EXPLANATORY MEMORANDUM TO

THE AIR NAVIGATION ORDER 2009

2009 No. 3015

1. This explanatory memorandum has been prepared by The Department for Transport and is laid before Parliament by Command of Her Majesty.

This memorandum contains information for the Joint Committee on Statutory Instruments.

2. Purpose of the instrument

2.1 The Air Navigation Order 2009 ("the ANO") is a substantial piece of secondary legislation by which aviation safety standards are implemented and air navigation is regulated. The ANO is wide-ranging, covering aircraft (airworthiness, operation and certification), air crew, passengers, cargo, air traffic services and aerodromes. Certain articles extend to the flying of kites and model aircraft.

3. Matters of special interest to the Joint Committee on Statutory Instruments

3.1 None.

4. Legislative Context

4.1 This instrument consolidates existing amendments to the Air Navigation Order 2005 and introduces a number of additional provisions.

5. Territorial Extent and Application

5.1 This instrument applies to all of the United Kingdom.

6. European Convention on Human Rights

6.1 As the instrument is subject to negative resolution procedure and does not amend primary legislation, no statement is required.

7. Policy background

7.1 As described above, there are various changes which now need to be made to the Air Navigation Order 2005. A key amendment in this Order is consequent upon the establishment of common aviation safety rules in Europe, pursuant to EC Regulation 3922/91 on the harmonisation of technical requirements and administrative procedures in the field of civil aviation, which is known as EU-OPS. EU-OPS is designed to enhance aviation safety and promote a level playing field across commercial air transportation within Europe. The EU-OPS requirements will apply to all EU operators of aeroplanes flying for the purposes of commercial air transport. This Order ensures that penalties are created for breach of the EU-OPS rules and the same level of penalty is applied to such a breach as would apply to a breach of a similar provision in the Order. The consolidated Air Navigation Order also seeks to implement various amendments reflecting national changes to standards in aviation and air navigation safety, including an amendment which will make the shining of laser lights at aircraft a criminal offence.

7.2 It is desirable to consolidate these amendments in a wholly new instrument. The level of public interest in the policy is reflected in the analyses of consultation contained in the final

Regulatory Impact Assessments (RIAs) undertaken by the Civil Aviation Authority which are attached to this Explanatory Memorandum.

8. Consultation outcome

8.1 Consultations were carried out by the Civil Aviation Authority for each of the amendments listed below in 10.1. Each such amendment has also had a Regulatory Impact Assessment produced.

9. Guidance

9.1 Guidance relating to the various amendments contained within the consolidated Air Navigation Order is provided to users by the Civil Aviation Authority in its role as the industry regulator with respect to such matters.

10. Impact

10.1 Regulatory Impact Assessments are attached to this memorandum for amendments:

- consequential upon the harmonisation of the technical requirements of EC Regulation 3922/91,
- permitting state aircraft to fly with a European Aviation Safety Agency certificate of airworthiness,
- expanding the use of Mode S transponders in UK airspace,
- to the regulation of Unmanned Aircraft Systems,
- to the classification of minor repairs and modifications,
- prohibiting the advertising of illegal public transport flights,
- changing the crew requirements for police helicopter operations,
- to the description of a small aircraft,
- to the regulation of test flights over congested areas,
- to the requirements for safety management systems at licensed aerodromes, and
- to effect the transfer of instrument flight procedure design to industry.

10.2 Only two of the amendments listed in paragraph 10.1 above have an impact on the public sector. The impact on the public sector for prohibiting the advertising of illegal public transport flights will be negligible with the costs being incurred by the Civil Aviation Authority for the investigation of offences and subsequent prosecutions.

10.3 The impact on the public sector in relation to changing the crew requirements for police helicopter operations will be high with overall costs predicted to be in the order of £17.5m split between the Police Air Operations units concerned and the Home Office. But it is likely that in the main the commitment to a harmonised approach to safety for police helicopter crews will have already been addressed within normal re-equipment procurement cycles.

10.4 A Regulatory Impact Assessment has not been produced in respect of the following changes because the measures have no impact on business, charities or the voluntary sector:

- the removal of the requirement for medical certificate holders to notify the Civil Aviation Authority of their illness in writing,
- amending the definition of a microlight aircraft,
- the prohibition of the use of shining lights which can dazzle or distract air crew,
- the provision which will permit the Civil Aviation Authority to provisionally suspend the certificates of airworthiness which are regulated by the European Aviation Safety Agency.

10.5 None of the measures listed in paragraph 10.4 above has an impact on the public sector.

11. Regulating small business

11.1 The legislation applies to small business.

11.2 To minimise the impact of the requirements on firms employing up to 20 people, the Civil Aviation Authority will provide assistance and advice to small business where possible when introducing new regulations which are likely to increase their costs.

11.3 The basis for the final decision on what action to take to assist small business has been left to the judgement of the Civil Aviation Authority as the industry regulator.

12. Monitoring & review

12.1 The Civil Aviation Authority will monitor the UK aviation industry to ensure compliance with the standards which set out in the consolidated Air Navigation Order and European legislation. The Civil Aviation Authority will continue to make future amendments to the Order as necessary. These future amendments will be captured in a further consolidation of the Air Navigation Order when appropriate.

13. Contact

Craig Griffiths at the Department for Transport (Tel: 020 7944 3246 or email: craig.griffiths@dft.gsi.gov.uk) can answer any queries regarding the instrument.

Impact Assessment 1 - Summary: Intervention & Options

Department /Agency:	Title:	
Civil Aviation Authority Safety Regulation Group	**Impact Assessment of the Amendment of the Air Navigation Order 2005 and the Air Navigation (Dangerous Goods) Regulations**	
Stage: Implementation	**Version:** 1	**Date:** xx April 2008
Related Publications: Civil Aviation Publication 393 - Air Navigation: The Order and the Regulations		

Available to view or download at:

http://www.caa.co.uk/publications

Contact for enquiries: ed.golden@caa.co.uk **Telephone:** 01293 573539

What is the problem under consideration? Why is government intervention necessary?

Regulation (EEC) No. 3922/91 Annex III (EU-OPS) provides harmonisation of technical requirements and administrative procedures in the field of civil aviation, and is designed to enhance aviation safety and promote a level playing field in commercial air transportation within the European Union. The risks of not making these changes to the ANO to reflect EU-OPS are that the United Kingdom will be in breach of its international obligations to align its legislation with superseding European legislation, the law will be unclear inasmuch as UK domestic legislation purports to apply requirements which are no longer enforceable and perhaps more significantly purports to exclude aircraft from requirements where the exclusion is no longer applicable.

What are the policy objectives and the intended effects?

The EU-OPS requirements will apply to all EU operators of aeroplanes flying for the purpose of commercial air transportation. The EU-OPS requirements will supersede the ANO and AN(DG)Rs in these relevant areas and the objective is to reflect these changes so far as necessary in the ANO and AN(DG)Rs. It is proposed to amend both the ANO and the AN(DG)Rs to define public transport as excluding commercial air transportation and to define commercial air transportation as flights which must be conducted under an EU OPS Air Operator's Certificate (AOC).

What policy options have been considered? Please justify any preferred option.

Three Options were considered. The CAA's preferred option is Option 2.

Option 1.No Intervention. This was considered unacceptable. As a matter of law, the EU requirements will have effect.

Option 2.This option amended the ANO to define public transport as excluding commercial air transportation

Option 3.This option amended the ANO to include commercial air transportation in the definition of public transport.

When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects?

As the proposal is cost-neutral no formal review date will be set. However, in the event of unforeseen impacts becoming apparent, this will be reconsidered.

Ministerial Sign-off For final proposal/implementation stage Impact Assessments:

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options

Signed by the responsible Minister:

Paul Clark

.....Date:

Summary: Analysis & Evidence

Policy Option: 2	Description: **Amended ANO to define public transport as excluding commercial air transportation.**

COSTS

ANNUAL COSTS	Description and scale of **key monetised costs** by 'main affected groups' There maybe a cost associated with amending the operator's operating and training manuals but this should be a minimal. See paragraph 6.3.1 in the Evidence Base.
One-off (Transition) **Yrs**	
£ Nil	
Average Annual Cost (excluding one-off)	
£ Nil	**Total Cost** (PV) **£ Nil**

Other **key non-monetised costs** by 'main affected groups' N/A

BENEFITS

ANNUAL BENEFITS	Description and scale of **key monetised benefits** by 'main affected groups' There are no monetory benefit from this amendment.
One-off **Yrs**	
£ Nil	
Average Annual Benefit (excluding one-off)	
£ Nil	**Total Benefit** (PV) **£ Nil**

Other **key non-monetised benefits** by 'main affected groups' Nil

Key Assumptions/Sensitivities/Risks This option will secure compliance by the United Kingdom with its Community obligations with the minimum changes to current safety legislation. It also ensures that there will be no gaps in safety legislation for those aircraft outside of EC Regulation No. 216/2008.

