



## **The Civil Helicopter In The Community**

The aim of this section is to explain in simple terms some of the more important legal aspects and common practices regarding helicopters operating from landing sites other than recognised airfields.

The paper was written following consultation with the Department for Transport. It is divided into the following Sections:-

- Section 1: Background Information About Helicopters
- Section 2: Aviation Law
- Section 3: Air Traffic Control and Restrictions
- Section 4: Planning Legislation
- Section 5: Environmental Issues

The BHA is a non-profit making organisation, whose main objective is to promote the use of helicopters throughout the country and to bring to the attention of potential users the advantages of chartering or owning a helicopter. It is also concerned that helicopter operations are conducted safely and responsibly and that proper attention is paid to environmental issues. These objectives are pursued by liaison with government departments, local authorities, the Civil Aviation Authority, public services, private industry and exchange of information with other helicopter organisations outside the UK.

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Whilst every precaution has been taken to ensure that this document is accurate at the time of going to press, BHA cannot accept liability for errors or omissions.

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## **SECTION 1 - BACKGROUND INFORMATION ABOUT HELICOPTERS**

### **1.1 Introduction**

Since the late 1960's there has been a steady, if not always uniform, increase in the number of private and commercial helicopters in the United Kingdom. The growth in the use of helicopters in support of the Off-shore Energy Industry in the 1970s and 1980s and a more recent increase in helicopter operations by the emergency services has resulted in the UK Civil Aircraft Register reaching a total of some 1100 helicopters by the middle of 2003. The UK civil fleet is the fifth largest in the World.

To enable the reader to have a better appreciation about some of the technicalities in the latter sections of this paper, the following background information may be of assistance.

### **1.2 Helicopter Philosophy**

A conventional fixed wing aircraft of similar seating capacity is likely to be faster and cheaper, in terms of both capital and operating costs, than a helicopter. However, one of the disadvantages of a fixed wing aircraft is that it is restricted to using prepared airfields which by their very nature require considerable amounts of expensive land. Furthermore, airfields are not always sited at locations where the air traveller wishes to go and their limited number can also cause congestion resulting in delays at major centres.

In contrast, the helicopter does not require an expensive infra-structure and what it may lose by way of speed and cost it makes up in flexibility by providing door to door service for its users without having to depend on conventional airfields.

The compactness of the United Kingdom with its main cities, manufacturing and financial centres all relatively close together, plus a radial surface transportation system of motorways and railways emanating from London, makes the helicopter an ideal business tool.

In exactly the same way that local businesses depend upon cars, vans and trucks to meet their transport needs, many large and small business concerns are becoming more reliant upon private air travel to give the kind of mobility they require to make them more efficient and competitive. This becomes more relevant as the road system, including motorways, becomes more congested.

### **1.3 Power Plants - Piston/Turbine Engines**

In general terms small helicopters with capacities of up to 3 seats are powered by air cooled piston engines using AVGAS (aviation petrol). However, since the mid-1960's, almost all the larger helicopters are powered by one or more gas-turbine engines. They are known as turbo-shaft power plants. The gas-turbine engine can produce greater power at less weight and, since they are more efficient, they are much quieter than piston aircraft engines with comparable power outputs.



## **1.4 Safety - Autorotation**

If a fixed wing airplane is compelled to make a forced landing in the event of engine failure or other emergency, the chances are fairly high that it will be unable to reach a suitable airfield. The helicopter on the other hand, because of its inherent flexibility, is able to auto rotate to safety. With no power applied, the helicopter windmills down like a sycamore seed and, using the kinetic energy built up in the rotor system, is able to achieve a safe controllable landing using a very small area on the ground.

The ability to auto rotate is one of the fundamental airworthiness requirements laid down by the Civil Aviation Authority and all types of helicopter have to prove this before they are permitted to fly. In addition, all pilots are required to master this technique and, in particular, pilots of commercial single engine helicopters have to demonstrate their proficiency every six months.

## **1.5 Twin Engine Helicopters**

All the helicopters used for support of the off-shore energy industry in the North Sea, as well as a significant number of those employed overland, are equipped with two engines. This does not mean that they have two main rotor systems (although uniquely, in this country, the RAF Chinook does have two main rotors and two engines). In essence the two engines are harnessed in tandem and drive a main gear box which in turn drives both the main and tail rotors.

