

## AMA DIRECTIVE 300-02

### MEDICAL INVESTIGATION AND REPORTING OF FLIGHT SAFETY OCCURRENCES

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#### References:

- A. A-GA-135-001/AA-001 Flight Safety for the Canadian Forces
- B. B-MD-007-000/AF-003 CF Flight Surgeon's Handbook 2010-01-01
- C. [DAOD 5018-0 Injured Members and Military Casualties](#)
- D. [A-MD-214-000/DT-001 Aeromedical Training for the Canadian Forces Procedures for Collecting and Shipping Toxicology Specimens](#)
- E. [Federal Aviation Administration Civil Aerospace Medical Institute \(CAMI\) "External Specimen Chain of Custody"](#)
- F. [A-GA-135-002/AA-001 Occurrence Investigation Techniques for the Canadian Forces](#)
- G. [CF H Svcs Gp Instruction PG 5020-20 Disclosure of Personal Health Information](#)
- H. [CF H Svcs Gp Instruction 5020-56 Privacy of Personal Information](#)
- I. NATO Standard AAMedP-1.7 Aeromedical Aspects of Aircraft Accident and or Aeromedical Incident Investigation
- J. [Aeronautics Act, \(R.S.C., 1985, c. A-2\)](#)

**RECORD OF AMENDMENTS**

Date	Change/Reason
Jun 2018	References: Addition of Ref K Aeronautics Act.
Jun 2018	Para 18 (i): Added explicit FSI Flight Surg responsibility to collect and review personal health information relevant to a FSI IAW para 31.
Jun 2018	Para 22: Added Aeronautics Act as the source of authority. Change of physical examination to medical examination. Deleted examples of types of physiological incidents. Added requirement for toxicology sampling and determination of fitness to return to duty.
Jun 2018	Para 23: Added explanation that urine sampling is mandatory and blood sampling is voluntary under the Aeronautics Act. Added referral of refusals to provide toxicology samples to DFS Flt Surg. Deleted CAMI lab and local lab as only toxicology processing options.
Jun 2018	Para 24: Deleted clause stating that samples will be shipped only to CAMI for processing.
Jun 2018	Subsection title and Para 31: Changed personal health records to personal health information. Para 31 (a). Changed military health records to CAF health records. Added AMA delegate as authorized to grant permission to access personal health information. Deleted AMA letter as the only means of providing AMA authorization to access personal health information.

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**STATEMENT**

1. Flight Surgeons may become involved in the investigation of FS occurrences in a variety of roles including as: the local responding Flt Surg, the AIA/DFS appointed Flt Surg, or the medical advisor to a BOI. These are potentially overlapping, yet distinct, roles. However, in each case, the essential function of the Flt Surg is to facilitate a correct and detailed medical investigation of the FS occurrence, including human factors and ALSE. This directive provides guidance to Flt Surgs involved in the investigation of a FS occurrence. While the focus of this directive is primarily on the conduct of an AIA/DFS directed FSI, the principles apply equally to other types of investigations.

**ABBREVIATIONS**

2. The following table contains abbreviations used in this guideline.

<b>Abbreviation</b>	<b>Term in Full</b>
1 Cdn Air Div	1 Canadian Air Division
Air Div Surg	Air Division Surgeon
AIA	Airworthiness Investigative Authority
ALSE	Aircrew Life Support Equipment
BAvMed	Basic Aviation Medicine
BOI	Board of Inquiry
CAMI	Civil Aerospace Medical Institute
CAF	Canadian Armed Forces
CFAO	Canadian Forces Administrative Order
CFEME	Canadian Forces Environmental Medicine Establishment
CFHIS	Canadian Forces Health Information System
CF H Svcs Gp HQ	CF Health Services Group Headquarters
DFS	Directorate of Flight Safety; Director of Flight Safety
DFS Flt Surg	DFS Flight Surgeon (DFS 2-6)
Flt Surg	Flight Surgeon
FS	Flight Safety
FSI	Flight Safety Investigation
FSIMS	Flight Safety Information Management System
G-LOC	G-Induced Loss of Consciousness
HFI	Human Factors Investigator
IIC	Investigator In Charge
MSTU	Medical Specimen Transit Unit
RCAF Surg	Royal Canadian Air Force Surgeon
SAR	Search and Rescue
TSB	Transportation Safety Board

## DEFINITIONS

3. The following definitions are provided for the purpose of this Directive. Refer to Ref A. for the most complete list of Flight Safety related definitions.
- a. FS Occurrence – Any event that involves the operation of a CAF and/or a military conveyance aircraft or activities in support to flying operations where safety of flight was compromised. To constitute an occurrence, the event may not necessarily have caused injuries to personnel or damage to material or property but had the potential to do so. FS Occurrences may be classified as Air or Ground FS Occurrences, depending on whether there was intent to fly.
  - b. FS Accident – An event in which a person is missing or receives fatal, very serious or serious injuries or illness (as defined in CFAO 24-1), or in which a CAF aircraft is destroyed, missing or sustains very serious or serious damage (as defined in Ref A).
  - c. FS Incident – An event in which someone receives minor injuries (as defined in CFAO 24-1) or there is risk of injury, or a CF aircraft sustains minor damage (as defined in Ref A). Alternatively, there may be no injury or damage but accident potential did exist.
  - d. Responding Flt Surg/BAvMed provider – The aviation-trained medical personnel who provide initial medical response capabilities to a FS occurrence.
  - e. FSI Flt Surg – The Flt Surg assigned by DFS to participate as an investigator on the FSI.
  - f. Examining Flt Surg– The Flt Surg performing the clinical examination of personnel involved in a FS occurrence. This may or may not be the Responding Flt Surg.

## DIRECTION

4. This guideline provides direction to Flt Surgs to investigate and report the medical and human factors aspects of either:
- a. a non-fatal air incident that will not be the subject of a FSI, particularly if there is a malfunction of life-support equipment or a crew member experiences an aeromedical problem;
  - b. a FSI convened by the AIA/DFS in accordance with Ref A.; and,
  - c. an aircraft accident BOI convened by a Commanding Officer.
5. The investigation, autopsy and reporting information herein may be supplemented by the checklists and current procedural and toxicology testing

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information contained in Ref B, which is a supporting document that should be read concurrently.

6. A separate administrative BOI is frequently convened by a Commanding Officer immediately following an aircraft accident or concurrently with a FSI. A different physician will be appointed medical advisor to the BOI. A BOI is focused on potential administrative and disciplinary aspects of the occurrence. BOI proceedings will operate under their own terms of reference; however, the BOI physician is not expected to produce a full medical report that duplicates the FSI medical report. The BOI medical member or advisor may request access to some FSI factual medical evidence, such as toxicology reports, autopsy reports and photographs, for BOI review purposes. The information provided to the BOI medical member or advisor by the FSI Flt Surg must contain only factual information. Analysis or issues to be followed cannot be provided. In all instances, the provision of such FSI information to the BOI must be authorized by the AIA/DFS.

### **Requirements**

7. The FSI Flt Surg will assist the Investigator-In-Charge (IIC) and be responsible for the investigation, analysis and reporting of all medical and human factors aspects of the occurrence to include:

- a. the physical, medical and physiological factors that may have had input into the accident;
- b. the broad spectrum of human factor influences;
- c. the survivability, including crash dynamics and life support equipment; and
- d. the evaluation of the medical aspects of the Crash Response.