Price Base Year 0	Time Period Years 0	**Net Benefit Range** (NPV) **£ N/A**	**NET BENEFIT** (NPV Best estimate) **£ N/A**

What is the geographic coverage of the policy/option?				UK
On what date will the policy be implemented?				16 July 2008
Which organisation(s) will enforce the policy?				CAA
What is the total annual cost of enforcement for these organisations?				£ N/A
Does enforcement comply with Hampton principles?				Yes
Will implementation go beyond minimum EU requirements?				No
What is the value of the proposed offsetting measure per year?				£ Nil
What is the value of changes in greenhouse gas emissions?				£ Nil
Will the proposal have a significant impact on competition?				No
Annual cost (£-£) per organisation (excluding one-off)	Micro **Nil**	Small **Nil**	Medium **Nil**	Large **Nil**
Are any of these organisations exempt?	No	No	N/A	N/A

Impact on Admin Burdens Baseline (2005 Prices) (Increase - Decrease)

Increase of £ Minimal Decrease of £ Nil **Net Impact** **£** Minimal

Key: **Annual costs and benefits: Constant Prices** **(Net) Present Value**

Evidence Base (for summary sheets)

IMPACT ASSESSMENT FOR THE AMENDMENT OF THE AIR NAVIGATION ORDER 2005 AND THE AIR NAVIGATION (DANGEROUS GOODS) REGULATIONS 2002 TO REFLECT THE COMING INTO FORCE OF PROVISIONS OF THE EUROPEAN COUNCIL REGULATION (EEC) NO. 3922/91 ANNEX III (EU-OPS)

1 Title of Proposal

1.1 Amendment to the Air Navigation Order 2005 (ANO) and the Air Navigation (Dangerous Goods) Regulations 2002 (AN(DG)Rs) to reflect the coming into force of provisions of the European Council Regulation (EEC) No. 3922/91 Annex III (EU-OPS).

2 Purpose and Intended Effect

2.1 Objective

2.1.1 The EU-OPS requirements will apply to all EU operators of aeroplanes flying for the purpose of commercial air transportation. The EU-OPS requirements will supersede the ANO and AN(DG)Rs in these relevant areas and the objective is to reflect these changes so far as necessary in the ANO and AN(DG)Rs.

2.2 Background

2.2.1 The Council of Ministers adopted by qualified majority a Regulation ((EC) No. 1899/2006) amending Regulation (EEC) No. 3922/91 Annex III (EU-OPS) on the harmonisation of technical requirements and administrative procedures in the field of civil aviation, approving all of the amendments passed by the European Parliament at second reading under co-decision procedure. The Regulation aims in particular to enhance aviation safety and promote a level playing field in commercial air transportation within the European Union. The Regulation transposes the non-binding Joint Aviation Requirements (JAR-OPS) established by the Joint Aviation Authorities at non-binding inter-authority level into a binding Community legislative act.

2.2.2 The adoption of Regulation (EEC) No. 3922/91 Annex III (EU-OPS), as amended, into European Law will affect the large majority of UK AOC holders which operate aeroplanes. At present, these operators satisfy the CAA as to their competence, as required by Article 6 of the ANO, by demonstrating compliance with JAR-OPS rules. With the adoption of EU-OPS, most of these operators will be required by EU Legislation to comply with EU-OPS.

2.2.3 In addition, at present, most of these operators are exempt from a number of the AN(DG)Rs, by demonstrating compliance with JAR-OPS rules, particularly Subpart R. With the adoption of EU-OPS, most of these operators will be required by EU Legislation to comply with these requirements.

2.3 Commercial Air Transportation and Public Transport

2.3.1 Not all UK AOC holders operating aeroplanes will be required to comply with EU-OPS. EU-OPS applies to commercial air transportation operations. Article 6 of the ANO requires an AOC to be held for public transport operations. The meaning of public transport as defined in the ANO is wider than the meaning of commercial air transportation as used in EU-OPS. In addition, EU-OPS does not apply to state aircraft operations such as police operations. UK AOC holders who conduct certain types of operation which are public transport but not commercial air transportation will therefore not be subject to EU-OPS but will continue to require an AOC issued under Article 6 of the ANO. Operations which are likely to fall outside the scope of EU-OPS include the following:

a) Helicopter operations, to which JAR-OPS 3 and/or the ANO continue to apply;

b) Aeroplanes when used by military, customs and police services;

c) Parachute-dropping and fire-fighting flights, and associated positioning and return flights in which the persons carried are those who would normally be carried on parachute dropping or fire-fighting flights;

d) Flights immediately before, during, or immediately after an aerial work activity provided these flights are connected with that aerial work activity and in which, excluding crew members, no more than six persons indispensable to the aerial work activity are carried.

2.3.2 Regarding dangerous goods regulations, UK AOC holders who conduct certain types of operation which are public transport but not commercial air transportation will not be subject to EU-OPS but will continue to be subject to the AN(DG)Rs. The same will be so for parties other than operators who have responsibilities in respect of dangerous goods, e.g. shippers, freight agents, passengers.

2.3.3 At present, the ANO contains definitions of public transport, aerial work and private flights. In essence, a flight is public transport if valuable consideration is given or promised for the carriage of passengers or cargo on that flight. This definition is capable of embracing a wide variety of circumstances going beyond normal commercial passenger carrying operations. It is for that reason that a number of exceptions have been developed where flights which might otherwise be caught by the public transport requirements (charity flights, cost sharing flights etc.) are deemed to be private.

2.3.4 European requirements use the term 'commercial air transportation'. This term is used but not defined in EU-OPS. However, EEC Regulation No. 2407/92 introduced the requirement for a European operating licence (based on financial and ownership criteria, not safety). This requirement applies to Community carriers who "carry by air passengers, mail and/or cargo for remuneration and/or hire". This is taken to be what is meant by commercial air transportation for the purposes of EU-OPS. The term is considered to apply to what might be thought of as "proper" commercial passenger and cargo flights. It is not considered to extend to such things as charity flights and cost sharing which does, however, come within the wider definition of public transport in the ANO.

2.3.5 Everything which is commercial air transportation is therefore also in ANO terms public transport. However, public transport also embraces other types of operation which fall outside the narrower scope of commercial air transportation.

2.3.6 Against this background, it is necessary to introduce into the ANO references to commercial air transportation because it is to commercial air transportation flights by aeroplanes that EU-OPS will apply.

2.3.7 The proposal therefore is that the ANO will contain four categories of flight:

a) Public transport, meaning effectively what it means today except that it will exclude commercial air transportation flights.

b) Commercial air transportation – which will mean flights by aeroplanes required to be conducted under EU-OPS.

c) Aerial work – meaning any flight for which valuable consideration is given or promised other than public transport or commercial air transportation.

d) Private – meaning any flight which is neither public transport, commercial air transportation nor aerial work.

2.4 Schedule 14 Penalties

2.4.1 The legal requirements for conducting public transport operations are currently set out in the ANO. A failure to comply with any of those requirements is a criminal offence. The penalty for an offence will depend upon how it is categorised in Article 148 of the Order.

2.4.2 The most serious category of offence is punishable by an unlimited fine or imprisonment for five years or both. Offences in this category are listed in Part C of Schedule 14. There is only one offence in this category and that is recklessly or negligently endangering the safety of aircraft.

2.4.3 The second most serious category of offence is punishable by an unlimited fine or imprisonment of up to two years or both. Offences coming within this category are listed in Part B of Schedule 14 and include flying without a certificate of airworthiness, flying without an appropriate flight crew licence or flying for public transport without an air operator's certificate.

2.4.4 The third most serious category of offence is punishable by a fine of up to £2,500. These offences are listed in Part A of Schedule 14.

2.4.5 The least serious category of offence comprises anything which is not specified in Part A, B or C of Schedule 14 (i.e. everything else in the ANO). A breach of any of these requirements is punishable with a maximum fine of £1,000.

2.4.6 It is proposed that where an Article in the Order is displaced, so far as commercial air transport aeroplanes are concerned, by a provision in EU-OPS, the penalty for a contravention of that EU-OPS provision should be the same as for a contravention of the Article under the Order. There is no equivalent to endangering so none of the EU-OPS provisions will come within the most serious category of offence. But flying an aeroplane for the purpose of commercial air transport without an EU-OPS AOC would be punishable if tried in the Crown Court with an unlimited fine and/or up to two years' imprisonment.

2.4.7 The AN(DG)Rs are the legal requirements for the carriage of dangerous goods in the UK. A breach of the Regulations is punishable by an unlimited fine or imprisonment of up to two years or both.

2.4.8 It is proposed that where a Regulation in the AN(DG)Rs is displaced, so far as commercial air transport aeroplanes are concerned, by a provision in EU-OPS, the penalty for a contravention of that EU-OPS provision should be the same as for a contravention of the Regulation in the AN(DG)Rs.

3 Rationale for Government Intervention

3.1 The risks of not making these changes to the ANO are that the United Kingdom will be in breach of its international obligations to align its legislation with superseding European legislation, the law will be unclear inasmuch as UK domestic legislation purports to apply requirements which are no longer enforceable and perhaps more significantly purports to exclude aircraft from requirements where the exclusion is no longer applicable.

4 Consultation

4.1 Within Government

4.1.1 The Department for Transport has been consulted on this proposal.

4.2 Public Consultation

4.2.1 All interested parties within the aviation industry have been consulted. Additionally, the Letter of Consultation and Regulatory Impact Assessment was made available on the CAA SRG website.

5 Options for Amending the ANO

5.1 Three Options were considered.

Option 1. Do nothing. This was considered unacceptable. As a matter of law, the EU requirements will have effect. It would be confusing as well as a breach of the United Kingdom's international obligations, to retain in the ANO provisions which purport to apply to aircraft which are now subject to EU regulation.

Option 2. This option amended the ANO to define public transport as excluding commercial air transportation and to define commercial air transportation as flights which must be conducted under an EU-OPS AOC. This would mean that any provision in the ANO which applies to public transport would not apply to EU-OPS operations. Where currently there is a provision applying to public transport which is required to be applied to EU-OPS operations, it would need to expressly say so. Typically, this would be achieved by saying that the provision applies to flights for the purpose of public transport and commercial air transportation. But there are very few provisions where this would apply.

