

**Safety Regulation Group**



**CAP 414**

**The Aerial Application Certificate**

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**Safety Regulation Group**



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**The Aerial Application Certificate**

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## Foreword

- 1 The purpose of this publication is to explain the administrative procedures for the issue and renewal of Aerial Application Certificates (AACs), and to indicate requirements to be met by operators in respect of equipment, organisation, staffing, training and other matters affecting the operation of aerial application aircraft.
- 2 An Aerial Application Certificate signifies that the holder is 'competent ... to secure the safe operation of [his] aircraft' but does not relieve the operator or the aircraft commander of his responsibility for compliance with the relevant statutory requirements applying in relation to a particular flight.
- 3 Requirements concerning aircraft Certificates of Airworthiness and maintenance arrangements are contained in the relevant parts of the Air Navigation Order and British Civil Airworthiness Requirements (BCARs). Further information on the requirements can be obtained from the Civil Aviation Authority (CAA) Safety Regulation Group.
- 4 Unless otherwise specified reference in this publication to Acts, Orders in Council and Regulations are to such Acts, Orders and Regulations for the time being in force.

**NOTE:** All references to the masculine gender, used for convenience in this document, equally apply to the feminine where appropriate.

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# Chapter 1    **General**

## **1        Legal**

- 1.1        The Air Navigation Order (ANO) states that an aircraft shall not be used for dropping articles for the purposes of agriculture, horticulture or forestry or for training for the dropping of articles for any of such purposes otherwise than under, and in accordance with the terms of an Aerial Application Certificate granted to the operator of the aircraft by the Civil Aviation Authority (CAA). The 'operator' is defined in the ANO as the person for the time being having the management of the aircraft.
- 1.2        It follows that the management of an aircraft engaged in Aerial Application Operations must remain at all times with the operator on whose Aerial Application Certificate it appears. The overall responsibility for such management may not be delegated, although specific duties associated with it may be delegated.
- 1.3        The holder of an Aerial Application Certificate will normally be given permission under the requirements of the ANO concerning the carriage of dangerous goods. Furthermore, the requirements of the Rules of the Air Regulations relating to flight closer than 500 ft to any person, vessel, vehicle or structure contain an exclusion clause in respect of flights made in accordance with the terms of the certificate.

## **2        Certificates - Initial Application and Renewal**

- 2.1        Initial application should be made to the CAA's Flight Operations Inspectorate (General Aviation) section on Form CA 2345. The application must be accompanied by the appropriate fee and a copy of the Applicant's Aerial Application Manual (See Chapter 2). The minimum notice required by the CAA before a certificate can be granted is 28 days from the date of receipt of the aerial application manual. The interval between application and the grant of the certificate will depend primarily on matters within the control of the operator and no undertaking can be given by the CAA to reach a decision within a particular period.
- 2.2        On receipt of an application and the appropriate fee, an aerial application inspector will be assigned to the operator. The inspector will carry out a detailed examination of all aspects of the proposed operation, including management structure and responsibilities, adequacy of ground and flying staff and arrangements for their training premises, operational documents, equipment and aircraft. A detailed examination will also be made of the operator's aerial application manual, a copy of which will be retained by the CAA during the currency of the certificate.
- 2.3        A certificate is normally issued for a period of one year. Application for renewal should be made on Form CA 2346 (available from the CAA's Flight Operations Inspectorate (General Aviation) section). The application, together with the appropriate fee, should be made at least 28 days before the expiry of the current certificate.
- 2.4        A specimen certificate is shown at Appendix A.

### **3 Charges**

Details of the current charges in respect of Aerial Application Certificates are contained in a scheme of charges made under Section 11 of the Civil Aviation Act 1982, and published in Series 5 of the CAA Official Record. Charges are payable on application for the initial grant or for the renewal of a certificate, and additional charges are made when a certificate is issued or when a variation is made to a certificate. Copies of the current charges scheme may be obtained from the CAA website [www.caa.co.uk/OR5No211](http://www.caa.co.uk/OR5No211).

### **4 Audits**

- 4.1 During the currency of a certificate the CAA will require periodic reports on the continued competency of the operator. For this purpose, a Flight Standards Officer (FSO) from the CAA's Flight Operations Inspectorate (General Aviation) section will carry out an annual audit at the operator's base and also in the field. On occasions the Aerial Application FSO may be accompanied by an officer of the Health and Safety Executive Agricultural Inspectorate, who have a special responsibility for inspecting the control and handling of toxic materials used in agriculture.
- 4.2 The Aerial Application FSOs are 'authorised persons' as defined in the ANO. They carry an identification document that lists their powers which include those shown in the conditions forming part of the Aerial Application Certificate (Appendix A).

### **5 Refusal, Revocation, Suspension or Variation of a Certificate**

- 5.1 Procedures to be followed by the CAA in connection with the refusal, revocation, suspension or variation of certificates are prescribed in the CAA Regulations.
- 5.2 Where an application for the grant or variation of an Aerial Application Certificate is refused, or is granted in terms other than those requested by the applicant, a notice will be served stating the reasons for the decision, and the applicant may, within 14 days from the date of service of the notice, request that the case be reviewed by the CAA.
- 5.3 Where it is proposed to revoke, suspend or vary a certificate, otherwise than on the application of the holder, notice of the proposal, together with the reason for it, will normally be served on the person concerned, who may request that the case be decided in accordance with particular provisions of the CAA Regulations. A certificate may be provisionally suspended without notice, pending consideration of, or enquiry into, the case. Before any final decision is made the applicant for, or holder of, the certificate will be able to make representations to the CAA in accordance with the provisions of the Regulations.
- 5.4 If an operator ceases operations for which the certificate was issued, or if the CAA revokes or suspends the certificate, it should be returned immediately to the office of issue.
- 5.5 The above information is intended to give a general indication of the prescribed procedure. For detailed information reference should be made to the Regulations.

## Chapter 2 Aerial Application Manual

### 1 General

The ANO requires in Article 68 that an Aerial Application Manual 'shall contain all such information and instructions as may be necessary to enable the operating staff to perform their duties as such'.

#### 1.1 Form and Contents

The form and scope of manuals will vary with the nature and complexity of the operators, organisation and with the aircraft used. Manuals should cover not only instructions and information related to the safe operation of the aircraft but also to the safe application and handling of chemicals etc. It may be convenient to produce the manual so that sections which apply to particular groups of operating staff are separate. Although it is patently impossible to produce a standard list of all matters which should be included in an Aerial Application Manual, the following sections of this chapter contain basic requirements needed to satisfy the CAA.

#### 1.2 Availability

It is a requirement of the Air Navigation Order that a copy of the manual is to be made available to every member of the operating staff. In particular every pilot should have a copy available to him either in the aircraft or in a ground vehicle at the site from which the aircraft operates. A copy must also be lodged with the CAA.

#### 1.3 Legal References

The manual should make reference to those parts of the Air Navigation Order and associated Regulations from which holders of certificates are exempted and should make it clear that all other relevant provisions apply. In particular it should be stated which flights are exempt from the '500 ft rule' of the Rules of the Air Regulations. In the CAA's view, exemption from the '500 ft rule' cannot reasonably be taken to apply beyond 1500 m from the boundary of the area to be treated. Reference should be made to the fact that permission under the requirements of the Air Navigation legislation in respect of the carriage of dangerous goods applies only in respect of approved materials. There are other statutory requirements relevant to the use of chemicals which should be referred to, such as the Health and Safety at Work Act 1974, the Control of Substances Hazardous to Health Regulations 1994, the Food and Environment Protection Act 1985, the Control of Pesticides Regulations 1986 and/or the equivalent Northern Ireland legislation. The manual should state that only pesticides approved for aerial application under the Control of Pesticides Regulations 1986 or those given an Experimental Permit by the Department for Environment, Food and Rural Affairs (DEFRA) may be applied from the air.

#### 1.4 Copy Numbers and Amendment Action

Each copy of the manual should normally bear a serial number, and a list of holders should be kept by the person responsible for issuing amendments. Amendments in manuscript will not be acceptable. Changes or additions should be incorporated by the issue of a fresh or additional page on which the amended material is clearly marked.

## **2 Operational Organisation**

### **2.1 Key Personnel**

The manual should include a description of the company's individual organisation showing the chain of command with the individual responsibilities and areas of control of the Operations Manager and Chief Pilot. The AAC requires that 14 days' notice be given to the CAA of an intended change of persons occupying these posts. The manual should include actual names.

### **2.2 Operational Facilities**

2.2.1 The manual should describe the operational facilities provided. The information should cover the availability of flight briefing facilities, including aircraft technical documents and aviation publications such as NOTAMS, United Kingdom AIP (Air Pilot), Aeronautical Information Circulars (AICs), Aeronautical Charts, etc.

2.2.2 It should also list the documents held in the company's chemical library and those relating to the specialist techniques of Aerial Application. It may be convenient to list these documents as a separate annex to the manual and an example of such a list is given at Appendix C to this publication.

## **3 Aircraft Description, Performance and Handling**

The technical information provided should be adequate for use in the course of day-to-day operations. The following paragraphs set out the range of information needed but reference to the aircraft flight manual would be acceptable if it presents sufficient information in a form simple and clear enough to be readily usable at a remote operating site.

### **3.1 Technical Details**

Details should be included of dispensing equipment, wire cutting or cable deflectors, the position and operation of fire extinguishers and other rescue equipment and the method of dumping payload in an emergency.

### **3.2 Aircraft Weights and Centre of Gravity**

3.2.1 Information should be give on the following weights and centres of gravity:

- a) maximum permitted take-off and landing weights;
- b) authorised centre of gravity range;
- c) aircraft basic weight and associated centre of gravity;
- d) weights and centre of gravity associated with different spray/dusting equipment fitted; and
- e) volumetric weights of fuel and oil.

3.2.2 Reference should be made to the performance section of the Flight Manual in order to determine maximum allowable payloads and fuel uplift.