8. When applicable, the degree of injury will be determined by a physician in accordance with Ref C.

9. A CFEME HFI may be assigned to the FSI team and will assist the FSI Flt Surg with the collection, reporting and analysis of human factors information pertinent to the FSI.

10. When civilian and military aircraft or facilities are involved the investigation is done in combination with the Transportation Safety Board (TSB) of Canada. All shared medical information in a combined investigation will be done bearing medical confidentiality and need-to-know in mind. If questions arise during this process, immediately contact DFS Flt Surg and/or the Air Div Surg. The AIA/DFS is the sole authority for the release, to any individual or agency, of investigative information collected and analyzed during the course of a FSI.

### **Appointment of Medical Investigators**

11. When a FSI is convened by the AIA/DFS, the appointment of a FSI Flt Surg is determined and tasked by DFS in consultation with the Air Div Surg and the DFS Flt Surg. The DFS Flt Surg will usually be the first choice to be tasked as a member of the FSI team. In some circumstances, CFEME will assign an ALSE technician to

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assist the FSI Flt Surg. If assigned, the ALSE technician has specific responsibilities for assisting in the investigation and analysis of ALSE function and use and reporting on ALSE in the medical reports.

12. The investigating physician must be a Flt Surg, preferably experienced in the type of aircraft or flying mission involved. Unless there is no reasonable alternative, the FSI Flt Surg should not be associated with the unit to which the aircraft or any personnel involved in the flight safety occurrence belong. A Flt Surg with advanced aerospace medicine training is optimal.

13. The FSI Flt Surg is responsible to the IIC of the FSI for a complete and unbiased investigation of all medical and, in cooperation with the CFEME HFI, human factors aspects of the occurrence. Members so appointed may be released from investigative duties only with the approval of the IIC FSI.

### **Aeromedical Incident in Hypo/Hyperbaric Facility**

14. A Flt Surg investigating an aeromedical incident in a hypo/hyperbaric facility, which is not classified as an air incident, will report findings on all medical and human factors aspects of the occurrence in accordance with Ref D.

### **Initial Response to a Flight Safety Occurrence**

15. Normally, the responding Flt Surg/BAvMed trained health care provider making the initial response to an air incident or accident will be a member of the wing or base at which the accident occurs. Accordingly, these personnel will not normally be appointed to carry out the BOI or the FSI. The clinician making the initial response should consult Ref B as a guide. Furthermore, clinicians identified as responding Flt Surg/BAvMed providers should be familiar with and, when possible, participate in Base/Wing Emergency Response Plan reviews and crash exercises. The initial response and data collection by this clinician is often vital to the medical and human factors investigation process.

16. The responding Flt Surg/BAvMed provider will give priority to:
- a. coordinating with First Responders (ie. firefighting and emergency medical personnel) to ensure immediate medical care of the affected or injured;
  - b. ensuring measures are in place to protect against all categories of crash scene hazards (ie. physical, chemical, environmental, psychological and biological hazards);
  - c. coordinating with local responding FS personnel to support initial investigative efforts;
  - d. ensuring the completion and recording of a medical examination on each affected person, including the immediate collection of blood and urine samples as indicated;
  - e. ensuring all pertinent personal and medical histories are recorded;
  - f. impounding all relevant paper medical records (e.g. CF2016, CF2034, pharmacy, mental health, psychosocial, physiotherapy, dental and aero

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medical training records). NOTE: There is no need to "impound" the CFHIS record since the security and record amendment procedures prevent any deletion, tampering or alteration of the record. The information in CFHIS will remain secure and available to the treating and investigating clinicians. If inappropriate access to a member's CFHIS information is suspected, an audit of personnel who have accessed the record can be requested through National Health Records;

- g. assisting the local responding FS personnel in creating a rough record of the accident site, with emphasis on recording the position of casualties and their safety equipment, as required;
- h. for fatal accidents, ensuring dignified treatment of remains and contacting the local coroner/medical examiner to obtain authority to remove bodies for post-mortem examination;
- i. when applicable, assisting the local responding FS personnel in coordinating a thorough search for human remains and collecting specimens in accordance with Annex C to this Directive, while minimizing the number of personnel involved to mitigate the psychological risk of exposure to human remains;
- j. coordinating with DFS Flt Surg to initiate arrangements for a post-mortem examination of all aircrew and selected other deceased in accordance with procedures detailed in Annex C to this Directive; and
- k. coordinating with local FS personnel to ensure security of the site, particularly if there is any possibility of human remains still on site.

17. The initial responding Flt Surg/BAvMed provider will continue involvement until the FSI Flt Surg has arrived. At that time, the initial responding Flt Surg/BAvMed provider will turn over all the information that has been collected, including a statement as to impressions gathered to that point.

### **Initial Action of FSI Flt Surg**

18. The FSI Flt Surg will normally arrive on the scene some hours after the occurrence and, as soon as possible, should:

- a. establish contact with the IIC of the FSI;
- b. establish contact with the initial responding Flt Surg/BAvMed provider to receive all information that has been collected to date;
- c. assure the ongoing care of casualties;
- d. confirm that permission has been received from the local coroner/medical examiner to move bodies and/or human remains;
- e. attend autopsies and coordinate the collection of toxicology samples;



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- f. for fatal accidents, confirm that medical and dental records that may be used for forensic identification are impounded; and
- g. coordinate with the IIC of the FSI to ensure security of the site is maintained , particularly if there is any possibility of human remains still on site;
- h. maintain ongoing communication with the DFS Flt Surg and the Air Div Surg to ensure appropriate coordination of medical aspects of the FSI; and,
- i. collect and review any personal health information deemed to be relevant to the FSI IAW para 31.

### **Consultation and Advice**

19. Both the responding Flt Surg/BAvMed provider and FSI Flt Surg are encouraged to consult with one of the following senior Flt Surgs for advice and assistance with any investigation conducted under this guideline:

- a. DFS Flt Surg (DFS 2-6) - NDHQ Ottawa. Commercial (613) 944-5524 or through 24 hour DFS pager: 1-888-WARN-DFS (927-6337);
- b. Air Div Surg - 1 Cdn Air Div HQ Winnipeg Commercial (204) 833-2500 ext 5875/5430/5488/or front desk at 4144 or CSN 257-xxxx. After hours pager (not available during working hours) (204) 931-1622 or Mobile (204) 801-8983.

### **Witness Interviewing**

20. The FSI Flt Surg should try to attend all meetings with other members of the FSI team when key witnesses are being questioned.

21. Separate interviews (ie. other than those conducted during a medical examination) may be conducted to deal with sensitive medical or human factors information, including other witnesses and family members who may need to be interviewed to establish personal details. All interviews shall be coordinated and planned by the FSI team and conducted only with IIC authorization and concurrence of the treating physician, as applicable.

### **Non-Fatal Accident Toxicological Specimens**

22. Under the authority of the Aeronautics Act (Ref K), all personnel involved in accidents or aeromedical/physiological incidents are required to undergo a medical assessment, including but not limited to toxicology sampling and a determination of fitness to return to duty, by an examining Flt Surg as soon as possible after the occurrence.