Option 3. This option amended the ANO to include commercial air transportation in the definition of public transport. This would mean that every provision applying to public transport flights would also apply to EU-OPS operations unless specifically excluded by saying, for example, "this provision applies to flights for the purpose of public transport except such flights which are for the purpose of commercial air transportation" or "this provision shall not apply to an EU-OPS flight or an EU aeroplane". But almost every provision in the ANO which applies to public transport would not be applicable to EU-OPS operations. So there would need to be a very large number of statements to that effect included in the ANO.

6 Costs and Benefits for Amending the ANO

6.1 Sectors and Groups Affected

6.1.1 All operators of aeroplanes holding an AOC and conducting public transport will be affected. The proposed amendments would have no effect on voluntary organisations and charities and would not have any race equality impacts.

6.2 Benefits

Option 1. There would be no benefit and as stated above this was not an option that can be considered.

Option 2. This has the immediate advantage of avoiding the need to add excluding provisions in large numbers of Articles. It has the longer-term advantage of differentiating between public transport and commercial air transportation, treating public transport as something different to commercial air transportation. In the medium term, industry will need to be educated that if they see a provision which applies to public transport it means it is not applicable to commercial air transportation. This option will secure compliance by the United Kingdom with its Community obligations with the minimum changes to current safety legislation. It also ensures that there will be no gaps in safety legislation for those aircraft outside of EC Regulation No. 216/2008.

Option 3. The benefit of this option was that an operator holding an EU-OPS AOC would have a positive statement that Articles of the ANO do not apply to their operation. As with the second option, industry would be educated as to which Articles were not applicable to commercial air transportation. However, this option would require a substantial amendment to the ANO excluding provisions to a large number of Articles and the benefit was suggested to be small.

The CAA's preferred option is Option 2.

6.3 Costs

6.3.1 Compliance Costs

Option 1. There were no costs associated with this option.

Option 2. See below.

Option 3. See below.

It is not considered that any significant costs arise as a consequence of the amendments to the ANO which are being proposed.

Significant costs may arise as a consequence of the requirements imposed by EU-OPS. This Impact Assessment (IA) does not attempt to consider those costs. Rather, this IA concerns the changes being made to the ANO which are consequential upon the requirements now coming into force under EU-OPS. Those requirements will come into force whether or not the ANO is amended. The costs arising from EU-OPS are therefore not costs attributable to this proposal to amend the ANO.

6.3.2 Costs for a Typical Business

Operators who are likely to be affected by this proposal were invited to submit comments/estimates to the CAA; none were received.

7 Options for Amending the AN(DG)Rs

7.1 Two Options were considered.

Option 1. Do nothing. This was considered unacceptable. As a matter of law, the EU requirements will have effect. It would be confusing as well as a breach of the United Kingdom's international obligations, to retain in the ANO provisions which purport to apply to aircraft which are now subject to EU Regulation.

Option 2. Amend the AN(DG)Rs such that an EU-OPS operator is not subject to those Regulations in respect of responsibilities addressed by EU-OPS.

8 Costs and Benefits for Amending the AN(DG)Rs

8.1 Sectors and Groups Affected

8.1.1 All operators of aeroplanes holding an AOC and conducting commercial air transport will be affected. The proposed amendments would have no effect on voluntary organisations and charities and would not have any race equality impacts.

8.2 Benefits

Option 1. There would be no benefit and as stated above this was not an option that can be considered.

Option 2. This is a very simple but effective solution which will secure compliance by the United Kingdom with its Community obligations with the minimum changes to current safety legislation.

The CAA's preferred option is Option 2.

8.3 Costs

8.3.1 Compliance Costs

Option 1. There were no costs associated with this option.

Option 2. See below.

It is not considered that any significant costs arise as a consequence of the amendments to the AN(DG)Rs which are being proposed. EU-OPS dangerous goods requirements reflect the ICAO Technical Instructions which are currently incorporated in the AN(DG)Rs. Consequently, there will be no additional requirements introduced with the coming into force of EU-OPS.

8.3.2 Costs for a Typical Business

Operators who are likely to be affected by this proposal were invited to submit comments/estimates to the CAA; none were received.

9 Small Firms Impact Test

9.1 The proposals will have an impact on any operator of aeroplanes holding an EU-OPS AOC and operating for the purpose of commercial air transportation. However, this will be restricted to the adoption of requirements of the new operating code which differ from JAR-OPS in only minor detail. The CAA did not consider these costs to be significant but welcomed comments on this assumption. No comments on the costs were received

10 Competition Assessment

10.1 It is considered that there are not any competition issues.

11 Enforcement, Sanctions and Monitoring

11.1 The mechanism for enforcement through the ANO already exists and no additional resources will be required in this regard. The position will be kept under continuing review as part of the ongoing transition process.

12 Implementation and Delivery Plan

12.1 The changes to UK legislation implemented by this IA have been anticipated for several years. The draft proposal addresses what UK Industry have been briefed upon over the past two years in various degrees, as details have been released by the European Commission. Therefore, UK industry have been made aware of the implementation date of these proposals (16 July 2008) and the administrative changes that will be required. The CAA is providing guidance material to all affected by these changes and will continue to provide assistance and advice during any transition period.

13 Post-implementation Review

13.1 Further European legislation will be introduced in 2009 which will affect all forms of aviation undertaken in the UK and will require further amendment to the ANO and the AN(DG)Rs. The CAA, as part of its continuing oversight of aircraft operations, will assess the effect of this and further amendments on both commercial air transport and public transport. Should amendments be required, the CAA will consult on proposals that would modify or supersede the requirements proposed in this IA.

14 Consultation

14.1 In the Letters of Consultation (L of C) of 10 July 2007 (FODCOM 16/2007) and 12 September 2007 (FODCOM 21/2007) the CAA detailed the proposal to amend the ANO and the

AN(DG)Rs, respectively, to reflect the coming into force of provisions of the EU-OPS. Comments were invited on the proposal.

14.2 Comments concerning the L of C (FODCOM 16/2007) were received from two AOC holders and one from a member of the public.

a) MyTravel

b) Directflight

c) Mr C Rapose

14.3 There were two replies to the L of C (FODCOM 21/2007). One was received from an AOC holder, the other from the holder of a Police AOC.

a) British International

b) Western Counties Air Operations Unit

14.4 A summary of the comments and replies are given at Annex 1. The CAA is satisfied that the views expressed by interested parties during the consultations have been taken into account.

15 Summary and Recommendation for Amending the ANO

15.1 The CAA believes that Option 2 has the greater advantage by avoiding the need to add excluding provisions in large numbers of Articles. It has the longer-term advantage of differentiating between public transport and commercial air transportation, treating public transport as something different to commercial air transportation. This option will secure compliance by the United Kingdom with its Community obligations with the minimum changes to current safety legislation. It also ensures that there will be no gaps in safety legislation for those aircraft outside of EC Regulation No. 216/2008.

15.2 Option 1 was rejected because as a matter of law, the EU requirements will have effect and therefore by not amending legislation it would be a breach of the UK's international obligations. Although Option 3 offered a positive statement that Articles of the ANO do not apply to operators holding an EU-OPS AOC, this option would require a substantial amendment to the ANO excluding provisions to a large number of Articles and the benefit was suggested to be small.

15.3 A summary of the Costs and Benefits associated with amending the ANO are tabulated in Annex 2. The proposed amendment to the ANO is detailed in Annexes 3 and 4.

16 Summary and Recommendation for Amending the AN(DG)Rs

16.1 The CAA believes that Option 2 will provide an effective solution requiring the minimum changes to current safety legislation and which will secure compliance by the United Kingdom with its Community obligations.

16.2 Option 1 was rejected because, as a matter of law, the EU requirements will have effect. It would be confusing as well as a breach of the United Kingdom's international obligations to retain in the ANO provisions which purport to apply to aircraft which are now subject to EU Regulation.

15.3 A summary of the Costs and Benefits associated with amending the AN(DG)Rs are tabulated in Annex 2. The proposed amendment to the AN(DG)Rs is detailed in Annexes 3 and 4.

Specific Impact Tests: Checklist

Use the table below to demonstrate how broadly you have considered the potential impacts of your policy options.

Ensure that the results of any tests that impact on the cost-benefit analysis are contained within the main evidence base; other results may be annexed.

