CHAPTER 8 – POST-OCCURRENCE ACTIVITIES

References: A. 1016-18 (DFS) 7 May 2007 - CVR/FDR Policy
B. 1 Cdn Air Div Orders, Vol 3, 3-304: Flight data recorder/Cockpit Voice Recorder/Crash Position Indicator/Other Cockpit Flight Recording Devices
C. *Aeronautics Act*

PURPOSE

1. As indicated in Chap 1, the objective of the FS Program is to prevent the accidental loss of aviation resources. Unfortunately, despite the best efforts of all concerned, accidents can still occur. Accordingly, wings and units must prepare sound plans for this eventuality to ensure that loss of life and injury to personnel is minimized, damage to property is minimized and evidence is collected and protected to facilitate a thorough investigation. In addition, aircraft accidents understandably attract a lot of attention. Therefore plans must include provisions for the timely release of accurate information to the chain of command, next of kin and the media.

CVR AND FDR PARAMETER REQUIREMENTS

2. The Cockpit Voice Recorder (CVR) and Flight Data Recorder (FDR) Parameter policy (ref A) established the airworthiness requirements for CF operated aircraft to be equipped with on-board recording devices that are to be used for accident prevention and accident investigation. The policy originally signed off by C Air Force is set to transition to a CFTO being developed by TAA staff titled Aircraft Equipment Requirements (AER).

3. Ref B should be consulted to consider handling, requirements and lists the equipment installed on current aircraft in DND/CAF. Annex E to this chapter describes additional CVR/FDR parameters for different families of aircraft.

DEFINITIONS

Aircraft Recording Device (ARD)

4. An ARD is any device installed on an aircraft that records and stores data in any shape or form.

> NOTE
> ARDs include cockpit voice recorder (CVR), heads-up display (HUD) with or without voice, aircraft crash position indicator (CPI), flight data recorder (FDR), maintenance signal data recording set (MSDRS), health usage maintenance monitoring system (HUMMS), operational loads monitoring (OLM) devices, air combat manoeuvring instrumentation (ACMI), non-volatile memory chips, cockpit mounted cameras. See annex G.

On-board Recording (OBR)

5. An OBR is defined in the *Aeronautics Act* article S22. It states “In this section and in section 23, “on-board recording” means the whole or any part of either a recording of voice communications originating from an aircraft, or received on or in the flight deck of an aircraft, or a video recording of the activities of the operating personnel of an aircraft, that is made, using recording equipment that is intended not to be controlled by the operating personnel, on the flight deck of the aircraft, and includes a transcript or substantial summary of such a recording.”

Designated OBR

6. A designated OBR is the the cockpit voice recorder and cockpit video recorder as described at para 5 above.

Non-designated OBR

7. A non-designated OBR is any ARD not categorized as a designated OBR that records voice and/or video to and from the cockpit. The non-designated OBR were not designed solely for FS purposes and are used for other purposes such as crew training, mission debriefing and maintenance.

HANDLING OF ARD DATA

8. The following paras explain the categories of ARDs, their status in relation to a FS investigation, the statutory authority specifying how they shall be handled and the releasing authority for the different categories of ARDs. Annex G portrays these provisions in one simple image.

Privileged Status of OBR Data

9. Data from designated OBR is always privileged. In the case that a FS occurrence has taken place, data from non-designated OBRs shall be treated as privileged.

Handling of OBR Data

10. The requirements for handling the data of ARDs are either statutory (based on laws) or regulatory (based on orders).

a. Designated OBR. The Statutes of the *CTAISB Act* and the *Aeronautics Act* require that “On Board Recordings” or designated OBR data be treated with privilege. The details associated for use and access to a designated ORB are contained within the statutes. Therefore, the authority to download data from a designated OBR must be obtained from DFS/AIA, except for the authorized actions associated with verifying the recorder serviceability and its’ maintenance. Otherwise, download and use of these OBRs will only be granted for FS investigations or DFS/AIA approved training and promotion activities; and

b. Non-designated OBR. The use of data from a non-designated OBR for maintenance or typical post-mission purposes such as training and debrief is authorized by the DFS/AIA unless the recording is associated with an

occurrence. Once a FS occurrence has taken place, the data from these OBR is privileged; therefore, only the specifically delegated WFSO (typically the WFSO responsible for the occurrence aircraft) and those authorized by contact with the DFS/AIA or the designate may view, download or utilize these recordings. Personnel given access to non-designated OBR data under this circumstance must be cautioned regarding the statutory privilege associated with this data.

11. Privileged OBR data shall be protected whereby no person other than an authorized investigator or someone authorized by the AIA shall:

a. be given access to the data;

b. knowingly communicate or allow the data to be communicated; and

c. be required to produce OBR data or give evidence relating to it in any legal, disciplinary or other proceedings.

Handling of Other ARD Data Following a FS Occurrence

12. These recording devices may be downloaded for valid purposes such as those associated with fleet maintenance, operations, training or test purposes. The authority to download ARD data on a routine basis must rest within the associated 1 or 2 Cdn Air Div Orders for the personnel conducting such activities. Notwithstanding, after a FS occurrence, these recording devices and data sets shall be quarantined as per para 45 to 56 below pending a decision on the requirement to retrieve the recorded data. This decision will be taken following consultation with Unit FS Personnel and DFS/AIA if/as necessary. The quarantine will remain in effect until the data has been successfully downloaded and is proven usable for evidence purposes.

Provisions for Downloading ARD Data

13. Designated OBR. Designated OBR unit may be removed from the aircraft or the data downloaded to assist with valid AIA approved activity only when conducted in strict accordance to the following provisions:

a. no person, including any person to whom access is provided to the privileged representation shall knowingly communicate it or permit it to be communicated to any person;

b. information shall not be used for any administrative, disciplinary proceedings or punitive actions,

c. information will not be accessible through the Access to *Information Act* (ATI),

d. crew identities shall not be released without their explicit consent;

e. the data shall solely be used for the purposes of maintenance activities related to aircraft systems or other valid AIA approved activity;

f. instructions for periodic maintenance, data download, and calibration must be established for each fleet. Frequencies for these maintenance activities are to b detailed in the maintenance schedule applicable for each fleet

g. data retrieved shall be copied integrally and steps be taken to ensure that no information is lost, altered, or destroyed as a result of the downloading;

h. once every 12 months, the downloaded data as well as the correlation data are to be sent to the National Research Council (NRC) Flight Data Recorder Playback Center for verification of the recorded parameters and accurac . The frequency of the data download may be increased, if so requested by the AIA, to verify the accuracy or the reliability of the system.

NOTE
If the capacity to download designated OBR data does not exist, then the complete unit must be sent to NRC for analysis.

14. FDR. Instructions for FDR periodic maintenance, data download, and calibration must be established for each fleet. Frequencies for these FDR maintenance activities are to be detailed in the maintenance schedule applicable for each fleet. Once every 12 months, the FDR data will be downloaded and sent to NRC Flight Recorder Playback Center for the purposes of validating the quality of the recording and the serviceability of the recorder. The frequency of the downloads may be increased, if so requested by the AIA, to verify the correct functioning of a recording system.

NOTE
FDR data that is removed/downloaded for maintenance-related activities do not need special documentation; however, the provisions stipulated in the paragraph above are to be upheld.

OCCURRENCE RESPONSE PROCEDURES

Efficient Response Elements

15. The CO, through the FSO, must ensure the unit is prepared to respond to any occurrence, regardless of location. The occurrence response plan shall include provisions for:

a. saving lives and preventing injury or further damage;

b. protecting the response team from hazards at accident sites as per Annex A; and

c. thorough investigation of every occurrence.

16. The elements of an efficient occurrence response are

    a. immediate, accurate and thorough reporting;

    b. thorough independent airworthiness investigation leading to the discovery of cause factors and findings that identify PM

    c. implementation and recording of PM and feedback of information; and

    d. periodically revisiting PM at a later date to ensure that they were properly implemented and have been effective.

17. Operation orders for CF activities involving air assets or support for air assets like exercises, operations and deployments on airshows shall include contingencies for FS occurrences. The CO should use this opportunity to assess the hazards of the operation and risks involved, and draw attention to specific areas where there might be particular concern. These should be highlighted in a statement on the overall importance of FS in the conduct of operations.

Investigation Planning Requirements

18. Planning is required to ensure that evidence is protected and to conduct a safe and expeditious investigation. Time is most important in post-occurrence activities; evidence may change or be lost, or there may be another accident before PM can be implemented.

19. In preparing a response to an FS occurrence, DFS will:

    a. maintain a suitable cadre of trained, authorized and accredited aircraft accident investigators as delineated in the AIM;

    b. authorize the Div FSO to train and accredit airworthiness investigators as delineated in the AIM;

    c. maintain an adequate inventory of field investigation equipment includin recording devices (audio and video), personnel protective equipment (PPE), communication devices, portable IM/IT and field navigation equipment

    d. maintain a permanently monitored occurrence notification system (1-888-927 6337/WARN-DFS);

    e. maintain arrangements for specialist investigation support from organizations such as AETE, QETE, DRDC Toronto and National Research Council (NRC);

    f. maintain arrangements for coordinated investigations with other agencies within Canada (TSB) and with other nations (where feasible);

    g. develop a process that can initiate investigations quickly and deploy investigation teams within 24 hrs domestically and 48 hrs internationally; and

    h. develop a process that can be used to prepare, revise and finalize FSIs

20. 1 Div FSO shall in relation to FS matters look after the following:

a. ensure that units and suitable personnel receive adequate training and accredit trained investigators as authorized by the AIA;

b. provide guidance in the preparation of accident response plans and review the plans and checklists as part of FS surveys;

c. follow up on PM flowing from SRs; an

d. conduct trend analyses to provide FS advice to Comd 1 Cdn Air Div.