In normal level flight both engines operate at cruise power; but in the event of one of them failing the other automatically increases power and is able to maintain the helicopter in flight, albeit with a reduced performance.

## **1.6 Helicopter Flight Manual**

Each type of helicopter has a Flight Manual which is compiled by the helicopter manufacturer and, apart from technical data, it contains information about operational and flying techniques. The Flight Manual forms the basis of the Certificate of Airworthiness issued by the Civil Aviation Authority (CAA). Amongst the data are the criteria for taking off and landing, including approved rates of climb and descent, as well as the minimum size of a landing site. From this data the pilot is able to calculate whether a particular landing site is acceptable.

## **1.7 Taking Off and Landing from Ground Level Sites**

Because each type of helicopter has different performance characteristics it is not possible to be precise about the exact requirements for a landing site but, as a general guide, a flat area of ground about the size of two tennis courts should be adequate to take the smaller types. If possible helicopters should be able to take-off and make their approach into wind. There should also be no obstructions in the immediate vicinity of take-off and approach paths e.g. trees, power lines, buildings etc. It is the pilot's responsibility to ensure that the layout of a landing site is within the performance capability of his or her helicopter.



## **1.8 Taking Off and Landing from Elevated Sites**

Special safety criteria are applied to operations from roof tops and elevated sites. This is because most of these are located in busy city centres where there is a need to give greater protection to persons and property compared with a landing site located in the open countryside.

For a start, only twin engine helicopters are allowed to operate from elevated sites. Furthermore, they have to be certificated by the CAA that they meet certain performance standards, known as Class 1. This in effect means that should an engine fail at any stage of flight the helicopter can either land safely on the elevated site or else fly safely away using the remaining engine. The most critical time for a helicopter operating under these conditions is immediately after take-off. However, flying techniques covering the loss of an engine have to be proved by the manufacturer to the satisfaction of the CAA before this type of operation can be approved for inclusion in the Flight Manual.



## SECTION 2 - AVIATION LAW

### 2.1 Civil Aviation Act 1982 and the Air Navigation Order 2000

The conduct of civil aviation in the United Kingdom is currently set out in the Civil Aviation Act 1982. The enabling document under which powers are delegated to the Civil Aviation Authority is the Air Navigation Order 2000 (ANO). The latter is amended from time to time and contains the precise detail of how flights are to be conducted by all types of aircraft, including helicopters, in the United Kingdom.

The prime purpose of the ANO is safety and UK standards are regarded as some of the highest in the world. Copies of the ANO can be obtained from the CAA's publication agents,

The Stationery Office:

<http://www.tsoshop.co.uk/bookstore.asp?FO=1195828&trackid=000372>).

### 2.2 Basic Principles of Safety

The ANO sets out certain basic safety principles which may be summarised as follows:-

- **First Priority**

No aircraft may be operated in such a way that, even if an engine fails, third parties on the ground are put at risk.

- **Second Priority**

If there are fare paying passengers on board an aircraft, the operator is required to ensure that certain mandatory safety standards are met to ensure that risk of injury to passengers is minimised.

- **Third Priority**

In the case of private pilots the CAA ensures that minimum standards in respect of flying training, licensing, construction and maintenance are met.

The CAA, through departments such as the Flight Operations Inspectorate, General Aviation Department, Aerodrome and Air Traffic Standards and the Air Regulation Enforcement and Investigations Branch, ensure that the requirements of the ANO are met. Offenders may be successfully prosecuted, but are more often warned as to their future conduct.

### 2.3 Low Flying

Low flying is clearly an issue which lies at the heart of The Civil Helicopter in the Community. The low flying rules which affect helicopter operations can be found in Rule 5 of Section II of



the Schedule to the Rules of the Air Regulations 1996, SI 1996/1396 made pursuant to Article 84(1) of the ANO. These rules may be summarised as follows:-

"A helicopter shall not fly below such a height as would enable it to alight without danger to persons or property on the surface, in the event of an engine failure."

This is the most important rule as it directly affects safety and the CAA, which may give dispensations in certain circumstances to the other low flying rules, cannot grant variations to this one.