Type of testing undertaken	***Results in Evidence Base?***	***Results annexed?***
Competition Assessment	No	No
Small Firms Impact Test	No	No
Legal Aid	No	No
Sustainable Development	No	No
Carbon Assessment	No	No
Other Environment	No	No
Health Impact Assessment	No	No
Race Equality	No	No
Disability Equality	No	No
Gender Equality	No	No
Human Rights	No	No
Rural Proofing	No	No

Annexes

Annex 1

FODCOM 16/2007

Commentor	Comments	Responses
MyTravel Limited	MyTravel Airways had no objection to the proposal to amend the Air Navigation Order 2005 (ANO).	Noted.
Directflight Limited	Clarification was sought over disapplying Article 42(1)(c) and its effect on Article 126 (1) exemptions with respect to operations into certain aerodromes.	Directflight accurately summarised the situation regarding the forthcoming changes to the ANO being brought about by the introduction of EU-OPS. The CAA intends to disapply Article 42(1)(c) because EU-OPS 1.220 and EU-OPS 1.192 are equivalent requirements. However, Article 126(1) is specific to the UK aerodromes, although it applies to all aircraft flying here. The CAA wishes to continue to apply it to all operators currently conducting public transport, and we can achieve that by applying it to all commercial air transport operations. However, because this is a UK specific requirement, which goes beyond EU-OPS, the CAA will retain its ability to exempt using Article 153.
Mr C Rapose	Include the following text in the beginning of the ANO: "Without prejudice to the generality within an ANO or to any other provision of Council Regulation (EEC) No 2407/92 of 23 July 1992 on the licensing of air carriers and or of Council Regulation (EC) No 1899/2006 (annex III) of 12 December 2006 amending Council Regulation (EEC) No. 3922/91 of 16 December 1991, an ANO may contain provision –" Amend Section 155 of the ANO to include the following: 'Community Air Carrier' has the meaning as defined in of Council Regulation (EEC) No 2408/92 of 23 July 1992 on access for Community air carriers to intra-Community air routes. 'Operating Licence' has the meaning as defined in of Council Regulation	This was outside the scope of the consultation to amend the ANO to reflect the coming into force of Provisions of Regulation (EEC) No. 3922/92 Annex III. The definitions for 'community air carrier' and 'operating licence' are found in Community Regulations (EEC) Nos 2407/92 and 2408/92 which are Community law and therefore do not require defining in the ANO. 'Operating Licence' is defined in CAP 393 Section 6 of The Civil Aviation Authority

	(EEC) No 2407/92 of 23 July 1992 on the licensing of air carriers. 'Air Operator's Certificate' (AOC) is a 'document', a company or individual's business, wishing to manoeuvre an aircraft itself as a Community air carrier, has to have access to possession, prior to offering to arrange flights to carry by air passengers, mail and/or cargo for remuneration and/or hire. i. An AOC certifies that a company or individual's business having access to the possession of the document, prior to the issue of the document complied with the required through process by which, the CAA based on established safety criteria was satisfied that, the company or individual's business is 'competent to secure the safe use of aircraft' to arrange flights to 'carry by air passengers, mail and/or cargo for remuneration and/or hire'. ii. The document above, once granted remains in force and is valid indefinitely, provided no evidence exists that a breach of a safety requirement without reasonable excuse has been committed with a flight arranged under the document.	Regulations 1991 in Regulation 3 'Interpretation'. The term is not used in the ANO. This is outside the scope of the consultation to amend the ANO to reflect the coming into force of Provisions of Regulation (EEC) No. 3922/92 Annex III.

FODCOM 21/2007

Commentor	Comments	Responses
British International	Does the L of C apply to AOC operators of helicopter operators?	The L of C only applies to aeroplane AOC holders.
Western Counties Air Operations Unit	Will the L of C have any effect on the existing dangerous goods exemptions presently given to UK Police Air Support Units?	Holders of PAOCs will continue to be subject to the Air Navigation (Dangerous Goods) Regulations and as such the L of C has no effect on the exemptions.

Summary Costs and Benefits Table for Amending the ANO

Option	Total benefit per annum: economic, environmental, social policy and administrative	Total cost per annum: economic, environmental, social policy and administrative
1	No benefit.	No cost.
2	This has the immediate advantage of avoiding the need to add excluding provisions in large numbers of Articles. It has the longer-term advantage of differentiating between public transport and commercial air transportation, treating public transport as different to commercial air transportation. This option will secure compliance by the United Kingdom with its Community obligations with the minimum changes to current safety legislation. It also ensures that there will be no gaps in safety legislation for those aircraft outside EC Regulation No. 216/2008.	There will be no environmental or social costs. There will be an administrative cost involved in the change from a JAR-OPS AOC to an EU-OPS AOC. This is expected to be small and during the consultation, no estimates of costs involved were offered.
3	The benefit of this option was that an operator holding an EU-OPS AOC would have a positive statement that Articles of the ANO do not apply to their operation. As with the second option, industry would be educated as to which Articles were not applicable to commercial air transportation. However, this option would require a substantial amendment to the ANO excluding provisions to a large number of Articles and the benefit was suggested to be small.	As Option 2 above.

Summary Costs and Benefits Table for Amending the AN(DG)Rs

Option	Total benefit per annum: economic, environmental, social policy and administrative	Total cost per annum: economic, environmental, social policy and administrative
1	No benefit.	No cost.
2	This option provides a very simple but effective solution which will secure compliance by the United Kingdom with its Community obligations with the minimum changes to current safety legislation.	There will be no environmental or social costs. It is not considered that any significant costs arise as a consequence of the amendments to the AN(DG)Rs. EU-OPS dangerous goods requirements reflect the ICAO Technical Instructions which are currently incorporated in the AN(DG)Rs. Consequently, there will be no additional requirements introduced with the coming into force of EU-OPS.

Impact Assessment 2 - Summary: Intervention & Options

Department /Agency:	Title:	
Civil Aviation Authority	**Impact Assessment of a Proposal to Incrementally Expand the Use of SSR Mode S Transponders in UK Airspace**	
Stage: Final Proposal	**Version:** #1.0	**Date:** 20 April 2009
Related Publications: Summary of Responses Document for a Consultation on the Proposed Incremental Expansion of the Use of SSR Mode S Transponders in UK Airspace - Dec 08 - Issue 1.0		

Available to view or download at:

http://www.caa.co.uk/default.aspx?catid=1698&pagetype=90&pageid=9307

Contact for enquiries: andrew.knill@caa.co.uk **Telephone:** 0207 453 6530

What is the problem under consideration? Why is government intervention necessary?

Commercial air traffic levels are expected to continue to grow significantly in the medium to long term. This growth must be accommodated by the ATC system while maintaining safety levels to realise potential economic and environmental benefits. To enable this, secondary radar technology must be updated and the detection of aircraft by ATC systems and anti-collision safety nets must be improved. Current SSR systems cannot be sustained in the longer term for reasons of spectrum capacity and efficiency. Mandatory equipage is the only way to improve interoperability between aircraft in busy airspace, otherwise inefficient segregation of commercial and recreational flying may be needed to maintain safety levels.

What are the policy objectives and the intended effects?

To mandate the use of SSR Mode S transponders on all aircraft flying within all controlled airspace volumes of Classification A to C.

To extend the SSR Mode S transponder carriage regulations to gliders.

The intended effect is to improve the co-operation of all aircraft operating in busy UK airspace with the safety 'layers' provided by ATC secondary radars, ATC automatic conflict warning tools, and airborne collision avoidance systems used by commercial aircraft.

What policy options have been considered? Please justify any preferred option.

1) Do nothing.

2) Mandatory use of Mode S transponders by all aircraft in all controlled airspace.

3) The proposal as detailed in the aforementioned section - this is the only viable option that solves the problem in a measured and targeted way, taking into account the concerns of the sporting and recreational flying communities about proportionality.

When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects? The policy will be reviewed in 2014 as this will allow sufficient time to provide a full assessment of the implementation and its associated operational impact.

Ministerial Sign-off For final proposal/implementation stage Impact Assessments:

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister:

Paul Clark

.....Date:

Summary: Analysis & Evidence

Policy Option: 3	Description: **Extend Mode S transponder carriage regulations to gliders and mandate use of Mode S transponders in Class A to C controlled airspace.**

COSTS

ANNUAL COSTS	
One-off (Transition)	**Yrs**
£176K to £882K	3
Average Annual Cost (excluding one-off)	
£7.4K to £37.2K	

Description and scale of **key monetised costs** by 'main affected groups' Key costs are from the one-off equipage requirements and these would fall on owners of up to 120-620 gliders by 5 April 2012. Typical one-off costs per glider are expected to be in the range £2,358 to £4,733 with average additional ongoing costs of around £70 per year.

Total Cost (PV) **£595K to £3M**

Other **key non-monetised costs** by 'main affected groups' Costs from having to take aircraft out of service to complete equipage upgrades, associated travel expenses to engineering facilities, and any potential indirect costs on supporting businesses or stakeholders have not been quantified.

BENEFITS

ANNUAL BENEFITS	
One-off	**Yrs**
£ N/K	
Average Annual Benefit (excluding one-off)	
£ N/K	

Description and scale of **key monetised benefits** by 'main affected groups'

Total Benefit (PV) **£ N/K**

Other **key non-monetised benefits** by 'main affected groups' Direct benefits are safety, airspace access and ATC efficiency improvements. Proposals implement a key technology 'enabler' that support wider efforts to ensure that the air traffic system can accommodate commercial air traffic growth in order to realise the economic benefits set out in the Air Transport' White Paper.

Key Assumptions/Sensitivities/Risks Actual costs are dependent on how many operators eventually choose to install Mode S transponders as equipage is only required if operators want to access airspace where transponders are mandatory. Costs assume that most gliders would be in the higher equipage cost range and would equip in 2011/2012. Cost sensitivity assessed to be -45% to +12%.

Price Base Year 2009	Time Period Years 17	**Net Benefit Range** (NPV) **£ N/K**	**NET BENEFIT** (NPV Best estimate) **£ N/K**

What is the geographic coverage of the policy/option?			UK	
On what date will the policy be implemented?			1 October 2009	
Which organisation(s) will enforce the policy?			CAA	
What is the total annual cost of enforcement for these organisations?			£ Negligible	
Does enforcement comply with Hampton principles?			Yes	
Will implementation go beyond minimum EU requirements?			N/A	
What is the value of the proposed offsetting measure per year?			£ Nil	
What is the value of changes in greenhouse gas emissions?			£ N/K	
Will the proposal have a significant impact on competition?			No	
Annual cost (£-£) per organisation (excluding one-off)	Micro **£70/aircraft**	Small **£70/aircraft**	Medium **£70/aircraft**	Large **£70/aircraft**
Are any of these organisations exempt?	No	No	N/A	N/A

Impact on Admin Burdens Baseline (2005 Prices) (Increase - Decrease)

Increase of £ Negligible Decrease of £ Negligible **Net Impact** **£** Negligible

Key: **Annual costs and benefits: Constant Prices** **(Net) Present Value**

Evidence Base (for summary sheets)

[Use this space (with a recommended maximum of 30 pages) to set out the evidence, analysis and detailed narrative from which you have generated your policy options or proposal. Ensure that the information is organised in such a way as to explain clearly the summary information on the preceding pages of this form.]