### **3.3 Aircraft Performance (Aeroplanes)**

3.3.1 Operators should provide pilots and (where applicable) other personnel responsible for decisions on the suitability of take-off and landing areas, with simple guidance from which they can determine maximum take-off and landing weights for the prevailing conditions. The material to be included should be calculated from the aircraft flight manual or equivalent publication where available, or by giving estimates of performance based on company experience and tests. Where estimates are used they should be declared as such.

### 3.3.2 Information should be given on the following points:

- a) limiting speeds;
- b) stalling speeds in various configurations including variation with tightness of turn (this information may best be presented graphically), stall warning and stall characteristics, variations of stalling speeds with changes of centre of gravity and weight;
- c) gross take-off distance to 50 ft at maximum authorised take-off weight;
- d) landing distances from 50 ft at maximum authorised landing weight;
- e) effect on (c) and (d) of variation in surface type, condition and gradient;
- f) effect on disposable load of different types of application gear;
- g) gross climb gradient, stating configuration and conditions to which the figures apply;
- h) wind, altitude and temperature accountability figures with a special warning of danger from changes in wind components due to changes in wind speed or direction and from increasing temperature during the day;
- i) effect of crosswinds, shear and turbulence on handling; and
- j) any other handling peculiarities considered significant for the type.

### 3.4 **Aircraft Performance (Helicopters)**

Where applicable, the performance information listed in paragraph 3.3 above should be included in the manuals of helicopter operators. In addition, the following information and instructions should be included:

- a) take-off space requirements, to include allowance for rejected take-off, to achieve a height of 50 and/or 100 ft at maximum permitted take-off weight and zero wind;
- b) the effects of wind on the take-off space required in a); and
- c) instructions on power assessments to take account of wind and temperature effects on performance, to the effect that the take-off weight is to be checked against the power required to sustain a hover in ground effect. The margin of power to be available in the hover should also be given.

### 3.5 **Inspections and Checks**

Details of pre-flight inspections and cockpit checks should be provided in a form suitable for use as an immediate reference in day-to-day operations. Items to be covered include checks of specialist equipment and the replenishment of fuel, oil and other systems, with special emphasis on checks of fuel for water contamination. Inspections should also take account of the possible adverse effects of mud, dust and chemicals.

## 4 **Maintenance of Aircraft and Equipment**

The ANO requires that an aircraft for agricultural purposes shall be maintained in accordance with maintenance schedules approved by the CAA Safety Regulation Group. Full information on the appropriate maintenance schedule requirement is contained in the relevant parts of the British Civil Airworthiness Requirements and in CAP 455 - Airworthiness Notices. The manual should describe the arrangements under which the Company's aircraft are maintained.

#### 4.1 **Pilot Maintenance**

Operators should include in their Aerial Application Manual details of aircraft maintenance which may be carried out by pilots. This information should include such repairs or replacements by pilots as are allowed under the ANO as prescribed in the Air Navigation (General) Regulations. Operators must make it clear that the equipment or parts used in such repairs or replacements must be of a type approved by the CAA. To cover the case of flight with unrectified defects the manual should include instructions and guidance to pilots, preferably in the form of an allowable deficiency list. Such lists should be cleared with the CAA's Safety Regulation Group, who are also available for comment or advice on all maintenance matters.

#### 4.2 **Application Equipment**

To ensure the efficient and properly controlled release of chemicals it is important that the operators include in their manuals guidance and instructions on the day-to-day checking and maintenance of application equipment. In particular the information should cover checks of such items as control valves, seals and spray nozzles and include instructions on the extent to which rectification or replacement of faulty equipment may be carried out in the field.

#### 4.3 **Logs**

The minimum contents of log books and technical logs are laid down in the ANO. However, operators may wish to use a technical log as a record for other matters such as details of locations, crops treated, chemicals applied, rate of application, etc. Instructions on the content and compilation of log books and technical logs should be included in the manual.

#### 4.4 **Chemical Contamination**

Because of the highly corrosive effect of some chemicals in use in aerial application, it is essential that special care is taken in the inspection, maintenance, cleaning and decontamination of aircraft. Details of inspections and maintenance are set out in the appropriate approved maintenance schedules and include information on procedures to prevent ingress of corrosive or poisonous chemicals into the aircraft structure. Information and instructions to be set out in the manual should include:

- a) responsibility for carrying out routine daily cleaning of aircraft and application equipment;
- b) methods of carrying out routine cleaning of aircraft and equipment;
- c) instructions on the frequency of cleaning where corrosive, poisonous or high fire risk chemicals are used;
- d) precautions to be taken during cleaning operations to safeguard against the risk of poisoning persons, livestock, wildlife etc. or of contaminating surrounding areas;
- e) instructions on the disposal of cleansing fluids and material and of chemical containers.

## **5 Operations**

### **5.1 Planning and Preparation**

#### **5.1.1 Site Assessment**

The criteria for the adequacy of take-off and landing sites in respect of performance limitations have been covered under paragraph 3 of this chapter. There are, however, other factors which should be taken into account when deciding on the adequacy and acceptability of temporary sites. In particular, operators should include in their manuals instructions on minimum site dimensions required, with details of allowances to be made for cross winds up to the maximum crosswind allowance of the aircraft and for lateral clearance from obstructions. It should be made clear that operations from public highways or from sites which involve low-level flight over motorways or major roads are forbidden except with the written consent of the appropriate police authority. The manual should indicate how any conditions associated with such a consent are to be made known to the pilot.

#### **5.1.2 Reconnaissance**

5.1.2.1 A reconnaissance of the working site and the area within 1500 m of its boundaries must be carried out to ascertain whether the task is acceptable. Operators should state in their manuals who is responsible for carrying out the reconnaissance and include advice on the matters which must be taken into consideration in judging the acceptability of the site. The reconnaissance should normally be made from the ground. Where this is impossible, or if the pilot deems it necessary in addition to the ground reconnaissance, an aerial reconnaissance should be made. When assistance is required in identifying areas to be treated from the air, operators may fly up to a maximum of one passenger per site to be treated. No payment may be given or promised for such flights and the passenger is to be given a full safety briefing and is to be suitably clothed. The passenger shall be notified before embarking on the flight that the aircraft is not operated in accordance with the Public Transport requirements as defined in the ANO. No chemical is to be carried during such passenger reconnaissance flights. Great care must be taken to ensure that the above requirements are met in full. For example, if a customer were to say that he wanted to recce a site from the air, and it was an implied part of the agreement that the operator would carry the customer on such a flight, then it might well be Public Transport and thus fall outside of the privileges of the AAC.

5.1.2.2 Among the matters to be taken into account in deciding whether the task is acceptable are:

- a) the safety of persons, farm animals, property, wildlife, bees and other creatures;
- b) possible deleterious effects on water supplies, fisheries, fish farms, non-target crops and other vegetation;
- c) possible annoyance and noise;
- d) danger to motorists etc. from distractions caused by low flying aircraft;
- e) the general topography of the area, especially the orographic effects of hills;
- f) the presence of flight obstructions such as masts, cables, trees etc;
- g) proximity to prohibited, restricted and danger areas;
- h) proximity to hazardous areas including explosives establishments and oil and chemical refineries; and
- i) the ability to comply with the specific requirements of paragraph 5.2.3 in respect of flights near occupied dwellings and congested and sensitive areas.

### 5.1.3 **Obstruction Data**

The manual should stipulate that pilots are to be provided with a map of the working site and the area within 1500 m of it, to a scale of not less than 1:50,000. In addition, if there are hazards on or near the site, pilots should be given a map or a sketch map to a scale of not less than 1:25,000, on which the hazards are clearly marked. Unless a pilot has himself carried out the reconnaissance and preparation of the map he should also be given an oral briefing on all hazards.

### 5.1.4 **Chemicals**

The manual should stipulate that only chemicals having full or provisional approval or an experimental permit for use in aerial spraying should be applied (see Appendix B). The manual should also indicate who is responsible for providing information on chemicals to be used including the type of chemicals, handling precautions to be observed, quantity of chemical and total volume to be applied per acre and type of spray equipment to be used.

### 5.1.5 **Flight Planning**

- a) The manual should contain instructions on flight planning and pre-flight briefing requirements. In this context it is important to include instructions on how a pilot operating from a temporary base should obtain up-to-date aeronautical information. Pilots should be reminded of the obligation to obtain an air traffic clearance before flying within controlled airspace or within aerodrome traffic zones, and the need to observe procedures associated with Military Aerodrome Traffic Zones (MATZs). The manual should include a reference to the Low Level Civil Aircraft Notification Procedure (CANP) and to the necessity in the interests of safety for all flying at or below 1000 ft above ground level (agl) to be notified to the London Air Traffic Control Centre (Military) on (free phone) 0800 515544, or by fax on free number 0500 300 120. Also see the current AIC and/or CANP information. The manual should also refer to the desirability of notifying the aerodrome authority or Air Traffic Control (ATC) unit of flight at a working site which is within 5 nm of an aerodrome although outside the ATZ.
- b) The manual should contain instructions to the effect that on transit flights where the distance between the base aerodrome or forward operating base and the working site is not in excess of 15 nm, flights may be undertaken at a height of 150 ft agl subject to the following restrictions:
  - i) Difficult terrain is to be avoided. Transit flights at 150 ft agl are not permitted:
    - in northern England bounded by the parallels of latitude 54°30'N and 55°30'N and meridians of longitude 02°00'W and 03°30'W;
    - in Wales west of 03°15'W; and
    - in Scotland north of 56°30'N;
  - ii) Flights are not to be made within a minimum separation distance of 500 ft (measured horizontally or obliquely) from dwelling houses, schools, hospitals or other noise sensitive buildings and from public assembly areas in use or recreation areas in use. As far as possible flights should not be made over fields or farms containing livestock; and
  - iii) Flights are not to be made at the low-level transit height of 150 ft agl over motorways.

### 5.1.6 **Fuel and Oil**

The manual should include instructions on the minimum fuel and oil to be carried. It should specify the minimum fuel to be available on landing, making any necessary allowance for unusable fuel.