"Unless a helicopter is taking off or landing in accordance with normal aviation practice, no helicopter may fly closer than 500 feet to any person, vessel, vehicle or structure."

This rule is sometimes referred to as the '500 foot Rule', but for the present the word 'closer' is used and not 'lower than'; thus flight over open moorland, for example at 200 feet, is legal providing no person or structure is within 500 feet. (Despite this the BHA encourages all pilots to fly as high as possible consistent with the weather and other factors.) The '500 foot Rule' does not apply to police helicopters.

The other key rule, sometimes called the '1,000 foot Rule', is concerned with flights over urban and built up congested areas. It forbids helicopters from flying over congested areas of "towns or settlements" at a height below 1,000 feet above the highest fixed object within 600 metres of the helicopter. (For practical purposes this means 1100 feet above the ground (street) level, and on occasions could well be higher).

NOTE: Helicopters are exempt from the land clear rule

The ANO specifically allows the CAA to grant 'exemptions' from both the '500 foot Rule' and '1,000 foot Rule' and other Rules provided the exemption is given in writing. The CAA may also lay down conditions as part of the permission. Safety is the criteria used in this respect. Examples of exemptions from the '500 foot Rule' could be aerial photography - down to 200 feet - aerial application of chemicals for forestry purposes, powerline inspections and emergency air ambulance operations. Helicopters operating over aerodromes for flight test or training purposes are also exempt. Exemptions from the '1,000 foot Rule' could include the use of a landing site in a city centre, aerial photography and survey work as well as police and ambulance operations.

When a helicopter - or any aircraft - is flying in controlled airspace (see Section 3.1) the 1,000 foot rule does not apply. The pilot is required to obey the instructions of Air Traffic Control (ATC) whose prime concern is to ensure safe vertical and horizontal separation between the aircraft flying through that airspace. Helicopters and other aircraft will be allowed to fly as high as possible but in practice, particularly near the approach paths to a major airport like Heathrow, helicopters may be lower than 1,000 feet (see also Section 3.4).

For completeness there are two other Rules:-

'The Crowd Rule' - which forbids, except with permission of the CAA, flight over or within 1,000 metres of a crowd of more than 1,000 persons assembled for the purpose of witnessing or participating in an organised event and 'The Specified Area Rule' which applies to a particularly congested part of the centre of London, apart from the River Thames, and prevents helicopters from over flying unless they can land clear of the area following an engine failure and unless they have the specific permission of the CAA.



This, in effect, bars single engine helicopters, but twin engine helicopters are not affected.

## **2.4 Saving of Life**

There is only one blanket exemption from the Rules of the Air Regulations made under the ANO and this concerns flights for the purpose of saving life. The Rules provide that nothing in the rule relating to low flying shall prohibit any aircraft from flying in such a manner as is necessary for the purpose of saving life. Although this is probably not contentious, the onus of proof is placed upon the helicopter operator who may be required to justify his actions to the CAA. The increasing number of helicopters in support of conventional ambulance services is relevant in this context.

## **2.5 Military Helicopters**

Military helicopters, several hundred of which are based in the United Kingdom, are not required to comply with the same low flying regulations laid down for civil registered helicopters. The very nature of their operations may require them to fly at exceptionally low levels, sometimes a matter of a few feet over the ground or water during the day or night.

As with their civil counterparts, the military are aware of the concerns which may result from some of their operations and are willing to discuss potential problem areas. There is usually a Liaison Officer at military airfields who may be able to help and advise you.

## **2.6 Police Operations**

The ANO and Rules of the Air Regulations specifically permit helicopters to fly lower than normally permitted when working on behalf of a police authority. Most police helicopters are suitably marked and police authorities will investigate any complaints made about their operation.

## **2.7 Rescue and Fire Fighting Services (RFFS)**

Providing it is not anticipated that a Temporary Unlicensed Surface Level Landing Site (see paragraph 4.3) will be used for the purposes of public transport of passengers by more than 10 movements in any one day, specific provision of RFFS is not required.



