

Noise Considerations at General Aviation (GA) Aerodromes

An examination of some of the environmental issues associated with general aviation-focussed aerodromes, concentrating upon noise impact and local Noise Abatement Procedures (NAP).

November 2012



NOISE CONSIDERATIONS AT GENERAL AVIATION AERODROMES

1. Introduction

- 1.1 Under the [Civil Aviation Authority \(Air Navigation\) Directions 2001](#), the CAA is tasked by the Government to provide a focal point for receiving and responding to aircraft related environmental enquiries and complaints from the general public. In providing this function, the environmental issues associated with smaller aerodromes and aircraft used for General Aviation (GA)¹ activities are frequently raised with the CAA's Directorate of Airspace Policy (DAP). Whilst the term "aircraft related environmental enquiries and complaints" captures a broad range of subjects, a high proportion of the telephone calls and correspondence received by DAP are specifically related to the noise impact of GA aircraft and the activity in which they are involved. This paper examines the environmental issues associated with GA focussed aerodromes, concentrating on the associated noise impact and the potential voluntary measures that can be taken by the operator of such aerodromes in order to mitigate these effects.

2. Scope

- 2.1 The purpose of this paper is to provide best practice guidance to aerodrome and aircraft operators in minimising the noise impact of their operations on the local population. It has also been written to provide members of the general public with an explanation of the constraints and factors that must be considered by aerodrome operators when designing and implementing voluntary noise mitigation measures. The other environmental impacts, such as aircraft emissions, visual intrusion and maintenance activities, which, in addition to noise, contribute to the overall environmental impact of GA are not covered; advice on these matters can be obtained by visiting the General Aviation Awareness Council (GAAC) website, which can be accessed [here](#).

3. Aviation Legislation: The Air Navigation Order and The Rules of the Air Regulations

- 3.1 All civil aircraft fly subject to the legislation contained within the Air Navigation Order (ANO) and the Rules of the Air Regulations (RoA). The full text is published in [Civil Aviation Publication \(CAP\) 393: Air Navigation: The Order and The Regulations](#). The RoA are diverse and whilst it is not the intention to replicate them in this paper, some of the 'low flying prohibitions' are worthy of description. Rule 5 of the RoA details the low flying prohibitions, the purpose of which is to ensure the safety of persons and property on the ground; however, there are some associated environmental (noise) implications that merit being drawn out and the following extracts from Rule 5 give some indication as to the height limitations placed upon aircraft operators:
- Except with the written permission of the CAA, an aircraft shall not be flown closer than 500 feet to any person, vessel, vehicle or structure (Rule 5(3)(b) refers).

¹ GA activities encompass private flying, aerial work and recreational flying involving all types of aircraft.

- Except with the written permission of the CAA, an aircraft flying over a congested area² of a city town or settlement shall not fly below a height of 1,000 feet above the highest fixed obstacle within a horizontal radius of 600 metres of the aircraft (Rule 5(3)(c) refers).
- 3.2 There are a number of exemptions from the low flying prohibitions. Over congested areas, the 1,000 feet rule is relaxed for the purposes of landing and taking off from a Government or licensed aerodrome; over uncongested areas, the 500 feet rule is relaxed for the purposed of landing and taking off (Rule 6(a) refers).
- 3.3 Failure to comply with the requirements of the ANO and RoA is a criminal offence and the CAA is tasked by the [Department for Transport \(DfT\)](#) to investigate alleged breaches of this legislation. Where there is a high level of positive evidence to support an alleged breach of the low flying prohibitions, the CAA's Aviation Regulation Enforcement and Legal departments may seek a prosecution through the Magistrates and Crown Courts. However, the CAA would need to prove, beyond all reasonable doubt, that an offence had occurred; in the case of low flying aircraft, this would normally require confirmation of the aircraft's registration, at least two (preferably more) independent supporting witnesses and (ideally) video/photographic evidence of the incident.