21. In many instances, action items are not the responsibility of the FSO. However, the FSO shall ensure that the appropriate actions are taken as required.

ACCIDENT RESPONSE PLAN REVIEW

22. Each unit shall develop an accident response plan and validate it to ensure that critical actions are not overlooked. This plan should be reviewed and exercised periodically. It shall be held by:

a. the unit chain of command and UFSO;

b. the Duty Officer

c. the Air Traffic Control Services

d. the Operations Section;

e. the Senior military medical authority; and

f. the applicable local police, fire halls, hospitals, ambulance services, telephon operators and information services.

ACCIDENT RESPONSE COMPONENTS

23. The response plan shall include, in order of precedence, those individuals to be advised. The Aircraft Accident Checklist at Annex B lists the actions anticipated from the organizations concerned in case of a serious accident.

24. The accident response plan should include:

a. provisions for the immediate involvement of aeromedical personnel;

b. training of firefighting personnel in aircraft rescue technique

c. availability of rescue personnel whenever flying is in progress, includin personnel to disarm, remove or safety explosive devices and pressurized systems;

d. provision of technical and operational advice to the pilot in an emergency;

e. a checklist to be used during emergencies by personnel in key positions like CO, DCO, SAMEO, tower, operations, OSCER and FSO;

f. procedures for recovery or diversion of aircraft;

g. briefings to the local authorities on how to report an occurrence and what to do a the scene until CF authorities arrive, like liaising with coroner or police;

h. alert the agencies that must respond to an off-unit site occurrence;

i. communications for all rescue vehicles and agencies, e.g. Padre, Environmental Officer and AO;

j. the accident-rescue grid map of the airfield and surrounding area. Copies shoul be kept in the control tower, dispatch centres, OSCER vehicle , helicopters, ambulances, fire trucks, maintenance, and other vehicles that must respond t an accident or emergency;

k. preparations for evacuation and medical treatment of casualties. Make arrangements with local hospitals, fire halls and police for assistance, includin briefings on rescue procedures and toxicology requirements for personne involved in the accident. Copies shall be kept in the tower, ambulances and accident response vehicles;

l. the search-and-rescue (SAR) plan (water, land or air parties), arrangements for a search centre and for SAR support;

m. considerations for runway clearance and diversion procedures to allow, if possible, the recording of evidence before wreckage is moved;

n. procedures for runway clearance, including instructions for the selection, maintenance and use of heavy equipment, cranes, jacks, portable floodlights spare wheels and slings;

o. media response guidelines;

p. measures for the security of the aircraft;

NOTE Whenever sabotage is apparent or suspected, Security Orders for the CF apply.

q. periodic review of instructions, including:

(1) the testing or practice of crash alarm systems,

(2) the accident rescue response procedures, and

(3) the use of training films and other aids

r. preparations for safeguarding evidence. Plans should include the following:

(1) making video recordings of emergency landings,

(2) guarding and protecting accident sites to protect evidence and any contaminated areas associated with the accident site. An accident security team shall be established with a designated comd, who shall be responsible for:

(a) if crash site is outside a defence establishment, coordinating with local police authority to identify CF security needs and ask for their support;

(b) seeking and issuing proper rules of engagement for military personnel;

(c) issuing, maintaining and using equipment to support guard operations;

(d) developing a shift system;

(e) making provisions for transport, money, rations and accommodation;

(f) ensuring that communications equipment is functional; and

(g) ensuring that provisions are made to set up a single controlled accident site entry/exit point at which appropriate protective instructions and kit will be issued, and

(3) selecting and briefing alternate security comd and crew

s. establishing chain of command for site control, within or outside the defence establishment site, prior to and following the arrival of the FS investigation team;

t. selecting, maintaining and using equipment for the protection and collection of evidence;

u. using the services of the Recovery and Salvage Squadron (RASS) of ATESS for heavy equipment and diving or dragging equipment to recover wreckage, using both civilian and CF resources (see C-05-010-002/AG-000 – Aircraft Salvage Procedures); and

v. preparing for the commencement of the investigation by ensuring that perishable evidence is recorded, personnel involved and witnessess are isolated and requested to provide a written statement as soon as possible after the accident, personnel are instructed to take and ship samples, measurements are taken, accident site diagrams are prepared, appropriate medical exams are conducted, appropriate items are quarantined and impounded as required, witnesses (including start crews) are identified, and weather observations at the time of th occurrence are taken.

NOTE

Annex E amplifies details of the photographic requirements. Custody of photographs must be carefully controlled to ensure maintenance of the chain of evidence custody.

NOTE

A Report of Emergency Escape from Aircraft and/or Report of Emergency Landing on Water may also be required.

COMMUNICATIONS

Notification of Foreign Nations

25. When occurrences involve non-CF aircraft and/or locations and facilities, DFS shall notify the Nations involved as required by NATO STANAG 3531, Letters of Agreement and other standing arrangements, so that the actual owners of the aircraft may discharge or take possession of their property and indicate what type of support they require from DFS.

Requests Beyond Wing Supporting Capability

26. Normally, the nearest practicable wing will be designated as the supporting wing. Requests for assistance that are beyond the capabilities of a wing or a supporting wing shall be directed to 1 Cdn Air Div/CANR Headquarters.

Notification to Coroner

27. In the case of fatalities, the provisions of the appropriate provincial coroner statute shall be respected. The coroner is responsible for establishing the cause of death and is the final authority for the removal of human remains.

Release of Information

28. The release of information to the public is the responsibility of the Public Affairs Office (PAO). Following an FS occurrence, the FSO or IIC shall maintain contact with the PAO to ensure timely and accurate news releases. Public and media interest must be anticipated and the FSO should be prepared to assist the PAO. When pressed for information, the FSO and IIC should be guided by DAOD 2008 and AIA delegated authorizations regarding release of information outlined in the AIM. If the occurrence is a significant event in that it involves either prominent persons or circumstances likely to create public interest, there will be a requirement to generate a Significant Incident Report

29. The FSO and the IIC may be asked to answer questions concerning an occurrence and its investigation. At no time shall they admit Crown responsibility for any damage, no matter how obvious this liability may seem in the circumstances. They should reinforce that the mandate of the FS Program is to investigate to prevent future occurrences and the aim of the investigation is not to assign blame.

30. The investigation team members should be responsive to media or public requests for general or background information, and should always treat reporters politely. The PAO shall be notified of any intent by or request to a team member to conduct an interview related to the investigation.

31. Under no circumstances will the individuals involved in an FS occurrence be interviewed by the media until they are cleared to do so by the IIC.

Briefing to Next of Kin

32. The unit is responsible for keeping family members informed of the progress of an investigation. In the case where the accident involved casualties, the norm would be for DFS to provide the next of kin with an initial briefing describing the FSIR process and provide them with a copy of the FTI prior to its public release on the DFS website. The intent of conducting the initial briefings is to provide the NOK with an explanation of the investigation process and provide them with a copy of the FTI so they can get ready to address the press prior to DFS public release. DFS will also give family members a detailed briefing on the findings, cause and recommendations contained in the final FSIR prior to its public release. Close coordination with Wing and Unit commanders and their advisors is essential to meeting the aim of the briefings while minimizing stress on the NOK and survivors

Information not to Be Released

33. To prevent impeding the investigation and to avoid premature or incorrect conclusions, the following shall not be released:

a. the specific location of an o f-site occurrence if rescue procedures would be impeded by sightseers;

b. names of personnel killed, missing or injured until after their next of kin have been informed;

c. detailed descriptions of injuries or fatalities;

d. classified information and/or equipment, including weapons loading

e. privileged information, such as witness statements, related evidence and all fligh recorder information;

f. statements that tend to indicate responsibility of the Crown or any person;

g. statements that imply failure of equipment or facilities;

h. premature speculation that could jeopardize the conduct of the investigation;

i. statements on causes to civilians, including news media representatives;

j. accident statistics, rates, trends, costs of accidents and similar information without DFS authority;

k. when civilian or allied military aircraft or installations are involved, anything that has not been approved by their local representatives; and

l. information related to contracted organizations.

Release of Information to Contractors

34. Releasing information to commercial firms under DND contract is subject to QR& 19.36, in that only general information may be released immediately to contractors, field service representatives or technical representatives. In addition, they may be given other

information only as authorized within security limitations to fulfil their contracts. There will be occasions when field service or technical representatives will be enlisted as specialist advisors to investigations. In that case they will be allocated observer status while supporting the investigation. Procedures regarding this situation are contained in the AIM.

Release of Information to Other Nations

35. NATO STANAGs provide guidance for the dissemination of FS information. STANAG 3101 provides for exchange of information concerning aircraft or missiles in common use. Information concerning FS matters arising from the operation of a nation's air services within or over another NATO nation's territory is exchanged under the terms of STANAG 3102. Release of information to other Nations is based on the same principles.

PROCEDURES ON ACCIDENT SITE

Health Protection

36. At an accident site, there will be dust, chemicals and/or fumes that can be toxic or very hazardous to health. Therefore it is essential to protect all personnel working at the accident site. Equipment must protect the lungs and skin from contact with and ingestion of particles and fumes. The CF has a legal obligation to ensure the safety of all personnel involved in the support of an accident investigation, including any agency or civilian contractor involved in work at the accident site or the salvage operation. Accident Response Plans must ensure that any information regarding dangerous substances is passed to these support agencies. Refer to Annex A and the AIM for further details.

37. The particulars of all personnel involved in post-crash activities will be recorded prior to entering the cordon placed around the accident site or at the quarantine facility. The nature and duration of each exposure to the accident site/quarantine and the PPE worn during that exposure will also be recorded. This information will be placed on individual personnel files and medical records.

