aircraft:

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### **Explosive devices**

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Explosive devices will be present if the aircraft is fitted with ejection seats, canopy jettison or canopy systems. Such devices will be concentrated in the cockpit area of the jet fighter and jet trainer aircraft currently operated only by the RAAF. Navy and Army helicopters fitted with winches, cargo hooks and/or sonar reeling devices employ Electro-Explosive Devices (within the winch/reeling facility and/or cargo hooks) to enable emergency jettison of the cable or load. All due care should be exercised when operating near this equipment. Some aircraft, mainly Navy, utilise emergency flotation devices should it be necessary to ditch in the water. This equipment is generally located on helicopters near the outer central fuselage and may present an additional explosive danger to personnel should it be activated at an accident site.

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### **Pyrotechnics**

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Pyrotechnics will be present on most aircraft operated by the ADF. They may consist of one or a mix of coloured signal flares, smoke generating devices and light emission devices. Such devices will normally be found in the main cabin area of larger military aircraft, the cockpit of smaller aircraft types and on personal survival equipment carried by the crew.

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### **Aircraft armament**

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Aircraft armament may be present in all aircraft, although more likely on F/A-18 Hornet, BAE Hawk and Tiger helicopter. These aircraft should only be approached from the rear, or a slight angle, until the absence of armaments has been confirmed. Such armaments may consist of a single weapon or a mix of high-explosive bombs, rockets, missiles, machine guns and cannons. Normally these items are carried under the wings and will be self-evident. In the case of jet fighter aircraft the cannon is fuselage mounted. For other helicopters a door-mounted machine gun may be fitted.

# ACCIDENT PROCEDURES



AP-3C Orion maritime aircraft carry a variety of weapons and pyrotechnics. Bombs and rockets may be carried under the wings, while torpedoes and bombs may also be carried in the bomb bay situated under the fuselage just forward of the wings. Small explosive charges and pyrotechnics, such as flare cartridges and smoke markers, are stowed in the fuselage in the area of the main cabin door. Accidental discharge of armament can occur through tampering with controls used to discharge the armament. Proceed with **EXTREME CAUTION** when extracting personnel or equipment located near operational controls (ie, control column or joystick), the instrument panel or any button or lever coloured red or marked with black and yellow stripes.

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## Fuel hazards

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Aircraft fuels are a primary hazard in a post-crash aircraft fire. If ignited they pose danger to survivors, rescue personnel, fire services personnel, etc. Fuel used by aircraft will come from one of the following groups:

**Avgas** is a high octane aviation petrol suited for piston-engined aircraft. It has a relatively low flash point and; therefore, is highly flammable/volatile. Avgas is used in civil general aviation aircraft.

**Avtur** is the kerosene-type fuel used in all jet or turboprop aircraft and does not possess the low flash-point qualities of Avgas. However, when heated its flash point is reduced significantly. This fuel burns longer and more intensely than Avgas.

**Diesel** is also in use in some GA aircraft and has similar characteristics to Avtur.

**Water Methanol** is used in small quantities to provide extra power and as an additive to Avtur in certain flight situations, such as takeoff. This substance is alcohol-based and burns without a visible flame. If ignited during a crash, you may require alcohol foam to extinguish the flames. You may not need to use alcohol foam, but the existence of water methanol must always be considered.

**WARNING: WATER METHANOL IS TOXIC. WEAR FULL PROTECTIVE CLOTHING IF SUBSTANCE IS SUSPECTED.**



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## Structural and site hazards

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Materials used in aircraft construction, if subjected to intense heat, can produce hazardous situations or develop toxic side effects:

**Magnesium and aluminium metals** in various mixtures are used extensively as structural components, particularly where lightweight framing is used. In some aircraft magnesium is used in wheel assemblies. It is also used in pyrotechnics; it burns with intense heat and radiates powerful light. Water should not be applied as an extinguishing agent to burning magnesium as an explosion may occur.

Other hazardous metals such as cadmium, depleted uranium and beryllium, are used in small quantities and can be extremely toxic when exposed to fire.

**Composite materials** (such as carbon fibre in an epoxy resin) are used extensively in modern aircraft. When involved in a fire, these materials may give off toxic fumes and loose fibres may be released in the smoke plume. It is possible, but not highly probable, that loose fibres may cause short circuiting of electronics and electrical equipment. The major hazard; however, is from inhalation and ingestion of free fibres and associated burning resin products. Only personnel equipped with self-contained breathing apparatus (SCBA) or full-face canister respirators with appropriate cartridges should enter the accident site until all fires are extinguished and loose composite fibres are suppressed (e.g., bonded with spray-on floor polish or similar product sprayed over the fibres).

**Toxic gases** are also given off when some plastics and adhesives are burnt. After the fires have been extinguished, loose fibres should be avoided.

