AIB NOTE 1/71 (Revised August 1974)

ACCIDENTS INVESTIGATION BRANCH
Department of Trade

Memorandum on the Investigation of Civil Air Accidents

LONDON
DEPARTMENT OF TRADE
1974

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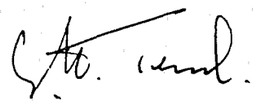
Introduction

Civil aircraft become involved in accidents almost anywhere in this country and its surrounding waters. Fortunately they do not occur very frequently, but when they do those concerned are expected to work with promptness and efficiency.

These notes have therefore been prepared to assist police officers in an activity that may be outside their personal experience and to inform them of the work and responsibilities of the Accidents Investigation Branch of the Department of Trade.

In order to assist police forces to build up such notes for a chapter for their Major Disaster Procedure Orders, the Home Office have issued their Air Navigation Memorandum for the Guidance of Police, of which Part II Sections A and B give some information concerning civil air accidents. However, this memorandum has, of necessity, to be brief, consequently the attached note which goes into further detail has been drawn up. An Appendix has been included dealing with procedures to be followed when an aircraft is reported missing or overdue. In addition, it incorporates some information provided by a Consultant Pathologist at the RAF Institute of Pathology and Tropical Medicine, which describes further work of the aviation pathologists and the specialist funeral directors, following a major air disaster.

These notes are the basis of lectures which are given from time to time to the Inspectors' Courses at the Police College or at individual Police Force Training Centres. It is hoped that they will be of interest and value to Chief Constables generally.



Chief Inspector of Accidents
Department of Trade

August 1974

Memorandum on the investigation of civil air accidents

1 The Accidents Investigation Branch

The Accidents Investigation Branch (AIB) is part of the Department of Trade (not part of the Civil Aviation Authority) and the Chief Inspector of Accidents is responsible directly to the Secretary of State for Trade. The offices of the Branch are located in Shell Mex House, Strand, London WC2R ODP, telephone number 01-217 3627. If this number is engaged, the call may be routed through the exchange 01-217 3000, or outside working hours through the Department of Trade Duty Officer at 1 Victoria Street, London SW1, telephone number 01-222 7877.

2 AIB authority

The authority for AIB to investigate aircraft accidents springs from the Civil Aviation Acts 1949 and 1968. The current statutes defining the procedures to be followed in the investigation of aircraft accidents and the powers of the Inspectors of Accidents are the Civil Aviation (Investigation of Accidents) Regulations 1969 and the Air Navigation (Investigation of Combined Military and Civil Air Accidents) Regulations 1969 respectively. As the title implies, the latter regulations cover the eventuality of a civil aircraft having an accident on a military airfield or vice versa; also a collision between a civil and a military aircraft.

3 Definition of an accident

The definition of an aircraft accident contained in the Regulations is as follows:

> "If between the time when any person boards an aircraft with the intention of flight and such time as all persons have disembarked therefrom (a) any person suffers death or serious injury while in or upon the aircraft, by direct contact with the aircraft or anything attached thereto or (b) the aircraft receives substantial damage."

If there has been an accident of this kind, then it falls into the notifiable category. Damaged wing tips or a broken propeller do not count as notifiable accidents. In case of doubt, a telephone call to AIB will resolve the problem.

4 Notification of accidents

All notifiable accidents are required to be reported to the Department of Trade. The notification signals are passed to the Chief Inspector of Accidents, who may initiate an investigation into the circumstances and causes. In fact, the regulations give the Chief Inspector the right to decide whether or not to investigate an accident. The Secretary of State cannot

instruct the Chief Inspector to carry out an investigation but he may decide to order a Public Inquiry, in which event the Inspector's investigation formally ceases but all AIB activities continue to assist the Treasury Solicitor in his preparations for the public hearing. The Inspectors of Accidents continue to exercise their powers to require evidence to be produced.

5 AIB reaction time

In the event of a major accident, AIB Inspectors of Accidents set off as soon as possible after notification. However, as the Branch is located in London their time of arrival at the scene of an accident will be dependent on the distance they have to travel. There will usually be a period of several hours after the initial notification before the Inspectors can reach the scene of an accident. In areas more remote from London it could even be the next day before they could arrive. It is most important that the site is kept secure prior to the arrival of the Inspectors of Accidents.

6 Purpose of the inquiry

The fundamental purpose of inquiring into an aircraft accident is to determine the facts, conditions and circumstances pertaining with a view to establishing the probable cause thereof, so that appropriate steps may be taken to prevent a recurrence of the accident and the factors which led to it. The nature of the inquiry into an aircraft accident should be inquisitorial rather than accusatorial; the object being to take remedial rather than punitive action. The assessment of blame or responsibility is not included amongst the duties of the accident investigation authority. Reduced to simple terms, the investigator has to determine what happened, how it happened and why it happened; to seek out, record and analyse the facts; to draw conclusions and, where appropriate, make recommendations.