### 5.1.7 **Operating Weather Minima and Limitations**

The manual should include weather limits for:

- a) take-off and landing, i.e. cloud, visibility and crosswind component;
- b) en-route flight, cloud base and visibility; and
- c) flight at the working site, with special reference to the need for adequate visibility (not less than 2,000 metres in the case of aeroplanes) to ensure the ready sighting of obstructions, to the effect of turbulence, drift and wind shear, and to windspeed in relation to spray drift (see paragraph 5.2.5).

### 5.1.8 **Operating Limitations Contained in the Aerial Application Certificate**

Aerial Application Certificates include a number of conditions which circumscribe the type of flight to which the Certificate applies. The manual should refer to these conditions, a convenient method being to include a copy of the Certificate as an appendix.

### 5.1.9 **Essential Documentation**

The manual should contain a check-list of essential pre-flight documentation including those documents required to meet the express requirements of the ANO.

### 5.1.10 **Prior Notice of Operations**

The manual should describe company procedures for giving prior notification of and prior consultation on Aerial Application Operations, and should state who in the company is responsible for ensuring that notification/consultation has been carried out.

Those to whom prior **notification** is to be given include:

- a) the office of the Chief Constable of the area in which it is intended to operate;
- b) where the application is of a pesticide, the Chief Environmental Health Officer for the area;
- c) the occupants of buildings and the owners, or their agents, of livestock or crops on land within 25 m of the boundary of the area to be treated;
- d) any hospital, school or other institution, any part of the curtilage of which lies within 150 m of any potential flight path; and
- e) the reporting point of the local bee-keepers' spray warning scheme.

Prior **consultation** is to be carried out with:

- f) English Nature (or equivalent organisations in Scotland and Wales) if any part of land which is a Site of Special Scientific Interest, a National Nature Reserve, a Local Nature Reserve or a Marine Nature Reserve lies within a distance of 1500 m of the land to be treated; and
- g) the appropriate water authority if the application is to land adjacent to, or within, 250 m of water or if the application is for the purpose of controlling aquatic weeds or weeds on the banks of watercourses or lakes.

**NOTES:**

- 1 The prior notification or consultation should include the probable time of operation and should be made not less than 24 hours and (so far as is practicable) not more than 48 hours in advance of the operations in the case of (a), (b), (c) and (d), at least 48 hours in advance in the case of (e) and at least 72 hours in advance in the case of (f) and (g). Further, in the case of (g) the consent of the water authority must be obtained before aerial application if the purpose is to control aquatic weeds or weeds on the banks of watercourses or lakes.
- 2 The notification in (c) and (d) is to be in writing and include the name, address and telephone number of the operator, the product name, the date and time of application and an indication that details of the operation have been lodged with the Chief Environmental Health Officer and/or the police as appropriate.
- 3 Details of spray warning schemes for bee-keepers may be obtained from divisional offices of DEFRA or the Welsh Office Agriculture Department.
- 4 Arrangements should be made for the manning of the telephone referred to in (2) above to deal with inquiries from the public on the details of any particular operation.

**5.1.11 Warning Notices**

The manual should detail the company's procedures for provision and positioning of warning signs required to be placed within 60 m of the land to be treated so as to warn pedestrians, drivers and others of the activity.

**5.1.12 Ground Crews**

The manual should contain information on the requirement for composition, responsibilities and duties of ground crew, taking into account the location and circumstances of the operation. It should cover the following points:

- a) the need for ground staff at the working site for operational purposes or to warn and inform members of the public. Completed copies of the written prior notification referred to in Note (2) paragraph 5.1.10 above should be available;
- b) whether the pilot or some other person is to be the leader (if the leader is not the pilot the instructions must make it clear that in matters of aviation safety the pilot has overriding authority);
- c) verbal or written briefings to be given to each team member;
- d) company policy on the use of maps, job sheets etc. (see also paragraph 5.1.3); and
- e) instructions on rescue, first aid and other post-crash actions, especially warning of the presence of toxic-chemicals.

**5.2 Execution****5.2.1 Flight Patterns**

Instructions should be included to describe the standard flight patterns to be used and specifying heights at which to fly for each type of application. They should contain a special warning that aircraft must always be able to alight without danger to persons and property in the event of engine failure and instructions that aircraft should fly no lower than is necessary when manoeuvring outside the working area.

### 5.2.2 **Obstructions**

Advice should be given on flight near to obstructions or in hilly terrain and should cover factors such as visibility (including sun and rain effects) turbulence, wind shear, the type and number of obstructions and topography. Advice should also be given on flight close to or underneath cables.

### 5.2.3 **Minimum Clearances from Buildings etc.**

The manual should contain a requirement that flight directly over occupied dwellings, houses and their gardens and other buildings which the pilot knows, or ought reasonably to know, to be occupied shall not be made at a height below 200 ft. Pilots should be given instructions on:

- a) determination of the minimum horizontal distance to be maintained, according to circumstances, from such dwellings, houses and their gardens or buildings when flying below 200 ft;
- b) the need to avoid flying directly over, even at heights in excess of 200 ft, especially sensitive areas such as hospitals, schools, children's playgrounds, stables, other livestock buildings, etc., and the horizontal distance to be maintained, according to circumstances, from such areas; and
- c) the minimum horizontal distance to be maintained, according to circumstances, from congested areas when flying below 1000 ft.

**NOTE:** The minimum horizontal distance acceptable from dwellings, houses and gardens referred to in (a) above and from sensitive and congested areas referred to in (b) and (c) above is 60 m. However, with the express permission of the occupier, the minimum horizontal distance in respect of (a) may be 30 m.

### 5.2.4 **Minimum Clearance from Roads**

Instructions should be given concerning flight in the vicinity of motorways and main roads, and should stress that flight paths are to be chosen so as to minimise the risk of distracting drivers. The manual should stipulate that flight below 250 ft over motorways and 100 ft over main roads is prohibited.

### 5.2.5 **Restriction of Chemicals to the Target Areas**

The manual must include a statement that application shall be confined to the area to be treated. In addition, it should include detailed instructions designed to bring about this objective with particular emphasis being given to material on non-contamination of:

- a) persons, vehicles or occupied dwellings;
- b) livestock or beehives;
- c) water, e.g. reservoirs, waterways, irrigation ponds, fish farms;
- d) vegetables and crops (other than those being treated), especially if they appear likely to be harvested shortly;
- e) crops in flower where bees may be foraging; and
- f) shelter belts, hedges, small woods and other valued vegetation.

**NOTE:** The following points should be included in the instructions:

- 1 A maximum windspeed of 10 knots is permitted at spraying height unless a different limit is specified in the approval given for a particular pesticide. It is also helpful to include information on the effect of

droplet size, aircraft height and windspeed on spray drift (a nomogram is given in Appendix D);

- 2 In cases where wind conditions are problematical, checking spraydrift from a ground marker by carrying out an operation at least one swathe in from the downwind edge of the field is desirable;
- 3 The need to keep a check on changes in meteorological conditions;
- 4 The need for special care if there are schools, hospitals, children's playgrounds or other sensitive areas nearby.

### 5.2.6 **Ground Crews**

Company instructions to ground crews covering their responsibilities and duties should specify:

- a) the responsibilities and duties of each member of the crew;
- b) advice on marking the work area for flight track guidance and, where applicable, for giving obstruction avoidance guidance to the pilot;
- c) a detailed description of the visual or radio signals to be used between the pilot and ground crew including emergency signals for the aircraft to stop spraying;
- d) instructions on safeguards to prevent members of the public or livestock approaching too close to the target area including those using public roads and footpaths;
- e) precautions to be taken by ground crew to avoid being contaminated by chemicals;
- f) measures to ensure that unauthorised persons do not have access to aircraft, equipment or materials at landing sites; and
- g) measures to prevent injury from propellers or rotors.

### 5.2.7 **Refuelling and Reloading**

Material on duties to be performed and precautions to be observed by ground crew at temporary landing strips should be included in the manual and should cover the use of special loading equipment. The manual should also contain instructions on refuelling aircraft (see CAP 748 - Aircraft Fuelling and Fuel Installation Management (First Edition - July 2004) (N.B. CAP 748 has replaced CAP 74 and CAP 434).), including precautions for the detection of contaminated fuel. Refuelling hoses (including so called "conductive" hoses) are not considered to be suitable substitutes for dedicated clips and wires designed to provide effective bonding. Much of the material concerning chemical safety will be based on requirements in paragraph 6 of this Chapter. Additional guidance may however be necessary to cover the use of mechanical loaders.

### 5.2.8 **Emergencies and Mishaps**

The manual should contain comprehensive instructions on action to be taken in the event of flight and crash emergencies or mishaps with chemicals such as dumping and accidental spraying. Matters to be covered should include:

- a) procedures for emergency dumping at any time during flight;
- b) crash/rescue procedures and provision of rescue, fire-fighting and first aid equipment at the base airfield, the temporary operating strip and the working area. First Aid Kits should be provided in the aircraft and in ground support vehicles as well as at the base airfield. Appendix E sets out basic minimum scales of crash/rescue equipment and contents of First Aid Kits;

- c) arrangements for emergency communication with the Police, Fire and Ambulance services. The information to be passed must include details of the material carried and a specific warning if the material is in any way toxic;
- d) methods of isolating and neutralising poisonous chemicals and avoiding possible dangers from their toxic fumes when dumped from the air, spilled during ground handling or in an aircraft crash. Procedures should also be included to cover the case of the pilot being contaminated during flight;
- e) notes on First Aid to be applied in the event of suspected poisoning. Attention should be drawn to the need for compliance with any specific advice on medical treatment given on product labels;
- f) a list, with telephone numbers, of the environmental health officers, local doctors, hospitals with accident and emergency departments and DEFRA and HSE Divisional Offices in the normal operating areas and instructions for compiling similar lists in other cases. A procedure should be included for alerting the appropriate authorities in the event of mishap and for informing them of the substance concerned in the incident. The appropriate DEFRA and HSE Divisional Office should also be informed; and
- g) a procedure for informing farmers, local Environmental Health Officers and water authorities (as appropriate) in the event of crops, ponds or reservoirs being accidentally sprayed. The appropriate DEFRA Divisional Office should also be informed.