Accident Investigation Kit

38. Kits must be available at all wings and units operating in isolation. The FSO Accident Investigation Kit is referred to in the tool control system as TLD 1246. Units looking to re-supply their kits can get the necessary information from CFTCCS ATESS in Trenton. The FSO is responsible for the provision and safekeeping of these kits. Because of the value and attractiveness of many of the items, a member of the investigation team is required to be responsible for the kit when it is in use. Annex C lists the recommended items to be contained in the FSO accident investigation kit. There are three types of items:

a. Hand-portable Items. These are likely to be required at every accident site;

b. Contingency Items. These are heavy or bulky items that may be needed on site; and

c. Facilities. These may be needed on returning from the accident site to complete the investigation.

Site Security

39. Security is normally required at every accident site and local police are usually the best option unless the site is very isolated or only accessible to CF/DND personnel. On defence establishments it is the responsibility of the MPs. If the site is outside CF military facilities or what is considered a defence establishment, the local police has jurisdiction. The aircraft commander, the CO or the senior capable survivor may obtain local police or other civilian personnel to perform the initial security.

40. Investigators are not to be tasked with the administration of the security party; thus a separate individual shall be tasked, briefed and equipped to handle the responsibility for the security of the site.

41. With the exception of established field service representatives (FSR) under contract t DND, company or contractor representatives are not to be permitted access to an accident site or wreckage components unless authorized by DFS. In the case of FSIs, access to the accident site and the extent of investigative participation is left to the discretion of the DFS. Representatives of the news media should be asked to stay clear to protect the evidence on the crash site and for their own safety. They should be informed that a PAO will provide all details which may be released to the public. Cooperation of news photographers should be requested, but no force will be used by CF personnel to prevent them from gathering imagery. The PAO should be advised of any news media in breach of restricted access areas. Similar procedures are to be followed with owners of the property involved, remembering that a full and effective investigation may depend upon a property owner's cooperation.

42. However, when it is impractical or of doubtful value, the CO, having considered the security classification of the components, may decide not to secure the area. COMSEC authorities should be consulted when COMSEC material is present.

43. For accidents or forced landings outside Canada, security will likely be provided by the country of occurrence, particularly if that country is a signatory of NATO STANAG 3531. Whenever CAF security is not provided, DFS shall be informed.

Security Duties

44. Security personnel must be briefed to ensure that no evidence is disturbed or obliterated, unless it is absolutely necessary in order to save lives or to prevent injury or serious damage. Moreover, personnel shall have been briefed on accident site hazards and made aware of the PPE required when working on site. If possible, items should be moved only short distances, in straight lines parallel to other parts being moved to preserve the layout of the scene. Photographs and video should be taken before evidence is disturbed and notes made of any explosive charges made safe and pressure systems deflated. The security comd shall ensure that:

a. doctors, coroners, first aid personnel, firefighters, rescue teams, aircr disarming and wreckage recovery personnel, and authorized investigators and photographers are allowed access and are not impeded in the performance of their duties;

b. civil and military property is adequately protected;

c. unauthorized persons are not permitted to enter the area; and

d. following release by DFS, accident aircraft components appearing on the list of classified equipment are accorded appropriate securit . Classified equipmen may be removed from the site, on approval of the DFS investigator-in-charge (IIC) to ensure security control during the investigation. Ultimate disposal of classified equipment remains the responsibility of the NDHQ Item Manage , or DCOMSEC for COMSEC material.

Securty in Foreign Nations

45. Outside Canada, the local authorities or locally provided security have jurisdiction for physical security. CF requirements should be made known and CF methods should be tactfully suggested. For details concerning the security of evidence within NATO countries, refer to STANAG 3531, available on the DFS intranet site under tab Resources\Manuals.

IMPOUNDING ARTICLES

46. Impounding articles refers to safeguarding material to prevent the loss or alteration of all records, documents, films, tapes, and forms that may be required for the investigation. Under unusual circumstances, some of this material may be required for continued operations, program completion or other assessments. Examples of such requirements are battle damage assessment, weapons effect analysis, intelligence gathering and analysis or data assessment for on-going programs. This may require the viewing, copying or assessment of impounded items by personnel not involved with the Flight Safety Investigation activity. In these circumstances, the impounding FSO shall maintain evidence continuity and ensure that such activity is consistent with the higher-level requirements while honouring the privilege associated with such data, should it exist. For example, if the data includes voice or the movements of the crew, personnel viewing the data must be cautioned that particular data is privileged and can only be used for Flight Safety purposes and it should not be transmitted to other persons except for operational reasons. The person designated as the impounding officer shall submit a statement of impoundment to the investigative authorit , using the format shown in Annex F. Any impounded items viewed for the above noted exceptions should be appropriately annotated. All impounded items shall bear a notation as per sample below.

Impounded:(*time, date, month, year*) on the authority of:

_____

(*full details of authority for impounding*)

_____

(Signature and Rank)
Impounding Authority

Items to Be Impounded

47. The following items shall be impounded following an accident and may be impounded following a serious incident:

a. the maintenance record set, current logbooks and computer records from ADAM or similar systems for the aircraft concerned and its components;

b. pertinent Aviation Fuel DND Sampler Reports (CF 907), Equipment Oil Sampling Register (CF 34 2) and Spectrometric Oil Analysis Reports;

c. ARD data;

> NOTE
> DFS will issue handling instructions for any recording devices removed from an aircraft involved in an occurrence.

d. the flight authorization form, flight plan, passenger manifest and load sheets f the flight in question

e. data stored on the Mission Management Application (MMA) can be captured through the “impound” feature;

f. the crew’s log books;

g. unit training and standards records;

h. tower log books and ATC communication and data recordings. In the case of civilian ATC facilities, contact DFS or DFS IIC, who will make the officia impoundment request;

> NOTE
> For an occurrence where elements of both a FS occurrence and an aviation infraction/violation are present, DICP and DFS/AIA can, in order to conduct their respective investigations, request copies of the same ATC voice and data file recordings through their respective chains of command.

i. pertinent meteorological records, forecasts and special observations;

j. pertinent photographic records;

k. radar unit log books, radar scope tape and voice recordings relating to the occurrence;

> NOTE
> These records must be handled carefully, since they are irreplaceable.

l. medical records and, in the case of fatalities, dental records and fingerprints fro the National Defence Identification Service (NDIS) in NDHQ; an

m. any other documents, forms, tapes, films or computer records that are pertinent e.g., maintenance, arrestor cable or AMSE records.

QUARANTINING

48. Quarantining is the withholding and safeguarding of physical evidence or hazardous items. Such items may include complete aircraft components, equipment, stores, and production lots or batches. Quarantining shall begin as soon as a unit learns of an FS occurrence. Objects to be quarantined shall be removed from use immediately, and kept in a secure storage (size permitting). Alternate arrangements shall be taken to withhold and safeguard larger items. In unusual circumstances, as noted above in para 9 above, access to some quarantined items may be required to continue operations, programs or testing and this access must be documented by the quarantine officer while maintaining evidence continuity and other statutory or regulatory requirements.

QUARANTINING DOCUMENTATION

49. If the item has a log book, an entry shall be made that the item is quarantined under authority of this publication. In the case of an accident, the person designated by the CO as the quarantining officer shall submit a statement to the DFS IIC using the format at Annex F.

50. Aircraft equipment/parts shall be prominently tagged with both a CF-706 (Quarantine tag), and a CF942 (Material condition tag).

51. A register is to be kept in the secure storage to identify items held in quarantine and provide a link to the FSOMS occurrences. This register shall also be used to record disposal actions for quarantined items (e.g. shipment data, released to LCMM as per e-mail dated dd-mm-yyyy).

ITEMS TO BE QUARANTINED

52. The following items, if applicable, shall be quarantined:

a. the aircraft;

b. the aircraft components (to include software and test equipment used to verify component serviceability) or personal equipment involved or suspected in the occurrence;

c. the equipment or facilities that last serviced the aircraft with oxygen, POL, armaments or other stores;

d. any other equipment such as that which may have hit the aircraft, cargo that caused problems, defective ground radar, arrestor cable, starting unit or other facilities; and

e. any stocks, particular makes or batches of components, like stores and POL, that are suspect.

NOTE
Until the quarantine is lifted personnel will avoid turning on the battery or applying ground power in order to avoid the loss of recorded data. i.e. CVR and FDR information. The quarantine will remain in effect until the data has been successfully downloaded and is proven usable for evidence purpose.

53. When the facility involved is a civilian contractor for into-plane services, quarantining the facility shall be the responsibility of the appropriate technical services detachment.

FLUID SAMPLING

54. Fluid sampling is the gathering and submission of specimens of POL and other fluid for analysis. Sampling shall begin as soon as a unit learns of an occurrence. In the case of an accident, the sampling office , usually the AFSO, must submit a statement of impoundment to the DFS Investigator using the format shown at Annex F. Sampling procedures shall be as directed in applicable CFTOs; if not specified, use sound engineering practices to prevent further contamination. If contamination is unavoidable, record its nature and if possible obtain a sample of the contaminant and take more than one sample from each source.

55. Ideally, all fluid sample analysis should be done at QETE. Howeve , the need to avoid operational delays may dictate that a preliminary analysis be conducted locally. Coordination with QETE shall be carried out prior to any local fluid sample testing and QETE will provide either direct or delegated oversight of the tests. In this case, a second set of fluid samples will be sent directly to QETE for analysis.

56. Unless clear evidence exists that contamination or other component breakdown did not contribute to the occurrence, the following items must be sampled:

a. all entrapped fluids in any wreckage

b. all entrapped fluids in any failed or suspect fluid systems such as fuel, oi hydraulics and oxygen along with associated filters; an

c. all ground equipment (e.g. LOX/HOX cart, fuel bowser) and facilities (e.g. fuel tank) involved.