7 Organisation of the investigation

With the increasing complexity of the aviation environment, eg flight operations, aircraft systems and air traffic control, it has become necessary for AIB to call on outside specialists to assist the Branch in particular aspects of specific investigations. These personnel can be co-opted from the airline operator involved, the manufacturers of the aircraft, its engines and equipment, or other government agencies. They are formed into Working Groups under the direction of AIB Inspectors of Accidents. The number and scope of the groups depends on the size and complexity of the specific accident. An investigator-in-charge is appointed by the Chief Inspector of Accidents and is responsible to him for the overall organisation, conduct and control of an accident investigation. He will decide what specialist working groups are required and will co-ordinate and direct the efforts of the groups. There are eleven main groups that can be involved in an investigation. The investigator-in-charge will act as the co-ordinating authority and should be kept continually informed as to the progress made by the groups. Regular meetings of all groups leaders will be held by the investigator-in-charge, so that there will be a free interchange of facts and ideas between the various groups. He will also be the main link between the Police and the AIB HQ.

8 Responsibility for notification

The responsibility for notification of an accident rests first with the commander of the aircraft or, if he be killed or incapacitated, then the operator. He is required to inform the Department of Trade (in effect the AIB) by the quickest means possible and to give, as far as possible, the following information:

(a) the type, nationality and registration marks of the aircraft;
(b) the name of the owner;
(c) the person in command;
(d) the date and time (GMT) of the accident;
(e) the last point of departure and next point of intended landing of the aircraft involved;
(f) the position of the accident in relation to some easily defined geographical location;
(g) the number of persons on board and the number killed or seriously injured;
(h) the nature of the accident as far as it is known;
(i) brief particulars of damage to the aircraft.

The owner is also required to inform the local police of the accident. This may be the first information received by the police, although it is more likely that it will come to them through an emergency call from a member of the public; in which case the police should immediately telephone AIB and pass on as much information as is available. It is desirable for Police Forces also to make local arrangements for informing the Civil Aviation Authority Air Traffic Control Centre responsible for the airspace above their territory of the circumstances of the accident. These are situated at West Drayton for the southern half of England (Phone 01 81 44077); Preston for nothern England (Phone 077286 2651); and Atlantic House, Prestwick for Scotland and Northern Ireland (Phone 0292 79822).

In the event of an aircraft being reported missing or overdue, the police may be alerted by a local aerodrome authority, Air Traffic Control Centre (ATCC) or Rescue Co-ordination Centre (RCC) When this happens it is essential that the closest liaison is established and maintained with the appropriate RCC. Relevant extracts from the *UK Air Pilot* and *General Aviation Flight Guide* are included in Appendix A.

9 Accident sites

It is most important that when an accident site has been identified it should be sealed off as soon as possible, only people required for rescue and fire-fighting being allowed access to the wreckage. The guarding of a site is not always easy. For example, with a high speed aircraft the wreckage trail can be hundreds or even thousands of yards long. The number of people in and around the wreckage needs to be kept to an absolute minimum. It is all too easy for vital evidence to be destroyed by well intentioned citizens climbing over wreckage, trampling equipment into the ground and moving switches and controls from their original positions. The press, in particular, will be well represented and it will probably require some effort to keep them away from the wreckage. Press photographs, albeit from a distance, can provide a useful record of the wreckage distribution at a fairly early stage. The regulations specify that "When an accident occurs in or over the United Kingdom, of which notification is required ..... no person other than an

authorised person shall have access to the aircraft involved in the accident and the aircraft shall not, except under the authority of the Secretary of State be removed or otherwise interfered with." Apart from AIB personnel, authorised persons include any constable or any officer of Customs or Excise. It is the responsibility of the Police to guard the wreckage and provide security for the accident site. AIB attempt to keep the period during which the accident site needs to be guarded to a minimum. However, it must be appreciated that the plotting of a wreckage trail and on the spot examinations of instruments, engines and the like can take some time, particularly in the case of a large aircraft. It is often necessary for wreckage to be moved for the purpose of rescue before AIB arrive. In this case it is most important that a record should be made of the original situation. Photographs are very useful in this respect. The temptation to tidy up the site should be resisted, but if it is necessary then an accurate plot should be made before work is started. Moving aircraft wreckage is not easy without doing further damage.