1 POLICY CONTEXT FOR THE PROPOSALS

1.1 Levels of air traffic in the UK have grown significantly in the last three decades and medium-term forecasts[1] estimate an average annual growth rate of commercial flight movements in UK airspace of between 1.8% and 4% from 2008 to 2014. This equates to an additional 331,000 to 804,000 flights per year in UK airspace in 2014 compared to 2007. Notwithstanding the current economic downturn, the Civil Aviation Authority (CAA) considers that traffic levels will continue to rise in the medium to long term and so it is necessary to continue to plan to accommodate this growth despite the short-term uncertainty. Even in the current constrained economic environment, some key volumes of airspace are still reaching their full capacity at certain geographical locations or at certain times of the day. As such, it is necessary to continue to improve safety standards to meet this capacity/ demand requirement.

1.2 Commercial air traffic growth is highly beneficial to the UK in terms of economic prosperity, employment, tourism, exports and the social benefits of access to affordable air travel. In 2003, the Government set out in its White Paper, 'The Future of Air Transport', how it seeks to ensure that the forecast growth in air traffic can be accommodated by UK airports and the associated Air Traffic Control (ATC) system. The 2003 White Paper also acknowledged that the benefits of air traffic growth must be balanced with the environmental consequences of aircraft emissions. The CAA believes that the challenge of increasing capacity while simultaneously addressing environmental considerations and maintaining target levels of safety will need to be achieved through a variety of initiatives. These include:

- More efficient handling and routing of flights within the Air Traffic Management (ATM) system;
- Greater technical interoperability, and hence co-operation, between all classes of aircraft and with the safety layers provided by anti-collision systems and ATC radars;
- A more modern ATC radar surveillance system;
- Measures to reduce the number of airspace infringements and to minimise the adverse consequences of infringements when they occur.
- Changes to controlled airspace structures, together with measures to increase efficiency in the use of controlled airspace;
- Optimal climb-out routes from airports and more direct routing of commercial aircraft between airports;
- Greater use of continuous descent approaches and less holding of commercial aircraft in the terminal phases of flight.

1.3 The consequences of these initiatives are likely to affect all airspace users in the UK to a lesser or greater extent, particularly through changes to the way that aircraft are routed in order to use the limited airspace resource more efficiently. The CAA considers that greater co-operation between all categories of airspace user is needed to protect freedom of movement and access to airspace whilst maintaining or improving safety. The deployment of future concepts of operation for safely managing increased levels of air traffic will require a more co-operative overall environment between airspace users and ATC. Wider deployment of SSR will provide the electronic means of achieving this co-operative environment.

[1] EUROCONTROL – Medium Term Forecast – IFR Flight Movements 2008-2014 – Volumes 1 & 2 – 29 February 2008.

1.4 In particular, the current Secondary Surveillance Radar (SSR) system used by ATC, and which is also the primary technological basis for anti-collision safety systems, needs to be updated to cope with increasing air traffic levels. Currently, aircraft are required by the Air Navigation Order to carry and operate an SSR Mode Select (Mode S) capable transponder in the following circumstances:

- When flying under Instrument Flight Rules (IFR) in controlled airspace below Flight Level 100. (Gliders do not currently have to comply with this requirement.)
- When flying at and above Flight Level 100. (Gliders do not currently have to comply with this requirement except when operating in controlled airspace of Classification C outside of an active 'Temporary Reserved Area – Gliders', referred to as a TRA(G).)
- When flying within a Transponder Mandatory Zone (TMZ). (Gliders do not have to comply with this requirement.)
- When flying for the purpose of public transport. (Gliders and balloons do not have to comply with this requirement.)

As a consequence of these current regulations, the vast majority of commercial aircraft already carry and operate Mode S equipment.

1.5 Aircraft that operate without SSR transponders are effectively 'invisible' to Airborne Collision Avoidance Systems (ACAS) carried by commercial and some GA aircraft and to ground-based conflict alert tools used by ATC. Visibility of non-transponder equipped aircraft to controllers relies on the aircraft being detected on Primary Surveillance Radars (PSR). This can be problematic with very small aircraft and those made from composite materials because PSR relies on radio energy being reflected off the aircraft back to the radar receiver. Even where aircraft are detected using PSR only, the situational awareness of controllers is reduced compared to detection by SSR because aircraft identity and altitude information is not provided and cannot, therefore, be displayed on controller workstations. The absence of this data increases controller workload when these aircraft require an ATC service because of the need to transmit and receive more radio messages to elicit the information not being provided visually by radar. The lack of visible altitude information on aircraft can also make the sequencing and separation of aircraft under the control of ATC much less efficient while maintaining the required safety levels and renders inoperable controlled airspace infringement tools, such as CAIT used by NATS.

1.6 Therefore, since the turn of this Century, the CAA along with its European neighbours has been pursuing a policy of gradually increasing the use of the modern SSR Mode S technology, both on the ground and in the air.

2 POLICY OPTIONS TESTED THROUGH CONSULTATION

2.1 In 2006 and 2008, the CAA conducted public consultations on proposals to expand the requirements to carry and operate SSR Mode S transponders in UK airspace to deliver a more co-operative overall environment. The following potential options were tested during these two consultations:

- Mandatory SSR Mode S transponder carriage by all aircraft in all airspace;
- Mandatory SSR Mode S transponder carriage by all powered aircraft in all airspace;
- Mandatory SSR Mode S transponder carriage by all aircraft flying within controlled airspace of classification A to E;
- Inclusion of gliders within the SSR transponder carriage regulations that apply to all other aircraft;
- Mandatory SSR Mode S transponder carriage by all powered aircraft conducting international flights;
- Adoption of the Airspace Change Process set out in CAA Publication (CAP) 725 as a mechanism with which to process future applications from stakeholders for TMZs.

2.2 Over 5,000 responses were received during the two consultations, the vast majority coming from sporting and recreational pilots and associations, particularly from the gliding sector, who strongly

opposed any extension to the current transponder carriage rules on the grounds of disproportionate costs, lack of direct benefits and a perceived lack of suitable equipment for some types of aircraft. It was also felt by many that the proposals were not supported by fully quantified benefits or a clear and pressing safety need.

3 HOW CONSULTATION HAS HELPED TO DEVELOP THE CAA PROPOSALS

3.1 The CAA has taken into account the views and concerns of all stakeholders submitted during the extensive consultations. Detailed response documents for these consultations were published[2] separately but the following issues, in particular, have been most influential in helping the CAA to develop the final proposals presented in this Impact Assessment:

a. It was argued by General Aviation stakeholders that commercial air traffic density and the level of collision risk between commercial and sporting/recreational aircraft was not uniform across UK airspace. It was also felt that future increases in commercial air traffic would not be evenly spread throughout UK airspace and, in any case, would probably not be realised due to the current environmental, economic and security pressures. Therefore, it was considered by General Aviation stakeholders that a more 'targeted' approach to the expansion of the SSR Mode S transponder carriage requirements should be adopted by the CAA, rather than resorting to a 'blanket' application of new rules.

The CAA's recommendations to Government reflect a targeted approach to extending the transponder carriage rules.

b. It was argued by General Aviation stakeholders that suitable SSR Mode S transponder technology, which has specifically been designed to take account of the operating and financial constraints of very light powered aircraft and gliders, has not yet been developed by industry and brought to market. Some respondents felt that, in certain cases, it would not be possible to install any of the currently available transponders on their aircraft. Therefore, it was felt that a significant part of the General Aviation community could not yet comply with the SSR transponder carriage requirements, as this would result in disproportionate equipage costs and/or significant operating limitations being required.

The CAA has been investigating the feasibility and encouraging the development of an SSR Mode S transponder suitable for light aviation for many years. Despite these efforts, industry perception of a limited market and a lack of a robust regulatory environment has brought about limited results. More recently, there have been reassuring signs that suitable transponders are becoming available in the market, as industry responds to the changing environment.

c. In view of the various perceived technology constraints, it was considered by General Aviation stakeholders that the CAA must provide appropriate mitigation for them in the form of equipage subsidies or by implementing procedures that would continue to allow them access to any expanded mandatory transponder carriage airspace without transponders.

Notwithstanding the CAA's existing powers to notify mandatory SSR transponder carriage airspace to address pressing safety and efficiency needs, the CAA has decided that the Airspace Change Process will be employed as the mechanism with which to consider requests from stakeholders to extend the transponder carriage requirements in specific volumes of airspace of Classification D to G. This process requires that potential mitigation must be considered for stakeholders that would be adversely affected by a proposed airspace change and that the applicants conduct appropriate consultation with these affected stakeholders. For defined scenarios within controlled airspace, the CAA supports the adoption of airspace access arrangements for General Aviation aircraft through the use of Letters of Agreement between air traffic service units and General Aviation organisations. The recommendations to Government will continue to permit the use of Letters of

[2] 'Summary of Responses' and 'Response to Consultees' documents for a "Consultation on a Proposal to Amend the Air Navigation Order 2005 for the Purpose of Improving the Technical Interoperability of All Aircraft in UK Airspace" were published in December 2006. 'Summary of Responses' and 'Synopsis of Comments Received' documents for a "Consultation on a Proposal for an Incremental Expansion of the Use of Secondary Surveillance Radar Mode Select transponders in UK Airspace" were published in December 2008.