23. As part of the medical examination authorized under the Aeronautics Act, the examining Flt Surg shall ensure the collection of toxicology samples as soon as possible after the FS occurrence. Under the Aeronautics Act, the provision of blood toxicology samples for an FSI may only be voluntary, whereas the provision of urine toxicology samples is considered part of the compulsory medical examination.

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Therefore, blood samples may be requested on a voluntary basis when practical, but urine samples shall be collected on a mandatory basis as soon as possible after a FS occurrence. A non-witnessed urine sample may be collected by non-medical personnel as long as Chain of Custody is maintained and samples are stored securely. Annex C and Ref B provide further detail on the collection of samples for toxicology. Refusals to provide mandatory urine samples shall be referred to the DFS Flt Surg. The examining Flt Surg shall contact the DFS Flt Surg to determine how toxicology samples shall be analyzed before sending them for processing.

24. If in doubt, or if the DFS Flt Surg cannot be immediately contacted, toxicology samples shall be collected as though they are to be sent to CAMI (including maintaining a Chain of Custody) and refrigerated. However, in all cases, the DFS Flt Surg shall be consulted before samples are actually shipped to CAMI.

25. For samples to be sent to the CAMI lab, Ref E details how to package and ship samples using the MSTU (Non-fatal) kit. A completed CAMI "Chain of Custody Form" must also be included. This form is found in Annex C Appendix 5 and online at Reference F.

26. In the case of an unequivocal aircraft malfunction or mechanical failure that results in only brief physiological symptoms (e.g., obvious smoke in the cockpit) not warranting toxicological testing, routine blood work and biochemistry may be obtained at the discretion of the FSI Flt Surg and will be analyzed locally. The examining Flt Surg may consult with the DFS Flt Surg for direction on testing.

27. The examining Flt Surg shall provide examined personnel with a written copy of the medical disposition (ie. a chit), including initial grounding period, if applicable, and direction for follow-up assessment. The examining Flt Surg may contact the DFS Flt Surg or the Air Div Surg to discuss the medical disposition of personnel involved in FS occurrences.

### **Fatal Accident Toxicological Specimens**

28. For a FS accident in which there are fatalities, collection and handling of toxicological specimens will be in accordance with Annex C to this Directive. Useful information is also contained in Ref B. This process will almost always be done in collaboration with a pathologist in an appropriate clinical setting. Consult DFS Flt Surg to coordinate.

29. Annex C and Ref B provide further detail on the collection of samples for toxicology. Ref E details how to package and send them to the CAMI lab using the MSTU (Fatal) kit. A completed CAMI "Chain of Custody Form" must also be included. This form is found in Annex C Appendix 5 and online at Reference F. DFS Flt Surg shall be consulted before samples are actually shipped to CAMI.

30. Additional routine blood work and biochemistry may be obtained at the discretion of the FSI Flt Surg, with the cooperation of the local coroner/medical examiner or pathologist, and will be analyzed locally.

### **Access to Personal Health Records for Flight Safety Investigations**

31. If the IIC or the FSI Flt Surg, believes that any personal health information may have relevance to the investigation, they may require the release of that

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information under the authority of the Aeronautics Act. Access to records containing personal health information shall be IAW the following procedures:

- a. Military health records. All records, including paper charts and CFHIS electronic documents, may be accessed and reviewed directly by the FSI Flt Surg. The FSI Flt Surg must document access with a CFHIS note which includes the following statement:

“This patient record has been accessed for a Flight Safety Investigation (FSI) of Flight Safety Information Management System (FSIMS) case # XXXXX under the authority of the Privacy Act 8(2)(b) and the Aeronautics Act Part II, Section 14, paragraph 10 (c). The Medical Officer reviewing the record has been authorized to do so by the Aerospace Medical Authority or delegate. The following summary was provided to the Investigator-In-Charge.” This statement shall be followed by a scanned or transcribed copy of the summary, or “nil” if no health information was disclosed to the IIC. Civilian health records. The requirement to release civilian health records shall be made in writing to the holder of the information. Written requests shall be coordinated by the IIC and the FSI Flt Surg.

- b. Civilian health records. The requirement to release civilian health records shall be made in writing to the holder of the information. Written requests shall be coordinated by the IIC and the FSI Flt Surg.

32. All personal health information will continue to be treated as protected. Questions about access to personal medical information may be directed to the DFS Flt Surg.

### **Aeromedical/Physiological Incident Investigation**

33. Annex A provides the examining Flt Surg with a suggested framework to document medical findings for an “Aeromedical/Physiological Incident Investigation Report”. The form can either be completed by hand to be scanned into CFHIS or the content directly typed into a “Clinician Note Template” in CFHIS.

34. The Aeromedical/Physiological Incident Investigation Report shall be forwarded to the DFS Flt Surg and Aeromedical Standards and Clinical Services at the Air Div Surg office using the CFHIS internal messaging system. If necessary, biochemical results may be forwarded later. The DFS Flt Surg shall coordinate the maintenance of a database of these reports and provide regular reports to the AMA and AUMB.

### **Separate Medical Report to Flight Safety Investigation**

35. Annex B provides the FSI Flt Surg with a suggested framework to document the medical findings of a FSI. If the FSI Flt Surg wishes to amplify any area or include additional information, this is also encouraged.

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36. The need for a separate medical report and its content will be determined by the FSI Flt Surg after all parts of the report working document are completed and after consultation with the IIC of the FSI and DFS Flt Surg .

37. A detailed description of the accident, or the reiteration of other information included in the main FSI Report, is not necessary and is discouraged unless it adds to the readability of the separate medical report.

38. In all FS occurrences for which personal health information is collected (e.g. toxicology reports, x-ray reports, autopsy reports, photographs, “separate medical reports” etc.), such items will be handled in the same manner as all other protected records containing personal health information.

39. There should be nothing relevant to the FSI in the separate medical report of which the IIC of the FSI has no knowledge. This report and the other medical evidence shall be identified and safeguarded as “PROTECTED B” and archived with the rest of the evidence from the investigation. The FSI Flt Surg will include a sign-off block for the IIC of the FSI at the end of the separate medical report to read:

“I certify that the full contents of this medical report have been interpreted to me.

(Signature)

(Name)

Investigator In Charge


### **When No Separate Medical Report Written**

40. If no separate medical report is written, the CFEME HFI will forward their comments on the conduct of the medical and human factors portions of the investigation to the DFS Flt Surg.

### **Medical Examination of Remains**

41. Annex C and appendix 1 and 2 provide guidance to the FSI Flt Surg regarding how to assist the pathologist during an aviation autopsy to ensure that the correct information is collected.