## **SECTION 3 - AIR TRAFFIC CONTROL AND RESTRICTIONS**

### **3.1 Controlled Airspace**

Contrary to popular belief, most of the low level airspace in the UK (below 2,000 feet) is uncontrolled. Although pilots invariably make contact with the nearest ATC agency for safety reasons, there is no mandatory requirement for them to do so.

Controlled airspace is established around the larger airports and pilots are required to comply with ATC instructions when flying in these areas.

### **3.2 Air Traffic Zones**

Air Traffic Zones are established around small licensed and unlicensed aerodromes up to a radius of 2½ nautical miles from the aerodrome's datum point and they apply for the period that the aerodrome's air traffic services are available. The status of the service depends upon the qualifications of the air traffic controller.

Nevertheless, it is the duty of ATC to permit and expedite aircraft commanders' requirements and it is unusual for flying operations to be curtailed because of air traffic problems.

### **3.3 Restricted Airspace**

The only permanent restricted airspaces over the United Kingdom are several large areas in Scotland where high density low level military activity takes place, an area in Eastern England reserved for practice by the RAF 'Red Arrows' display team, several atomic energy establishments and high security prisons, as well as some 'sensitive' dwellings and locations.

Temporary restrictions may be published from time to time by the CAA e.g. in the event of major incidents or accidents, public events and flying displays.

Perhaps surprisingly, military danger areas and military airfields, other than their Air Traffic Zones, are only advisory for civil aircraft. However, intentional intrusion into these areas without prior clearance is ill advised for obvious reasons.

### **3.4 Helicopter Routes**

For the benefit of ATC, Helicopter Routes are sometimes established. These are normally associated with large cities which have adjacent busy international airports. London is a good example where the only heliport available (London Heliport at Battersea) is located directly underneath the flight path of aircraft approaching Heathrow's Westerly runways. The Helicopter Routes cover the whole of the London Control Zone and are chosen to ensure that adequate separation standards are maintained between helicopters and aircraft using Heathrow.

Furthermore, the helicopter routes have been selected to enable helicopters to fly over as many open areas as possible. Apart from environmental considerations, the routes allow pilots to comply with the low flying rules.



However, as already mentioned in Section 2.3, the '1,000 foot Rule' does not apply to the helicopter routes because they are within controlled airspace.

Use of helicopter routes is not mandatory and provided the pilot is able to comply with the law, he or she is free to request the route of his choice from ATC. In practice however, and specifically within the London Control Zone, single engined helicopters usually do follow the routes except to the extreme West. Many twin engined helicopters route direct; this has the advantage that they can clear the area quicker and at a higher level.



## **SECTION 4 - PLANNING LEGISLATION**

### **4.1 Permanent Landing Sites**

Permanent sites are generally regarded as those which have been granted planning consent by a local authority and those which are licensed by the CAA. There are only two heliports in the UK which currently hold CAA licences: these are the The London Heliport at Battersea, and Penzance Heliport in Cornwall. It is a prerequisite that scheduled services can only operate from CAA licensed airports/heliports; this is the reason why Penzance is licensed. Helicopters can of course land at most fixed wing airfields, both licensed and unlicensed.

### **4.2 Planning Applications For Helicopter Landing Sites**

The Department of the Environment Planning Policy Guidance Paper 'Planning and Noise' (PPG24 of September 1994) states:-

"When determining a planning application for a heliport the predicted noise should not be assessed in isolation - account should be taken of local circumstances including the existing level of noise disturbance in the area surrounding the site and factors such as whether the area is already exposed to noise from fixed-wing aircraft. Local planning authorities will need to consider the effect of further disturbance resulting from the proposal."

Planning powers are concerned with the use of land. It is therefore not appropriate to seek to impose planning conditions to control the movement of, or noise emitted by, aircraft in flight. Powers are contained in Civil Aviation legislation for control of aircraft noise during landing and take off. (See Section 5.5).

### **4.3 Temporary Landing Sites**

Under Part 4, Class B of Schedule 2 of the Town and Country Planning General Development Order 1988, helicopters are permitted to take off and land at temporary sites provided the site is not used for more than 28 days in any one calendar year. The operator must also have permission from the owner of the site.