Incidents and accidents should also be reported to CAA's Flight Operations Inspectorate (General Aviation) section.

### 5.3 **Post Flight**

#### 5.3.1 **Operational Records**

The manual should include instructions that the following operational information should be recorded and retained for at least three years after the flight(s) in question:

- a) task - nature, place and date to include a copy of any sketch map provided in accordance with requirements (see paragraph 5.1.3);
- b) aircraft registration and name and permanent address of the pilot;
- c) substance, quantities used, and application details;
- d) flight times;
- e) weather, including windspeed and direction;
- f) names and flight details of any passengers flown for reconnaissance purposes; and
- g) remarks - including a record of any untoward occurrences affecting flight safety or the safety of persons or property on the ground.

#### 5.3.2 **Aircraft Unloading and Decontamination**

The manual should make it clear that chemicals should not be left in aircraft after operations have ceased. Instructions should indicate who is responsible for unloading and when, how and by whom aircraft are to be decontaminated.

## 5.4 Pilot Fatigue and Personal Flight Safety Precautions

### 5.4.1 Pilot Fatigue

The manual should include the Company's rules and limits on flight times, flying duty periods and rest periods for pilots, and should indicate the person responsible for keeping the necessary records, and the form in which they should be kept. Special provision should be made for keeping records relating to pilots operating away from their main base.

### 5.4.2 Fitness for Flight

The manual should remind pilots of their personal responsibilities for not flying when unfit, including temporary unfitness caused by fatigue. Clear guidance should be given that pilots should not fly for at least eight hours after taking small amounts of alcohol and proportionally longer if larger amounts are consumed but in general, pilots should not drink alcohol for at least 24 hours before flying and are to obtain advice on precautions to be taken when undergoing medication.

The Railways and Transport Safety Act 2003 Part 5 is the UK Legislation that extends testing for alcohol and drugs to aircrew, licensed engineers and Air Traffic Controllers. The permissible limits vary depending upon the role of the person but, in general, they are lower than those applicable to the driving of motor vehicles.

**NOTE:** Aeronautical Information Circulars issued from time to time on these subjects may form a useful basis for instructions to be included in the manual. Operators encountering any special difficulty in framing their instructions may call upon the CAA's Medical Branch for advice (Contact details can be found in Appendix F to this document). AIC 99/2004 (Pink 72) gives guidance on medication, alcohol and flying and is available at [www.ais.org.uk/aes/pubs/aip/pdf/aic/4P072.PDF](http://www.ais.org.uk/aes/pubs/aip/pdf/aic/4P072.PDF)

### 5.4.3 Pilot Protection

5.4.3.1 The manual should specify measures to protect pilots involved in aircraft accidents. It should cover the following points:

- a) A requirement that the safety harness is worn at all times during flight and a protective helmet is worn during low level operations and/or underslung load operations (In the Air Accidents Investigation Branch (AAIB) report following the investigation into a recent accident involving the carriage of underslung loads by a UK registered helicopter, the safety benefit of flight crew wearing protective flying helmets was highlighted. The CAA, in consultation with the British Helicopter Advisory Board (BHAB), agrees that the wearing of these protective flying helmets by flight crew members would provide them with an additional level of safety and protection, but feels that this should be applicable to all crew members carried in the aircraft during underslung load operations. FODCOM 11/2004, available at [www.caa.co.uk/FODCOM1104](http://www.caa.co.uk/FODCOM1104), formally makes this recommendation);
- b) Pilots should be required to wear outer garments designed to give maximum body cover, including long sleeves and gloves. Clothes should be made of flame retardent material where possible. Materials which melt when exposed to flame should never be used; and
- c) Advice should be given on the wearing of approved dust masks and goggles where there is a risk of dust particles or spray mist entering the cockpit either during flight or loading.

- 5.4.3.2 Consideration should be given to the wearing of life jackets if operations involving other than very brief periods of over-water flight beyond autorotative distance from land are contemplated.

## **6 Chemicals - Hazards and Precautions**

### **6.1 General**

Although the chemicals used in Aerial Application Operations have been approved for such use under the Control of Pesticides Regulations 1986, and whilst some chemicals offer a greater potential hazard than others, all chemicals should be handled with care. Some chemicals may damage susceptible crops while others may harm unprotected persons. Precautions need to be taken to minimise the risk of accidental spraying and these are described elsewhere in this document (paragraph 5). This Section deals only with precautions aimed at the protection of ground operators and pilots.

### **6.2 Description of Health Hazards**

The manual should contain a general explanation of the hazard to health associated with absorption of toxic chemicals into the body. The material should cover:

- a) methods of absorption, including inhalation, absorption through the skin and ingestion;
- b) the effects of poisoning, in particular those of repeated absorption of chemicals;
- c) descriptions of the symptoms of poisoning associated with each generic group. It is particularly important that the organophosphorus group of insecticides should be covered as they may have an effect on vision, and even with a relatively mild degree of poisoning may produce deterioration in distance judgement, depth perception and visual acuity generally. Pilots especially should be warned against contact with chemicals in this group. Warnings should also be given against contact with products which may cause eye irritation as these may have a consequential effect on vision; and
- d) the additional risks associated with handling and mixing concentrates.

### **6.3 Personal Precautions - Ground Crew**

The manual should include advice on precautions to be observed, including the use of PPE, when handling chemicals and general guidance covering personal cleanliness, the decontamination of clothing and elementary precautions to be taken when eating, drinking or smoking after contact with chemicals.

### **6.4 Personal Precautions - Pilots**

Instructions concerning pilots should prohibit handling of concentrated chemicals and their containers, mixing chemicals and transferring them to and from aircraft. Precautions against accidental contamination by agricultural chemicals should be described.

### **6.5 Monitoring of Staff Health**

Operators should include in their manual company rules and arrangements for adequate checks on the effect of exposure to chemicals on staff, especially pilots. The rules should include instructions for the treatment of staff thought to be affected. In the case of pilots it is recommended that statutory medicals also include tests for accumulation of toxic chemicals. Advice may be obtained from the Health and Safety

Executive in respect of ground staff and from the CAA's Medical Branch in the case of pilots (contact details can be found in Appendix F to this document).

#### 6.6 **Adherence to Manufacturers' Instructions**

With regard to the storage, transportation, loading and use of chemicals, the manual must make it clear that the staff concerned are to follow strictly the instructions on the container label. The manual should state that aircraft should transport chemicals only in the form in which they are permitted to be applied from the air. The manual should also include instructions on the positioning of appropriate hazards labels on aircraft.

#### 6.7 **Aircraft Loading**

The manual should describe procedures to be used and safety measures to be taken when loading and unloading aircraft. The instructions should include precautions to be taken to safeguard persons from poisonous substances, both persons and aircraft from high risk fire materials, and aircraft from corrosive effects.

#### 6.8 **Disposal of Chemicals**

The manual should set out arrangements for the safe disposal of chemicals and containers in accordance with the DEFRA Code of Practice for the Safe Use of Pesticides on Farms and Holdings.

## Chapter 3 Company Administration

### 1 General

1.1 The CAA grants an Aerial Application Certificate only when it is satisfied that the applicant is a 'fit person' and is competent, having regard to his equipment, organisation, and staffing to secure the safe operation of aircraft on flights covered by the certificate. The operator must have operational control of at least one aircraft with an appropriate Certificate of Airworthiness.

1.2 The aim of this chapter is to give operators guidance on the CAA's requirements with regard to company facilities, organisation and personnel.

### 2 Facilities

#### 2.1 Accommodation

Office space at the main operating base must be sufficient to provide a suitable working environment for the staff employed. Adequate facilities must exist for operational planning to be carried out and for the storage and display of essential documents and records.

#### 2.2 Reference Documents

At the main operating base the operator should maintain an adequate library of maps, aeronautical charts, manuals and other documents needed for reference and planning purposes. A suggested bibliography of useful documents is at Appendix C. The company Operations Manual is to contain a bibliography of actual documents held. The CAA offers a free amendment notification service for all CAA documents which can be accessed from [www.caa.co.uk/publications](http://www.caa.co.uk/publications).

#### 2.3 Personnel Records

Records should be kept for each pilot showing the dates on which licences, ratings, certificates etc. are due for renewal. A system for ensuring that pilots are not rostered with out-of-date qualifications must be specified within the company Operations Manual together with the name of the person responsible for the maintenance of that system. Records of each individual pilot's flight times, flying duty periods, and rest periods should be properly kept to ensure compliance with mandatory and company requirements in respect of fatigue of flight crew. A system should be established to ensure that pilots do not infringe the prescribed limitations especially when operating away from the main base.

#### 2.4 Occurrence Reporting

Although Occurrence Reporting is not mandatory in respect of aircraft employed in agricultural aviation it is essential that reports of the circumstances of an incident with safety implications should be made generally known within an operator's organisation and a system should be established to achieve this end. Where an incident is thought to have significant implications for other operators, full use should be made of the facilities provided for the exchange of information through the CAA's Safety Investigation and Data Department and the General Aviation Safety Council. CAP 382 - The Mandatory Occurrence Reporting Scheme - Information and Guidance (available from [www.caa.co.uk/CAP382](http://www.caa.co.uk/CAP382)) gives the details of the MOR scheme.

### **3 Company Structure**

#### **3.1 Management**

A sound and effective management structure is essential and it is particularly important that the operational management should have proper status in the overall company organisation and be in suitably experienced hands. The duties and responsibilities of managers must be clearly defined and chains of responsibility established. Active pilots in the management structure should be afforded facilities to discharge both management and flying functions to proper effect.

#### **3.2 Key Personnel**

The names of the persons holding the positions of Operations Manager and Chief Pilot are required to be listed in the Aerial Application Manual. It is a condition of the Aerial Application Certificate that the CAA shall be given notice of any change in such appointments or functions.