4. Legislation Relevant to Aircraft Noise

- 4.1 Although it is acknowledged as a major environmental impact, aircraft noise is not currently a statutory nuisance in the UK. It is not covered by the [Environmental Protection Act 1990](#) or the [Noise Act 1996](#), which means that local authorities do not have the legal power to take action on matters of aircraft noise. However, the establishment of a new aerodrome or the development of an existing aerodrome would be subject to local planning authority agreement. The planning consent process provides a local planning authority with the opportunity to impose any operating conditions that it considers appropriate to the proposed development through the application of Section 106 agreements.
- 4.2 Whilst the CAA, under the [Civil Aviation Authority \(Air Navigation\) Directions 2001](#), must consider the environmental impact of proposals for the establishment of new, or the amendment of existing, airspace during the airspace change process, the Authority does not have the legal power to prevent an aircraft flying over a particular location at a particular time for environmental reasons; Section 76(1) of the [Civil Aviation Act 1982](#) states that

“No action shall lie in respect of trespass or in respect of nuisance, by reason only of the flight of an aircraft over any property at a height above the ground which, having regard to wind, weather and all the circumstances of the case is reasonable, or the ordinary incidents of such flight, so long as the provisions of any Air Navigation Order and of any orders under section 62 above have been duly complied with.”

Consequently, the CAA can only intervene in cases where there is substantial evidence which suggests that a breach of the legislation contained within the ANO and the RoA has occurred.

² Article 255 of the ANO defines a 'congested area' as "any area which is substantially used for residential, industrial, commercial or recreational purposes".

5. Aircraft Noise Certificates

- 5.1 Aircraft built today are required to meet the noise certification standards adopted by the [International Civil Aviation Organisation \(ICAO\)](#)³ as published in Annex 16 (Volume I) Environmental Protection. The [European Aviation Safety Agency \(EASA\)](#) produce a Type-Certificate Data Sheet for Noise (TCDSN) that documents an aircraft type's compliance with the applicable requirements for noise certification and records the associated EASA approved noise level(s). These approved noise levels are the basis against which national aviation authorities issue individual noise certificates.
- 5.2 The CAA certifies light aircraft and helicopters for compliance with the appropriate requirements and discharges its responsibilities through the [Aeroplane Noise Regulations 1999](#), the [Aeroplane Noise \(Amendment\) Regulations 1999](#) and the [Air Navigation \(Environmental Standards for Non-EASA Aircraft\) Order 2008](#).
- 5.3 The [Air Navigation \(Environmental Standards for Non-EASA Aircraft\) Order 2008](#) specifies that “the CAA, after consultation with the Secretary of State, may exempt from any of the provisions of this Part any aircraft or persons or classes of aircraft or persons, either absolutely or subject to such conditions as it thinks fit”; vintage aircraft and, with the exception of microlights, Permit to Fly⁴ aircraft are exempt from the requirement to have a noise certificate.
- 5.4 Once granted, a noise certificate will remain current so long as no modifications are made to the airframe and/or engine of the aircraft; should modifications take place, it would be the responsibility of the aircraft owner to apply for a new noise certificate.

6. Aerodromes

- 6.1 Within the UK there are two different types of aerodrome operations, licensed and unlicensed. The requirements for an aerodrome to be licensed are described in Article 211 of the ANO, but may be summarised as applying to those aerodromes where flights for the purpose of public transport operations take place. For aerodrome licensing purposes, public transport includes any flight where passengers are carried for a fare, but does not include flights where passengers agree to share the cost of fuel.
- 6.2 Any aerodrome operator that wishes to hold a licence must make a formal application to the CAA, demonstrating that they are competent to conduct aerodrome operations safely. [CAP 168: Licensing of Aerodromes](#) sets out the required standards at UK licensed aerodromes and the CAA uses this document in support of the granting of an aerodrome licence; it is the CAA's responsibility to ensure that the holders of a licence are competent and suitable persons to exercise the privileges of that licence. Under Section 5 of the [Civil Aviation Act 1982](#), the Secretary of State can specify certain aerodromes whereby the CAA will have a 'duty' to consider the environmental factors when exercising the aerodrome licensing function. However, to date, no aerodrome within the UK has been

³ Formed in 1944, ICAO was created to promote the safe and orderly development of international civil aviation throughout the World. It sets standards and regulations necessary for aviation safety, security, efficiency and regularity, as well as for aviation environmental protection.

⁴ A Permit to Fly is granted in accordance with BCAR A3-7 only to aircraft that do not meet the ICAO certification standards required for the issue of a Certificate of Airworthiness (CofA); further information can be viewed in [CAP 733: Permit to Fly Aircraft](#).

'specified' under Section 5 and consequently the CAA currently has no duty to consider environmental factors as part of the licensing process.