57. Samples must be analyzed as quickly as possible. If duplicate samples are taken they should be retained by one of the following until they are released:

a. FSO or D/FSO;

b. DFS;

c. CO or designate; or

d. a CF-approved laboratory when authorized by one of the above and when overseen by QETE.

> NOTE
> Samples shall be labeled with the source component or item, the section or system of that item, the date and time of sampling, the nature of the sample fluid with any known or suspected contaminants, and any other information which will assist in the analysis.

58. The Fluid Sampling Kit (NSN 8115-21-886-4126) should be used, and is to be sent to QETE in accordance with transport instruction contained therein. QETE will send a replacement kit on request.

AUTHORITY TO ACCESS QUARANTINED/IMPOUNDED ITEMS

59. Apart from the exceptional requirements noted in paras 9, 10 and 11 above, the DFS IIC, WFSO, UFSO, AFSO (Aircraft Fluid Services Officer) or authorised individuals, are the only people to have access to quarantined/impounded items.

LIFTING OF QUARANTINE/IMPOUNDMENT

Authority to Lift Quarantine/Impoundment

60. DFS is the authority to lift quarantine/impoundment. This authority is delegated, with the exception of photographic/imagery evidence, to the tasked IIC. Additionally, in order to maintain critical operational capability, the CO, or a CO's delegated person of authority with the requisite knowledge to ascertain that the lifting of the quarantine/impoundment of item(s) will not affect the conduct of the investigation, may also lift a quarantine/impoundment.

> NOTE
> Due to Privacy Act considerations, the DFS/AIA retains the authority for the release of all photographic/imagery evidence.

Provision for ARD Data

61. Lifting of quarantine for ARD data can only be done once the agency charged with producing the data has advised the applicable authority that the information was successfully downloaded and is usable and that a printed copy of the data has been produced.

Recording the Lifting of Quarantine/Impoundment

62. Whenever log book entries have been made impounding or quarantining an item of evidence, a notation as per sample below shall be made in the log book on release of the item.

Released (*time, date, month, year*) on the authority of:

_____
(full details of authority for lifting impounding/quarantining)

_____
(Signature and Rank)
Impounding/Quarantining Lifting Authority

NOTE
For aircraft maintenance record sets, see C-05-005-P04/AM-001.

DISPOSAL OF QUARANTINED/IMPOUNDED EVIDENCE

63. Disposal instructions for certain items may only be issued by the appropriate authority at higher HQ, e.g. the applicable item manager at DAEPM. Before issuing such disposal instructions, the authority concerned must confirm whether the item is to be shipped under an FS quarantine or is to be released from quarantine.

64. Disposal instructions will include one or more of the following actions:

a. DFS handling instructions for OBR data;

b. Actions to be taken for each quarantined items:

(1) repair or return the items to normal use, including the return of personal property to the rightful owner;

(2) return the items to supply or forward for repair and overhaul;

(3) forward the items to a specified agenc , e.g., QETE, AETE or contractor, for further investigation and analysis. Items are to remain under the FS quarantine and must be accompanied by sufficient details to describe the occurrence (e.g., UCR, CF 543, initial / supplementary report). Pack such parts in accordance with D-LM-008-001/SF 001 – Specifications for Methods of Packing, and A-LM-187-001/JS-001 – Packing and Preservation General Procedures;

(4) retain the items for a specified period; o

(5) scrap the items.

Authority for Civilian Into Plane Servicing Facility

65. When a civilian into-plane servicing facility under DND contract has been quarantined by the appropriate NDQAR, the release from quarantine shall be carried out by the CFQAR.

PROCESSING OF SPECIAL EQUIPMENT

66. Certain items must be handled with particular care and caution to avoid personnel injury or equipment damage and to prevent further damage that might hinder the investigation. Specific handling instructions are outlined belo .

Escape Systems

67. If the occurrence involves an ejection seat or canopy, it should not be moved before the AETE specialist arrives on site.

68. Escape system components involved in ejections or damaged in accidents are to be photographed using close up, high quality colour photography before any on site movement. All escape system components must be safetied by an AETE specialist prior to being shipped as per IIC instructions. Such items include ejection seats and all related components, e.g., leg straps, seat pack shells, seat pack/torso vest contents, and parachutes. These components are to be packed in accordance with appropriate CFTOs to ensure that they arrive at AETE in the same condition as found at the accident site. Applicable armament orders shall be observed before shipping any armament component, and the parts shall be packed in accordance with CFTOs.

69. Ejection equipment is not to be dismantled and parachutes are not to be repacked in their original enclosures. This equipment is to be packaged so as to prevent further damage in shipment. If the seat rocket has not fired, separation of the catapult tubes could cause the rocket to ignite unless the seat is made safe by an AETE specialist.

Aviation Life Support Equipment

70. In all ejections and in accidents involving injuries, all aviation life support equipment (ALSE) and all items of apparel must be suitably packed, annotated, and shipped to DRDC Toronto. DRDC Toronto should be consulted on proper packing/shipping procedures. Such items include aircrew helmets, oxygen masks, survival vests and contents, immersion suits, anti-G suits, handwear, footwear, flight clothing, and underclothing such as thermal vests, T-shirts and turtlenecks. To preserve the integrity of evidence, in-depth investigation of these items should not be attempted without the approval of DRDC Toronto. These items are to be struck off the appropriate inventory before shipping, as they will not be returned by DRDC Toronto. Personally purchased survival items, crests and badges are not to be removed. They will be returned to the owner when the DRDC Toronto investigation is completed.

QETE FS WORK REQUEST

71. A Unit requiring FS work to be carried out by QETE will need approval beforehand by the WFSO and the appropriate DFS Desk Office . The UFSO will then confirm feasibility of project with QETE by sending a FS QETE Project Feasibility Assessment request to QETE, attention Q 2-2 with applicable photos, drawings, diagrams, etc. Upon approval by QETE, the FSO shall follow the SOP as detailed on the DFS website under Resources/Investigator Toolbox.

Annex A
Chapter 8
A-GA-135-001/AA-001

ANNEX A – PERSONAL PROTECTIVE EQUIPMENT

EQUIPMENT REQUIRED

1. The following PPE shall be available:

   a. Coveralls. Coveralls shall be comfortable, light and repellent to the great majority of liquids. Since they are very distinctive, they will also assist in site security.

   b. Gloves. The gloves shall be leather work gloves or service gloves providing adequate protection for most contaminated situations. With liquid contamination, rubber overgloves shall be used. If there is biohazardous material present, nitrile gloves should be worn under the leather work gloves.

   c. Boots. Combat boots provide good protection and should be cleaned or changed before the wearer leaves the site. If there is liquid contamination, rubber overboots shall be used.

   d. Goggles. The goggles shall protect against splashing liquids and flying debri and provide considerable protection from dust.

   e. Disposable Industrial Dust Mask (referred to as N95 mask). When this light, comfortable industrial dust mask is properly fitted to the face it allows very littl unfiltered air to be inhaled. It provides adequate protection from particulat hazards such as composite fibres, lead oxide dust, depleted uranium dust an asbestos. The N95 mask requires a formal biennial fitting which can be arrange through Base Fire Halls or their equivalents. Instructions on use will be provided at the time of fitment

   f. Reusable Half Face Piece Respirator. The half face mask provides filterin protection against particulates, many gases and vapours (depending on which filter is used). The half face mask is to be used instead of the N95 mask when the concentration of airborne contaminants is higher or if there are any concerns about the level of protection offered by the disposable industrial dust mask. The half face piece respirator is not a self contained breathing apparatus and should not be used when unknown fumes are present, ambient oxygen supply is short, or if there are substances present for which the filter was not designed This mask requires a formal biennial fitting which can be arranged through Bas Fire Halls or their equivalents. Instructions on use, storage and cleaning will be provided at the time of fitment. Due to current allotment levels, only designate FS personnel will be assigned a half face piece. Designation will be determined and subsequently tracked by the appropriate WFSO or UFSO.

   g. Miscellaneous PPE. Antiseptic hand-wipe, half face piece respirator cleaning wipes, masking tape for sealing ankle and wrist cuffs, etc.

NOTE
If in doubt as to the type or concentration of substances present do not approach the occurrence site without consultation with fire fighters o preventive medicine technicians on the type of protective equipment that should be worn. Generalized questions regarding PPE should be directed to DFS.

DISTRIBUTION OF HEALTH PROTECTION KITS

2. Health protection kits are issued for aircraft accident sites as per the Appendix 1. These kits will normally be distributed as follows:

a. 15-person Kits. 5 Wg Goose Bay, 9 Wg Gander, 16 Wg Borden, CFB Edmonton, CFB Gagetown, CFB Petawawa, CFB Valcartier, 438 Sqn St. Hubert, 440(T) Sqn Yellowknife, 22 Wing North Bay, and FOLs at Inuvik, Ranking Inlet and Iqualiut. These kits are the responsibility of the FSO.

b. 30-person Kits. 3 Wg Bagotville, 4 Wg Cold Lake, 8 Wg Trenton, 12 Wg Shearwater, 14 Wg Greenwood, 15 Wg Moose Jaw, 19 Wg Comox, HS 443 Esquimalt. These kits are the responsibility of the FSO.

c. 50-person Kits. Two deployable 50-person kits exist for DFS use. They are held by FSO 17 Wg Winnipeg.