**ANNEX A – PHYSIOLOGICAL/AEROMEDICAL INCIDENT INVESTIGATION REPORT**  
 In accordance with National Defence Security Orders and Directives (NDSOD), form Annex A (DND 4266-E - Physiological / Aeromedical Incident Investigation Report) is designated "Protected B" information once completed. The form below is for viewing purposes only, use the Fillable Online Version located here [ANNEX A – PHYSIOLOGICAL / AEROMEDICAL INCIDENT INVESTIGATION REPORT](#)

<b>PROTECTED B</b> (When completed)			
			
<b>Physiological / Aeromedical Incident Investigation Report</b>			
SN	Last name	First name	DOB (yyyy-mm-dd)
<b>Section A: Medical assessment and toxicology sampling</b> (if additional space required please use Annex A on page 6)			
HR	RR	BP	Temp
Subjective			
Objective: Include comments on mental state, coherence of speech, agitation, sweating, collapse, injuries, burns, state of ALSE clothing.			
Labs (Blood and/or urine toxicology screening): <input type="checkbox"/> Taken <input type="checkbox"/> Not Taken			
Consider also: Hb, Hct, ESR, Lactate, WBC and differential, COHb, glucose, alcohol, urine (including microscopy), cyanide (consider empiric treatment for cyanide poisoning if patient presents physiologically or mentally altered after smoke inhalation).			
Assessment			
Plan			

# ANNEX A

PROTECTED B (When completed)

SN	Last name	First name	DOB (yyyy-mm-dd)
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**Section A: Medical assessment and toxicology sampling (cont'd)**

Disposition (Grounding status, follow-up requirements)

**Section B: Narrative (if additional space required please use Annex A on page 6)**

Brief description of incident

**Section C: Information concerning aircraft and sortie (if additional space required please use Annex A on page 6)**

1. Aircraft type and mark / version:	
2. Aircraft ID letters / numbers:	
3. Aircraft nationality and unit:	
4. Date of flight (yyyy-mm-dd):	
5. Type of mission:	
6. Stage of mission:	
7. Usual air base:	
8. Take-off base:	
9. Time of reporting duty (hh:mm):	
10. Time of take off (hh:mm):	
11. Weather conditions:	
12. Visibility in direction of flight:	
13. Time of landing (hh:mm):	

**Section D: Information concerning the examined person involved (if additional space required please use Annex A on page 6)**

1. Nationality:	2. Sex: <input type="checkbox"/> Male <input type="checkbox"/> Female	3. Age:	4. Height (cm):	weight (kg):		
5. Marital status:						
6. Living accommodations (mess, quarter, etc.):						
7. Crew type (pilot, engineer, pax, etc.) and MOS ID:						
8. Crew position during incident:						
9. Medical category (current):	V:	CV:	H:	G:	O:	A:
10. Total flying hours:						
11. Hours on type:	Hours on day of incident:					
12. Meals in the past 48 hours:						

PROTECTED B (When completed)

PROTECTED B (When completed)

SN	Last name	First name	DOB (yyyy-mm-dd)
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Section D: Information concerning the examined person involved (cont'd)

<p>13. Smoking habit:</p>																																																																																																																																	
<p>14. Presence of infections / illness:</p>																																																																																																																																	
<p>15. List of drugs / meds in past 7 days including Pharmacological Fatigue Countermeasures:</p>																																																																																																																																	
<p>16. List of non-Pharmacological Fatigue Countermeasures:</p>																																																																																																																																	
<p>17. Sleep pattern:</p> <p><b>Sleep quality reference:</b>  <b>Poor:</b> 4-6 interruptions per hour or sleeping seated (eg. a 40 degree incline airline seat or lounge chair);  <b>Fair:</b> 2-4 interruptions per hour or cot equivalent (eg. lie-flat seat or aircraft bunk);  <b>Good:</b> 1-2 interruptions per hour or sleeping in non-ideal environment (eg. hotel); or,  <b>Excellent:</b> No interruptions and sleeping in ideal environment (eg. at home in own bed).</p>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"></td> <td style="text-align: center; border-bottom: 1px solid black;">Start sleep</td> <td style="width: 50%;"></td> <td style="text-align: center; border-bottom: 1px solid black;">End sleep</td> </tr> <tr> <td>Sleep time:</td> <td style="border-bottom: 1px solid black;">[ ] [ ] Z</td> <td style="border-bottom: 1px solid black;">[ ] [ ] Z</td> <td style="border-bottom: 1px solid black;">[ ] [ ] Z</td> </tr> <tr> <td></td> <td style="font-size: small;">Date (yyyy-mm-dd) Time (hh:mm)</td> <td style="font-size: small;">Date (yyyy-mm-dd) Time (hh:mm)</td> <td style="font-size: small;">Date (yyyy-mm-dd) Time (hh:mm)</td> </tr> <tr> <td>Sleep quality:</td> <td colspan="3"> <input type="checkbox"/> Poor    <input type="checkbox"/> Fair    <input type="checkbox"/> Good    <input type="checkbox"/> Excellent                 </td> </tr> <tr> <td></td> <td style="text-align: center; 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SN	Last name	First name	DOB (yyyy-mm-dd)
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Section D: Information concerning the examined person involved (cont'd)

17. Sleep pattern (cont'd):	<p style="text-align: center;">Start sleep <span style="float: right;">End sleep</span></p> <p>Sleep time: <input type="text"/> <input type="text"/> Z <input type="text"/> <input type="text"/> Z</p> <p style="text-align: center;">Date (yyyy-mm-dd) <span style="margin-left: 100px;">Time (hh:mm)</span> <span style="margin-left: 100px;">Date (yyyy-mm-dd)</span> <span style="margin-left: 100px;">Time (hh:mm)</span></p> <p>Sleep quality: <input type="checkbox"/> Poor <input type="checkbox"/> Fair <input type="checkbox"/> Good <input type="checkbox"/> Excellent</p> <p style="text-align: center;">Start work <span style="float: right;">End work</span></p> <p>Work time: <input type="text"/> <input type="text"/> Z <input type="text"/> <input type="text"/> Z</p> <p style="text-align: center;">Date (yyyy-mm-dd) <span style="margin-left: 100px;">Time (hh:mm)</span> <span style="margin-left: 100px;">Date (yyyy-mm-dd)</span> <span style="margin-left: 100px;">Time (hh:mm)</span></p> <p><input type="checkbox"/> No work    Number of time zones crossed _____    <input type="checkbox"/> East    <input type="checkbox"/> West</p>
18. Last leave period:	Start date (yyyy-mm-dd): <input type="text"/> End date (yyyy-mm-dd): <input type="text"/>
19. Unusual pattern of activities over past 72 hours:	<input style="width: 100%; height: 40px;" type="text"/>
20. Alcohol in past 72 hrs. (units):	<input style="width: 100%; height: 20px;" type="text"/>
21. Domestic / Occupational stress:	<input style="width: 100%; height: 20px;" type="text"/>
22. Previous accidents or incidents (flight, dive, chamber) and significant medical history:	<input style="width: 100%; height: 60px;" type="text"/>
23. Date / Place of last aviation physiology training:	Date (yyyy-mm-dd): <input type="text"/> Location: <input style="width: 100%;" type="text"/>
24. SCUBA diving in past 24hrs:	<input type="checkbox"/> Yes <input type="checkbox"/> No    Max depth (meters): <input style="width: 100%;" type="text"/>

Section E: Details of incident (if additional space required please use Annex A on page 6)