However, local planning authorities do have powers under Article 4 of the GDO to make a direction withdrawing these rights and requiring a planning application to be made for continued use of the site. If the direction is to remain in force for more than six months, approval from the Secretary of State for the Environment is required. If planning permission is refused or granted subject to conditions, compensation may be payable.

### **4.4 Private Landing Sites**

Helicopters may operate from the gardens of private houses without planning consent provided the landing site is within the curtilage of the property. Even though an owner of a property may also own an adjoining field, its use as a landing site would require planning consent as the field falls into the category of open land. Helicopter operations from it would constitute a change to the conditions of use requiring planning consent. However the field could be used under the rules for temporary sites i.e. for not more than 28 days in any one calendar year (see Section 4.3 above).



Although planning consent is not normally required for helicopter operations from private property, the construction of hard standing e.g. a concrete landing surface as well as the installation of landing lights and the erection of a hangar or barn in which to house the helicopter, may be regarded as development by the local planning authority for which planning consent would be required.

Generally, planning consent is not required for helicopter operations from commercial premises such as factories, offices and hotels where these are ancillary to the principal use of the land. However, should the size of a helicopter operation overtake that of the original business, it could be seen to constitute a change in the conditions of use in which case planning consent would be required.

All landing sites located in urban and congested areas, whether they be permanent, temporary or private require the prior written permission of the CAA before they can operate (see Section 2.3 above).



## **SECTION 5 - ENVIRONMENTAL ISSUES**

### **5.1 Noise Made By Helicopters In Flight - Civil Aviation Act 1982**

It is well known, but worth repeating, that under Section 76 of the Civil Aviation Act 1982, no action lies in respect of trespass or nuisance by reason of the flight of an aircraft over any property where the aircraft is flown reasonably in accordance with the standards of good airmanship having regard to the circumstances.

### **5.2 Noise At The Heliport/Helipad**

Section 77 of the Civil Aviation Act 1982 precludes persons from claiming damages under common law for nuisance in respect of noise and vibration at a CAA licensed heliport provided the relevant requirements and conditions laid down in the ANO are met. Furthermore, the combined effect of Section 78 of the Act and Regulation 13 of the Air Navigation (General Regulations) 1993 is to extend the immunity in respect of noise and vibration caused by:-

- helicopters landing and taking off;
- helicopters moving on the ground or water;
- engines in the aircraft being operated for the purpose of ensuring their satisfactory performance, bringing them to a proper temperature in preparation for, or at the end of, a flight, or ensuring that the instruments, accessories or other components of the aircraft are in a satisfactory condition.

In the case of unlicensed heliports and landing sites, individuals are able to pursue a claim for noise nuisance under common law but, as already stated in Section 5.1 above, this does not extend to helicopters in flight.

### **5.3 Helicopter Noise Certification**

It is a mandatory requirement that, prior to the issue of a Certificate of Airworthiness of a new type of helicopter, it meets certain internationally agreed noise standards. The standards are laid down by the International Civil Aviation Organisation (ICAO), to which the UK is a signatory, and involve noise measurements whilst the helicopter is landing, taking off and overflying at its maximum permitted all-up weight. Larger types of helicopter are permitted to make more noise in the same way that large fixed wing aeroplanes are permitted to make more noise than smaller ones. A copy of Schedule I Part IX of the Air Navigation (Noise Certification) Order 1990 - Noise Standards Required for Issue of a Noise Certificate to Helicopters Specified in Article 6(10) - is shown at Appendix A. All current light types of helicopter meet these standards. For the future the European Joint Aviation Authorities will set the standards through the medium of Joint Aviation Requirement (JAR) 36.

### **5.4 Methods of Measuring Helicopter Noise**

In the past, the use of contours based on the Noise and Number Index (NNI) was the recognised method of measuring the degree of disturbance caused by helicopters. However this method has been superseded in favour of Leq contours on grounds that they are more appropriate to modern conditions than the NNI.



Following a Public Inquiry in 1991 into a proposal to develop a heliport near Cannon Street station in London, the Secretary of State for the Environment asked the Secretary of State for Transport to develop a more robust means of assessing urban helicopter noise impact. This work, carried out between 1992 and 1995, included development of a helicopter noise contour model (HCON) by the Civil Aviation Authority (CAA) which calculates the Leq (dBA) noise contours taking account of various features that distinguish helicopter noise from the noise of fixed wing aircraft. Important among these are different directional characteristics from helicopter movements within the heliport boundary (ie: hover, ground-taxi and idle).