- 6.3 Although many aerodromes do not need a licence to carry out flying activities, the CAA is still responsible for all matters affecting the safety of aircraft at aerodromes through its regulation of aircraft operations and maintenance, click [here](#) for further information. [CAP 793: Safe Operating Practices at Unlicensed Aerodromes](#) provides guidance and advice on setting up and operating an unlicensed aerodrome; Chapter 2 (Planning Considerations), Section 5 (Local Engagement) encourages operators of unlicensed aerodromes to engage with the local community in order to achieve and maintain good relations.

7. Noise Impact of GA Aerodromes

- 7.1 The following list details the 'hot topics' that are frequently raised with the Aviation Related Environmental Enquiries section concerning flying activities at GA aerodromes across the UK:

- Circuit Training – this can be very repetitive with aircraft audible for long periods of time and mitigations are discussed in greater detail within the Noise Abatement Procedures section (8) of this document;
- Aerobatics – the noise can be erratic and last for prolonged periods of time and this topic is covered in greater detail below;
- Parachute Dropping/Glider Tug aircraft – noise can last for a prolonged period of time as the aircraft will routinely circle and climb/descend overhead of the aerodrome;
- Piston Engines – general perception that piston driven fixed/rotary wing aircraft are more intrusive, especially when on full power with low background noise levels. In terms of rotary wing aircraft (helicopters) it is recognised that "helicopter noise has different characteristics from that of fixed wing aircraft and is often regarded as more intrusive or more annoying by the general public".

- 7.2 As discussed in paragraph 4 above, responsibility for aviation policy and aircraft noise matters lies with the DfT and the CAA works closely with the Department to help develop regulations and policies to limit the environmental effects of aircraft operations to the greatest extent possible. However, the DfT is only directly involved in measures to ameliorate noise at three designated airports, Heathrow, Gatwick and Stansted. Away from the three designated airports, it has been the policy of successive Governments that local problems concerning the environmental impact of aircraft operations should be resolved locally.

8. Noise Abatement Procedures

- 8.1 In order to mitigate the effect of their operations on local communities, the majority of both licensed and unlicensed aerodrome operators voluntarily impose Noise Abatement Procedures (NAPs). Whilst the establishment of NAPs demonstrates that an aerodrome operator is conscious of the need to fit into the wider community and be a good neighbour, it is not always possible for the operators to design such procedures in respect of areas where aircraft performance characteristics and operational requirements allow little latitude, especially in the immediate vicinity of the aerodrome. Moreover, NAPs are subordinate to the safe conduct of flight and aerodrome operators must remain wary of implementing procedures that increase the risks to both aircraft operators and the local population. Potential problems also

arise associated with flying training activities in the visual circuit⁵. Trainee pilots should be taught to fly circuits at any airfield by visual reference to the runway; the introduction of complicated NAPs can undermine this principle and an increase in the circuit size resulting from noise abatement increases the possibility of forced landings happening away from the aerodrome.

- 8.2 Perhaps the most effective method of noise mitigation is the fundamental design and adaptation of the published visual circuit. Circuit training is an essential part of pilot training as it exercises their co-ordination and judgement as well as teaching them to make safe takeoffs and landings. A pilot undergoing training will often fly many circuits, one after another and therefore circuit flying can be extremely repetitive, with aircraft flying at low altitudes for prolonged periods of time. Whilst it is not routinely referred to as a NAP, a circuit that routes aircraft away from areas of population will have obvious benefits. Indeed many aerodromes employ the non-standard right-hand circuit to avoid overflight of areas of higher population in the immediate vicinity. A good example of how aerodromes can mitigate related noise problems through adaptation of the visual circuits is the way in which one particular airfield alternates the circuit direction on a 24hr basis, even employing 3 northerly circuits (outer, middle and inner) changing from one to another on an hourly basis. Such alternation of procedures does not reduce that noise overall, but is seen as a very successful method by which the 'pain is shared'.
- 8.3 In addition to the adaptation of lateral routing of the visual circuit, many aerodromes employ higher visual circuits. The concept that an increase in the height of a visual circuit will reduce the noise impact is interesting, as an increased circuit height will mean a longer period when the aircraft must fly under increased power and possibly increase track miles. There does not appear to have been any scientific study undertaken to demonstrate that the overall impact of a higher circuit actually does reduce the overall noise penalty on the ground. Finally, environmental issues also arise where GA activities combine with air transport activity where, for example, light aircraft have to 'fit in' with larger commercial aircraft with a resultant increase in holding and delays in the visual circuit.
- 8.4 In mitigating either a perceived generic, or specific, noise related problem, the associated procedures can vary greatly in complexity. The paragraphs below look at various examples that can be employed.
- Ground activity – Specific instructions can be given to pilots concerning the positioning of aircraft during engine run-up checks:
 - “final power checks to be carried out at Holding Point Alpha only”
 - Simplistic NAPs that are commonly employed at aerodromes to help mitigate a very specific problem often refer to the avoidance of overflight of a local village(s)/particular building(s):
 - “Pilots are requested to avoid the villages of...”
 - “Circuit traffic is to avoid overflight of all local villages”
 - “...turn to runway QDM until passing prominent white building...”