10 Photographs

The importance of good quality photographs of the scene of an aircraft accident from the earliest possible stage cannot be over-emphasised. Subject to the over-riding need to save life wherever possible, pictures of cockpit crews for instance, who may have been killed in their seats, could provide vital evidence which might be destroyed as soon as the wreckage is disturbed in order to remove their bodies. Similarly, a photographic record of other casualties could prove most useful when the causes of the accident and casualties are being analysed. There are obvious difficulties in obtaining good photographic coverage early on in the proceedings, but the exercise is usually very worthwhile from the AIB point of view. Nevertheless, it is appreciated that it will often not be possible to leave the bodies undisturbed long enough to get full photographic coverage.

11 Eye-witnesses

The Police can assist AIB a great deal by compiling lists of witnesses and in some cases taking their initial statements. It is most important that in the latter case the statements should be strictly confined to a record of the facts as seen by the witnesses and excluding all opinions. Although the Police may need these statements for their own purposes, it is important that they shall be made available to AIB. The first time a witness is interrogated produces the least contaminated evidence. In cases where it is necessary to try and establish the final flight path of an aircraft, the number of witnesses and the area covered by them can be more important that the individual quality of their evidence. Specialist aviation knowledge on the part of a witness is no guarantee of accuracy. It is important to know the location of survivors, particularly the crew, and to ensure that they are protected from the press.

12 Documents

A large number of documents and papers are carried by aircraft and the recovery and preservation of these is most necessary. All papers associated with an aircraft accident should be carefully collected and held with a minimum of handling of damaged or burnt specimens. The documents carried will include the Certificate of Airworthiness, Certificate of Registration,

Certificate of Maintenance, Technical Log, Radio Equipment Licence, Load and Balance Sheets, Passenger and Freight Manifests, Crew Licences, Log Books, Navigation Log Sheets, Aircraft and Operations Manuals, maps, notes etc. In the past, examination of documents and analysis of the information contained in them has provided vital evidence for the investigators.

13 Flight recorders

Most large passenger aircraft now carry flight recorders, many of which work on an electro-magnetic principle. After an accident, the location of the recorder is of prime importance, but they should not be searched for with devices of the mine-detector type because these can erase everything on the record. Flight recorders are usually painted in "Dayglow" red and are designed to be resistant to crash forces and fire. Once a flight recorder has been located, it is preferable that its position should be noted and that it should be handled as little as possible before being retrieved by specialists. Unskilled handling after a crash can cause unnecessary damage which might lead to loss of information and delay in reading out the recording.

14 Communications

A further service that the Police can provide that will greatly assist AIB personnel in the field is in the area of communications. Use of Police radio and telephone links for passing and recording messages and the fact that a Police Information Room is available and manned 24 hours a day can be very useful to Inspectors of Accidents during the on-site stage of the investigation. AIB personnel now have UHF radios for on-site communication and provision has been made for setting up a main control station.

15 Liaison with HM coroners

A coroner is required to inquire into all the circumstances of a sudden, violent or unnatural death, which includes aircraft fatalities (Coroners Act 1887 s 3 and Coroners Rules 1953 rule 26). While the AIB is strictly concerned with the cause of the accident, the two aspects of a fatality are inseparable. In practice, the coroners' officers and AIB inspectors collaborate in the investigations. Normally, the coroner or, in Scotland, the Procurator Fiscal will be in touch with the progress of the inquiries and will consult with the Inspector in deciding which witnesses should be called.

16 Aviation pathology

In Great Britain the AIB team includes a specialist in aviation pathology, who attends the scene of a major fatal accident; he is usually loaned from the RAF Institute of Pathology and Tropical Medicine. While the choice of pathologist lies with the coroner for jurisdiction, the specialist knowledge of the aviation pathologist may be invaluable and experience has shown that most coroners have called on his services in connection with major aircraft disasters. In circumstances where the coroner's pathologist lacks ready access to laboratory facilities, the aviation pathologist will be happy to assist to the best of his ability.

17 New concepts of accident pathology

Whilst the cause of death following an aircraft accident is generally obvious in the broad sense, the autopsy report may not meet the requirements of the Accidents Investigation Branch. In some cases the Inspector of Accidents needs and expects as much information from the pathologist's examination of the bodies of the occupants of the aircraft, as he does from the engineering examination of the aircraft structure. Information which might reasonably be required of a pathologist is listed below. All the questions tabulated have, in fact been answered in practice on at least one occasion.

(a) Evidence of cause of the accident.

  (i) Mechanical failure (from the body).
  (ii) Physical. Who was controlling the aircraft? Was there disease which could influence the function of the crew or incapacitate them?
  (iii) Toxicological. Were the crew affected by noxious fumes, drugs or alcohol?
  (iv) Physiological. Was there a defect in the pressurisation system?