Helicopter noise characteristics not only differ markedly from type to type; they are also extremely sensitive to flight configuration, particularly during manoeuvres involving accelerations and turns. Because of these effects, helicopter noise contours are much more difficult to model accurately than those around conventional airports. Although HCON is very flexible with regard to the amount of detail it can accommodate, its output is only as good as the input data upon which it relies, and this is rather limited. For example, in its current form HCON would be of limited use for evaluating a specific heliport proposal (ie: at a specific location involving specific helicopter types and operating procedures in the presence of particular buildings and other features that affect sound propagation). If required for such applications, it would, as a minimum, have to be 'calibrated' by flight tests (ie: at the actual site or at other suitable representative locations) and supplemented by helicopter specific data (eg: from the manufacturers).

## **5.5 Control of Aircraft Noise**

The Department of the Environment Transport and the Regions (DETR) issued an up-dated consultation document "Control of Aircraft Noise" in July 2000. A relevant extract reads:

"9. The 1991 consultation also asked for views about the possibility of extending the Environmental Protection Act 1990 so that it applied to temporary sites used by helicopters. The responses to this consultation showed no evidence of persistent or widespread problems at temporary and private helicopter sites and it was decided that an amendment to the Act would not be justified. Also, given the limited extent of the problem, it was felt that regulating the use of helicopter sites through a local authority licensing system would be too bureaucratic and expensive and would remove helicopters' flexibility of operation. Since 1991, there has been no obvious increase in problems at temporary and private sites, so we are not considering any new provisions to restrict or regulate the use of these sites used for helicopters or other aircraft.

"10. The essence of our proposals is that matters should be resolved locally (and where possible amicably) between the parties. We therefore propose that noise amelioration schemes should have the status of agreements between aerodromes and their users, subject to civil rather than criminal sanctions in the event of dispute."

The BHA supports the proposals contained in this document.

## **5.6 Some Comments on Helicopter Noise**

The subject of helicopter noise is complex. Evidence shows that there are a number of factors which have given the helicopter a poor public perception.



A survey in the USA conducted by the Helicopter Society of America which asked residents adjacent to heliports what they disliked most about helicopters showed that 'noise' as such came about half way down the list. Surprisingly, safety came bottom but intrusiveness or the invasion of privacy came top.

A study of Community Disturbance Caused by General and Business Aviation Operations (published by the Department of Transport, 1988, £8.95) indicated that noise disturbance was particularly strongly influenced by public perceptions of the nature and conduct of flying activities.

Thus to some extent the type of mission upon which a helicopter is engaged has a direct bearing on public reaction. Those engaged on police or ambulance work appear to be more acceptable in the eyes of the public than those carrying key staff of large commercial companies. Filming and survey work can also cause problems, especially if the helicopter is either hovering over the same spot for long periods, or is operating in a confined area. The BHA has prepared three Codes of Conduct for Helicopter Pilots; one covering general operations; a second specifically for aerial work and photography over urban congested areas; and a third for helicopter operations in National Parks. These are shown at Appendices B, C and D respectively.

## **5.7 Complaints about Helicopter Operations and Noise**

One way of gauging public reaction is by the level of complaints, but it is hard to attach any statistical evidence to the number of complaints received about aircraft noise. In recent years there appear to have been relatively few complaints concerning helicopters made to either the DETR or to local authorities.

Individuals wishing to make representations about policy aspects of civil helicopter operations can do so by telephoning the DfT's Aviation Environmental Division (AED) (020 7944 5796). Similarly the Home Office Police Aviation Advisor (020 7217 8293) may be contacted over policy for police helicopters and the Ministry of Defence (020 7218 4664) for military helicopters. Complaints about noise should be made to the relevant local authority, police force or military air station. It is better to do this as soon as possible after, or even during the event.

If any helicopter is thought to be flying dangerously or is for an other reason outside the law the Air Regulation Enforcement and Investigation Branch of the Civil Aviation Authority may be contacted at CAA House, 45-59 Kingsway, London WC2B 6TE (Tel: 020 7379-7311).