1. Incident time:	Date (yyyy-mm-dd): <input type="text"/>	Time (hh:mm): <input style="width: 100%;" type="text"/>
2. Nature of first symptoms:	<input style="width: 100%; height: 20px;" type="text"/>	
3. Time course of subsequent symptoms:	<input style="width: 100%; height: 20px;" type="text"/>	
4. Duration of symptoms and presence after landing:	<input type="checkbox"/> Yes <input type="checkbox"/> No    Hours: <input style="width: 100%;" type="text"/>	
5. Actions taken to report symptoms:	<input style="width: 100%; height: 20px;" type="text"/>	
6. Actions taken to overcome symptoms:	<input style="width: 100%; height: 20px;" type="text"/>	
7. Aircraft altitude (feet):	<input style="width: 100%; height: 20px;" type="text"/>	
8. Cabin altitude (feet):	<input style="width: 100%; height: 20px;" type="text"/>	
9. Aircraft attitude:	<input type="checkbox"/> Level <input type="checkbox"/> Climbing <input type="checkbox"/> Descending <input type="checkbox"/> Turning <input type="checkbox"/> Aerobatics <input type="checkbox"/> Unknown G-load: <input type="checkbox"/> Unknown    Amount: <input style="width: 100%;" type="text"/> <input type="checkbox"/> Positive <input type="checkbox"/> Negative	
10. Presence of vibration:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input style="width: 100%;" type="text"/>	
11. Type of O2 system:	Setting: <input type="checkbox"/> Normal <input type="checkbox"/> Emergency <input type="checkbox"/> 100%	
12. Type / Size / Fit of O2 mask and condition of assembly:	<input style="width: 100%; height: 20px;" type="text"/>	
13. Flying clothes worn:	<input style="width: 100%; height: 20px;" type="text"/>	
14. O2 contents at time of incident and on landing (confirm sample taken):	<input style="width: 100%; height: 20px;" type="text"/>	

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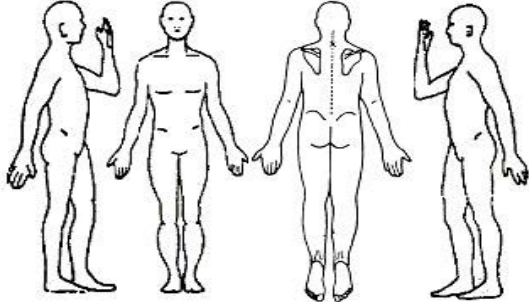


ANNEX A

PROTECTED B (When completed)

SN	Last name	First name	DOB (yyyy-mm-dd)
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Section E: Details of incident (cont'd)

15. Operation of magnetic indicators:	<input type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
16. Breathing difficulty:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
17. Change in rate or depth of breathing:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
18. Change in O2 system pressure (confirm regulator serviceability):	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
19. Visual disturbances:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
20. Tremor or loss of coordination:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
21. Difficulty concentrating:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
22. Change in hearing:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
23. Tingling hands, feet, lips:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
24. Nausea:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
25. Headache:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
26. Pain / discomfort in any site (including joints, abdomen, chest, ears, sinuses). Describe character, intensity, frequency, alleviating or exacerbating factors:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
			
27. Mental state at time of incident (relaxed, bored, tense):			
28. Thermal comfort:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
29. Unusual smells / Smoke (noted by occupants or ground personnel):	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
30. Other human factors problems:			

Rank	Name of examiner, Flight Surgeon or BAWMed	Date (yyyy-mm-dd)	Time (hh:mm)	Signature of examiner, Flight Surgeon or BAWMed
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ANNEX A

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Annex A: Additional information

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## **ANNEX B**

### **ANNEX B - SEPARATE MEDICAL REPORT TO FLIGHT SAFETY INVESTIGATION**

#### **PART I – MEDICAL AND HUMAN FACTORS**

Most of the information collected for Part I will be protected and must, therefore, be submitted as part of the Separate Medical Report if one is written.

If a separate medical report is not submitted, the information contained in Part I must be abridged, as necessary, to ensure medical confidentiality, and included in Part III.

A detailed description of the accident or the reiteration of other information included in the main board is not necessary and is discouraged unless it adds to the human factors discussion or readability of this separate report.

The FSI Flt Surg is responsible for investigating and reporting the medical information in this report. If assigned to the FSI team, the CFEME Human Factors Investigator (HFI) will assist the FSI Flt Surg with the collection and reporting of human factors information pertinent to the FSI.

#### **Section A – Personal Identification and Medical Assessment**

Information shall be provided as per Annex A – Physiological/Aeromedical Incident Investigation Report, including the medical assessment.

Include results of biochemical testing (if available at the time of drafting), and report on relevant laboratory findings or toxicological test results. Report on any plan for follow-up or interpretation.

*For example, an initial screen for cannabinoids was positive but subsequent confirmatory tests were negative.*

Include a narrative discussion of the pertinent medical history. Flying and personal history may be included only if it adds to the overall accident causation development and is not otherwise described in the main body of the FSI Report.

Consider all items in *Canadian Armed Forces Flight Surgeon's Handbook*.

#### **Section B – Human Factors Assessment**

In cooperation with the CFEME HFI, consider all topics and items in the *Canadian Armed Forces Flight Surgeon's Handbook*. You may also consult Chapter 10 of A-GA-135-001/AA001 *Flight Safety for the Canadian Forces*.

#### **Section C – Official reports and documents**

**The following additional information should be included for each fatality:**

## **ANNEX B**

- a. autopsy report; and
- b. death certificate.

Note: In case of a fatal accident, complete autopsy and toxicology instructions are contained in Annex C of this Directive.

### **PART II – AIRCREW LIFE SUPPORT AND SURVIVAL EQUIPMENT (ALSE)**

Part II shall be a narrative report, including observations on medical aspects of the rescue response system.

Consider the pathological findings and possible relationship between the use of the ALSE, the crash dynamics and other factors in causing the injuries or death. The items in B-MD-007000/AF-003 *Canadian Armed Forces Flight Surgeon's Handbook* will be of assistance.

The ALSE technician, if assigned, will be very valuable for general assistance in all aspects of the medical investigation as well as specific assistance in the investigation and report preparation of ALSE use and function.

Close liaison with the technical member of the FSI team will avoid duplication of effort.

Part II shall be included, in total, in the FSI report with the Summary, below.

### **PART III – MEDICAL SUMMARY AND DISCUSSION OF HUMAN FACTORS**

Part III shall be included in both the separate medical report, if written, and the FSI Report.

#### **Summary**

This portion of the report is extremely important since it is through this summary that the FSI Flt Surg will provide the IIC of the FSI with all the pertinent findings from the medical portion of the investigation.

This succinct summary of all the pertinent positive and negative information gained will be the only record in the final FSI Report of the pertinent aspects of Part I. The FSI Flt Surg must exercise careful judgment in preparation of this part of the report. Avoid the use of medical terms. Use simple statements such as, “the injuries sustained by the right hand were consistent with the pilot holding the control column at impact”.

It will often be very difficult to decide what information must be included in the interest of flight safety and what must be excluded to protect medical confidentiality,

## **ANNEX B**

particularly if no separate medical report is submitted. Personal and medical information should not be discussed in this summary unless it is considered central to the cause of the accident. Regular consultation with the IIC of the FSI and the DFS Flt Surg is essential.

### **Discussion of Human Factors**

In cooperation with the CFEME HFI, the opinion of the investigating Flt Surg as to any human factors in the aetiology of the accident will be included. This will be considered in the FSI's final cause factor assignment.

### **Recommendations**

Summarize your ideas supporting the cause factors, findings and recommendations in the main FSI Report. Include a human factors summary for future accident prevention based on and consistent with the relevant sequence of known, calculated, probable or possible events leading up to this accident.

Full discussion with all members of the FSI must be undertaken to reach a consensus on the contributing aetiological factors. Under exceptional circumstances, if agreement with other members of the FSI team is not reached on one or more points, a minority opinion can be clearly stated after all attempts at reconciling opinions have failed.