(b) Evidence of sequence of events of the accident.

(c) Was the accident anticipated or not?

(d) Evidence as to survivability.

18 The coroner and the aviation pathologist

From the AIB standpoint, it is highly desirable for the pathologist dealing with an air accident to have a knowledge of aviation and aviation medicine and the answer to many of the questions may well depend on a comparison of accidents in which the specialist knowledge of the aviation pathologist will be invaluable. Normally, the two pathologists cover an aircraft accident autopsy, the coroner's pathologist being in charge and the aviation pathologist, although formally being present as an observer, taking an active part. The aviation pathologist is normally happy to act on behalf of HM Coroner when the latter so desires.

19 The pathologist and the major passenger transport accident

In the case of an accident involving a large number of casualties, some of the particular problem areas in the medical sphere can be summarised as follows:

(a) There is a need for an extensive investigation into cause and effect because such accidents, although costly in terms of casualties, are fortunately rare. The opportunity for a valuable exercise in preventive medicine must not be lost.

(b) Problems of disposal of estates and settlement of insurance claims are likely to result.

(c) Problems associated with the identification of multiple casualties are introduced.

The identification of casualties is not an end in-itself, but must be regarded as a part of the whole investigation. A body should not be buried until it has made its maximum contribution to the accident investigation and, thus, to the saving of lives in the future.

20 Organisation of the pathological aspects of a major fatal aircraft accident

Experience has shown that forward planning is an essential pre-requisite to an investigation. This planning could be divided under three headings:

(a) Body reception and storage.

(b) The secretariat.

(c) Implementation of tactical plans.

21 Body storage

No place one can conceive of possesses permanent buildings available exclusively for reception of up to 400 severely mutilated dead bodies, which is the possible outcome of an accident involving one large passenger aircraft. It follows that conditions must be make-shift to some extent. The important feature is that plans must be made for an immediate takeover of agreed facilities. Basically three areas are needed – reception, refrigeration and viewing.

22 Secretariat

A secretariat must be established and pre-trained to receive and correlate data arriving through two channels:

(a) Observations on dead bodies made at the accident site, in the reception and viewing rooms and in the mortuary.

(b) Information on missing passengers received from relatives, dentists and other sources.

The secretariat should also be responsible for arranging disposal of the bodies.

23 Implementation of tactical plans

(i) At the site Every body, portion of body, significant possession, etc. must be marked with a numbered label and a stake bearing the same number implanted in the ground. The body can then be moved to the reception area. The following points are important:

  (a) Once a number is allocated it must remain unchanged and only one series may be used.

  (b) Unless they are certainly associated with a larger portion, parts of bodies should receive numbers of their own.

  (c) Ideally, bodies should be photographed in situ -- often this is sociologically impossible.

  (d) Security of the site is important.

(ii) In the reception room Bodies must be received by a member of the secretariat, who should:

  (a) Prepare a folder bearing the body number.

  (b) Originate a 'Body effects' form. (Copies of forms which have proved useful in practice are attached.)

  (c) Remove jewellery and contents of pockets; itemise and store them under the body number.

  (d) Arrange for radiological and dactylographic examinations where needed.

(iii) In the mortuary Clothing should remain on the body until seen by the aviation pathologist.

(a) Clothing is examined by the pathologist and the description entered on the 'Body effects' form.

(b) After removal clothing is itemised and stored by the secretariat

(c) Medical examiner notes visual characteristics of the body scars etc. and prepares "External Examination" form.

(d) At a suitable time the odontologist makes his examination and enters details on the 'Body effects' form.

(e) The pathologist performs an autopsy, annotating the 'External Examination' and 'Autopsy Report' forms accordingly.

(f) Blood specimens are taken from each body and preserved. Specimens for microscopic examination are taken at the discretion of the pathologist and preserved.

(iv) Action by the Secretariat Additional duties of the secretariat should include:

(a) Prepare a chart, the purpose of which is to correlate body numbers with crew list and passenger manifest.

(b) Prepare folder for each person on crew list and passenger manifest.

(c) Complete 'Registration and Identification Particulars' form for each missing person with the assistance of next of kin. The dental chart from victim's own dentist is obtained or telexed and filed in folder.

(v) Subsequent action

(a) The secretariat undertakes a continuing correlation of 'body' folders and 'missing person' folders.

(b) Pathologist continues attempts to aggregate incomplete cadavers.

(c) Bodies cleared as to positive identification and contribution to the investigation can be transferred to care of the appropriate funeral directors.