The British Helicopter Association (Tel: 01276-856100) may be able to help identify a civil helicopter if an accurate description of the time, place and aircraft can be given.



## **APPENDIX A**

### **EXTRACT FROM THE AIR NAVIGATION (NOISE CERTIFICATION) ORDER 1990**

Noise Standards Required for Issue of a Noise Certificate to Helicopters Specified in Article 6(10)

1 In this Part of this Schedule -

'the noise certification reference conditions' means conditions in which -

(i) atmospheric pressure at sea level is 1013.25 millibars;

(ii) ambient air temperature is 25° C;

(iii) relative humidity is 70%;

(iv) there is zero wind; and

(v) the maximum take-off and landing weights of the helicopter are those at which noise certification is requested by the applicant for the certificate.

'take-off reference procedure' means the procedure specified in BCAR;

'overflight reference procedure' means the procedure specified in BCAR;

'approach reference procedure' means the procedure specified in BCAR.

2 The noise levels required by paragraph 3 of this Part of this Schedule shall be measured at the following points -

(a) on take-off

(i) at a flight path reference point located on the ground vertically below the flight path defined in the take-off reference procedure and 500 metres horizontally in the direction of flight from the point at which transition to climbing flight is initiated in the reference procedure;

(ii) at two other points on the ground symmetrically disposed about the flight path defined in the take-off reference procedure and lying on a horizontal line through the flight path reference point at right angles to the direction of flight at a distance of 150 metres.

(b) on overflight

(i) at a flight path reference point located on the ground 150 metres vertically below the flight path defined in the overflight reference procedure;



(ii) at two other points on the ground symmetrically disposed about the flight path defined in the approach reference procedure and lying on a horizontal line through the flight path reference point at right angles to the direction of flight at a distance of 150 metres.

(c) on approach -

(i) at a flight path reference point located on the ground 120 metres vertically below the flight path defined in the approach reference procedure;

(ii) at two other points on the ground symmetrically disposed about the flight path defined in the approach reference procedure and lying on a horizontal line through the flight path reference point at right angles to the direction of flight at a distance of 150 metres.

3 (1) Subject to the provisions of paragraph 4 of this Part of this Schedule a helicopter having the maximum total weight authorised specified in the 1st column of the following Table shall not, at the points referred to at (a), (b) and (c) of paragraph 2 of this Part of this Schedule, exceed in the noise certification reference conditions the noise levels specified in relation to those points in the 2nd, 3rd and 4th columns of that Table, as shown by flying trials.

**TABLE**

Maximum total weight authorised of helicopter	Noise level in EPNdB		
	At point (a)	At point (b)	At point (c)
80 000 kg or more	109	108	110
788 kg or less	89	88	90

(2) Where the maximum total weight authorised of the helicopter is between the weights specified in the above Table, the noise levels which are not to be exceeded shall vary linearly according to the logarithm of the maximum total weight authorised of the helicopter.

(3) The necessary corrections shall be made where flying trials are carried out in conditions other than the noise certification reference conditions.

4 The noise levels specified in paragraph 3 of this Part of this Schedule may be exceeded at one or two of the measuring points specified in paragraph 2 if -

(a) the sum of the excesses does not exceed 4 EPNdB;

(b) at no measuring point is the excess greater than 3 EPNdB; and

(c) any excesses are completely offset by reductions at the other measuring point or points.