3. DFS will dispatch a 50-person kit to an accident site to augment the responding wing's issue if required.

4. Additional kits can be coordinated through DFS as required

Appendix 1
Annex A
Chapter 8
A-GA-135-001/AA-001

APPENDIX 1 – HEALTH PROTECTION KITS

Health Protection Kits			
Kit	Kit Size		
	15-Person	30-Person	50-Person
Hooded coveralls with extra protection (size a/a)	30	60	100
Boot covers (pairs)	30	60	100
Leather work gloves size a/a (pairs)	15	30	50
Chemical and oil protection gloves (pairs)	15	30	50
Nitril/latex gloves (pairs: 6 per person)	90	180	300
N95 air filtering disposable masks (6 per person)	90	180	300
Reusable half face respirators	5	10	10
P100 particulate filters for respirators (pairs)	5	10	10
P100 organic vapor cartridges for respirators (pairs)	5	10	10
Cleaning wipes for respirators (100 wipes/box)	1	1	2
Antiseptic hand sanitizer (115 ml bottle)	5	10	30
Goggles	15	30	50
Masking tape (1.5 inch x 55 meters)	5	10	30

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Annex B
Chapter 8
A-GA-135-001/AA-001

ANNEX B – AIRCRAFT ACCIDENT CHECKLIST

References: A. QR&O 19.36 to 19.375 and 19.41
B. DAOD 1002-2, Informal Access to Personal Information
C. DAOD 2008-0, Public Affairs Policy – Authorities Table
D. DAOD 2008-3, Issues and Crises Management
E. DAOD 2008-4, Public Affairs, Military Doctrine and CF Operations
F. DAOD 3002-4, Ammunition or Explosives Accident, Incident, Defect or Malfunction Reporting.
G. DAOD 2008-1, Accountability and Responsability for Public Affairs

ACTIONS ON NOTIFICATION OF AN AIRCRAFT ACCIDENT

General

1. Personnel at the site of an accident and for every occurrence shall ensure that action is taken to prevent loss of life, injury to personnel or damage to property and to protect evidence and classified material against loss, alteration or compromise, irrespective of the locations described in the following paragraphs.

Telephone Notification

2. When information is received by telephone, the following should be recorded:
   a. the informant's name, location and telephone number;
   b. the time of the accident;
   c. whether there is a fire
   d. exact location of accident site and its accessibility;
   e. location and condition of the crew and passengers;
   f. immediate medical response no matter what the condition of crew and passengers;
   g. in the case of a fatality, whether the coroner has been advised;
   h. whether there is serious property or environmental damage;
   i. the type and tail number of the aircraft;
   j. where the rescue team will be met;
   k. whether local emergency services have been notified
   l. any other information that may be volunteered; and

> NOTE
> The checklist should include the need for phoning the informant back to check authenticity.

m. the times at which the information was received and when it was relayed to designated recipients.

> NOTE
> Before ending the telephone call, caution the informant to remain clear of the wreckage, and ask the caller to attempt to deter others from entering the area or tampering with evidence. Suggest that this could well jeopardize the investigation and warn of hazards such as fuel fumes, fire, explosives, dust from composite materials, ejection seats, armaments, jettisonable tanks and pressurized systems.

RESPONSE PROCEDURE AT ACCIDENT SITE

IMMEDIATE RESPONSE

3. For every aircraft accident, personnel at the site shall ensure that the accident is reported as quickly as possible and that action is taken in conjunction with local authorities to:

   a. prevent loss of life, injury to personnel or damage to property (including arranging for medical aid, fire suppression, making explosives safe, and SAR); an

   b. protect evidence and classified material against loss, alteration or compromis (including arranging for guards, crowd control and photographing of wreckage before it is removed from runways or before the onset of snow).

4. The immediate response to an accident will normally be under the direction of the firefighters, and if fire or fumes are involved, self-contained breathing apparatus, coverall gloves and eye protection may be required. Only firefighters and medical personnel should b directly involved in the immediate response.

5. There must be a strictly enforced policy of no smoking, eating or drinking at the site, as these activities promote the inadvertent ingestion of potentially hazardous or toxic materials from the wreckage.

6. Establish a protected entry point to the site, at which a facility should be erected to enable access control, the donning and doffing of protective equipment, cleaning of boots and washing of hands before departing the site. All disposable gear such as masks, coveralls and gloves shall be removed and disposed of in accordance with appropriate directives.

HEALTH PROTECTION

7. After rescue activity is complete and the immediate threat to personnel and property has passed, the OSCER will give the DFS IIC access to the site. The IIC shall inspect the site in full protective gear to assess hazards. The following should be considered (IAW publication C-05-010-002/AG-000):

a. Fire hazards. Extreme caution should be exercised if the site is contaminated by fuel. Smoking is prohibited. Aircraft batteries should be disconnected as soon as possible.

b. Explosion hazards. Qualified technicians should safety all explosives includin armaments and explosive-activated devices. Death or serious injury can also be caused by a tire exploding due to a damaged wheel.

NOTE All personnel are to be kept a minimum of 500 feet from explosive devices and pressurized systems that have been subjected to accident impact forces or fire

c. Blood-borne pathogens. All blood, tissue and certain body fluids should b treated as hazardous. Puncture-resistant disposal containers must be available at the site if any of these substances are present. Proper biological hazard warning signs must be placed on the containers. Therefore, FS investigators and immediate accident responders should be inoculated for Hepatitis A and B. Non-disposable equipment such as boots and goggles shall be disinfected at the site.

d. Composite materials and toxic substances. Smoke and burning composite materials are toxic and hazardous to personnel and aircraft systems. Carbon fibre released from burning composite materials can be inhaled, becom embedded in the eyes, or penetrate the skin or aircraft electrical system with adverse effects. Fibres can also be released in the atmosphere when this material is impacted or cut. For further details refer to C-05-040-012/TS001 – Post Aircraft Accident/Accident Release of Carbon Fibre. Exposed carbon fibr should be covered with plastic or sprayed with shellac. Some aircraft also contain plastics or other materials that give off toxins that may be inhaled or absorbed on exposure. Battery acid and Skydrol hydraulic fluid are highly corrosive

e. Radiation hazards. Although efforts have been made to remove equipment containing radioactive substances, many of the older aircraft still have fligh instruments containing radioactive material. The main hazard is from inhalation and ingestion of radioactive particles in dust when this equipment is broken or burnt. Refer to CFAO 34-24, Ionizing Radiation Safety.

f. Parts and equipment containing radioactive material are listed in C-02-040-003/TP-000. If a radioactive hazard is suspected, the Base Radiation Safety Office shall be notified

8. Once the site survey has been completed, the investigator will determine the protective clothing and PPE that personnel must use.

RESPONSE PROCEDURE FOR FIRST UNIT ADVISED

9. On the declaration of any air emergency in the area of a flying unit, the occurrenc response plan should be implemented immediately. This ensures that medical, firefighting an rescue services are alerted and brought into position. Occurrences at non-flying units should be referred immediately to the nearest flying unit. The following actions may be required after an occurrence:

a. preventing loss of life, injury to personnel and damage to property through the provision of medical aid, firefighting, SAR and safetying of explosives, pressu systems and ejection seats;

b. security and protection of evidence, including wreckage (specific instruction regarding classified equipment are to be obtained from wing security offic . If COMSEC material is involved, the wing COMSEC officer should be consulted)

c. B-GA-100-001/AA-000 and CFMO 42-04 require that all personnel involved in an air or ground accident or physiological incident receive a medical exam, toxicology screen and human factor assessment. This should be completed as soon as practicable following the occurrence.

d. If there is a possibility that a “D” Category occurrence may be upgraded to an accident, then the medical requirements of CFMO 42-04 must be implemented; all personnel involved in an air or ground accident or physiological incident receive a medical exam, toxicology screen and human factor assessment. This should be completed as soon as practicable following the occurrence;

e. reporting the occurrence as quickly as possible to the unit of ownership;

f. taking photographs of the wreckage and other evidence before it is disturbed or obliterated by the elements;

g. making a preliminary wreckage diagram should it be necessary to move the wreckage prior to the arrival of the DFS investigator;

h. quarantining, impounding and/or taking samples from applicable items of evidence;

i. locating and identifying all witnesses to the occurrence, including start crew supervisors and acquaintances of personnel involved (see CFAO 21-9 and A-GA-135-002/AA-001, Occurrence Investigation Techniques);

j. implementing investigative procedures as required;

k. assisting investigators by providing the following:

(1) administrative and logistic support,

(2) wreckage search-and-recovery teams

(3) transportation, and

(4) accommodation;

NOTE
If provision of these services is beyond the capability of the unit, refer to para 16 Recovery and Salvage section below.

l. When an FS investigation is convened, the recovery and salvage officer (RASO assigned to the occurrence is to abide by the recovery instructions from the IIC. Prior to the complete recovery/salvage of the aircraft, the RASO is to liaise with the appropriate DFS investigator (see also DAOD 4003-0, Environmental Stewardship);

m. instituting or recommending measures to remedy the causes of the occurrence;

n. observing the deadlines and routing for all reports by the unit of ownership; and

o. disseminating information relating to the occurrence.

NOTE
When the unit of occurrence is also the unit of ownership, the actions listed in Para 10 also apply.

RESPONSE PROCEDURE FOR UNIT OF OWNERSHIP

10. On the declaration of any aircraft accident involving a unit aircraft, the occurrence response plan should be implemented immediately as follows:

a. ensuring that arrangements at the accidents site comply with above section entitled Response Procedures for Unit of Occurrence, and providing the necessary assistance to the unit of occurrence;

b. ensuring that the occurrence is reported as quickly as possible. The following may require notification or direction with respect to impounding or quarantining depending on the severity of the occurrence:

(1) C Air Force, DFS (1-888-WARN DFS);

(2) 1 Cdn Air Div AOC or through CanadaCOM; CEFCOM or CANSOFCOM;

(3) the wing or unit of occurrence;

(4) unit(s) of last fuelling, servicing;

(5) last unit of departure and other units involved;

(6) other units involved (for example, the army unit owning the vehicle being airlifted having developed a fuel leak when airborne);

(7) TSB thru DFS if the occurrence involves civilian aircraft and /or ATC agencies;

(8) NDQAR (if the occurrence involves a civilian maintenance or servicing contractor); and

(9) Direction Quality Assurance (DQA) (if the occurrence involves aircraft at NDQAR).