⁵ A circuit procedure is (routinely) shaped like a rectangle and obviously starts with the departure, which is then followed by the crosswind leg, downwind leg, base leg and then the final approach (where the aircraft is lined up with the runway). A Standard Overhead Join to a left-hand 1,000 feet circuit pattern is provided at Annex B.

- “All departures from Rwy07 should turn right ... to maintain a track of 080 until clear of Fyfield village.” ”Rwy 07/25 – Downwind leg must be to the north of ... the large new house.”
- Providing generic direction to pilots related to timing of specific turns:
 - “Keep circuits tight”
- Departure routes following course of other features that generate noise:
 - “immediate right turn and follow line of M1”
 - “...track 270 to the railway line”

8.5 Examples of NAPs at aerodromes close to built up areas are often more complex and/or fundamental:

- “Pilots must obtain a (noise abatement procedure) briefing before Departure”
- “Circuits restricted to aerodrome based flying schools only”
- “Noise abatement techniques should be practised at all times”
- “Pilots are to familiarise themselves with the Oxford Noise Amelioration Scheme...”

8.6 Taken as a snapshot review of published material available to all GA pilots, these are but a few examples of the ways in which aerodrome operators adapt procedures to mitigate the noise impact upon the local community. In all cases where geographical features are involved, it would seem evident that a supporting pictorial display of the routing involved produces obvious benefits. It is, however, difficult to objectively quantify the success of schemes on a specific basis but it is evident that aerodrome operators (the local experts) value their worth and believe they go some way to balancing the needs of the aviation and local communities.

9. Publication of NAPs

9.1 It is an ICAO requirement that information on the status of a ‘certified’ (licensed) aerodrome is promulgated in the State’s Aeronautical Information Publication (AIP)⁶; ICAO recommends that this information should include a detailed description of the NAPs established at the aerodrome. Consequently, NAPs associated with licensed aerodromes will be published in the AIP.

9.2 Aside from the AIP, both licensed and unlicensed aerodromes will routinely include details of their NAPs when publishing information in a variety of commercially available flight guides.

10. NAP Compliance

10.1 Publication of a NAP is one thing, the degree to which compliance is achieved or even monitored is quite different. Whilst the monitoring of compliance is vital if the procedures are to prove their worth, it can be difficult to achieve particularly when it involves aircraft operating away from the immediate vicinity of the aerodrome. Whilst an aerodrome operator may choose to design and establish NAPs, the good neighbourliness of an aerodrome will, ultimately, depend on the actions of the pilots flying the aircraft. Pilots are more likely to comply with a NAP if the procedure itself is straightforward and easy to follow.

⁶ The UK AIP is identified as the publication used for the provision of aeronautical information/data necessary for the regularity and efficiency of air navigation.