There should be nothing relevant to the FSI in the separate medical report of which the IIC of the FSI has no knowledge. The FSI Flt Surg will include an IIC of the FSI sign-off block at the end of the separate medical report to read:

“I certify that the full contents of this medical report have been interpreted to me.”

(Signature)

(Name)

Investigator In Charge

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(Date)

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(FSI Flt Surg Signature)

NOTE - This form shall be reproduced locally.

## **ANNEX C – MEDICAL EXAMINATION OF REMAINS**

### **Policy Statements**

A medical examination (autopsy and biochemical) shall be conducted on the recoverable remains of all aircrew members and selected or representative military personnel killed in, or dying as a result of, a military air accident involving a CAF aircraft.

These examinations shall form an integral part of the Separate Medical Report to the air accident Flight Safety Investigation (FSI) and shall be conducted in accordance with Appendices 1 to 4 of this Annex. The purpose of these examinations is to ensure accurate observations relating to pre-existing disease, observed trauma, biochemical findings and environmental factors are made and to determine any relationship of the findings to the events of the air accident.

This guideline shall be read in conjunction with CFAO 24-1 *Casualties – Reporting and Administration*, CFAO 24-6 *Investigation of Injuries or Death* and Reference C.

### **Flt Surg Responsibility**

Any Flt Surg having responsibility in this area shall make every effort to arrange for autopsies and to assist in the collection of information.

In the event of a major catastrophe or other circumstances beyond the capability of the on-site Flt Surg, a request for assistance shall be directed to 1 Cdn Air Div Surg who may contact the DGHS and request appropriate specialist staff assistance.

### **Post-Mortem Biochemical Investigation Guidelines**

A post-mortem biochemical investigation shall be conducted on the remains of all aircrew and selected other military personnel who have died as a result of an air accident occurring in the course of military operations.

Detailed instructions for the collection, packaging, preparation and shipment of samples are contained in Appendix 5 of this annex.

### **Contacts with Coroner/Medical Examiner**

Air accident victim bodies shall not be moved from the accident scene without the consent of the coroner/medical examiner or the commanding officer if the Service situation requires such removal. Tact and diplomacy are advocated in all contacts with the coroner/medical examiner. If possible, all communication with the coroner/medical examiner shall be through one person, preferably the Flt Surg.

### **Requesting Autopsy**

It should be explained to the coroner/medical examiner that DND policy requires all aircrew killed in an air accident will have full post-mortem examination. Most coroners/medical examiners will

## ANNEX C

cooperate by ordering an autopsy if the reasons are carefully explained and information arising out of it is made available to civil authorities.

### **Body Release Authority**

If the coroner/medical examiner does not order an autopsy for his own inquest, the Flt Surg shall request him to release the body to the Service for autopsy. In this case the authority is provided in QR&O 24.20 *Post-Mortem Examination*, and rests with the Minister of National Defence or his delegated representative, or alternatively, the written consent of the next of kin.

If due regard is shown for the extensive authority vested in the coroner/medical examiner, it will seldom be necessary to invoke the statutory provision of QR&O 24.20.

### **DND Autopsy Participation**

If the coroner/medical examiner orders an autopsy for his own purpose, the services and assistance of DND shall be offered. Specifically, having a Flt Surg attend the autopsy will facilitate the aviation-specific aspects of the examination, including collection of toxicological samples for FAA CAMI lab analysis.

### **Refusal of DND Assistance**

If the coroner/medical examiner orders an autopsy and refuses DND assistance, participation or access to the findings, the matter shall immediately be referred through the DFS Flt Surg.

### **Procedures for Autopsies**

With the cooperation of the coroner/medical examiner, autopsies shall be conducted in accordance with Appendix 1 of this Annex.

### **CAF Medical Officer to Attend Autopsy**

The FSI Flt Surg shall, when practicable, attend every autopsy, subject to the pathologist's approval.

The responsibilities of the Flt Surg are contained in Appendix 1. Preferably, the attending Flt Surg should be the

Flt Surg having responsibility for the medical aspects of the FSI and should be familiar with QR&O 24.20 *PostMortem Examination* and CFAO 24-6 *Investigation of Injuries or Death* which contain the procedures governing such investigations.

### **Disposition of Autopsy Records**

The autopsy findings may be critical to the FSI process. It is essential that these records, both written and pictorial, be carefully handled, distributed and retained as directed in this Annex.

## ANNEX C

### **Copy of Autopsy Records**

A copy of the complete autopsy record, including any histopathological and biochemical reports, if not included in the proceedings of the Separate Medical Report to the FSI, shall be forwarded the DFS Flt Surg.

### **Photographs of the Dead**

If considered necessary to illustrate an important injury that may be related to the aircraft or ALSE damage, selected close-up photographs may be included in the Separate Medical Report. Photographs of the dead in any form shall not be included in the main FSI report. One complete set of photographs shall be forwarded to the DFS Flt Surg along with the autopsy record.

### **Other Reports**

It may be desirable, but not mandatory, to include a copy of the autopsy protocol and other pathology reports in the Separate Medical Report to the FSI. In some cases the FSI Flt Surg may summarize or paraphrase the information in an acceptable form in the FSI Report.



## **APPENDIX 1 – AUTOPSY TECHNIQUES – GENERAL**

### **Primary Objectives of Air Accident Autopsy Examination**

The primary objectives of the autopsy shall be to:

1. confirm identity;
2. discover the presence of disease, if any;
3. assist in the reconstruction of the air accident by providing evidence indicating the sequence of events leading to the accident and death, such as two sets of lesions of different age, ante-mortem fire, drowning, etc.;
4. provide samples for biochemical investigation, which may assist in determining the physiological and pharmacological condition of the individual immediately prior to the air accident; and
5. provide evidence of the nature, direction, and magnitude of forces imposed on the body, and to relate all injuries to the causal structure or agent in the total accident environment.

### **FLT SURG RESPONSIBILITIES Offer Assistance and Advise Pathologist on Special Tests**

To offer any assistance that may be needed and to advise the pathologist of the special toxicological, biochemical and autopsy procedures, investigations and techniques necessary in the case of an air accident (see Appendix 2).

### **Provide Accident Information**

To provide the pathologist with pertinent information concerning the air accident, thus allowing the pathologist to conduct the autopsy with knowledge of the context of the occurrence.

### **Make Detailed Examination of ALSE**

To make a detailed examination, with the pathologist, of any flight clothing, safety or other life support equipment remaining with the body. A narrative report of this examination should preferably, if necessary, be written by someone familiar with the equipment which will become part of the FSI Report (e.g. ALSE member of the FSI).

### **Obtain Required Information**

Obtain copies of the autopsy protocol with any photographs and diagrams, for the Separate Medical Report to the FSI and for transmission to the DFS Flt Surg.

### **Ensure Proper Handling and Forwarding of Specimens**

Ensure all specimen samples collected are prepared and forwarded for analysis in accordance with the provisions of Appendix 2 and 5.

### **Complete CAMI Chain of Custody and Accident Information Form**

**Complete the CAMI Chain of Custody and Accident Information Form** (Appendix 4) to the best of their ability using the information available at the time of shipment of the tissue specimens.

## APPENDIX 1

This data sheet accompanies the tissue specimens in the Medical Specimen Transit Unit (MSTU) in a sealed envelope marked “Medical – Confidential”.