Bear in mind that some materials used in aircraft construction may be rendered harmful after heating in a fire and then being extinguished with water. Their products may be strongly acidic (e.g. fluoro polymers which yield hydrofluoric acid), or dangerous to ingest (e.g. some magnesium alloys or depleted uranium which corrodes very rapidly in the presence of water). It is imperative that all personnel at the accident site wash all exposed areas of skin before eating, drinking or smoking. Should emergency services personnel at the site exhibit respiratory distress or skin irritation, they should evacuate the site and institute HAZMAT (hazardous material) procedures for liquid hazards.

**High-pressure containers** are used in some aircraft systems. These AIRCRAFT containers when subjected to heat may be the source of secondary explosions. Pressurised containers likely to be encountered

may consist of oxygen, liquid nitrogen, hydraulic accumulators, landing gear struts and fire extinguisher bottles (fixed and hand-held).

**Dangerous/hazardous cargo** and small amounts of radioactive material may be present or scattered on the accident site.

## Site hazards

In the event of a post-accident fire at a military aircraft accident site, care must be exercised by emergency fire and rescue services because of the additional hazards likely to be encountered. These hazards will depend on the aircraft type. These hazards are discussed below and need to be recognised for their potential lethality.

Avoid touching anything on the site unless absolutely necessary for rescue or safety reasons. Avoid working near or around running engines, propellers, jet intakes and exhausts at all times.

As with all accident sites, you should **AVOID CONTACT WITH BLOOD, BLOOD PRODUCTS AND PERCEIVED BIOLOGICAL HAZARDS.**

**Electrical hazards.** Carbon fibres and some other composite materials are electrically conductive. Therefore, you should take care when operating portable electrical appliances near the accident site.

**Fire extinguisher types and their uses.** Using inappropriate fire extinguishers on certain types of fires can be ineffective or can exacerbate a fire, increasing danger to personnel and equipment. Rescuers should seek expert guidance from trained firefighters before applying fire fighting equipment directly onto aircraft fires.

**Use of portable communications equipment.** Due to the possible activation of damaged ordnance by radio emissions, portable communications equipment should not be used within the immediate vicinity of the accident site.

**Radiation hazards.** Radioactive materials are used in numerous areas of military aircraft and missile guidance systems.

Contact the Australia-wide Poisons Information Centre for information and assistance: **13 11 26 (24 hours, 7 days a week).**

# ACCIDENT PROCEDURES

## **Agricultural and aerial application aircraft**

Approach the aircraft cautiously from upwind and from the opposite direction of the aircraft's flight path. Be aware of powerlines that may have caused the accident. The chemicals carried by agricultural aircraft are normally secured in a hopper, located forward of the pilot's position. You should be aware that this chemical may spill in an accident. The chemicals carried are generally diluted, most often with water; however, some chemicals are diluted with spray oil, which may be flammable.

Chemicals are packaged with both a label and a Material Safety Data Sheet (MSDS) – it is common for a pilot to carry the name of the chemical on the load sheet inside the cockpit; however, it is more likely to be with the loader-mixer (i.e. support crew) who may be nearby, or with the farmer. Both the label and the MSDS will contain relevant information for emergency situations, including decontamination procedures and first aid.

Fertiliser is generally not a concern in an accident in terms of creating a hazard for emergency personnel. Seed is not a concern to the safety of emergency personnel, other than as a fire risk.

Aircraft engaged in fire bombing operations may be carrying a red product called 'Foscheck' or water and surfactant; neither product should pose a threat to emergency personnel.

If appropriately trained, disconnect the battery; there is no need to cut into the fuselage as the battery should be easily accessible through access panels.

Emergency personnel should contact their local aerial application-operator for assistance with emergency planning.



# AIRCRAFT ACCIDENT PROCEDURES

## Military aircraft data matrix

1 = 1 seat  
2 = 2 seat  
Mod = Module

AC = AVCAT  
AG = AVGAS  
AT = AVTUR

G = Gaseous  
P = Portable  
L = Liquid  
Chem = Chemical Oxygen System  
EPOS = Emergency Postable Oxygen  
OBOGS = On-board Oxygen Generation System