NOTE
If an Address Indicator Group (AIG) is used, ensure that all other applicable addressees are also included in the message.

c. Wing maintenance shall immediately refer to their copy of the appropriate security guide, i.e., C-12-XXX(A/C type)-000/AS-000, and prepare a list of classified equipment carried by the accident aircraft. Copies of the classifi equipment list are to be given as soon as possible to the following personnel at the designated support wing and NDHQ:

(1) the Wing Security Office ,

(2) the FSO,

(3) the DFS IIC, and

(4) NDHQ/DAEPM for the item manager;

NOTE
The wing custodian, assisted by appropriate personnel, shall determine the type and quantity of COMSEC equipment and material on board. The reporting procedures for loss and / or compromise of COMSEC material are contained in CIS/01/2, CF Instructions for COMSEC Material and Accountable Publications. This report must be sent without delay.

d. quarantining, impounding and/or taking samples from applicable items of evidence;

e. locating and identifying all witnesses of the occurrence, including start crews supervisors, and acquaintances of personnel involved (see CFAO 21-9 and A-GA-135-002/AA-001, Occurrence Investigation Techniques);

f. conducting an appropriate investigation of the occurrence or requesting assistance;

g. disposing of evidence only as authorized. When an FS investigation is convened, the RASO assigned to the occurrence is to abide by the recovery instructions from the IIC. Prior to the complete recovery/salvage of the aircraft, the RASO is to liaise with the appropriate DFS investigator (see also DAOD 4003-0, Environmental Stewardship);

h. instituting or recommending measures to remedy each cause;

i. observing the deadlines and routing of all reports by the unit of ownership; and

j. disseminating information related to occurrences.

RESPONSE PROCEDURE FOR OTHER WINGS OR UNITS INVOLVED

11. On being notified of the occurrence or when so requested, any other wing or uni involved in an FS occurrence shall immediately carry out the following actions as appropriate:

a. quarantine, impound and/or take samples from local items of evidence;

b. identify witnesses of the occurrence, including:

(1) servicing and start crews;

(2) tower controllers; and

(3) anyone else with pertinent information;

c. report the above actions by message to:

(1) the wing, base or unit of occurrence;

(2) the wing, base or unit of ownership; and

(3) C Air Force/DFS and 1 Cdn Air Div;

d. assist investigators as required, e.g. providing administrative and logistic support, transportation and accommodation, as required;

e. institute or recommend measures to remedy each cause of the occurrence that has been assigned as a responsibility of that unit; and

f. disseminate information related to occurrences.

RESPONSE PROCEDURE BY DFS

12. The DFS occurrence response procedure includes:

a. for occurrences involving non-CF aircraft, notifying the owners of the aircraft as required by NATO STANAG 3531, Letters of Agreement, or other standing arrangements, so that the actual owners of the aircraft may discharge their responsibilities;

b. acting as FS advisor to test establishments, technical services agencies and their units;

c. monitoring 1 Cdn Air Div, wing, base and unit actions;

d. initiating and conducting DFS investigations;

e. recommending special investigations when extraordinary circumstances prevail;

f. reviewing and amending each cause factor as required;

g. analyzing and recording PM;

h. recommending and monitoring PM as necessary; and

i. performing analysis, follow-up and dissemination of statistics and accident prevention information arising from occurrence reports.

RESPONSE PROCEDURE BY NDHQ

13. NDHQ agencies shall respond to occurrences by:

a. providing specialist advice, facilities and special testing as required; and

b. implementing those PM that are beyond the capabilities of subordinate formations.

SPECIAL ASSISTANCE IN AIRCRAFT ACCIDENT INVESTIGATIONS

14. The unit of occurrence and unit of ownership must provide the DFS IIC with the assistance required to conduct the investigation. If special technical, medical or other assistance is required beyond that available at the unit of occurrence or unit of ownership, such assistance will be requested by DFS. Special assistance might be in the form of:

a. airlifting personnel and equipment to and from the accident site;

b. ground search parties;

c. shelter and messing;

d. detectors for locating vital aircraft parts;

e. underwater recovery personnel and equipment;

f. infrared scanning for aircraft wreckage location; and

g. a receiver to detect the underwater acoustic beacon.

15. In addition, specially trained advisors may be approved by C Air Force or NDHQ to assist in salvage or analysis. In accordance with a letter of understanding between DFS and DRDC Toronto, DRDC Toronto will provide a human factors specialist for all A, B and C Category accident investigations. In addition, a DRDC Toronto Human Factor/Life Support Equipment member will be provided if requested for examination of non-ejection seat life support equipment. For ejection seat accidents, an AETE ejection specialist will normally be assigned to the investigation team (in accordance with MOU between AETE and DFS).

NOTE
In all cases, DFS must be advised of any such requirements in order to evaluate the benefits and arrange the support

RECOVERY AND SALVAGE COMMAND/CONTROL AND COMMUNICATIONS GUIDELINES

16. There are four basic accident scenarios for which different command, control and communications guidelines are applicable; the following directions shall apply:

a. On DND Property:

(1) The unit comd, through a designated representative, shall retain command of the emergency response until the DFS IIC arrives. Upon completion of all pertinent on-scene investigations, control shall revert to the unit comd's representative;

(2) Duties IAW A-GA-135-001/AA-001 shall be carried out by the FSO or his/her representative(s);

(3) The unit comd shall ensure the site is cordoned and secured. Access to the site is permitted only on the appropriate authority of the DFS IIC or the unit comd's representative during the pre- and post-investigation process;

(4) The DFS IIC shall assume the responsibilities outlined in A-GA-135-001/AA-001 and, in cooperation with the unit RASO, shall determine the hazards that exist and the level of protection required;

(5) The RASO assists the DFS IIC as required. The DFS IIC may direct that the wreckage be collected and relocated for further investigation;

(6) Accident site communications equipment shall be used, within reason, to ensure communications security. All requests for information should be directed to the DFS IIC through the designated PAO; and

(7) The unit comd is responsible for the coordination of all activities that support recovery actions, salvage and clean-up of the site. Such activities shall normally be coordinated through the Environmental Office , who will ensure that all reasonable efforts are made to leave the site in a condition that will not pose any hazard to the public (see also DAOD 4003-0, Environmental Stewardship).

b. Off DND Property:

(1) The supporting unit shall liaise with local authorities, and shall ensure coordinated support that may require a designated representative to be on site. If local authorities are present, military Emergency Response shall assist as required;

(2) Applicable duties IAW A-GA-135-001/AA-001 shall be carried out by the FSO or designated representative(s);

(3) If the accident is in a remote area or military flying area, the supporting unit shall ensure site control until the DFS IIC arrives;

(4) The DFS IIC, in cooperation with the supporting RASO, shall determine the hazards which exist and the level of protection required;

(5) The supporting RASO assists the DFS IIC as required. The DFS IIC may direct that the wreckage be collected and relocated for further investigation;

(6) Accident site communications equipment shall be used, within reason, so ensure communications security. All requests for information should be directed to the DFS IIC through the designated PAO; and

(7) The supporting unit is responsible for coordinating all activities that

support recovery actions, salvage, and clean-up of the site. Such activities shall normally be coordinated through the Environmental Office , who will ensure that all reasonable efforts are made to leave the site in a condition that will not pose a hazard to the public.

c. Submerged Aircraft:

(1) Emergency Response and SAR shall be coordinated by the appropriate RCC. The supporting unit shall liaise with RCC and provide available support;

(2) Applicable duties IAW A-GA-135-001/AA-001 shall be carried out by the FSO or his/her representative(s);

(3) DFS shall coordinate any external military/civilian assistance beyond the capabilities of the supporting unit for site security and aircraft recovery and salvage. If non-Air Force assets are required, an NDCC Ops tasking will be issued;

(4) In cooperation with the supporting RASO, the DFS IIC shall provide the external agencies with technical advice, notification of possible hazardous material and the associated safety precautions;

(5) The DFS IIC may direct the collection and relocation of the wreckage by external military/civilian agencies for further investigation at another site;

(6) Accident site communications equipment shall be used, within reason to ensure communications security. All requests for information should be directed to the DFS IIC through the designated PAO; and

(7) The supporting unit, in cooperation with the external military/civilian agency, is responsible for the coordination of all activities that effect recovery actions, salvage and clean up of the site. Such activities shall normally be coordinated through the Environmental Officer who will ensure that all reasonable effort has been made to leave the site in a condition that will not pose any hazard to the public at large. If non-air force assets are required, a NDCC Ops tasking will be issued.

d. Civilian Airport:

(1) Local Emergency Response authorities shall be in charge according to existing MOUs and Working Agreements and the Aeronautics Act. The supporting unit shall liaise with local authorities. The Working Agreement in force with TSB shall govern the investigative agency that will lead any investigation;

(2) DFS shall coordinate any external military assistance beyond the capabilities of the supporting unit for aircraft recovery and salvage operations;

(3) In cooperation with the supporting RASO, DFS shall provide the external agencies with technical advice, notification of possible hazardous materials and the associated safety precautions;

(4) The supporting RASO assists the designated investigative agency as

required; and

(5) Accident site communications equipment shall be used, within reason, to ensure communications security. All requests for information should be directed to DFS through the designated PAO.

FACILITIES AND EQUIPMENT NEEDED ON RETURN FROM AN ACCIDENT SITE

Facilities

17. The following facilities should be readily available so that investigators can compile their field reports

a. a large secure room to which investigators may have 24-hour access;

b. a telephone (preferably a dedicated line);

c. competent administrative assistance with applicable security clearance;

d. a white or blackboard, markers, chalk and eraser; and

e. at least five large tables or desks for examining evidence and laying out th report during assembly.