### **Special Techniques and Photographic Records**

Very little special technique is required but, as in any medico-legal autopsy, emphasis should be placed on accuracy of observation and description. The following are important:

1. obtain full-body CT scan while fully clothed with special emphasis on hands and feet and full-body CT scan unclothed (if practical) again with emphasis on hands and feet (to assess for control injuries/positioning at impact or other interactions with the airframe, life-support equipment or the environment).
2. a photographic record, shall be made of external injuries, which may be complex and difficult to describe, and of internal injuries of interest (e.g. brain lesions, cardiovascular ruptures, lacerations of lungs or other large organs) and of any pre-existing disease (*Note: If the pathologist does not have in-house photographic services, photographic assistance should be requested from the nearest supporting military unit; however, lacking either of these options, any reasonable arrangements may be made*); and,
3. the skull and brain should be examined in detail and all lesions described in sufficient detail to permit analysis of the probable magnitude and direction of the forces involved.

### **Ligamentous Injuries & Fractures**

Ligamentous injuries and fractures should be examined, the latter by CT scan, and charted on skeletal diagrams, with the object of defining the forces producing them.

### **Heart, Aorta, Vena Cava, and their Main Branches and Tributaries**

The heart, aorta, vena cava, and their main branches and tributaries should be opened and examined for rupture or for evidence of sub-endothelial or intramural haemorrhage.

Ruptures or lacerations of all organs should be described in detail and assessments made of whether they are due to penetrating fractures or to compression or displacement by accelerative forces.

### **Microscopic Examination**

Microscopic examination of all organs shall be made and should include special sections of lungs, brain and kidney for fat embolism. Bone marrow or tissue embolism of the lungs is not uncommon and should be sought.

- a. The chronological sequence of injury is frequently of interest and lesions of different age may be the first evidence of an incident preceding an aircraft crash. With this in mind, the pathologist should, using his discretion and the advice of the attending Flt Surg, examine traumatic injuries.

## APPENDIX 2 – POST-MORTEM BIOCHEMICAL INVESTIGATIONS

### **Guideline Direction Toxicology Investigations**

Post-mortem biochemical investigations shall be conducted on the recoverable remains of all aircrew members and selected or representative military personnel killed in, or dying as a result of, a military air accident involving a CAF aircraft.

Toxicology analysis shall be done by the Civil Aerospace Medical Institute (CAMI) Toxicology lab [http://www.faa.gov/data\\_research/research/med\\_humanfacs/aeromedical/forensictoxicology/](http://www.faa.gov/data_research/research/med_humanfacs/aeromedical/forensictoxicology/)

### **Purpose of Investigation**

A post-mortem biochemical investigation is designed to assist in establishing the physiological and pharmacological state of the individual at the time of death and the possible relationship of this state to the cause and prevention of such accidents. Some biochemical changes are labile; therefore, it is important that the following instructions regarding the collection, preparation and shipping of samples provided in the Medical Specimen Transit Unit (MSTU) be followed exactly.

### **Detailed History Requirement**

Accurate interpretation of the results requires a detailed history of the fatal event.

A completed copy of the “RCAF” CAMI Chain of Custody and Accident Information form (Appendix 4)

[http://www.faa.gov/data\\_research/research/med\\_humanfacs/aeromedical/media/chain%20of%20custody.pdf](http://www.faa.gov/data_research/research/med_humanfacs/aeromedical/media/chain%20of%20custody.pdf) along with a completed CAMI Chain of Custody and Accident Information Form (Appendix 4) or other detailed historical account of the fatal event, will be enclosed in all MSTUs being forwarded to CAMI for analysis.

### **Collection and Shipping of Samples**

The Flt Surg attending autopsies on victims of fatal accidents shall request the pathologist to provide the specimens for biochemical estimations as described in “RCAF Procedures for Collecting and Shipping Toxicology Specimens from FATAL and NON-FATAL Occurrences to Federal Aviation Administration Civil Aerospace Medical Institute (CAMI)” (Appendix 5). The Fatal MSTU kits have appropriate sample containers and shipping capability.

(NOTE: Toxicology samples for NON-FATAL accidents will be collected IAW Appendix 5 and sent to the CAMI lab with the CAMI Chain of Custody and Accident Information Form (Appendix 4)) after consultation with the DFS Flt Surg.

## APPENDIX 3

### APPENDIX 3 – MEDICAL SPECIMEN TRANSIT UNIT (MSTU)

#### General

All medical units supporting CAF flying operations will ensure that they are in possession of a sufficient number of complete, up-to-date Medical Specimen Transit Units (MSTUs) to support the type of flying being done at their Base/Wing. Generally speaking, one small MSTU (i.e. Non-fatal kit) can handle two survivors. One large MSTU (i.e. Fatal kit) can handle two deceased. It is imperative that each Base/Wing be in possession of at least one of each type of MSTU and that they be checked on a regular basis. All medical staff that could potentially be asked to perform post-aircraft occurrence aeromedical response procedures (e.g. toxicology) should familiarize themselves with the location and contents of each MSTU and the supporting documentation.

#### Contents

Contents of Small Medical Specimen Transit Unit – Non-Fatal (NSN 6545-21-912-4985) and Large Medical Specimen Transit Unit – Fatal (NSN 6545-21-912-4986) can be reviewed on the DWAN, as follows:

1. Click [here](#) to go to the CMED database
2. Select BROWSE in the top left menu
3. Select KIT SEARCH
4. Enter either select NSN or KEYWORD
  - a. For NSN – type in an NSN and then enter; OR
  - b. For KEYWORD – for example type “FATAL”
5. Select an item that matches what you are looking for by hitting the binoculars

Local Flt Surgs are encouraged to include additional supplies (eg. phlebotomy supplies) so they may obtain samples without the need to use host medical facility supplies. Contact DFS Flt Surg with any questions.

#### MSTU Replacement

Central Medical Equipment Depot (CMED), CFB Petawawa, is the distribution centre for these units. All local MSTU requirements, such as for replacement after use or for additional kits (eg. to support exercises or operations), shall be identified to the local PharmO who will order kits through CMED Customer Service.

The following return address is to be used for all MSTUs shipped:

**Central Medical Equipment Depot**  
**CFB Petawawa**  
**Petawawa, ON**  
**Canada K8H 2X3**

**APPENDIX 4: CAMI Chain of Custody and Accident Information Form**

**Federal Aviation Administration: 15 Nov 12**

**Civil Aerospace Medical Institute (CAMI), Oklahoma City, OK**

**External Specimen Chain of Custody (For the RCAF)**

**THIS PAGE MUST BE SIGNED AND PLACED IN TOX BOX / MSTU**

**Instructions**

Place all specimens in the MSTU (TOX BOX).

Complete Lines 1 and 2 in this electronic form <http://www.faa.gov/go/toxlab>, for Lines 3 through 8, enter names as described below for full accounting of sample handling. This information is crucial for the correct documentation of the chain of custody.

The person releasing specimens (e.g., Pathologist) will complete the form, and then **sign** his/her name under the "Released By" column on Line 3a. This person will enter the date and time of release on Lines 3b and 3c, respectively.

Each person or location receiving specimens (e.g., Lab Assistant, freezer) will be noted on the form, and then **signed** by a person in the "Received By" column on Line 3d if appropriate. This process will be followed whenever specimens are transferred from one person or location to another using the next available line.