(vi) Participation by funeral directors The staff of the secretariat must be accustomed to interviewing in the circumstances of a mass disaster and, ideally, should be in close contact with the airline concerned. Whenever possible, duplication of effort should be avoided.

For these reasons, there is much to be said for the employment of a professional team with wide experience. Such a team is available from a certain specialist organisation who are employed as repatriation and funeral directors by the major British airlines and have extensive experience in accidents involving British aircraft overseas. The place of the specialist firm in accidents occurring in the United Kingdom is quite unofficial but certainly in the past AIB pathologists have found their assistance, including such items as the loan of telex facilities, most valuable in all phases of the identification and processing of the bodies.

FATAL AIRCRAFT ACCIDENT VICTIM IDENTIFICATION AND AUTOPSY FORM M.1.

Aircraft Reg. No: Body No:

Date of Examination: Pathologist: Sex: MALE

Identified as:

Means of identification: Primary: Confirmatory:

EXTERNAL EXAMINATION

Estimated age: Visual / Dental	if measured Height:	Weight:	Body build:
Colour of skin: / Nails	Hair: Length / Colour	Moustache / Beard	Degree of obesity:

External scars, skin marks/tumours, etc.

Any obvious visual characteristics.	Extent of burning

Circumcised: Yes/No/Uncertain

Testes: Present/Single/Surgical Removal/Traumatically missing

Scalp
Vault of Skull

Face

Chest

Abdomen

Back

L. Arm

R. Arm

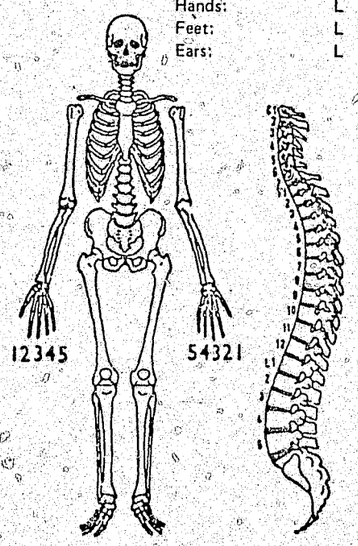
L. Leg

R. Leg

FOR USE IN CASES OF MUTILATION

Summary:

Humeral Heads: L R
Femoral Heads: L R
Hands: L R
Feet: L R
Ears: L R



INTERNAL EXAMINATION

Body No:

Brain and Meninges	
Base of skull	
Sternum	Clavicles
Ribs	Lt Rt
Spine	
Pelvis	
Pleural space	
Oesophagus	
Lungs	
Pericardium and heart	
Aorta	
Diaphragm	
Stomach	
Peritoneum and mesentery	
Intestines	
Liver	
Spleen	
Appendix	Present/Surgical removal/ Traumatically missing — Gall Bladder: Present/Surgical removal/ Traumatically missing
Kidneys	Lt Rt
Other Organs	

SPECIMENS TAKEN:

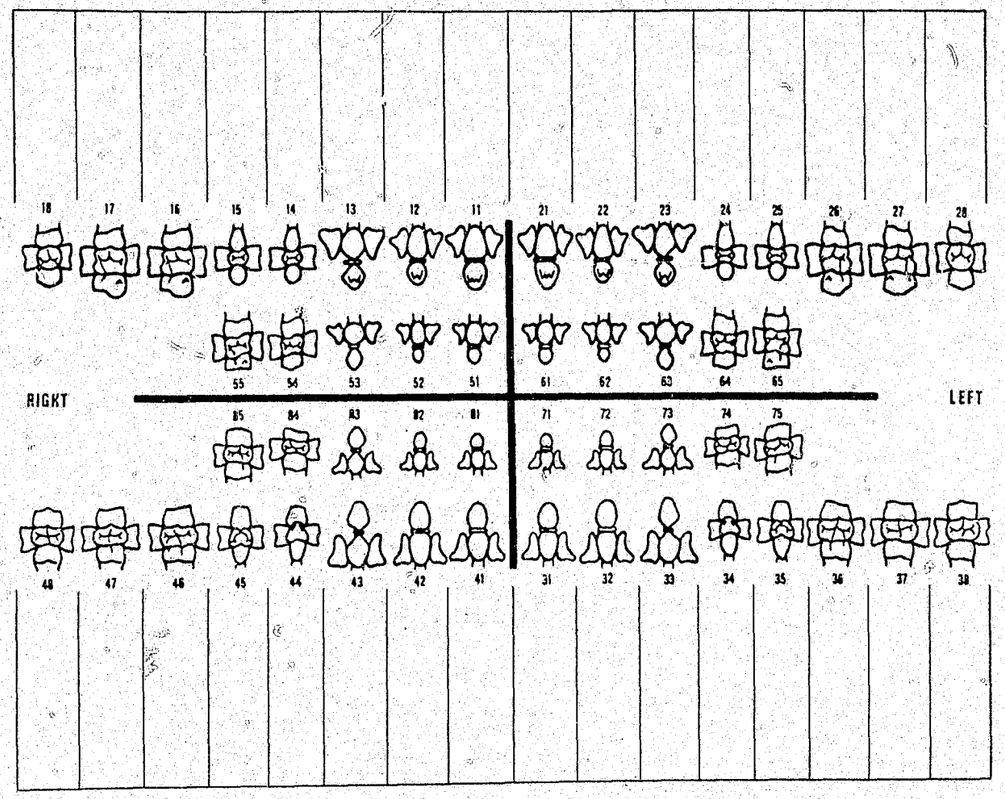
Histology Yes/No

Toxicology Yes/No

CAUSE OF DEATH AND REMARKS:

DENTAL EXAMINATION

Date of Examination: Examiner: Body No:



Prostheses, Orthodontics, etc.

Malformations, Oral Abnormalities, etc.

Dental Estimates of Age, Sex, Race, etc.

FATAL AIRCRAFT ACCIDENT VICTIM IDENTIFICATION AND AUTOPSY FORM M.2.

Date of Examination: Body No:

Examiner: Sex: MALE

CLOTHING

Outer Garments:

Under Garments:

JEWELLERY

OTHER EFFECTS (Wallets, documents, etc)

FATAL AIRCRAFT ACCIDENT VICTIM IDENTIFICATION AND AUTOPSY FORM F.1.

Aircraft Reg. No: Body No:

Date of Examination Pathologist: Sex: FEMALE

Identified as:

Means of identification: Primary Confirmatory

EXTERNAL EXAMINATION

Estimated age: Visual / Dental	if measured Height:	Weight:	Body build:
Colour of skin:	Hair: Length / Colour	Lipstick:	Degree of obesity:
Ears: Pierced / Not pierced		Nail varnish:	

External scars, skin marks/tumours, etc.

Any obvious visual characteristics	Extent of burning

Breasts

Scalp Vault of Skull

Face

Chest

Abdomen

Back

L. Arm

R. Arm

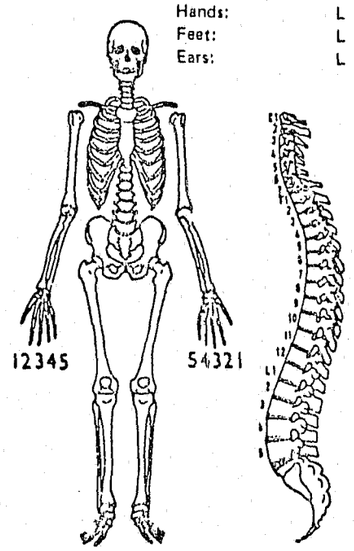
L. Leg

R. Leg

FOR USE IN CASES OF MUTILATION

Summary:

Humeral Heads:	L	R
Femoral Heads:	L	R
Hands:	L	R
Feet:	L	R
Ears:	L	R



INTERNAL EXAMINATION

Body No:

Brain and Meninges		
Base of skull		
Sternum	Clavicles	
Ribs	Lt	Rt
Spine		
Pelvis		
Pleural space		
Oesophagus		
Lungs		
Pericardium and heart		
Aorta		
Diaphragm		
Stomach		
Peritoneum and mesentery		
Intestines		
Liver		
Spleen		
Appendix	Present/Surgical removal/ Traumatically missing	Gall Bladder: Present/Surgical removal/ Traumatically missing
Uterus	Present/Total / Sub-total hysterectomy/ Traumatically missing	Ovaries: Present/Single/Surgical removal/ Traumatically missing
Kidneys	Lt	Rt
Other Organs		

SPECIMENS TAKEN:

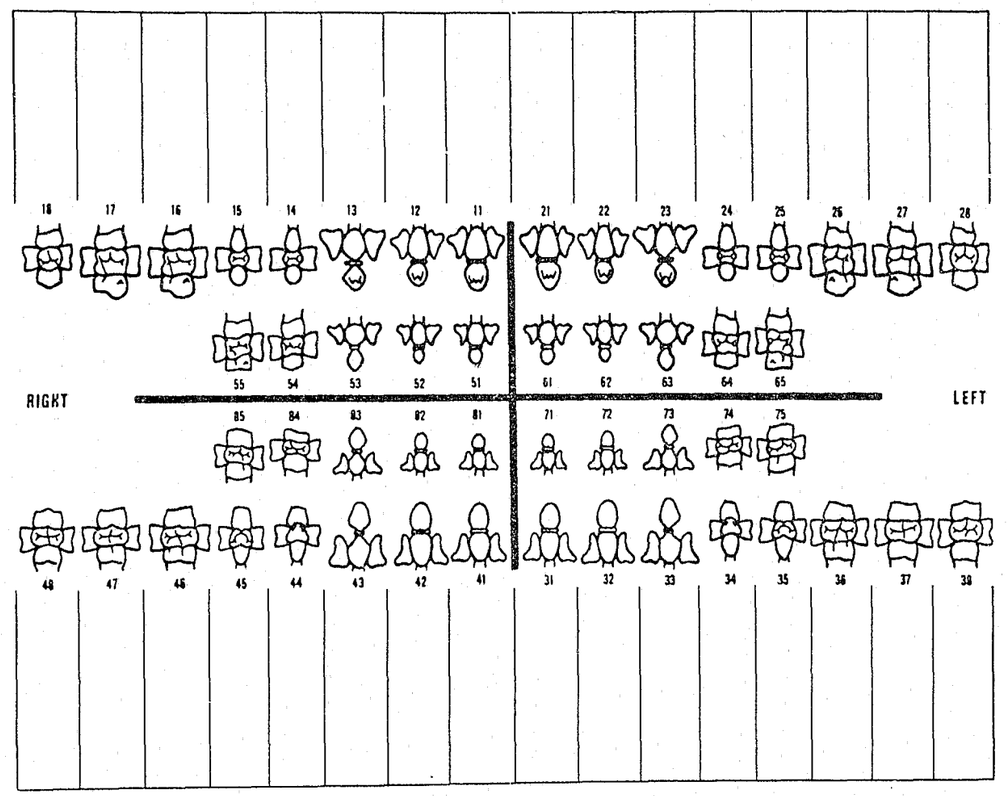
Histology Yes/No

Toxicology Yes/No

CAUSE OF DEATH AND REMARKS:

DENTAL EXAMINATION

Date of Examination: Examiner: Body No:



Prostheses, Orthodontics, etc.

Malformations, Oral Abnormalities, etc.

Dental Estimates of Age, Sex, Race, etc.

FATAL AIRCRAFT ACCIDENT VICTIM IDENTIFICATION AND AUTOPSY FORM

F.2.

Date of Examination:	Body No:
Examiner:	Sex: FEMALE

CLOTHING

Outer Garments:

Under Garments:

JEWELLERY

OTHER EFFECTS (Handbag, documents, etc.)

Registration and identification particulars

Accident to ..... Final body No. ..... Surname ..... Mr/Mrs/Miss

Registration Particulars

1. Forenames
2. Date of birth
3. Place of birth
4. Usual residence
5. Religion
6. Profession
7. Nationality
8. Married/Single

9. Father's name — Profession — Nationality
10. Mother's name — Nationality
11. Husband's name — Profession — Nationality
    Place of birth

12. Next of kin
    Name in full: — Relationship:
    Address: — Telephone:

13. Other contacts
    a) Solicitors
    b) Dentist
    c) Doctor
    d) Others
    Dental chart (requested (obtained (sent to (Field Team

Identification Particulars

14. Build: — Height: — Weight: — Obesity:
15. Race
16. Colour of eyes:
17. Colour and peculiarities of hair:
18. Moustache — Yes/no
    Beard — Yes/no
19. Nails peculiarities varnished or bitten:
20. Ears pierced — Yes/no
21. Scars or missing parts:
22. Tattoos:
23. Circumcision — Yes/no
24. Moles or other identifying marks:
25. Medical history (e.g. operations, non surgical illnesses, broken bones etc.)

26. **Likely clothing**

a) Outer garments:

b) Under garments

27. **Likely jewellery**

28. **Likely contents of pockets**

29. **Disposal:**

Cremation Local/UK

Burial Local/UK

Repatriation other than UK

For practical purposes it is recommended that this form be printed on thin card.

Body No.

Clothing Specimens

Outer garments			

Under garments			

Appendix A

Procedures to be followed when an aircraft is reported missing or overdue

Extracts from *UK Air Pilot* and *General Aviation Flight Guide.*

1 **Responsibility**

1.1 Responsibility for search for and rescue of the occupants of civil aircraft in the United Kingdom and the surrounding waters rests with a joint Civil/ Service organisation. Areas of responsibility, which are shown on the Map at SAR 3-1, are known as Search and Rescue Regions (Edinburgh and Plymouth SRR).