11. NAP Sanctions

- 11.2 NAPs are established on a voluntary basis and the responsibility of enforcing such procedures and the decision to apply any sanctions against non-complying aircraft, is a matter between the aerodrome operator and the individual pilot found not to have complied with the procedure. Clearly, ignoring any non-compliance will not only negate the effectiveness of the procedure in the round but will do little to encourage future compliance.
- 11.3 Conversely, taking action against errant pilots serves two very important goals. Firstly, the message to the local flying community is clear, 'stray from the procedure(s) and action will be taken'; this will encourage more consistent compliance with the procedure. Secondly, taking sanction against those that do not comply with the aerodrome-imposed procedure gives a very clear message to the local community that the aerodrome is proactive and serious about protecting its neighbours.
- 11.4 The degree of sanction is clearly a difficult issue; aerodrome operators will not, for financial reasons if nothing else, wish to routinely deny the use of the aerodrome and its facilities. However, sanction is important, and it seems that the management at certain aerodromes strike a good balance in developing a rising scale of guidance culminating in penalty. Examples that the CAA has been made aware of include:
- 11.4.1 Where investigation has provided evidence of non-compliance without any overriding reason for not following a NAP, in most cases an informal exchange with the relevant pilot has been shown to have the desired effect.
- 11.4.2 Where a pilot shows a lack of understanding of the procedure, if appropriate, they will be offered the opportunity to fly a dual sortie with a resident flying instructor who will demonstrate the airborne procedure, pointing out relevant land marks; such a training sortie is offered at reduced rates.
- 11.4.3 Blatant or repetitive (perhaps twice yearly) offences may lead to pilots being banned from operating at the aerodrome for periods of weeks or months.

12. Other Issues

12.1 'Out of the Ordinary' Events

- 12.1.1 Based upon comments received by DAP, there is evidence to suggest that to some degree local communities can become attuned to certain levels of activity and associated noise. It is the out-of-the-ordinary activity or new noise source that is more likely to cause concern. Experience has shown that the maxim 'fore warned is forearmed' holds true and the advanced promulgation of anticipated unusual peaks of traffic (night flying, fly-ins/flying displays and helicopter pleasure flights, for example) can prove beneficial to aerodrome operators and the local community alike.

12.2 Aerobatics

- 12.2.1 Whilst aerobatic activity routinely takes place away from aerodromes and therefore outside of the control of most aerodrome authorities, there are a number of aerodromes which are regularly granted annual exemptions from the RoA for the purpose of display practices or rehearsals. Aerobatics can be the source of considerable disturbance and when an aerodrome caters for such activity within the

overhead, or perhaps within the Aerodrome Traffic Zone (ATZ), it is evidently important to vary the portion of airspace utilised.

12.3 Consultative Committees

12.3.1 It remains Government policy that matters concerning aircraft noise from aerodromes should, wherever possible, be resolved locally. In support of this policy, the Government requires, under the Civil Aviation Act 1982, that aerodrome operators at fifty one aerodromes provide facilities for consultation, effectively in the form of Consultative Committees. Committee membership should comprise representatives from the aerodrome, Local Authority, parish councils and other interested parties and its purpose is to allow each party the opportunity to exchange information and ideas. Local difficulties and associated queries relating to an aerodrome's operation can often be resolved through liaison with the Consultative Committee or through contact with the Local Authority's representative on the Committee. Whilst they may provide an alternative avenue for highlighting any concerns that residents may have regarding the operation of a local aerodrome, it should be highlighted that the Consultative Committee does not have any statutory powers over the aerodrome itself.

13. Conclusion

13.1 Noise is the main topic of concern with regard to environmental issues at GA aerodromes and the aerodrome management organisations are generally highly conscious of concerns held within the local community. Given the growing consciousness of local communities, including local government, of the need to become more environmentally friendly, it is increasingly important that the GA community also considers its environmental impact; if possible and subject to overriding safety considerations, GA needs to adapt activities and procedures accordingly to ensure that they are environmentally optimised. Most aerodromes employ NAPs of some description but monitoring of compliance and the appropriateness of sanctions are difficult issues to manage successfully. Community involvement in the observation of compliance, perhaps fostered through an open relationship with the local residents, using the Consultative Committee and local council as appropriate, can have clear benefits. Equally, being seen to take action against individual pilots who fail to comply with promulgated NAPs is vital to establishing and maintaining a confidence-enhancing relationship with the local population. It is also worth highlighting that promulgation of any anticipated unusual levels of activity or different events in advance may help placate concerns related to short-term peaks of disturbance.

14. Best Practice

14.1 The following points are offered as CAA best practice guidance in respect of noise abatement issues at GA-focussed aerodromes. Aerodrome operators should consider:

- Take the matter of noise impact seriously and be seen, subject to overriding safety considerations, to be attempting to protect their neighbours from the environmental impact of aerodrome related operations.
- Notwithstanding overriding flight safety constraints, and taking into due consideration the experience and expertise of the locally based flying community, consider adaptation of flying procedures, such as published aerodrome patterns and practices, to mitigate the environmental impact of aerodrome operations upon the local community.