#### **3.3 Chief Pilot**

The holder of this appointment must:

- a) be the holder of a current professional pilot's licence for aeroplanes and/or helicopters (as appropriate) with aircraft ratings for each type to be flown on aerial application;
- b) have at least 500 hours as pilot-in-command on aerial application work extending over at least two seasons, preferably in the United Kingdom;
- c) preferably have a Type Rating Examiner's approval for the aircraft types operated by the company;
- d) meet the operator's recency/competency requirements as laid down in the training syllabus, which should embrace the statutory requirements;
- e) be responsible for pilot training and flight checking;
- f) be responsible to the operations manager for:
  - i) the proper conduct of flight operations;
  - ii) the competence of all pilots in their flying duties; and
  - iii) the observance of personal chemical safety precautions by pilots; and
- g) hold a Certificate of Competence in the Use of Pesticides issued under the Control of Pesticide Regulations 1986.

#### **3.4 Operations Manager**

This post should be filled by a person with wide experience in agricultural operations. He should be responsible for the overall supervision of all aspects of flight operations and be fully conversant with the contents of the operating company's Aerial Application Manual. It is necessary that he should:

- a) have extensive experience of agricultural application of substances, including poisonous or potentially poisonous materials, should have experience of the aerial application of such substances; and hold a Certificate of Competence in the Use of Pesticides issued under the Control of Pesticide Regulations 1986;
- b) be thoroughly familiar with the provision of current legislation relevant to the use of chemicals for aerial application;

- c) have an adequate knowledge of the following:
- i) the crops to be treated;
  - ii) susceptible crops, weeds, crop pests and diseases;
  - iii) the chemicals to be used and their potential effect on humans, livestock, domestic animals, water supplies, fisheries, wildlife and bees;
  - iv) treatment to be given to persons, animals, etc. in the case of inadvertent contact with chemical substances injurious to health;
  - v) storage, handling, transporting and disposal of the relevant chemicals and their containers and of the maintenance of chemical ground equipment;
  - vi) care, storage and cleaning of protective clothing;
  - vii) for the purposes of crash/rescue, the operation of door, window and harness release mechanisms on the aircraft types currently in use. He should also be familiar with the use of the fire extinguishers carried on the company's aircraft;
  - viii) operation of ground crash/fire equipment provided at temporary bases or working sites;
  - ix) the flight safety criteria governing the selection of landing strips and the acceptability and marking of working sites especially the operator's minima/maxima figures covered in Chapter 2, paragraph 5.1.7;
  - x) factors affecting spray drift including the use of nomograms (see Appendix D) or other methods of calculating the drift; and
  - xi) visual or radio signals concerning aircraft track guidance, obstruction avoidance and spray control;
- d) be responsible for:
- i) the training, briefing and supervision of the operational ground staff associated with the handling and application of chemicals, and arranging for such staff to obtain Certificates of Competence under the Control of Pesticide Regulations 1986;
  - ii) operational procedures appropriate to his qualifications and delegated responsibilities subject to the pilot's overriding decision;
  - iii) all matters concerned with delivery, storage, and safe disposal of the chemicals and their containers, the cleaning up of contaminated sites and loading and unloading chemicals into and from aircraft (except that he may not assume responsibility for aircraft weight and Centre of Gravity control);
  - iv) all chemical safety measures as they affect the operational ground staff including provision of personal washing and cleaning facilities;
  - v) advising and training pilots on chemical safety;
  - vi) maintenance of the chemical mixing and loading equipment;
  - vii) advising on the calibration and setting of aircraft application gear;
  - viii) advising on the possible hazard (from the chemicals to be applied) to persons, property, wildlife, other animals, fish, bees, non-target crops and vegetation and the possibility of pollution of water and food;
  - ix) alerting the appropriate public authorities in case of spillage on the ground, or aerial accident involving discharge of chemicals (see Chapter 2, paragraph 5.2.8); and
  - x) carrying out on behalf of the company the procedures for notification of operations contained in the operator's aerial application manual.

### 3.5 **Other Pilots**

All pilots engaging in aerial application operations must:

- a) hold a current professional pilot's licence, with the appropriate ratings and recency;
- b) hold a Certificate of Competency in the Use of Pesticides issued under the Control of Pesticide Regulations 1986; and
- c) have experience in aerial application work.

The experience required should include at least 25 hours flight training/supervised operations in the United Kingdom, although this figure may be reduced by agreement with the CAA if a pilot has other relevant experience or has flown extensively on aerial application operations overseas. An appropriate amount of training or supervised flying should be specified for pilots who have not flown on agricultural work in the United Kingdom or are not in recent practice.

### 3.6 **Pilots with Foreign Licences**

A pilot who holds a licence issued by a State other than the United Kingdom must also obtain a Certificate of Validation from the CAA's Directorate of Flight Crew Licensing before he can undertake aerial application work in the United Kingdom. As a condition of the validation the CAA will normally require a specified amount of training/supervised operations in the United Kingdom if the pilot has no previous experience of operating in British conditions. A Certificate of Competence issued under the Control of Pesticide Regulations 1986 is also required.

### 3.7 **Training Syllabi**

Training syllabi for both pilots and ground operating staff are contained in Chapter 4.

## Chapter 4 Training

### 1 Pilots

1.1 If a company undertakes training in aerial application, it should set out the method and content of such training in a training manual, which may form part of the Aerial Application Manual. It should include the minimum qualifications necessary before a pilot may undertake the training, and also indicate the minimum training needed by an experienced agricultural pilot who is not familiar with United Kingdom conditions.

### 1.2 Syllabi

The manual should set out syllabi appropriate to pilots requiring initial, familiarisation or refresher training as described above. It should include, as relevant to the pilot's qualifications and experience:

- a) aircraft type conversion, to include all items contained in Chapter 2, paragraph 3 and relevant items of Chapter 2, paragraph 4;
- b) low and ultra-low flying techniques, with special reference to sighting and avoiding obstacles, flight in hilly terrain, effect of wind and wind gradient and their interaction with hills, trees and buildings and avoidance of 'g'-induced stalls. The limits to which a pilot may be authorised to fly during training should be commensurate with his experience and abilities, and may be progressively reduced as the pilot demonstrates his competence to fly to them. Routes or areas to be flown over should be specified in a briefing before each flight. The routes and areas should be carefully selected to ensure that low flying does not cause annoyance or endanger people, livestock, property, etc;
- c) rough and short field take-off and landing techniques;
- d) spraying and spreading techniques, including spray drift control;
- e) design and operation of spraying and spreading gear, including load dump control;
- f) assessment, both from the ground and from the air, of proposed working sites taking into account their topography and associated flight hazards, the nearness of persons, property, wildlife, bees, animals, water supplies, crops and vegetation, fisheries and fish farms;
- g) low-level meteorology;
- h) criteria for choice of temporary landing sites;
- i) types of chemical used, their potential effect on human beings and especially their potential effects on a pilot's flying ability, prophylactic and first aid treatments, and effects on vegetation and animal life;
- j) visual and radio signals used in association with aircraft operations;
- k) emergency procedures;
- l) operating procedures contained in the aerial application manual; and
- m) company rules in respect of pilot fatigue and personal flight safety precautions.

## 2 Ground Operating Staff

2.1 Ground operating staff such as fieldsmen, markers, loaders etc. should not be employed on unsupervised work until the operator (or a person nominated by him (e.g. the Operations Manager) has satisfied himself that they have been suitably trained. Some staff will require Certificates of Competence issued under the Control of Pesticides Regulations 1986.

### 2.2 Syllabus

The training syllabus for such staff should cover both chemical safety and the procedures to be followed when working with aircraft. The scope of the syllabus and the depth of instruction will depend on the nature of the duties involved, but the syllabus would normally be expected to cover the following:

- a) official promulgated requirements governing the handling and use of chemicals;
- b) the use of chemicals in agriculture, and the potential hazard from such chemicals to human beings, livestock, domestic animals, susceptible crops, water supplies, fisheries, wildlife, bees, etc.;
- c) An understanding of the factors affecting spray drift;
- d) A knowledge of first aid, including antidotes to the chemicals employed in agricultural operations;
- e) the precautions to be taken in the storage, handling, transporting and disposal of chemicals and their containers and of any associated equipment. Also the use, care, storage and cleaning of protective clothing;
- f) basic knowledge of aircraft operations with special reference to the problems associated with the use of temporary landing strips and the precautions to be taken when refuelling and reloading;
- g) for crash/rescue purposes, the operations of door, window and harness release mechanisms on the aircraft types used, and the operation of fire-fighting and rescue equipment; and
- h) visual and (where applicable) radio signals and markings used in association with aircraft operations.

## Chapter 5 Safety Management Systems

### References and Abbreviations

ANO	Air Navigation Order 2005 (contained within CAP 393)
CAA website	<a href="http://www.caa.co.uk">http://www.caa.co.uk</a>
HSE	Health and Safety Executive
RA	Risk Assessment
SMS	Safety Management System

### 1 General

- 1.1 The use of a Safety Management System (SMS) is not mandatory for AAC Operators but it is highly recommended by the CAA. The completion of Risk Assessments is, however, mandated by the Health and Safety Executive Management Regulations (1999).

### 2 Safety Management Checklist

- 2.1 The use of checklists is recommended. These should be produced locally and be tailored to the nature and scale of individual operations. The following checklists are only intended as a guide and not as a definitive set of questions.
- 2.2 The idea of a checklist system is to allow Operators to individually assess whether their organisation has a positive safety management culture. Affirmative answers indicate a positive situation. Negative responses always suggest that corrective action is needed. During audits the CAA Flight Standards Officers will discuss SMS with operators. Their discussions will be based around any checklists and validation questions. 'Validation Questions' provide a suggested method of how the effectiveness of a Safety Management culture can be internally assessed.