1.2 *The Service Rescue Organisation*

1.2.1 Within each SRR is a Rescue Co-ordination Centre (Edinburgh and Plymouth RCC) whose task is the co-ordination and control of search and rescue operations within its SRR.

1.2.2 The Controller can be contacted on the following telephone numbers:

Edinburgh RCC . . . . 0383 23436 (Dunfermline)
Plymouth RCC . . . . 0752 53777 (Plymouth)

1.2.3 The RCCs can call on the following resources for assistance:

1.2.3.1 Primary forces

RAF fixed wing and helicopters (see SAR 3-1)
RAF Mountain Rescue Units (see SAR 3-1)
Royal National Lifeboat Institution (some 150 stations) (see SAR 3-2)
Ocean Station Vessels
HM Coastguard and Post Office Coast Radio Stations (see SAR 3-3)
Civil Police, Fire and Ambulance services
Neighbouring RCCs

1.2.3.2 Secondary or supplementary forces

RN helicopters and ships
Civil aircraft
RAF marine vessels (see SAR 3-1)
Merchant vessels
Army, RN and RAF personnel
Civilian Mountain Rescue Units

1.5 *The Civil Rescue Organisation*

1.5.1 When the location of a civil aircraft which has crashed on land is known and no air search is necessary responsibility for dealing with the incident devolves upon the civil ground organisation. A Civil Aviation Authority (CAA) Air Traffic Control Centre (ATCC), upon becoming aware of an aircraft in distress and knowing the position of its emergency landing, will notify the local police in the area who will then alert the fire, ambulance and hospital services, as appropriate. At some places arrangements are made for the fire service also

to be notified directly. Should the first report of an accident be given by a member of the public to the police, that force will immediately alert the fire and other services. The ATCC will then be told of the rescue action being taken and given all relevant details.

2 Alerting the organisation

2.1 The search and rescue organisation will be alerted in three phases.

2.2 *'Uncertainty' phase begins when:*

(a) no communication has been received from an aircraft within a period of 30 minutes after the time a communication should have been received, or from the time an unsuccessful attempt to establish communication with such aircraft was first made, whichever is the earlier, or when:

(b) an aircraft fails to arrive within 30 minutes of the estimated time of arrival last notified to, or estimated by, air traffic service units, whichever is the later,

except when no doubt exists as to the safety of the aircraft and its occupants.

During this phase, the Rescue Co-ordination Centre will co-operate with ATCC to collect and evaluate all reports. It may inform Rescue Units and the other Rescue Co-ordination Centre of the situation.

Note: In certain cases, depending upon local conditions, eg short sea crossing, a shorter period of time than 30 minutes may be set to initiate the *'Uncertainty'* phase.

2.3 *'Alert' phase begins when:*

(a) following the 'Uncertainty' phase subsequent attempts to establish communication with the aircraft or inquiries to other relevant sources have failed to reveal any news of the aircraft, or when

(b) an aircraft has been cleared to land and fails to land within five minutes of the estimated time of landing and communication has not been re-established with the aircraft, or when

(c) information has been received which indicates that the operating efficiency of the aircraft has been impaired, but not to the extent that a forced landing is likely;

except when evidence exists that would allay apprehension as to the safety of the aircraft and its occupants.

During this phase the Rescue Co-ordination Centre alerts the appropriate search and rescue services for immediate action.

2.4 *'Distress' phase begins when:*

(a) following the 'Alert' phase further unsuccessful attempts to establish communication with the aircraft and more widespread unsuccessful inquiries point to the probability that the aircraft is in distress, or when

(b) the fuel on board is considered to be exhausted, or to be insufficient to enable the aircraft to reach safety, or when

(c) information is received which indicates that the operating efficiency of the aircraft has been impaired to the extent that a forced landing is likely, or when

(d) information is received or it is reasonably certain that the aircraft is about to make or has made a forced landing; except when there is reasonable certainty that the aircraft and its occupants are not threatened by grave and imminent danger and do not require immediate assistance.

During this phase, the Rescue Co-ordination Centre will put the search and rescue plan into operation and will direct it until the aircraft is found and the survivors rescued, or it is clear that there is no longer any chance of doing so.

2.5 Whenever practicable, when an ATCC decides that an aircraft is in the 'Uncertainty' or 'Alert' phase, it will advise the aircraft operator before notifying the Rescue Co-ordination Centre. (If an aircraft is in the 'Distress' phase, the Rescue Co-ordination Centre must be informed before anyone else in order that there is the minimum delay in putting the search and rescue machinery into operation.) The aircraft operator will be kept informed of all subsequent developments as soon as possible after they occur.

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