- Aim to foster an open relationship with the local community, providing details of NAPs and ways in which members of the public can assist in the monitoring of compliance.
- Be prepared to sanction, on a sliding scale, individual pilots who are found to have unnecessarily failed to comply with locally implemented NAPs.
- Assist inexperienced pilots, those unfamiliar with the aerodrome and repeat offenders to facilitate a better understanding of local noise issues and associated NAPs.
- Consider promulgating within the local community any anticipated future unusual flying activity that might, even in the short-term, precipitate an increased noise burden describing how the impact has been mitigated to the greatest extent possible.
- Take action to minimise the impact of ground operations.

ANNEX A to Noise Considerations at GA Aerodromes

Full website links for relevant legislation:

Civil Aviation Authority (Air Navigation) Directions 2001
(<http://www.caa.co.uk/docs/7/DfT%20CAA%20Directions.pdf>)

CAP 393: Air Navigation: The Order and The Regulations
(<http://www.caa.co.uk/docs/33/CAP393.pdf>)

Environmental Protection Act 1990
(<http://www.legislation.gov.uk/ukpga/1990/43/contents>)

Noise Act 1996
(<http://www.legislation.gov.uk/ukpga/1996/37/contents>)

Civil Aviation Act 1982
(<http://www.legislation.gov.uk/ukpga/1982/16/contents>)

Aeroplane Noise Regulations 1999
(<http://www.legislation.gov.uk/uksi/1999/1452/contents/made>)

Aeroplane Noise (Amendment) Regulations 1999
(<http://www.legislation.gov.uk/uksi/1999/2253/contents/made>)

Air Navigation (Environmental Standards for Non-EASA Aircraft) Order 2008
(<http://www.legislation.gov.uk/uksi/2008/3133/contents/made>)

Full website links for relevant guidance documentation:

CAP 733: Permit to Fly Aircraft
(<http://www.caa.co.uk/docs/33/CAP733.PDF>)

CAP 168: Licensing of Aerodromes
(<http://www.caa.co.uk/docs/33/CAP168.PDF>)

CAP 793: Safe Operating Practices at Unlicensed Aerodromes
(<http://www.caa.co.uk/docs/33/CAP793.pdf>)

Environmental Information Document 2: The Rules of the Air Regulations
(<http://www.caa.co.uk/docs/7/EIS%2002.pdf>)

Environmental Information Document 4: Aerodrome Operations
(<http://www.caa.co.uk/docs/7/EIS%2004.pdf>)

Environmental Information Document 11: Aircraft Noise and Emissions
(<http://www.caa.co.uk/docs/7/EIS%2011.pdf>)

Conduct of Prosecutions by the CAA as a Prosecutor
(http://www.caa.co.uk/docs/755/CAAProsecutionsPolicy_v2_20110914.pdf)

GA Safety Poster: Standard Overhead Join
(http://www.caa.co.uk/docs/33/ga_srgwebStandardOverheadJoinPosterJan09.pdf)

Safety Sense Leaflet 6: Aerodrome Sense
(<http://www.caa.co.uk/docs/33/20110217SSL06.pdf>)

Safety Sense Leaflet 19: Aerobatics
(<http://www.caa.co.uk/docs/33/20110217SSL19.pdf>)

PPG 24: Planning and Noise
(<http://www.communities.gov.uk/documents/planningandbuilding/pdf/156558.pdf>)

Guidelines on Airport Consultative Committees
(<http://www.ukaccs.info/guidelines.htm>)

Useful websites:

Civil Aviation Authority (www.caa.co.uk)

Department for Transport (www.dft.gov.uk)

International Civil Aviation Organisation (www.icao.int)