**NOTE:** Not all questions will apply to all organisations.

**Table 1**

<b>CHECKLIST</b>	<b>VALIDATION QUESTIONS</b>
<b>POLICY/CULTURE</b>	<b>POLICY/CULTURE</b>
Is the need for a Safety Management System (SMS) accepted as essential by all?	Ask company personnel
Is safety accepted as the highest priority by all?	Ask company personnel
Is there a safety policy statement, made by an accountable manager, in operating manuals?	Statement seen at audit
Are safety responsibilities detailed?	Responsibility breakdown seen at audit
Are all personnel aware of their responsibilities?	Ask company personnel
Are safety procedures documented?	Records seen at audit
Is it clearly stated that safety issues must be resolved immediately in priority order?	Checked
Is there a procedure for resolving safety issues?	Procedure demonstrated and exemplified
Is SMS regularly internally audited/checked?	Procedure demonstrated and exemplified
Is there a robust, mandatory, internal occurrence reporting system? (In addition to MOR System)	Procedure demonstrated and exemplified
Are personnel encouraged to contribute safety ideas?	Evidence of action
Is safety literature widely available to all?	Evidence seen at audit
Is there a safety training programme for new personnel?	Checked
Are training responsibilities clear?	Checked
Are staff safety training needs regularly reviewed?	Check records

**Table 2**

<b>SAFETY STANDARDS</b>	<b>SAFETY STANDARDS</b>
Are safety standards clearly defined?	Read definitions
Are safety standards reflected in operating procedures?	Check examples
Is there a procedure for amending operating procedures to reflect changing safety procedures?	Procedure demonstrated and exemplified
Is there a procedure for ensuring amendments are incorporated?	Procedure demonstrated and exemplified
Is there a procedure for ensuring amendments are read by personnel?	Ask company personnel
Are operations and procedures regularly reviewed in relation to risk/hazard?	Review seen at audit
Is the introduction of change accepted as a risk/hazard?	Ask company personnel
Are risk/hazards considered before changes are implemented?	Ask company personnel
Is there a process for reviewing the impact of environmental/work-place change on safety?	Procedure demonstrated and exemplified
Is risk/hazard management understood?	Ask company personnel
Is there a procedure for managing risks/hazards?	Procedure demonstrated and exemplified - risk assessment process
Are the limits for safe operation defined?	Seen at audit
Are the limits for safe operation accepted by all?	Ask company personnel
Are the limits for safe operation adhered to by all?	Ask company personnel
Is the safety reporting system used?	Check records
Are safety reports recorded?	Check records
Is there a procedure to ensure action is taken as a result of safety reports?	Procedure demonstrated and exemplified
Is the competence and performance of personnel responsible for implementing safety measures checked?	Procedure demonstrated and exemplified

### 3 SMS Risk Assessment Matrix

#### 3.1 What is a Risk Assessment (RA)?

A RA is a careful examination of what, in the company's operation, could cause harm to people, so that it can be weighed up whether enough precautions have been taken or whether more should be done to prevent harm. This assessment will be subjective and should reflect the individual nature of each operation, covering both ground and air risks.

#### 3.2 Core definitions for RA

**Hazard** Anything that can cause harm.

**Risk** The chance, high or low, that someone or something may be harmed by a hazard.

3.3 The detailed RA should not be listed in the Operations Manual, as this would require an amendment to the Operations Manual for every change to the RA. The RA should be in a separate document, which is referenced within the Operations Manual. This simple procedure should suit the needs of most AAC Operators.

3.4 Someone who is aware of the risks and who will use sound judgement in the preparation of the assessment must undertake the assessment process associated with the activity being assessed. The assessor should also be aware that, in the event of a subsequent accident or incident, their risk assessment process may be challenged.

Risk = The Severity of the Hazard x The Likelihood of Occurrence

### 4 Types of Hazard

The following list provides examples of AAC hazards. It is not exhaustive but is merely an example of the types of hazard that should be considered:

Wire Strike;  
Unexpected/Forecast Change in Weather;  
Fire in the Air;  
Landing Resulting in Third Party Casualties or Damage;  
Landing in Unsuitable Terrain;  
Injuries to passengers on landing;  
Fuel Exhaustion;  
Ditching;  
Pilot Incapacitation;  
Structural Failure;  
Fire on the Ground;  
Contaminated Fuel;  
Loose Articles in Cockpit; and  
Chemical contamination of personnel.

### 5 Assessment

Assessment of likelihood and severity of hazard is subjective and is based on personal experience of the activity under assessment or statistical evidence when available.

## 6 Severity of Hazard

The severity of a hazard should be assessed under the headings given in the table below, depending on the possible outcome should the hazard become a reality, and allocated a score:

**Table 3**

<b>Trivial</b>	<b>Minor Injury</b>	<b>Serious Injury</b>	<b>Single Fatality</b>	<b>Multiple Fatality</b>
1	2	3	4	5

## 7 Likelihood of Occurrence

The likelihood of the hazard occurring should be assessed against the following headings and again allocated a score:

**Table 4**

<b>Highly Unlikely</b>	<b>Possible</b>	<b>Quite Possible</b>	<b>Likely</b>	<b>Highly Likely</b>
1	2	3	4	5

## 8 Matrix Production

Once Severity and Likelihood levels have been decided they should be entered in the matrix.

**Table 5**

Hazard	Severity	Likelihood	Rating	Mitigation	M/Factor (Likelihood reduced to:)	Final Rating
Wire Strike	3	3	9	Highlight wires on charts. Brief passengers to assist with lookout.	2	6
Fire in the air	4	2	8	Annual maintenance. Fire extinguisher on board. Suitable clothing (inc. gloves for pilots).	1	4
Chemical contamination of personnel	3	4	12	Training. Procedures in Ops Manual. Use of PPE. First Aid kit and eyewash.	2	6

**NOTE:** The content of the above table is for example only and does not imply or infer a risk level.

## 9 Risk Rating

9.1 The Risk Rating is the figure obtained when the Severity assessment is multiplied by the Likelihood assessment. A resultant figure of less than 6 indicates a low risk; a figure between 6 and 15 a medium risk; and a figure greater than 15 a high risk.

9.2 High risk ratings should generally be deemed unacceptable and mitigation sought to reduce the rating to an acceptable level, e.g. medium or better.

## 10 Mitigation

10.1 Mitigation action should be taken whenever possible to reduce risk ratings even when the risk is low.

## 11 Risk Assessment Audit Trail

- 11.1 Organisations should record and retain the details of their risk assessment process.

## 12 Why SMS and RA?

### 12.1 SMS

The CAA publishes a short SMS guidance leaflet available at [www.caa.co.uk/smsguidanceleaflet](http://www.caa.co.uk/smsguidanceleaflet). A more comprehensive document (CAP 712, SMS for Commercial Air Transport Operations) can be found from the website at [www.caa.co.uk/CAP712](http://www.caa.co.uk/CAP712). This CAP contains considerably more detail than most AAC operators will require. Any Safety Management Policy/System used by a Company should be stated in the Company Operations Manual. Companies that also hold an AOC may already have a SMS to meet the requirements of CAP 393, Section 1, Schedule 9. It is recommended that this SMS is also applied to the AAC operations.

### 12.2 RA

The following quotation from the Health and Safety Executive (HSE) may be of interest to those who question the value of RA:

**“The main requirement on employers is to carry out a risk assessment”**

(Health and Safety Regulation - A Short Guide - HSC13 rev 1)

## 13 Where can I find guidance on RA?

- 13.1 This Chapter contains sufficient information on the use of RA for most Operators. Additional guidance is readily available from the Health and Safety Executive website as follows:

5 steps to RA <http://www.hse.gov.uk/pubns/indg163.pdf>

Additional guidance on RA <http://www.hse.gov.uk/pubns/indg218.pdf>

Health and Safety Regulation: A Short Guide (as referred to in paragraph RA above)  
<http://www.hse.gov.uk/pubns/hsc13.pdf>

More detailed guidance, for those who may require it, on specific areas is available as follows:

Driving at Work <http://www.hse.gov.uk/pubns/indg382.pdf>

Manual Handling <http://www.hse.gov.uk/pubns/indg143.pdf>

Manual Handling Assessment Charts  
<http://www.hse.gov.uk/pubns/indg383.pdf>

- 13.2 An integral part of SMS, and any associated RA, is that the process is not a "one shot" event but is reviewed at suitable intervals. These intervals must be stated in the Operations Manual and the whole process adequately documented. One system would be to have a "start-of-season" meeting where SMS actions are undertaken and the RA reviewed. Further RA action during the season would be required if, for example, there were significant changes to company personnel, practices or equipment. The use of significantly larger helicopters, for example, should trigger a review.

## **14 What needs to be in my Operations Manual?**

- 14.1 This CAP requires systems and procedures to be in place for the monitoring and control of certain activities. These need to be stated within the Operations Manual with a nominated person who is responsible for those systems and procedures.

## **15 What types of systems or procedures are acceptable to the CAA?**

- 15.1 The types of systems and monitoring procedures must be adequate, taking into account the nature and scale of each operation. An acceptable system is therefore one that is effective for a particular operator and may range from a wall chart, a desk diary, a commercial piece of software or a bespoke electronic system.
- 15.2 Effectiveness is the keyword.

## **16 How can I be notified of amendments to CAA documents?**

- 16.1 Operators may register, free of charge, with the "publications" section of the CAA website to receive notification of amendments and new issues of all CAA electronic documents.

## **17 Conclusions**

- 17.1 Operators should only put procedures and systems in place that they then actually use. It is not adequate to write a "gold-plated" series of systems that are then not used and adequately documented.
- 17.2 For most operators there should be enough guidance contained within this CAP to produce an SMS with a RA acceptable to the CAA. Where further guidance is required this is available from the links given in this chapter. Advice is also freely available from the CAA Flight Operations Inspectorate (General Aviation) (Contact details can be found in Appendix F).
- 17.3 The Safety Management Policy/Systems should be placed in the Company Operations Manual.
- 17.4 The RA and any detailed check lists should not be in the Operations Manual but should be listed in a separate document. The Operations Manual should make reference to this additional document.
- 17.5 RAs are mandatory and if the operation has more than 5 employees they must be written down. Best practice is to write a RA even if this is not a legal requirement.
- 17.6 RAs should be reviewed regularly as required.
- 17.7 A suitably qualified and experienced person should carry out the RA.
- 17.8 The use of SMS is not mandatory but is strongly recommended as part of a process of mitigating both personal and business risks.