Agreement as mitigation for controlled airspace access by non-transponder equipped aircraft in specified circumstances where safety and efficiency issues can be managed appropriately.

d. It was argued by General Aviation stakeholders that SSR transponder carriage regulations should be harmonised throughout Europe and the CAA should not adopt unilateral measures that are out-of-step with regulations in neighbouring States.

The CAA's recommendations to Government are consistent with requirements in neighbouring States that are implementing SSR Mode S Technology. TMZs are already in use within several other European States, as is mandatory Mode S transponder carriage within complex and busy controlled airspace structures.

e. It was stated by General Aviation stakeholders that the CAA had not provided any convincing evidence that increased SSR transponder carriage would realise benefits for General Aviation pilots, and particularly, within airspace of Classification G and many volumes of Classification D or E controlled airspace around airports.

Under its existing powers and responsibilities, the CAA will, where necessary, notify mandatory transponder carriage within specific airspace to address pressing safety or efficiency needs. However, the recommendations to Government for extending the transponder carriage requirements in airspace of Classification D to G provide a robust and transparent mechanism for considering applications from aviation stakeholders on a case-by-case basis, taking into account evidence of the need for change in a particular area or circumstance. It will be a requirement of this mechanism that the potential benefits for all airspace users are considered.

f. It was stated by the gliding sector of General Aviation that a requirement for gliders to carry and operate SSR Mode S transponders at and above Flight Level 100 would decimate gliding clubs and related small businesses in the UK. It was argued that there was virtually no risk of collision between gliders and commercial aircraft above Flight Level 100 because the disparate activities did not operate within the same areas and there had not been a history of collisions and near misses.

The low radar cross-section of gliders and modern light aircraft of composite construction are not easily detected by primary radar. If these aircraft do not carry a transponder, it is difficult for ATC to detect their presence. This is of particular concern in airspace shared with large commercial air transport aircraft. The CAA's recommendations to Government advocate replacing the current general alleviation for gliders from the transponder carriage requirements at and above Flight Level 100 with specific, targeted exceptions. The CAA intends to work closely with the gliding associations and ATC providers to identify volumes of airspace currently classified F and G at and above Flight Level 100 where transponder carriage by gliders could be specifically notified as not being required. The overall aim will be to minimise the impact on gliding activity and build on the existing measures for non-transponder equipped glider access to controlled airspace of Classification C at and above Flight Level 195 while broadening the benefits that transponder carriage brings to many other airspace users.

g. A major ATC organisation in the UK supported the CAA's proposals and further argued that the full benefits of its many initiatives to accommodate commercial air traffic growth and reduce safety-related incidents would not be realised if technical interoperability was to remain at its current level. It argued that future concepts of operation would require an ever more co-operative environment in order to be able to achieve radically improved safety and efficiency in the future. The ATC organisation also stated that the increasing use of composite material in General Aviation aircraft was problematic for ensuring predictable tracking of aircraft and the maintenance of an ATC 'picture' using PSR technology.

The CAA intends to employ the Airspace Change Process as the mechanism through which ATC stakeholders can apply for an extension to the SSR transponder carriage rules to support specific safety and efficiency requirements in particular circumstances and airspace volumes.

4 POLICY DEVELOPMENT AND MANAGEMENT PROCESS

4.1 The CAA has been providing advance notification of its proposed Mode S policy to the UK aviation industry since 1989 through the use of Aeronautical Information Circulars, consultation papers, press releases and briefings. Since 2001, various departmental stakeholder consultation groups have been routinely apprised of the policy development, and a specific CAA inter-departmental Mode S working group was established to assist with the detail of the policy elements.

4.2 Management oversight and endorsement of the developing policy has been provided by the CAA Board and the Airspace Policy Committee.

5 CAA RECOMMENDATIONS FOR THE NEXT STAGE OF REGULATORY CHANGE

5.1 General

In light of the issues raised during the consultations, the CAA has refined its original proposals and is now recommending an incremental expansion of the SSR Mode S transponder carriage requirements as set out below. Overall, the CAA considers that these proposals ensure that the expansion of the SSR Mode S transponder carriage requirements is targeted at the UK's busiest and most complex airspace volumes, thereby creating the technology-based co-operative environments where they are most needed.

5.2 Extension of the SSR Mode S transponder carriage regulations to all aircraft (except gliders) flying within controlled airspace of Classification A to C with effect from 1 October 2009.

5.2.1 Currently, the Air Navigation Order requires all aircraft (except gliders) operating in all classes of airspace at and above Flight Level 100 or when operating under Instrument Flight Rules (IFR) within controlled airspace below Flight Level 100 to carry and operate an SSR Mode S transponder. Controlled airspace of Classification A to C can be the busiest and most complex airspace in the UK and yet, under these existing requirements, transponder carriage is not mandatory in all circumstances within that airspace.

5.2.2 The CAA is recommending that all aircraft operating in controlled airspace of Classification A to C, irrespective of altitude and flight rules, should be equipped with an SSR Mode S transponder unless specifically authorised otherwise by the responsible ATC unit. This would be applicable to gliders (except when operating within an active TRA(G) in Classification C airspace) with effect from 6 April 2012 and all other aircraft with effect from 1 October 2009. However, it is assessed that the actual impact of this proposed change will be negligible, as the vast majority of aircraft likely to be affected will already be suitably equipped. The CAA is content for ATC units to continue to provide mitigation, such as through Letters of Agreements, for non-transponder equipped flights to have access in specified circumstances where safety and efficiency issues can be managed appropriately.

5.3 Extension of the SSR Mode S transponder carriage regulations to include gliders with effect from 6 April 2012.

5.3.1 The CAA considers that the safety and efficiency benefits of SSR transponder carriage in the mandatory circumstances are undermined if the requirement does not apply to all users of that airspace. Currently, gliders are required to operate with an SSR Mode S transponder when at and above Flight Level 195 outside of an active TRA(G). In all other circumstances where transponder carriage and operation is mandatory, gliding is the only UK aviation sector that is excluded from the requirements the Air Navigation Order.

5.3.2 UK airspace and its use has evolved considerably since this exception was put in place for gliding, as has the use of technology to improve safety, such as collision avoidance equipment carried by commercial aircraft. The adverse transponder equipage issues raised by the gliding community during the consultations apply equally to many very light powered aircraft, to which this legacy exception does not apply. In the modern airspace context, and mindful of the need for a more co-operative overall environment for the future, the CAA view is that the presumption should now be that all aircraft, including gliders, must be equipped with an SSR Mode S transponder as previously described, unless specifically authorised otherwise by the responsible ATC unit. The CAA is, therefore, recommending that the current general exception for gliders should be removed from the transponder carriage regulations with effect from 6 April 2012.

5.3.3 The CAA is satisfied that the impact of removing this general exception for gliders will be far less severe than considered by the gliding community if specific mitigation measures are implemented and if adequate time is provided to bring any new arrangements into being. Alongside this proposed regulatory change, the CAA will continue to encourage the use of Letters of Agreement between gliding organisations and ATC units to permit access to airspace without transponders in specified circumstances where safety and efficiency issues can be managed appropriately. The current arrangements for gliding operations without transponders in active TRA(G) airspace above Flight Level 195 will continue to be applied. The CAA will work with the gliding associations and other stakeholders to define specific, notified areas of Classification G airspace at and above Flight Level 100 where gliders would still not be required to operate with an SSR transponder and that will provide the necessary connectivity to the upper airspace gliding boxes.

5.3.4 Self-Launching Motor Gliders (SLMG) are not currently included within the definition of 'glider' in the Air Navigation Order and so, unlike gliders, SLMG have been required to adhere to the SSR transponder carriage requirements unless otherwise authorised by a responsible ATC unit. As a result of information provided during the Mode S consultations, the CAA is satisfied that some SLMG operators can encounter the same challenges with SSR transponder equipage as those experienced by operators of gliders and Self-Sustaining Gliders (SSG). The proposed regulatory changes for gliders also contain recommended amendments that would align the SSR transponder carriage regulations for SLMG with those applicable to all other gliders.

5.4 Additional Non-Regulatory Change

Under its existing powers and responsibilities, the CAA will, where necessary to address pressing safety and efficiency needs, notify additional mandatory transponder carriage requirements within specific volumes of airspace.

However, in addition to the proposed regulatory changes for mandatory Mode S transponder carriage in all controlled airspace of Classification A to C, the CAA has decided to employ the Airspace Change Process set out in CAP 725 as the umbrella mechanism with which to process applications from external stakeholders for extensions to the transponder carriage requirements in specific volumes of Class D to G airspace on a case-by-case basis. This will include requests for the establishment of TMZs. It is envisaged that ATC organisations and other stakeholders will be able to use this mechanism to address transponder carriage needs in specific, targeted volumes of airspace not covered by the general transponder carriage regulations. Use of the Airspace Change Process ensures that appropriate justification has to be provided by applicants, and stakeholders fully consulted so that the impact of proposed changes can be fully assessed and suitable mitigation determined.

5.5 Transition Arrangements

Under existing transition arrangements associated with a previous expansion of Mode S transponder carriage in UK airspace, operators of aircraft flying outside of notified Mode S Enhanced Surveillance airspace that are equipped with legacy Mode A/C transponders have until 31 March 2012 to complete the necessary upgrades to Mode S Elementary Surveillance compliance. This alleviation would also apply to the increased Mode S transponder carriage recommendations set out in this Impact Assessment.

A specific exemption from the general transponder carriage requirements for SLMGs, which are classed as aeroplanes in the Air Navigation Order, has been previously notified by the CAA. This exemption would be extended until the proposed regulatory amendments come into force that would align the Mode S transponder carriage requirements for SLMG with those for gliders and SSGs.