Reference Materials

18. The following references should be available:

a. QR&Os, DAODs and CFAOs;

b. B-GA-100-001/AA-000, CF Flying Orders;

c. 1 Cdn Air Div Orders;

d. local orders and instructions; and

e. complete CFTO series for the aircraft concerned.

Report Compilation Materials

19. The following materials should be available:

a. forms for FS Investigation Report, Ditching Report, and Emergency Escape from Aircraft Report (held by DFS);

b. a personal computer with Microsoft Word application; and

c. hard covers, fasteners and labels.

20. The supporting unit, in cooperation with the unit of ownership, is responsible for coordinating the activities that affect recovery and salvage operations and the clean-up

of the site. Such activities shall normally be coordinated through local authorities and the Environmental Office , who will ensure that all reasonable efforts are made to leave the site in a condition that will not pose a hazard to the public.

Annex C
Chapter 8
A-GA-135-001/AA-001

ANNEX C – ACCIDENT INVESTIGATION KITS

HAND-PORTABLE ITEMS

1. The following items should be prepared for immediate issue and easy transportation.

    a. Publications;
    b. Survey Equipment;
    c. Tools and Sampling Materials; and
    d. Photographic Equipment.

PUBLICATIONS

2. The following publications should be available:

    a. A-GA-135-001/AA-001 and A-GA-135-002/AA-001;
    b. photocopies or excerpts from frequently used CFAOs, DAODs and QR&Os (see Annex D to Chapter 9 for listing of publications);
    c. CFTOs for unit aircraft;
    d. the unit telephone directory and a list of local civilian authorities' addresses and telephone numbers;
    e. notes for the Conduct of Investigations Into Aircraft Accidents, B-GA-015-003/FP-001;
    f. FS investigation handbooks for the technical and aircrew members; and
    g. Human Factors Guide for the Conduct of Aircraft Accident Investigation, B-GA-015-001/FP-001.

SURVEY EQUIPMENT

3. The following equipment may be used:

    a. maps of the area (1:50,000);
    b. 1,000 feet of light rope or heavy cord, marked at 50-foot intervals;
    c. a 50-foot tape measure;
    d. a 12-inch steel ruler;
    e. a magnetic compass and/or a GPS;
    f. 50 lightweight stakes;
    g. a small box of accident investigation tie-on tags (Form CF 219);
    h. a small pad of accident investigation adhesive tags (similar to the above, but with no catalogue number);
    i. a knife;

j. a hatchet;
k. a small shovel;
l. magnifying glasses (5X and 10X);
m. spray lubricant;
n. rags;
o. small stiff and soft-bristled brushes;
p. an aircraft fluids sampling kit (NSN 8 15-21-886-4126, available through QETE);
q. three siphons of various sizes;
r. plastic bags (assorted), non-static bags for permanent memory chips;
s. carbon fibre ash stabilizer kit including
   (1) paper coveralls (various sizes),
   (2) disposable latex gloves,
   (3) liquid floor wax
   (4) manual spray pumper, and
   (5) dust masks;
t. masking and duct tape;
u. work gloves;
v. packaged wash cloths;
w. hand cleanser;
x. paper towels; and
y. an inspection mirror.

TOOLS AND SAMPLING MATERIALS

4. The following tools and smpling materials should be available:
   a. wrenches (adjustable);
   b. pliers and wire-cutters (assorted);
   c. screwdrivers (several, including Philips);
   d. flashlight (with spare bulb and batteries)
   e. hammer, chisel and small portable cutting torch;
   f. small magnet and string;
   g. hacksaw with spare blades;
   h. small wood saw; and
   i. knife.

PHOTOGRAPHIC EQUIPMENT

5. Still cameras (traditional 35 mm with colour film, or digital) and video cameras may b used. Ideally the digital camera shall be a 5 megapixel camera with minimum 3X optical zoom with 2 GB of storage capacity.

SURVEY EQUIPMENT KIT

6. The survey kit shall contain the following:

   a. a small first-aid kit
   b. pens, pencils, grease pencils and chalk;
   c. two clipboards;
   d. notebooks, graph paper and scratch pads;
   e. voice recording devices and batteries; and
   f. scale model(s) of unit aircraft.

CONTINGENCY ITEMS

7. The following items are needed only under certain conditions. Notwithstanding the above, all FSOs of frequently deployed units and all Base FSOs must have the items that are scaled on L-49-070-021/LC-092 in their kits and ready for use at all times. Also, all FSOs must arrange to have the following items available for issue to investigators when required, remembering also to provide for necessary transportation of the items to the accident site:

   a. health protection kit (see Annex A Appendix 1);
   b. tents, bedding, rations and cooking gear;
   c. coveralls, boots, parkas and rain suits;
   d. emergency funds, including foreign currency if applicable;
   e. axes, machetes, chain saws, floodlights and other heavy equipment
   f. assorted sieves (up to 3 feet square) to sift mud for evidence;
   g. portable lightweight means of on-site communication, e.g., field telephones portable radio sets or loudhailers, and spare batteries;
   h. protective packing materials, containers and string for shipping evidence from the site;
   i. voice recording devices and batteries;
   j. a CPI receiver (normally available at SAR units and at the home bases of CPI-fitted aircraft); an
   k. an underwater acoustic beacon receiver (held by SAR units).

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Annex D
Chapter 8
A-GA-135-001/AA-001

ANNEX D – OCCURRENCE CHECKLIST

This checklist is a guide for the FSO when monitoring occurrence response procedures.

Requirements	Remarks
Receipt and dissemination of basic information. These procedures are to be carried out by the FSO.	Initiate and maintain a log to record critical information, such as names, phone numbers and locations.
Record the initial details of the occurrence.	Note the phone number and location of the contact at the accident site. Check that the information is genuine.
Initiate an occurrence response plan.	Confirm the aircraft tail number and unit of ownership. Determine if the aircraft was armed or carried dangerous cargo or COMSEC.
Give preliminary details to a higher authority by telephone. NDHQ/NDCC, 1 Cdn Air Div AOC, DFS and wing/base/unit must be notified.	Ensure DFS is advised via the toll-free hotline: 1-888-WARN DFS (1-888-927-6337).
Examine the flight plan for en-route stops and ATC agencies.	Advise ATC and servicing personnel of the occurrence and requirements.
Monitor occurrence response planning. Confirm the dispatch of the following, as required: • medical aid • firefighting and rescue • wreckage safety specialists • security crews and • photographers	All personnel dispatched to the accident site are to receive prior briefing on evidence protection. Wreckage is not to be disturbed unless essential to prevent further injury or damage. Take colour photographs or videos before disturbing. Check provisions for: • transportation • accommodation • rations • finances • communications • special equipment
If the runway is blocked, are plans being made for the recovery of airborne aircraft?	
If an exercise, deployment or airshow is in progress, the unit should be umpired out and communications restrictions waived.	

Requirements	Remarks
Request all necessary external assistance (e.g., SAR, heavy equipment).	
Ensure that Public Affairs is aware of the details.	The exact accident location shall not be mentioned in radio or TV reports. The public should be advised to stay away from the site and its access routes.
Locate the flight data recorder/cockpit voice recorder and CPI, if fitted. Impound and quarantine these items and turn them over to the DFS investigator.	Shut off the CPI transmitter.
The Occurrence Response Plan should have provisions for: • notifying the next of kin; • notifying a coroner or nearest civil authority IAW CFAO 24-6; and • reporting property and environmental damage.	
Obtaining initial evidence. These procedures are to be carried out by the FSO.	This should include written witness statements taken in isolation.
Determine the category of aircraft damage.	Always include the damage category in the initial report. If an accurate assessment is not possible within the time frame for the dispatch, indicate an estimated damage category.
Determine whether DFS investigative assistance is required.	DFS tasks all Class I to III investigations as per Chapter 9, Annex B. DFS should be informed of any significant D Cat Category occurrence.
Ensure all evidence and wreckage is photographed before being disturbed.	Record any instances in which evidence was disturbed.
Ensure an appropriate medical authority has been notified.	CFAO 24-1 injury Class.
NOTE B-GA-100-001/AA-000 and CFMO 42-04 require that all personnel involved in an air or ground accident or physiological incident receive a medical exam, toxicology screen and human factor assessment. This should be completed as soon as practicable following the occurrence. If there is a possibility that a D Category occurrence may be upgraded to an accident, then the medical requirements listed above must be actioned. For civilians that refuse to cooperate with the toxicology screen, DFS should be contacted immediately so that the provisions of *Aeronautics Act* , section 14 para 10(b) can be initiated.	
Prepare a preliminary wreckage diagram.	See A-GA-135-002/AA-001.

Requirements	Remarks
Record a brief description of the accident site.	Include the current and forecast weather and the extent of fire and property damage.
Ensure that impounding, quarantining and sampling actions are in hand (see Quarantining, this chapter).	
Ensure that special weather observations are taken.	
Record the events leading up to the occurrence.	Record: • the planned mission • the T/O time • the direction of the flight • the impact angle • whether the accident was preceded by fire or smoke • any ejections • any parachute descents • any unusual manoeuvres • or noises • the weather at the time
Note the present location of the aircraft commander or senior survivor.	
Locate all witnesses to the occurrence and preceding events. Include the last people to speak with the pilot, such as friends, supervisors and start crew. Try to secure a written statement from all witnesses available. Ensure the witnesses will be available by securing contact information, such as home and cellular phone numbers.	

NOTE

If, at any time during the gathering of evidence or the investigation of the event, it becomes apparent that action should be taken before the completion of the investigation to prevent a recurrence of the event, that action is to be taken in consultation with the DFS investigator. Comments should be added to the investigation record detailing the action taken. This will normally be actioned by message.