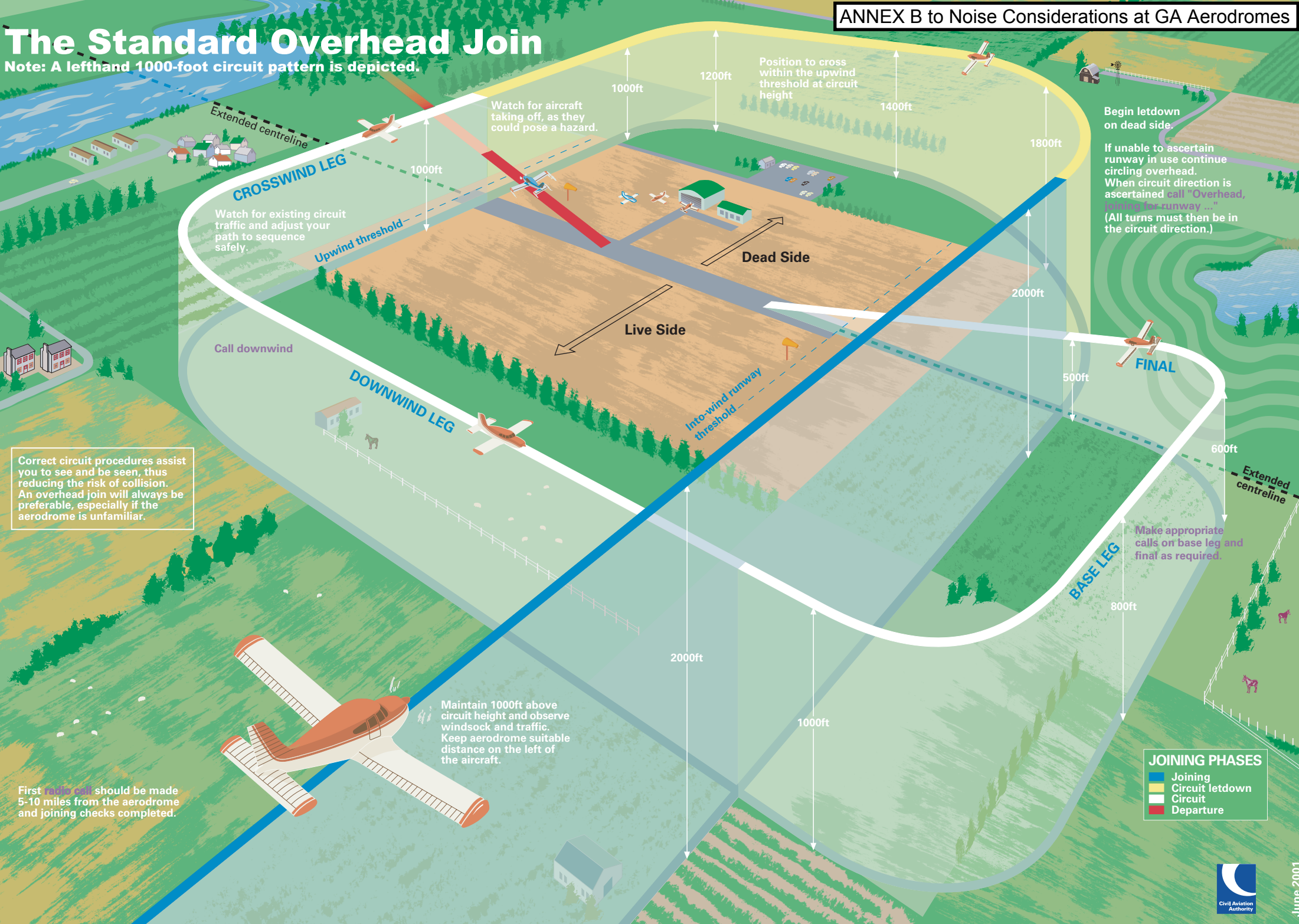
European Aviation Safety Agency (www.easa.europa.eu)

General Aviation Awareness Council (www.gaac.org.uk)

Aeronautical Information Services (www.ais.org.uk)

The Standard Overhead Join

Note: A lefthand 1000-foot circuit pattern is depicted.



CROSSWIND LEG

Watch for existing circuit traffic and adjust your path to sequence safely.

Watch for aircraft taking off, as they could pose a hazard.

Position to cross within the upwind threshold at circuit height

Begin letdown on dead side.

If unable to ascertain runway in use continue circling overhead. When circuit direction is ascertained call "Overhead, joining for runway ..." (All turns must then be in the circuit direction.)

Correct circuit procedures assist you to see and be seen, thus reducing the risk of collision. An overhead join will always be preferable, especially if the aerodrome is unfamiliar.

First radio call should be made 5-10 miles from the aerodrome and joining checks completed.

Maintain 1000ft above circuit height and observe windsock and traffic. Keep aerodrome suitable distance on the left of the aircraft.

Make appropriate calls on base leg and final as required.

JOINING PHASES

- █ Joining
- █ Circuit letdown
- █ Circuit
- █ Departure