5.6 Monitoring and Evaluation

The CAA proposes to evaluate the actual impact of the recommended policy in 2014, which allows a period of two years following full implementation in which to gather the necessary data and statistics. It is envisaged that the following sources of information would be used in this process:

a. Relevant metrics gained through the Airspace and Safety Initiative (ASI);

b. Relevant incident data, such as: Airspace Infringement statistics; Mandatory Occurrence Reports (MORs); and Airprox Reports;

c. Increases in transponder equipage levels on aircraft, especially for gliders, identified through the Wireless Telegraphy Act (WTA) licensing database;

d. The number and dimensions of any TMZs established;

e. Ongoing liaison with General Aviation stakeholder associations.

6 BENEFITS SUMMARY

6.1 SSR Mode S is an enabling technology that facilitates wider initiatives designed to safely accommodate the predicted growth in air traffic movements, thus helping to realise the significant economic and social benefits of air travel that were set out in 'The Future of Air Transport' White Paper. As Mode S is only one of the enablers, it is not possible to monetise any directly attributable benefits arising from its implementation in a meaningful way.

6.2 Global and European safety studies consistently show that interaction with ACAS significantly reduces the risk of mid-air collision and it has been assessed that aircraft equipped with SSR transponders operating in airspace where ACAS-equipped aircraft are present can halve their risk of collision when compared to the situation where they are not carrying a transponder[3]. These proposals increase the number of aircraft that will be electronically visible to airborne and ground-based collision avoidance systems operating within, and in support of, the busiest controlled airspace areas and in the busiest mixed operating areas of Classification G airspace. Therefore, the measures will maintain or improve safety levels as traffic levels rise through greater possibilities for ACAS interaction.

6.3 Mid-air collisions involving commercial passenger carrying aircraft are classed as low probability but high impact events. The ICAO recommended 'Target Level of Safety' when designing an air traffic system is for no more than 5 fatal accidents in every 1,000 million flight hours per defined airspace dimension arising from collisions[4]. It should be noted that single mid-air collision may comprise two fatal aircraft accidents. To put this 'Target Level of Safety' into context, during 2007 the total number of flights hours by passenger carrying aircraft in the whole of the UK airspace dimension was around 1.62 million[5]. On this basis, when taking the entire UK air traffic system as the "defined airspace dimension" the 'Target Level of Safety' would not be met if there was more than one mid-air collision every 246 years that resulted in a fatality on both of the aircraft. This illustrates the stringent measures that have to be considered for an air traffic system to try and ensure that the 'Target Level of Safety' is achieved. The maximum estimated cost of the proposals is £3M over the next 17 years. By comparison, the Government's typical figure for the 'Value of a Prevented Fatality' is around £1.5M[6] per individual, and so just 2 fatalities would need to be prevented by these measures over the same period for there to be net economic benefit arising from the improved collision avoidance potential.

6.4 The proposals will provide ATC with a means to increase controller situational awareness through the creation of 'known' traffic environments on radar displays in busy/complex airspace volumes. These 'known' traffic environments provided by SSR data are essential for achieving the overall levels of co-operation needed to deploy future ATM concepts of operation and improve safety and efficiency levels.

6.5 The proposals contribute towards realising improved access to controlled airspace for all users, because the initial identification and subsequent maintenance of identity of all aircraft will be easier for controllers. Consequently, controller workload is reduced, thereby providing an opportunity for improved safety and ATC capacity.

7 EQUIPAGE AND OPERATING COSTS SUMMARY

7.1 The cost impact of these proposals falls on the gliding sector of the General Aviation community. For all other aviation sectors, the directly quantifiable costs are assessed to be negligible. The costs accrued from potential future case-by-case extensions of the transponder carriage requirements, through the Airspace Change Process, can only be assessed as part of that process for the specific applications.

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[3] ACAS Programme, ACASA Project, Work Package 1, Final Report on Studies on the Safety of ACAS II in Europe, Edition 1, March 2002, paragraph 4.5.4.4.

[4] Source: ICAO Review of the General Concept of Separation Panel (RGCSP) – Working Group A - 5/95.

[5] Source: Analysis of Airprox in UK Airspace – Report Number 19.

[6] Assumption based on "Highways Economics Note No.1" issued by the Department for Transport, January 2007.

7.2 Estimated total average one-off equipage costs for gliders between 2009 and 2012 of £176,000 to £882,000 per year.

7.3 Estimated total additional average on-going costs for gliders between 2009 and 2026 of £7,400 to £37,200 per year.

7.4 Estimated total Present Value cost for gliders between 2009 and 2026 of £595,000 to £3M at a discount rate of 3.5%. By varying some of the assumptions, such as equipage timing and equipage cost proportions, the sensitivity of these estimates is assessed to be in the region of -45% to +12% for each of the equipage numbers scenarios.

7.5 The aim will be to work with gliding and ATC stakeholders to try and achieve costs at the lower end of the aforementioned estimated ranges or less.

8 DETAILED EQUIPAGE AND OPERATING COST CALCULATIONS

8.1 The total cost impact of mandating Mode S transponder carriage by all flights in airspace of classification A is assessed to be negligible, as virtually all aircraft conducting these flights will already be transponder equipped. Although, some of these aircraft may still be equipped with legacy SSR Mode A/C transponders, they should already be in the process of upgrading them to SSR Mode S by 2012 under the existing regulations.

8.2 The total cost impact of extending the current transponder carriage requirements in other specific circumstances using the Airspace Change Process on a case-by-case basis cannot be quantified or estimated accurately. The extent of new Mode S transponder equipage requirements for aircraft in these cases will depend on the number and extent of successful applications made by ATC providers or other parties, and/or on the mitigation arrangements that can be put in place for non-transponder equipped sporting and recreational aircraft. Any impact will have to be considered by the applicants and the CAA during the Airspace Change Process for each specific case.

8.3 Estimates of the cost impact on the gliding sector from the proposals to remove the general exception for gliders from the transponder carriage rules can only be calculated in a meaningful way for the requirement to operate a transponder at and above Flight Level 100. Below Flight Level 100 in Classification A airspace, mitigation arrangements using Letters of Agreement can still be available to negate the need to equip gliders with transponders. Access to other volumes of controlled airspace under VFR would still not require equipage of a glider with a transponder unless an application to extend the transponder carriage requirements had been approved for a particular volume of airspace through the Airspace Change Process. In which case, mitigation arrangements and the cost impact on gliders would need to be considered on a case-by-case basis with each specific application. Similarly, this would be the case with any TMZs established through the Airspace Change Process that potentially affected gliding activity.

8.4 For the purposes of this Impact Assessment, detailed costs estimates have focussed only on the likely need to equip gliders with Mode S transponders for continued access to some volumes of airspace at and above Flight Level 100 with effect from 6 April 2012. This would affect operators of gliders, including SSGs, and SLMGs. Operators of Touring Motor Gliders (TMGs) are already required to equip their aircraft with Mode S transponders for flights in circumstances where the carriage and operation of a transponder is mandatory. In the case of Hang Gliders and Paragliders wishing to access airspace at and above Flight Level 100, and for which there are currently no suitable Mode S transponder products, it has been assumed that these aircraft would have to be restricted to operating within the foreseen notified areas where gliders would still not require a transponder. The other potential impacts on the gliding sector, which may result in indirect costs, are considered in para 9 below.

8.5 Through consultation with the British Gliding Association, the estimated maximum numbers of gliders that could be affected by the need to carry and operate a transponder at and above Flight Level 100 are shown in Table 1 below.

Summary of Gliders/SLMG Numbers	Total	Mode S	No Mode S
Private	1793	12	1781
Non Private	697	0	697
Total	2490	12	2478

Table 1: Numbers of Glider/SLMG in the UK

8.6 Through analysis of consultation responses, Impact Assessment workshops with General Aviation representative associations, and research with avionics suppliers and maintenance organisations, typical Mode S transponder equipment and one-off installation costs for gliders have been estimated as shown in Table 2 below. The estimates are based on December 2008 prices.

Estimated Equipage Cost Ranges for Gliders/SLMG	Low Cost	Medium Cost	High Cost
Mode S Transponder Unit	£1,449	£1,673	£2,250
Transponder Related Minor Parts	£200	£224	£274
Installation/Other Attributable Changes	£500	£1,500	£2,000
EASA Approval Fees (€250)	£209	£209	£209
Total (inc VAT)	**£2,358**	**£3,606**	**£4,733**

Table 2: Estimated One-Off Equipage Costs for Gliders/SLMG

8.7 There are also ongoing costs associated with operating an SSR Mode S transponder. Consultation with industry indicates that the cost of routine maintenance checks of Mode S transponders is equivalent to that for Mode A/C transponders. Those operators required to upgrade Mode A/C transponders to Mode S capability would, therefore, not incur any additional expense, as they already have to meet this ongoing cost. Transponder checks are required every 24 months. In addition, the use of an SSR transponder requires operators to hold a Wireless Telegraphy Act (WTA) licence. Once again, those operators required to upgrade Mode A/C transponders to Mode S would not be affected by this element, as they will already hold the required licence. Any existing WTA licences for other radio equipment already carried on a glider would also just be amended to include the new Mode S transponder equipment without any additional charge.

8.8 Notwithstanding the above, the CAA is aware that only a handful of SLMG airframes are currently equipped with Mode A/C transponders and there are no gliders recorded as being equipped with Mode A/C. Therefore, as the number is negligible, for the purposes of the cost calculations, assumptions have been made that all gliders/SLMG would be equipping with a transponder for the first time and that 86% of gliders do not currently hold a WTA licence due to other radio equipment carriage. The estimated additional ongoing costs per glider, resulting directly from the CAA's proposals, are shown in Table 3 below.