A = Alkaline  
Li = Lithium  
NC = NiCad  
PB = Lead Acid/Gel

F = Fixed in Airframe  
P = Portable handheld  
CR = Civil registered

✓ = Fitted  
✗ = Not fitted

FIXED WING	Name	Tail No.	MAX Crew	MAX PAX	Ejection Seat	Fuel	Engine Oil	Hydraulic Oil	Oxygen	Radio-active material	Composite Material	Batteries	Explosive Ordnance	Extinguishers	Pressure cylinders	Alloys	Life support
	B350	A32-XXX	2	10	✗	AT	✓	✓	G	✓	✓	Pb	✓	FP	✓	✓	✓
	BBJ 737	A36-XXX	8	36	✗	AT	✓	✓	G,P,GG	✓	✓	NC	✓	FP	✓	✓	✓
	CAP10	CR	2	0	✗	AG	✓	✗	X	✗	✓	Pb	✗	P	✗	✓	✗
	Challenger	A37-XXX	4	9	✗	AT	✓	✓	G,P	✗	✓	NC	✓	EP	✓	✓	✓
	CT4B	CR	2	0	✗	AG	✓	✗	✗	✗	✓	PB	✗	P	✗	✓	✗
	F-111	A8-XXX	2	0	✓ Mod	AT	✓	✓	L,G	✓	✓	NC	✓	F	✓	✓	✓
	C130H Hercules	A97-XXX	5	92	✗	AT	✓	✓	L,P	✓	✓	Pb	✓	EP	✓	✓	✓
	C130J Hercules	A97-XXX	4	126	✗	AT	✓	✓	L,P	✓	✓	NC	✓	EP	✓	✓	✓
	F/A-18 Hornet	A21-XXX	2	0	✓ 1 or 2	AT	✓	✓	L	✓	✓	Pb, A, Li, NC	✓	F	✓	✓	✓
	Hawk	A27-XXX	2	0	✓ 2	AT	✓	✓	OBOGS, G	✓	✓	Pb, A, Li, NC	✓	✗	✓	✓	✓
	KC-30A	A39-XXX	14	270	✗	AT	✓	✓	G, P, Chem	✓	✓	A, Li, Pb	✓	F, P	✓	✓	✓
	AP3-C/P-3C Orion	A9-XXX	20	0	✗	AT	✓	✓	G, P, EPOS	✓	✓	Pb, A, Li	✓	FB	✓	✓	✓
	PC-9/A	A23-XXX	2	0	✓ 2	AT	✓	✓	G	✓	✓	NC, A, Li	✓	✗	✓	✓	✓
	RSAF PC21	9-XXX	2	0	✓ 2	AT	✓	✓	OBOGS, P	✗	✓	Li, Pb	✓	✗	✓	✓	✓
	Scan Eagle	N/A	0	0	✗	✓ see note	✗	✗	✗	✗	✓	Li	✗	✗	✗	✗	✗
	Skylark	N/A	0	0	✗	✗	✗	✗	✗	✗	✓	Li	✗	✗	✗	✗	✗
	Super Hornet	A44-XXX	2	0	✓ 2	AT	✓	✓	OBOGS,G	✓	✓	Pb, Li	✓	F	✓	✓	✓
Wedgetail	A30-XXX	13	8	✗	AT	✓	✓	G, P, Chem	✗	✓	Li, Nc	✓	F, P	✓	✓	✓	

NOTE: High Octane 2-stroke

ROTARY WING	Name	Tail No.	MAX Crew	MAX PAX	Ejection Seat	Fuel	Engine Oil	Hydraulic Oil	Oxygen	Radio-active material	Composite Material	Batteries	Explosive Ordnance	Extinguishers	Pressure cylinders	Alloys	Life support
	Black Hawk	A25-XXX	4	10	✗	AT	✓	✓	✗	✓	✓	Pb, A, Li	✓	FP	✓	✓	✓
	Chinook	A15-XXX	4	30	✗	AT	✓	✓	✗	✓	✓	NC, A, Li	✓	FP	✓	✓	✓
	Kiowa	A17-XXX	2	3	✗	AT	✓	✓	✗	✓	✓	NC, A, Li	✓	P	✗	✓	✓
	MHR90	A40-XXX	4	18	✗	AT/AC	✓	✓	✗	✗	✓	NC, Li	✓	F, P	✓	✓	✓
	S70B-2 Seahawk	N24-XXX	3	10	✗	AT/AC	✓	✓	✗	✓	✓	Pb, A, Li	✓	FP	✓	✓	✓
	Sea King	N16-XXX	3	25	✗	AT/AC	✓	✓	✗	✓	✓	NC, A, Li	✓	P	✓	✓	✓
	Squirrel	N22-XXX	2	4	✗	AT/AC	✓	✓	✗	✓	✓	NC, A, Li	✓	F	✓	✓	✓
	Tiger ARH	A38-XXX	2	0	✗	AT	✓	✓	✗	✓	✓	NC, A, Li	✓	FP	✓	✓	✓
	RSAF Super Puma	220-XXX	4	22	✗	AT	✓	✓	✗	✗	✓	NC	✓	FP	✓	✓	✓



**TO REPORT AN  
AVIATION ACCIDENT  
TELEPHONE:**

**CIVIL**



**Australian Government**  
**Australian Transport Safety Bureau**

**Ph: 1800 011 034**

**MILITARY**



**Australian Government**  
**Department of Defence**

**Ph: 0410 626 357**

**24hrs, 7 DAYS A WEEK**

Australia-wide  
**Poisons Information Centre:**  
**13 11 26**