## Appendix A Aerial Application Certificate

Certificate No Xx/01

Page 1 of 3

### **UNITED KINGDOM CIVIL AVIATION CAA**

#### **AERIAL APPLICATION CERTIFICATE**

1. Pursuant to Article 68 of the Air Navigation Order 2005, as amended, the Civil Aviation CAA hereby grants, subject to the conditions specified in Schedule 2 hereto, an aerial application certificate to:

Company Name

T/A Name

being satisfied that the said person is competent to secure the safe operation of the aircraft specified in Schedule 1 hereto on flights for the purpose of the dropping of articles for the purposes of agriculture, horticulture or forestry and for training for the dropping of articles for any such purposes.

2. Pursuant to Article 70 of the said Order and Regulation 4(i)(a) of the Air Navigation (Dangerous Goods) Regulations 2002 the CAA hereby gives permission for dangerous goods to be carried in the said aircraft.
3. This certificate shall not be valid during the continuance of any breach of any condition thereof: provided that a breach of a condition which relates to only a particular aircraft shall not render this certificate invalid in respect of any other aircraft.
4. This certificate shall remain in force unless previously revoked, from the date hereof until:

xx xxx xxxx

Signed this xx day of xxx xxxx

for the Civil Aviation Authority

Certificate No xx/01

Page 2 of 3

## AERIAL APPLICATION CERTIFICATE

**SCHEDULE 1      AIRCRAFT TYPE**

G-XXXX  
END OF SCHEDULE

Certificate No xx/01

Page 3 of 3

## AERIAL APPLICATION CERTIFICATE

## SCHEDULE 2 CONDITIONS

1. This certificate shall be invalid during any period exceeding 28 days in which the holder of the certificate is in default in payment of any of the charges payable in respect thereof.
2. Any person authorised by the CAA in that regard shall have access to any premises in the occupation or control of the holder of the certificate for the purpose of examining the premises and any document, equipment, tools, material or other things of whatsoever nature, relating to the operation of aircraft thereunder, kept or used or intended to be used in connection with the operation of the aircraft pursuant to this certificate.
3. Every flight under this certificate shall be conducted in accordance with the relevant provisions of the certificate holder's aerial application manual.
4. The holder of this certificate shall give to the CAA not less than 14 days' notice in writing:
  - (a) of the intended abolition of either of the following posts, or of any intended change in the person holding the post:

OPERATIONS MANAGER

CHIEF PILOT
  - (b) of any intended amendment of his aerial application manual.
5. Flights pursuant to this certificate shall not be made at night.
6. Only the flight crew of the aircraft may be carried on any flight made pursuant to this certificate.
7. The only dangerous goods which may be carried in the aircraft specified in Schedule 1 to this certificate shall be those approved under the terms of the Control of Pesticides Regulations 1986.

## Appendix B Pesticides for Aerial Application in Agriculture, Horticulture and Forestry

1 Only products which have been granted specific approval for aerial application under the Control of Pesticides Regulations 1986 may be applied from the air and must only be applied to the specified crops or for the uses shown.

2 It is important to ensure that the formulation is approved for the proposed use. Check this by consulting the product label or, if the aerial approval status is not made clear on the product label, contact the Pesticide Safety Directorate at DEFRA (Contact details can be found in Appendix F to this CAP).

Further information is published in the DEFRA/HSE monthly publication, 'The Pesticides Register'.

3 Operators are required under the Control of Pesticides Regulations 1986 to make returns on all applications. These returns, in the form prescribed by DEFRA, should be made within 30 days of the end of the calendar month to which they relate, to the Pesticides Usage Survey Group at DEFRA (Contact details can be found in Appendix F to this CAP).

Operators are advised to institute a regular reporting system and submit nil returns when appropriate.

4 **WARNING:** Approved formulations have not necessarily been cleared for possible deleterious effect on aircraft structures and materials, nor for possible fire hazard.

5 There are some pesticide products which have been given only a limited approval for aerial application in the form of an Experimental Permit. Such Permits are normally granted so that appropriate data can be collected following the use of a formulation under field conditions to support a notification for a higher level of clearance. Permit holders must make returns of the area treated and other special conditions are often attached. The Permit holder allocates the clearance to operators by way of a certificate in the form set out below. Operators must obtain such a certificate from the permit holder before applying pesticides which do not have either a full or provisional approval.

'To (Name of aerial contractor)

This company has been granted an Experimental Permit under the Control of Pesticides Regulations 1986 for the aerial application of (product), the active ingredient of which is (active ingredient) to (crop). We confirm that (name of aerial contractor) may apply (product) to (x) hectares of (crop) spraying to be completed before (any appropriate time limit). The following special factors should be taken into account (to be completed where necessary).

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## Appendix C Bibliography

This appendix lists those publications which it is either essential or desirable to be available to operating staff at the operator's base.

### 1 Essential Documents

#### 1.1 Legislation (current editions)

CAP 393 The Air Navigation Order  
The Rules of the Air Regulations  
The Air Navigation (General) Regulations

The Health and Safety at Work etc. Act 1974 (as amended)

The Control of Pesticides Regulations 1986

The Control of Substances Hazardous to Health Regulations 1994

#### 1.2 Operational Information

Aeronautical Information Circulars (AICs)

Aircraft Flight Manuals or equivalent publications

CAP 382 Mandatory Occurrence Reporting Scheme

CAP 414 The Aerial Application Certificate

CAP 426 Helicopter External Load Operations

CAP 428 Safety Standards at Unlicensed Aerodromes (including Helicopter Landing Sites)

CAP 748 Aircraft Fuelling and Fuel Installation Management

Company Operations Manual

Current aeronautical charts for area of operation

NOTAMS

United Kingdom AIP or UK VFR Flight Guide

Weather information, including access from field locations

### 2 Desirable Documents

#### 2.1 Operational Information

CAP411/412 Light Aircraft Maintenance Schedule Aeroplanes/Helicopters (where applicable)

CAP 520 Light Aircraft Maintenance (where applicable)

CAP 712 Safety Management Systems for Commercial Air Transport Operations

CAP 726 Guidance for Developing and Auditing a Formal Safety Management System

ICAO Circular 85-AN/71- Safety in Aerial Work - Part 1 - Agricultural Operations

ICAO Manual on Aerial Work - Doc 9408-AN/922

LASORS (replaces CAP 54)

## 2.2 **Chemical Safety Information**

DEFRA/HSE Reference Book 500 Pesticides (Year) (The Blue Book, published annually)

DEFRA/HSE The Pesticide Register (published monthly)

HSE/DEFRA Code of Practice for the safe use of Pesticides on Farms and Holdings

HSE Agriculture Information Sheet No 16, Guidance on Storing Pesticides for Farmers and Other Professional Users

HSE Guide to the Road Traffic (Carriage of Dangerous Substances) Regulations 1986

Pamphlets prepared by the British Agrochemical Association e.g. 'The Safety of New Pesticides in the Environment'

ICAO Technical Instructions

Pamphlets/Leaflets about the Control of Pesticides Regulations and the Control of Substances

Hazardous to Health Regulations

Guidelines for the use of herbicides on weeds in or near water courses or lakes UK Pesticide Guide (The Green Book)

## 3 **Organisations from whom the documents may be obtained**

CAA documents may be obtained from the CAA's printers, details of which can be found on the inside cover of this CAP, or from the CAA website [www.caa.co.uk](http://www.caa.co.uk).

Other publications may be obtained from Government Bookshops, DEFRA (Publications) and the British Agrochemical Association.

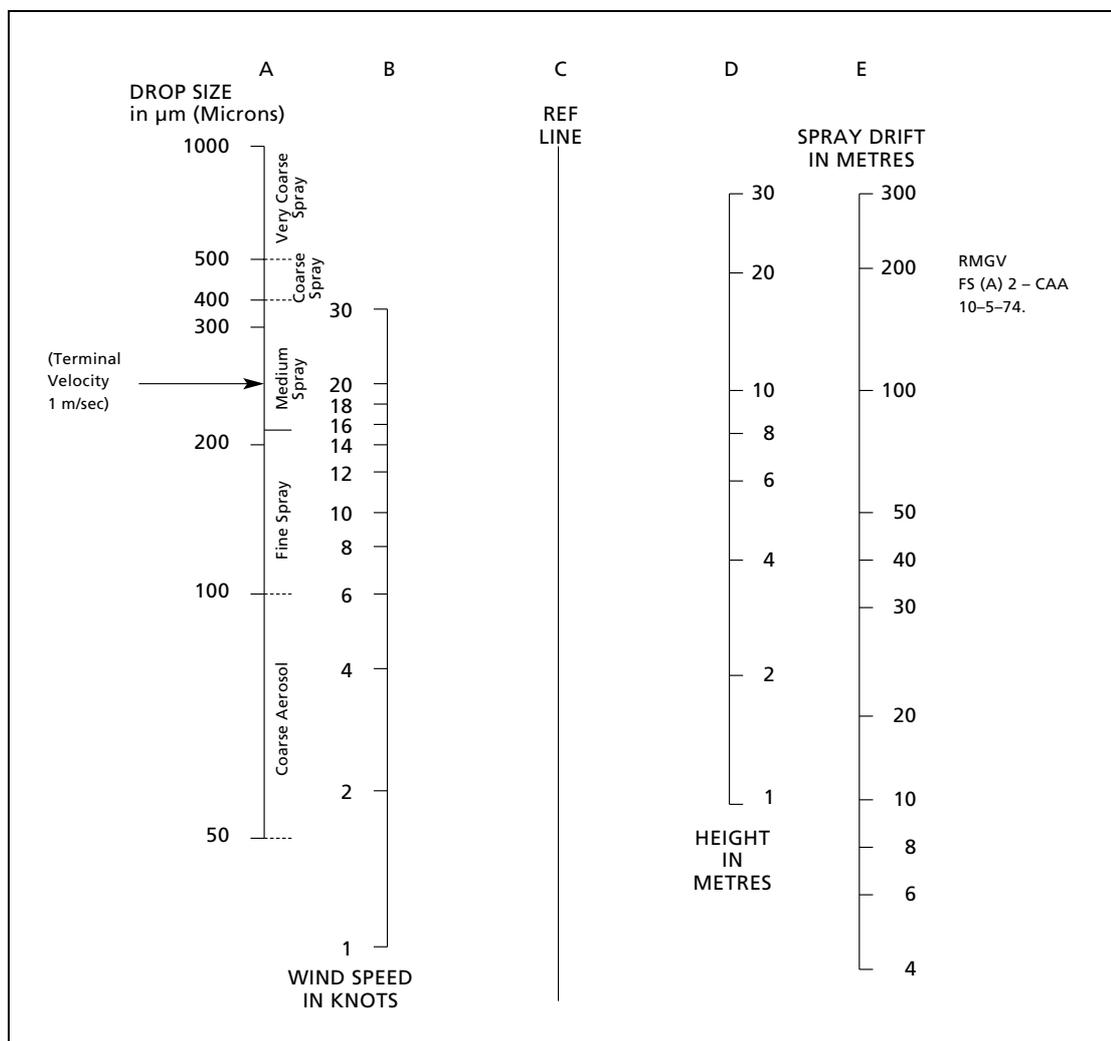
A list of useful addresses is at Appendix F.