Complete the IR occurrence report (FSOMS or CF 215) in all available detail.	Ensure all necessary addresses are included. Report any sabotage in accordance with A-SJ-100-001/AS-001.
Convening the investigation. These procedures are to be carried out by the DFS, 1 Div FSO or FSO.	

Requirements	Remarks
Determine the type of investigation required.	See Chapter 9, Class of Investigation, commencing at Para 19.
Establish contact with the investigators.	
Determine if an interpreter or liaison officer is required, and if so, coordinate.	STANAG 3531 (10B), ICAO 13 and ASCC Air Standards 85/2A deal with procedures for accidents involving foreign aircraft.
Establish the terms of reference.	
Issue tasking orders to all concerned e.g. heavy equipment and RAS.	
Arrange a briefing for the investigators.	
Provide for these administrative services: • administration • finance • photographic support • accommodation • rations • protective clothing • communications • transportation • special equipment	
Check kit contents and issue an investigation kit.	

NOTE

Casualties must be reported in accordance with CFAOs.

NOTE

When an accident or incident involves injury or death to civilian personnel, the occurrence must also be reported in accordance with A-GG-040-001/AG-001, DND General Safety Program. Ensure the coroner is also informed.

NOTE

If the occurrence results in the release of fibres from composite material, notification procedures must be completed in accordance with part 6 of C-05-040- 012/TS-001, Post Air Crash Accident.

NOTE

A register is to be kept to document the exposure of personnel to free composite material fibres in accordance with Part 4, Chapter 25 of C-05-040-012/TS-001.

Annex E
Chapter 8
A-GA-135-001/AA-001

ANNEX E – IMAGERY AND VIDEO COVERAGE

Reference: CF Imaging Instructions, A-PH-007-000/AG-001

INTRODUCTION

1. Any imagery or video coverage of an aircraft accident is an extremely valuable record. It assists in determining the exact cause(s) of an accident, thus facilitating remedial procedures and suggesting training to prevent a reoccurrence. The reference is the official document governing image acquisition and video coverage in support of aircraft accident investigations. This annex is based on ref document and shall serve as a quick field reference for any Imaging Tech or any personnel assigned to an investigative team.

IMAGERY WORK ORDER

2. Accident response procedures shall incorporate local procedures to facilitate the timely arrival of the Imaging Technician at the accident site. Image acquisition coverage will normally be carried out under the direction of the investigating authority on the scene. The investigating authority could be a DFS investigator or an FSO. Unless specifically stated otherwise at the time of the request, the request for imagery coverage will be considered an emergency, and the requirement for the originator to complete a CF315 (Imagery Work Order) prior to the commencement of work will be waived. It is the responsibility of the Image Tech on site to ensure that a CF315 is completed by a member of the accident / fire investigation team as soon as practicable after the initial response.

IMAGERY COVERAGE

3. If the Imaging Tech arrives on the scene ahead of the investigating authority, he / she is to commence acquiring images in accordance with para 8 describing the minimum coverage required. Imagery must be acquired in the case where fatalities have occurred and the CO / OSCER has authority from the coroner to remove the remains before his arrival (refer to Para 8.y. below).

PERSONNEL SAFETY

4. Imaging Techs, including contracted personnel, must be aware of the health hazards inherent in burning aircraft that are constructed of composite materials and the release of carbon fibres. Personnel are not to approach any burning aircraft until it has been established safe by a competent authority (OSCER, AERE Technical or DFS investigating officer). Any Imaging Tech who potentially may be involved in acquiring imagery of burning aircraft shall become familiar with the content of *Post Aircraft Accident/Accident Release of Carbon Fibres* (C-05-040-012/TS-001). Appropriate caution must also be exercised where hazards are created by unburned fuel, POL, hydraulic fluids and possible unexploded armaments

SECURITY CLASSIFICATION OF IMAGE RECORDS

5. It is the responsibility of the Imaging Tech on site to contact the investigating authority and confirm the security classifications that may app , as soon as this is practicable. Digital images or video images constituting an imagery record shall be handled as CONFIDENTIAL until the investigating authority assigns a more appropriate security classification or designation in accordance with the *National Defence Security Policy*. Similarly, all imagery coverage that depicts human remains shall, as a minimum, be designated PROTECTED B until the investigating authority assigns a more appropriate security designation.

CONTROL OF IMAGERY

6. Imagery acquired by CF Imaging Techs shall be identified and catalogued in accordanc with the Reference, Chapter 8. All coverage of an accident site is considered part of the accident investigation. In addition to that provided by the Imaging Tech, it includes coverage obtained by the pathologist, DFS investigator, military police, firefighters, accident truc operators, ATC tower personnel or anyone else who, by virtue of their responsibilities, is required to be at the accident site and who may have taken such coverage with privately owned equipment. Under the direction of the investigating authority, all coverage of this type shall be turned over to the unit Imaging Section for official recording and processing. FS investigators and Imaging Techs may be the first persons on site. Because imagery is considered as factual info, it is releasable to a BOI and criminal investigators if required. Therefore, Imaging Techs involved in a FS investigation need to maintain chain of evidence custody of the imagery taken on the accident site for possible release to other investigations. Digital images, prints and video tape recordings can only be released under the authority of DFS and shall conform to the provisions outlined in this publication.

STILL AND VIDEO COVERAGE OF FS OCCURRENCES

7. The Imaging Tech shall:

   a. label each digital storage media by inserting an identification card at th beginning of the shoot;

   b. maintain an image log describing every shot taken;

   c. include a scale reference such as a ruler in the picture, whenever practical; and

   d. when shooting video, pan slowly over the scene and leave room for editing.

8. When image acquisition is undertaken without the direction of the investigating authority, minimum coverage, where possible, shall include:

   a. once the emergency rescue team / OSCER or accident crew have declared the area safe, the Imaging Tech shall ensure images and video coverage are taken before the wreckage / evidence are disturbed or obliterated by the elements;

   b. an overall view of the accident scene showing the damaged aircraft (with identification and insignia, if possible), supplemented by two general images fro

different cardinal setting positions; if facilities permit, and the wreckage is strewn over an extended area, a view from the air is desirable;

c. a general view from a vantage point closer than that taken above, clearly showing the aircraft number;

d. an overall view of the area surrounding the accident scene, including nearby objects, to show the approach of the aircraft and the weather conditions;

e. if the accident occurred in trees or bush, a view showing broken tree-tops with a person in the scene to indicate the approximate scale;

f. a view from the aircraft towards the first point of impact

g. a view of each point of impact with skid marks leading to the aircraft or, where wreckage extends over a large area, general views taken at various distances from the first point of impact to the main part of the aircraft wreckage

h. marks on aircraft from cartwheel impact to aid correlation with ground marks and possible loose paint flakes

i. where wreckage is strewn over a large area, general views from the first poin of impact to each main part of the wreckage as guided by marks made, and showing the marks made by parts of the wreckage on the ground;

j. close-up views of each main part of the wreckage such as the fuselage, wings, rotor blades, engines, tail assembly and tail rotor to record the damage;

k. a view of the flaps from the tail position, supplemented by a close-up of flaps to show the angle of flap deflection (include a ruler to indicate the scale

l. views of the cockpit to include operating controls, fuel selector(s), fuel, radio, electrical control and circuit breaker panels; on dual control aircraft, similar views of both cockpits; if flying was solo in a dual control aircraft, a photograph of th physical positions of the stick/yoke, throttle, landing gear, flap controls and safet harness;

m. a general view of the undercarriage area; if undercarriage is retracted, views of the underside of the aircraft after the aircraft has been lifted at least six feet above the ground;

n. photographs of any fluid leakage on any parts of the aircraft, like the engin cowlings, windscreen and fuselage;

o. photographs of fire/heat damage or discolouration *

p. photograph of human remains, injuries and blood/tissue smears on wreckage *;

q. photograph of extra or missing items *;

r. if the aircraft was propeller-driven, a view of any marks on the ground made by the propellers with the aircraft in the background and a view to show the degree of pitch on the propeller hub (with a scale indicator);

s. where appropriate, view(s) showing propeller impact marks on the ground that show length of slashes and distance between slashes, and detailed views of

slash marks (front or rear) that show traces of propeller abrasion marks or paint flakes

t. close-up views of damage to property that might result in a claim by or against the Crown;

u. close-ups of fracture surfaces *;

v. close-ups of improperly installed components or any components suspected of having contributed to the damage *;

w. photographs of seats, restraining harness, helmets, parachutes and all other items of life support and safety equipment used;

x. imagery of steps in removing, opening or cutting apart components *; and

y. when a fatality has occurred and before the remains are removed from the accident scene, imagery shall be taken and shall include views of the general position of the remains in relation to the aircraft, as well as medium to close-up detail views from all angles to show injury patterns and identification; in addition imagery with a visible scale reference shall be taken to show the relationship of the remains to nearby life-support equipment.

* Asterix indicates that actions are not reflected in reference documen

Annex F
Chapter 8
A-GA-135-001/AA-001

ANNEX F – STATEMENT OF IMPOUNDING/QUARANTINING/SAMPLING FORM

STATEMENT OF IMPOUNDING/QUARANTINING/SAMPLING

I, (SN, rank, initials, surname), in my capacity as (position), did (impound/quarantine/sample) the items of evidence listed below which pertain to the occurrence on (date) to (type of aircraft) tail (number).

Item	Date/Time	Impounded/Quarantined/Sampled	Disposal of Item	Present Location of item

_____

_____ _____

Date Signature

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Annex G
Chapter 8
A-GA-135-001/AA-001

ANNEX G – AIRCRAFT RECORDING DEVICES BREAKDOWN AND HANDLING