## **APPENDIX B**

### **PILOT'S CODE OF CONDUCT**

1. **ALWAYS FLY AS HIGH AS POSSIBLE** consistent with the weather and other factors. This will reduce your projected noise at ground level, and also give you more scope to find a suitable landing site in the event of an emergency.
2. **ALWAYS AVOID POPULATED AREAS** if possible. You owe it to the public to help to preserve the environment. You will also find more landing sites out in the open in the event of an emergency.
3. **NEVER BANK SHARPLY** if you can avoid it. The sharp deflection from level flight will cause a rise in your aircraft's noise signature.
4. **ALWAYS GET AIRBORNE TO HEIGHT AS QUICKLY AS POSSIBLE** consistent with a safe climb speed. This will reduce your noise footprint and increase your safety.
5. **ALWAYS LAND AS QUICKLY AS POSSIBLE** once you know your landing area is clear. Again this will limit your noise footprint and please both your passengers and air traffic control.
6. **NEVER STRAY FROM ACKNOWLEDGED ROUTES** or you are sure to be spotted and risk complaint. Short cuts could prove to be an aggravation to you as well as those on the ground.
7. **ALWAYS WARN PEOPLE OF YOUR ARRIVAL IF POSSIBLE** if you want to be welcomed.
8. **ALWAYS TAKE TIME TO TALK TO INTERESTED PARTIES ABOUT HELICOPTERS**  
The Public's interest in all forms of aviation, especially helicopters, provides a great opportunity to extol the virtues of rotorcraft.
9. **LOWER YOUR CRUISE SPEED BY 5-10 KNOTS OVER NOISE SENSITIVE AREAS**
10. **FOLLOW HIGH AMBIENT NOISE ROUTES WHEREVER POSSIBLE**

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This Code of Conduct is applicable to all civil pilots, commercial or private, and is aimed at showing an environmentally conscious public that helicopter operators are also aware of the need to preserve the environment from unnecessary noise intrusion. The whole helicopter industry must demonstrate a responsible and co-operative attitude to this situation, and it can best be done by observing the Code of Conduct at all times, but particularly in congested urban areas.

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## **APPENDIX C**

### **PILOT'S CODE OF CONDUCT FOR AERIAL PHOTOGRAPHY AND SIMILAR AERIAL WORK FLIGHTS OVER CONGESTED AREAS**

In addition to any conditions stipulated by the Civil Aviation Authority, in respect of a permission:

1. Flights should not be made lower than 800ft above ground level, and no closer to any person or structure than 500ft. At 800ft AGL, the maximum duration of the flight should not exceed 5 minutes in any one area.
2. If a minimum height of 1,300ft above ground level can be maintained, the duration may be extended to 15 minutes.
3. Following a flight in a given area, no return may be made to the same area in less than 1 hour.
4. Other areas may be operated, provided centres of operation are no closer than 4 nautical miles.
5. Operations prior to 0700 and after 1700 are to be avoided.
6. Operators should undertake to inform local agencies of their intended operation, e.g. police, local airfield, and if possible local media and residents. Pilots should attempt to minimise any local inconvenience.
7. These restrictions do not apply in three cases:
  - a) Flights in connection with major national sporting events, e.g. cup final, boat race, etc.
  - b) Flights for major productions, provided that extensive written warnings and explanations can be circulated in the days preceding the event. Contact telephone numbers should be included.
  - c) Flights made on behalf of a Police Authority.
8. No such flights whatsoever should take place on Christmas Day.

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This Code of Conduct was drawn up under the auspices of the BHA Special Events Working Party. It aims to reduce any possible noise intrusion caused by such flights.

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## **APPENDIX D**

### **GUIDELINES FOR HELICOPTER OPERATIONS IN NATIONAL PARKS**

(Note: The term National Park, in this context, includes National Scenic Areas in Scotland.)

Helicopter operations in National Parks and places of outstanding beauty often cause annoyance and irritation to those seeking quiet and tranquility. Pilots should follow these Guidelines:-

1. Before undertaking an operation in a National Park, make a detailed study of the map: note where the key beauty spots are located and the routes leading to them.
2. Plan your operation to ensure that your chosen route avoids sensitive areas, eg beauty spots, built-up areas.
3. Spend as little time in the National Park as possible and always fly as high as possible consistent with safety.
4. Operations prior to 0700 and after 1800 hours are to be avoided.
5. Seek advice from and inform National Parks office about your intended operation giving as much notice as possible.
6. Avoid crossing National Parks if suitable alternative routes are available. When crossing National Parks always fly as high as possible unless safety requirements, eg weather conditions require lower levels. Follow key line features, eg railway lines, motorways etc.
7. Helicopter training flights should not take place.
8. There should be no flights on Christmas Day.
9. These restrictions do not apply in the following circumstances:-
  - a. Helicopter emergency medical evacuation flights
  - b. Helicopters used for rescue purposes and for animal feeding
  - c. Police helicopter operations