## Appendix D Spray/Drift Nomogram

- 1 Draw a line joining WIND SPEED IN KNOTS (B) with HEIGHT IN METRES (D) to cut reference line at 'X'.
- 2 A line drawn from the DROP SIZE (A) through 'X' will indicate the spray drift on line E.
- 3 For cross track drift use the component of the wind velocity perpendicular to the track.

**NOTE 1:** No account is taken of drop vaporisation - small drops will rapidly decrease in size when the relative humidity is low and the drift distance will increase.

**NOTE 2:** At low levels and with small drops the effect of the slipstream will predominate over other factors.



**NOTE 3:** Wind velocity varies with height; the mean between flight level and the surface should be used.

### WARNING

The above nomogram is intended only as a guide as the number of variable factors involved precludes establishment of accurate information in tabular form to cover all circumstances.

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## Appendix E Crash/Rescue and First Aid Equipment

### 1 Crash/Rescue

- a) The minimum fire-fighting equipment for rapid intervention in an accident is 2 x 9 kg dry chemical extinguishers and either 1 x 5 kg HALON (BCF) extinguisher or 2 x 4.5 kg CO<sub>2</sub> extinguishers. These should permit a snatch rescue to be performed. Total extinguishment of a post accident fire is not envisaged.
- b) Suitable tools for release and rescue purpose in light aircraft accidents should include:
  - i) 1 aircraft-pattern hand axe;
  - ii) 1 x 24 in bolt croppers; and
  - iii) 1 harness knife and a 3 ft crowbar.
- c) Protective clothing for rescue should include 1 pair of fire resisting gloves or gauntlets and a fire-fighting blanket of adequate size to serve as a screen, a wrapper or a carrying sheet.

### 2 Contents of First Aid Packs

A Medical pack containing a sufficient quantity of first-aid equipment including the following:

- a) Bandages;
- b) Burns dressings;
- c) Wound dressings, large and small;
- d) Adhesive tape;
- e) safety pins;
- f) Scissors;
- g) Small adhesive dressings;
- h) Antiseptic wound cleaner;
- i) Disposable resuscitation aid;
- j) Simple analgesic, e.g. paracetamol;
- k) Foil blanket;
- l) Eye bath and solution; and
- m) First-aid handbook.

The equipment listed above must be in date, in good condition and stored in such a way that it is instantly available at all times when aircraft movements are taking place.

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## Appendix F List of Useful Addresses

Reference is made in this document to various branches of the CAA and to other agencies. For convenience a list of addresses and telephone numbers is given below:

### Air Accidents Investigation Branch

Department for Transport  
Berkshire Copse Road  
Aldershot  
Hants  
GU11 2HH

Tel: (01252) 510300 (24 hours)  
Fax: (01252) 376999

<http://www.aaib.dft.gov.uk>  
[enquiries@aaib.gov.uk](mailto:enquiries@aaib.gov.uk)

### Civil Aviation Authority

Flight Operations Inspectorate  
(General Aviation)  
Aviation House  
Gatwick Airport South  
West Sussex  
RH6 0YR

Tel: (01293) 573525  
Tel: (01293) 573528 (AAC FSO direct line)  
Fax: (01293) 573973

Airworthiness Division  
Aviation House  
Gatwick Airport South  
West Sussex  
RH6 0YR

Aircraft Certification Department:  
Tel. +44 (0) 1293 573293  
Fax. +44 (0) 1293 573976  
[Department.Certification@srg.co.uk](mailto:Department.Certification@srg.co.uk)

Engineering Department (Aircraft Systems and  
Equipment Branch):  
Tel. +44 (0) 1293 573134/3138  
Fax. +44 (0) 1293 573975  
[aircraft.systems@srg.caa.co.uk](mailto:aircraft.systems@srg.caa.co.uk)

Engineering Department (Structures and Materials  
Branch):  
Tel. +44 (0) 1293 573532  
Fax. +44 (0) 1293 573855  
[jackie.altan@srg.caa.co.uk](mailto:jackie.altan@srg.caa.co.uk)

Survey Department:  
Tel. +44 (0) 1293 573196  
Fax. +44 (0) 1293 573979  
[Propulsion.Department@srg.caa.co.uk](mailto:Propulsion.Department@srg.caa.co.uk)

Flight Department:  
Tel. +44 (0) 1293 573112  
Fax. +44 (0) 1293 573977  
[flightdept.afts@srg.caa.co.uk](mailto:flightdept.afts@srg.caa.co.uk)

Policy and Standards Department:  
Tel. +44 (0) 1293 573299  
Fax. +44 (0) 1293 573976  
[Strategy.Department@srg.caa.co.uk](mailto:Strategy.Department@srg.caa.co.uk)

Medical Branch  
Aviation House  
Gatwick Airport South  
West Sussex  
RH6 0YR

Tel: (01293) 573700  
Fax: (01293) 573995  
[medicalweb@srg.caa.co.uk](mailto:medicalweb@srg.caa.co.uk)

Personnel Licensing Department  
Aviation House  
Gatwick Airport South  
West Sussex  
RH6 0YR

Tel: (01293) 573700 (Flight Crew and Engineers)  
(01293) 573355 (Air Traffic Services)  
Fax: (01293) 573996  
[fclweb@srg.caa.co.uk](mailto:fclweb@srg.caa.co.uk) (Flight Crew Licensing)  
[eldweb@srg.caa.co.uk](mailto:eldweb@srg.caa.co.uk) (Engineer Licensing)  
[ats.licensing@srg.caa.co.uk](mailto:ats.licensing@srg.caa.co.uk) (Air Traffic Services)

Safety Investigation and  
Data Department  
Aviation House  
Gatwick Airport South  
West Sussex  
RH6 0YR

Tel: (01293) 573220 (MOR)  
(01293) 573248 (General)  
Fax: (01293) 573972  
[sdd@srg.caa.co.uk](mailto:sdd@srg.caa.co.uk)

### **Countryside Council for Wales**

Maes-y-Ffynnon  
Penrhosqarnedd  
Bangor  
Gwynedd  
LL57 2DW

Tel: (0845) 1306229  
<http://www.ccw.gov.uk>  
[enquiries@ccw.gov.uk](mailto:enquiries@ccw.gov.uk)

### **Department for Environment, Food and Rural Affairs (DEFRA)**

Pesticides Safety Directorate  
Room 320  
Mallard House  
Kings Pool  
3 Peasholme Green  
York  
YO1 7PX

Tel: (01904) 455776  
Fax: (01904) 455733  
[www.pesticides.gov.uk](http://www.pesticides.gov.uk)  
[information@psd.defra.gsi.gov.uk](mailto:information@psd.defra.gsi.gov.uk)

Pesticides Usage Survey Group  
Central Science Laboratory  
Sand Hutton  
York  
YO4 1LZ

Tel: (01904) 462000  
Fax: (01904) 462111  
[www.csl.gov.uk](http://www.csl.gov.uk)  
[science@csl.gov.uk](mailto:science@csl.gov.uk)

### **TSO (The Stationery Office)**

PO Box 29  
Norwich  
NR3 1GN

Telephone orders/ General enquiries:  
0870 600 5522  
Textphone: 0870 240 3701  
Fax orders: 0870 600 5533  
[www.tso.co.uk/bookshop](http://www.tso.co.uk/bookshop)  
E-mail: [book.orders@tso.co.uk](mailto:book.orders@tso.co.uk)

**English Nature**

Northminster House  
Northminster  
Peterborough  
PE1 1UA

Tel: (01733) 455000  
Fax: (01733) 568834

<http://www.english-nature.org.uk>  
[enquiries@english-nature.org.uk](mailto:enquiries@english-nature.org.uk)

**Health and Safety Executive (HSE)**

Rose Court  
2 Southwark Bridge  
London  
SE1 9HS

Tel. 0845 345 0055

[www.hse.gov.uk](http://www.hse.gov.uk)  
[hse.infoline@natbrit.com](mailto:hse.infoline@natbrit.com)

**National Air Traffic Services Ltd. (NATS)**

Brettenham House South  
5th Floor  
Lancaster Place  
London  
WC2E 7EN

Tel. 020 7309 8666

[www.nats.co.uk](http://www.nats.co.uk)

**National Association of Agricultural Contractors**

Samuelson House  
Paxton Road  
Orton Centre  
Peterborough  
Cams  
PE2 5LT

Tel: (01733) 362920  
Fax: (01733) 362921

[www.naac.co.uk](http://www.naac.co.uk)

**Scottish Natural Heritage**

12 Hope Terrace  
Edinburgh  
EH9 2AS

Tel: (0131) 447 4784  
Fax: (0131) 446 2277

<http://www.snh.org.uk>  
[enquiries@snh.gov.uk](mailto:enquiries@snh.gov.uk)

**The Executive Secretary, General Aviation Safety Committee (GASC)**

Holly Tree Cottages  
Park Corner  
Nettlebed  
Oxon  
RG9 6DP

Tel: (01491) 641735

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