The person releasing specimens to a carrier (e.g., FedEx) must sign under "Released By," note the date and time of the release, and then write the name of the carrier under "Received By" on the same line for which the release was documented. **Carrier representative should NOT sign for receipt, or for release, of the TOX BOX/MSTU.**

Ensure that the TOX BOX/MSTU is sealed with the provided lead witness wires (and that line 9 below is ticked) and that THIS form is enclosed prior to the transfer to the carrier.

-----  
 1. Victim Name: \_\_\_\_\_ Birth Date: \_\_\_\_\_ SSN: \_\_\_\_\_ 2. Accident  
 Date: \_\_\_\_\_ Time: \_\_\_\_\_ Location: \_\_\_\_\_

Released By	Release Date	Release Time	Received By
a _____	b _____	c _____	d _____
a _____	b _____	c _____	d _____
a _____	b _____	c _____	d _____
a _____	b _____	c _____	d _____
a _____	b _____	c _____	d _____
a _____	b _____	c _____	d _____

Was the MSTU sealed with the lead witness wire upon **final release**? Yes No

-----For CAMI Use Only-----

Received in CAMI Accessioning: \_\_\_\_\_

Received by \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

Was the plastic bag sealed upon receipt? Yes No

Inspected By: \_\_\_\_\_

**Comment:** \_\_\_\_\_ **CAMI Case No:** \_\_\_\_\_

**Federal Aviation Administration**

**Civil Aerospace Medical Institute (CAMI), Oklahoma City, OK**

**Accident Information**

**PLEASE SUBMIT THIS PAGE ELECTRONICALLY**

1. Victim Name: \_\_\_\_\_ Birth Date: \_\_\_\_\_ SSN: \_\_\_\_\_
2. Accident Date: \_\_\_\_\_ Time: \_\_\_\_\_ Location: \_\_\_\_\_  
Pilot Co-Pilot Passenger Other: \_\_\_\_\_
3. Aircraft Make and Model: \_\_\_\_\_
4. Aircraft Tail Number: \_\_\_\_\_ NTSB Accident No: \_\_\_\_\_
5. Accident Type: Military Aviation:
6. Number of people: Fatal: \_\_\_\_\_ Non-Fatal \_\_\_\_\_
7. Fire Status: Yes No Unknown
8. Gray-Top and Green-Top Tube(s) Marked with Anatomical Blood Collection Site(s): Yes No
9. Other Information: \_\_\_\_\_

10. Examining Health Provider: \_\_\_\_\_ Phone: \_\_\_\_\_

**Medical Examiner/Coroner Information**

13. Autopsy By: \_\_\_\_\_ Phone: \_\_\_\_\_ (N/A)
14. Does Medical Examiner/Coroner want an electronic copy of the final case report? **Yes** (No)
15. Medical Examiner/Coroner e-Mail Address: \_\_\_\_\_

16. Postal Address:

DIRECTORATE OF FLIGHT SAFETY: (Medical Advisor)  
 NDHQ 101 Colonel By Dr  
 OTTAWA ON K1A 0K2

-----CAMI Contacts-----

1. Phone number: 405-954-4866, 0800-1630 hours Central Time Zone, Monday – Friday (Excluding Federal Holidays)
2. Fax number: 405-954-3705; Web site: <http://www.faa.gov/go/toxlab>
3. Direct emergency number: (405) 954-3793 during non-working hours
4. Select email Address to Submit Form: [9-AMC-AAM600-SPECIMENS@faa.gov](mailto:9-AMC-AAM600-SPECIMENS@faa.gov)

CAMI Case No: \_\_\_\_\_

AC 8025-3 (06/07/2012)

## APPENDIX 5: Procedures for collecting and shipping toxicology specimens to CAMI

### Procedures for Collecting and Shipping Toxicology Specimens from NON FATAL and FATAL Occurrences to Federal Aviation Administration Civil Aerospace Medical Institute (CAMI)

- The FAA CAMI lab will provide toxicology analysis for all RCAF aviation occurrences.
- Normally, only specimens from aircraft crew members are submitted. Such specimens are typically analyzed for the presence of carboxyhemoglobin, blood cyanide, alcohol, and drugs. In accidents involving a fire, blood specimens from passengers should be submitted for the analysis of carboxyhemoglobin and blood cyanide.
- It is critical that the anatomical collection site(s) of the submitted blood samples be indicated on tube(s). This information is necessary for the correct interpretation of analytical findings.
- Similarly, it is critical that betadine or chlorhexadine be used to clean the sample site - alcohol swabs must NOT be used.
- Please use water-resistant and permanent marking pen for filling labels.
- If the desired amounts of specimens mentioned below are not available, please send what is available.

### Specimen Types and Amounts

#### STEP 1 WHOLE BLOOD SPECIMENS (FOR NON-FATAL AND FATALS)

Using the provided needle, fill **2 X GRAY-TOPPED TUBES and 2X GREEN – TOPPED TUBE** with blood.

Note: Immediately after the blood collection, assure proper mixing of the preservative and anticoagulant by slowly inverting the blood tubes at least five times. Do not shake vigorously!

After completing the requested information on the labels of the tubes, including the anatomical site(s) from which the blood sample(s) were collected, return them to their original Styrofoam container. Then, complete the requested information on the label of the container. Place rubber band to secure the tampon to the sample container and place in the provided plastic bag.

#### STEP 2 URINE (FOR NON-FATALS AND FATALS)

Collect approximately 100 ml of urine in a plastic bottle. Fill the requested information on one of the provided bottle labels and mark the "URINE" box on the label. Then, remove the backing from the label and affix it to the side of the bottle. Place in plastic bag provided

**STEP 3**      VITREOUS HUMOR, SPINAL FLUID, AND BILE (FOR FATALS ONLY)

Using the provided needles, collect available vitreous humor, spinal fluid, and Bile in provided (**RED TOPPED**) tubes and label them accordingly. After the collection, return the tubes to the original Styrofoam container, and then fill the requested information on the label. Place rubber band to secure the tampon to the sample container and place in the provided plastic bag.

**STEP 4**      TISSUE and GASTRIC CONTENTS SAMPLES (FOR FATALS ONLY)

Collect the following quantities of specimens in the containers provided. Label the containers and place them in individual plastic bags:

- LIVER: 300grams
- BRAIN 200 grams
- LUNG 200 grams
- KIDNEY 200 grams
- SPLEEN 200 grams
- MUSCLE 200 grams
- HEART 100 grams
- GASTRIC CONTENTS 100 grams

**MSTU PACKING AND SHIPPING**

- Ensure that labels are properly completed and affixed to the respective containers.
- Ensure ice packs are frozen prior to shipping (Refrigerate blood, do not freeze).
- Complete both pages of the CAMI “Chain of Custody and Accident Information” form <http://www.faa.gov/go/toxlab>
- Place “Chain of Custody” form *and* the spare security seals with the cooler inside the MSTU outer box.
- Seal the outer MSTU box with provided security seals.
- Call DFS Medical Advisor for Courier billing number if required
- Inform CAMI that samples are on the way (phone numbers are at the bottom of the Chain of Custody form)

## Shipping Address:

FAA Civil Aerospace Medical Institute, Room 351  
6500 South MacArthur Boulevard  
Oklahoma City, OK 73169