Description	Estimated Cost
2-Yearly Check of Mode S Transponder	Nil additional cost for Mode A/C equipped aircraft
	£100 for new Mode S equipage
Annual WTA Radio Licence Fee (required for an SSR transponder even where a radio is not fitted)	Nil additional cost for Mode A/C equipped aircraft
	£20 for aircraft with <3,700 kg take-off mass

Table 3: Estimated Additional Ongoing Cost of Mode S Transponder Equipage

8.9 The number of gliders potentially affected by the CAA's proposals is dependent on the number, extent and locations of 'transponder free' areas above Flight Level 100 that can be identified. From reference to activity data on the British Gliding Association's website, the CAA estimates that, potentially, up to around 25% of the total glider fleet in the UK accesses this airspace. However, the aim will be to work with the gliding associations and ATC providers to identify suitable areas that would significantly reduce the likelihood of all these 25% of gliders needing to equip with Mode S. It is not yet possible to determine precisely to what extent this will be

achieved. Therefore, for the purposes of this Impact Assessment, three potential equipage scenarios have been considered in order to help provide a range of likely implementation costs:

a. **Low Equipage Numbers Assumption**. Under this scenario it has been assumed that only 5% of the total glider fleet would be affected by the CAA's proposals;

b. **Medium Equipage Numbers Assumption**. Under this scenario it has been assumed that only 10% of the total glider fleet would be affected by the CAA's proposals;

c. **High Equipage Numbers Assumption**. Under this scenario it has been assumed that 25% of the total glider fleet would be affected by the CAA's proposals.

8.10 Through consultation, it was apparent that the glider fleet is extremely diverse in terms of age, types and capabilities. Consequently, the cost of equipping gliders with Mode S transponders will vary considerably, depending on how much work is involved and how difficult it is to accomplish. For example, in some cases it was reported that totally new instrument panels and avionics would be required to provide the necessary space for a Mode S transponder. Therefore, a profile of estimated one-off equipage costs has been calculated to provide low, medium and high equipage cost assumptions. From the assessment of the responses to the consultations from glider pilots, the CAA has assumed that the likely profile for most gliders would be towards the medium/higher end of the cost estimates. Taking into account this assumption and the equipage numbers scenarios, the following tables provide an estimate of the numbers of aircraft likely to be affected in each scenario and in each of the equipage cost ranges. Table 4 provides the assumptions for privately owned gliders/SLMG and Table 5 shows the assumptions for gliders/SLMG owned by businesses, gliding clubs and voluntary organisations.

Private Gliders/SLMG Equipage Numbers Scenarios	Proportion	Total Equipage Assumption	Low Cost Proportion	Medium Cost Proportion	High Cost Proportion
			10%	20%	70%
Low Equipage Numbers Assumption	5%	89	9	18	62
Med Equipage Numbers Assumption	10%	178	18	36	125
High Equipage Numbers Assumption	25%	445	45	89	312

Table 4: Equipage Numbers and Cost Profile Assumptions for Private Gliders

Non-Private Gliders/SLMG Equipage Numbers Scenarios	Proportion	Total Equipage Assumption	Low Cost Proportion	Medium Cost Proportion	High Cost Proportion
Low Equipage Numbers Assumption		35	3	7	24
Med Equipage Numbers Assumption		70	7	14	49
High Equipage Numbers Assumption		174	17	35	122

Table 5: Equipage Numbers and Cost Profile Assumptions for Non-Private Gliders

8.11 The other variable in determining the estimated costs of the proposals concerns the timing of the likely equipage and, therefore, the impact on the Present Value calculations. It is expected that most glider operators will wait until nearer 6 April 2012 before deciding whether or not to equip their aircraft. Details of the 'transponder free areas' may not be available until 2011 and the prices of transponders may continue to decrease over time with increased competition in the market and technological advances. Therefore, the equipage timing assumptions that have been used for the cost estimates are shown in Table 6 below.

Year of Equipage Profile Assumption	2009/2010	2010/2011	2011/2012
Proportion of Total Equipage	10%	20%	70%

Table 6: Equipage Timing Assumptions

8.12 Taking into account the assumptions, the detailed calculations of the potential one-off transponder equipage costs for gliders/SLMG requiring access to airspace at and above Flight Level 100 are as follows:

a. **Low Equipage Numbers Assumption**. The detailed calculations for the assumption that up to 5% of the glider fleet would need to equip with a Mode S transponder are shown in Table 7 below. In line with HM Treasury recommendations, as set out in the Green Book, Present Value (PV) discounted costs are shown at a 3.5% rate with 2009 as the price base year.

Estimated Cost Per Year Analysis - Private Gliders/SLMG	Low Equipage Numbers Assumption			
	2009/2010	2010/2011	2011/2012	TOTAL
Low Cost Proportion	£2,100	£4,200	£14,699	£20,998
Discounted PV @ 3.5%	£2,100	£4,058	£13,721	£19,879
Medium Cost Proportion	£6,422	£12,845	£44,956	£64,223
Discounted PV @ 3.5%	£6,422	£12,410	£41,966	£60,799
High Cost Proportion	£29,503	£59,006	£206,522	£295,032
Discounted PV @ 3.5%	£29,503	£57,012	£192,788	£279,303
	£38,025	£73,480	£248,476	
Estimated Cost Per Year Analysis - Non-Private Gliders/SLMG	**Low Equipage Numbers Assumption**			
	2009/2010	**2010/2011**	**2011/2012**	**TOTAL**
Low Cost Proportion	£822	£1,644	£5,752	£8,218
Discounted PV @ 3.5%	£822	£1,588	£5,370	£7,780
Medium Cost Proportion	£2,513	£5,027	£17,594	£25,134
Discounted PV @ 3.5%	£2,513	£4,857	£16,424	£23,794
High Cost Proportion	£11,546	£23,092	£80,823	£115,462
Discounted PV @ 3.5%	£11,546	£22,312	£75,448	£109,306
	£14,881	£28,757	£97,242	
Estimated Cost Per Year Analysis - All Gliders/SLMG	**Low Equipage Numbers Assumption**			
	2009/2010	**2010/2011**	**2011/2012**	**TOTAL**
Low Cost Proportion	£2,922	£5,843	£20,451	£29,216
Discounted PV @ 3.5%	£2,922	£5,646	£19,091	£27,658
Medium Cost Proportion	£8,936	£17,871	£62,550	£89,357
Discounted PV @ 3.5%	£8,936	£17,267	£58,390	£84,593
High Cost Proportion	£41,049	£82,099	£287,345	£410,493
Discounted PV @ 3.5%	£41,049	£79,324	£268,237	£388,610
	£52,907	£102,237	£345,718	
			Average Cost per Glider	**£4,270**
			Average Cost per Year	**£176,355**

Table 7: One-Off Equipage Cost Calculations for the Low Numbers Assumption

b. **Medium Equipage Numbers Assumption**. The detailed calculations for the assumption that up to 10% of the glider fleet would need to equip with a Mode S transponder are shown in Table 8 below.

Estimated Cost Per Year Analysis - Private Gliders/SLMG	Medium Equipage Numbers Assumption			
	2009/2010	2010/2011	2011/2012	TOTAL
Low Cost Proportion	£4,200	£8,399	£29,397	£41,996
Discounted PV @ 3.5%	£4,200	£8,115	£27,442	£39,757
Medium Cost Proportion	£12,845	£25,689	£89,912	£128,446
Discounted PV @ 3.5%	£12,845	£24,821	£83,933	£121,598
High Cost Proportion	£59,006	£118,013	£413,044	£590,063
Discounted PV @ 3.5%	£59,006	£114,024	£385,577	£558,607
	£76,050	£146,960	£496,952	
Estimated Cost Per Year Analysis - Non-Private Gliders/SLMG	**Medium Equipage Numbers Assumption**			
	2009/2010	**2010/2011**	**2011/2012**	**TOTAL**
Low Cost Proportion	£1,644	£3,287	£11,505	£16,435
Discounted PV @ 3.5%	£1,644	£3,176	£10,740	£15,559

Medium Cost Proportion	£5,027	£10,054	£35,187	£50,268
Discounted PV @ 3.5%	£5,027	£9,714	£32,847	£47,588
High Cost Proportion	£23,092	£46,185	£161,646	£230,923
Discounted PV @ 3.5%	£23,092	£44,624	£150,897	£218,613
	£29,763	£57,513	£194,484	
Estimated Cost Per Year Analysis - All Gliders/SLMG	**Medium Equipage Numbers Assumption**			
	2009/2010	**2010/2011**	**2011/2012**	**TOTAL**
Low Cost Proportion	£5,843	£11,686	£40,902	£58,431
Discounted PV @ 3.5%	£5,843	£11,291	£38,182	£55,316
Medium Cost Proportion	£17,871	£35,743	£125,099	£178,713
Discounted PV @ 3.5%	£17,871	£34,535	£116,780	£169,186
High Cost Proportion	£82,099	£164,197	£574,690	£820,986
Discounted PV @ 3.5%	£82,099	£158,647	£536,473	£777,219
	£105,813	£204,473	£691,436	
			Average Cost per Glider	**£4,270**
			Average Cost per Year	**£352,710**

Table 8: One-Off Equipage Cost Calculations for the Medium Numbers Assumption

c. **High Equipage Numbers Assumption**. The detailed calculations for the assumption that up to 25% of the glider fleet would need to equip with a Mode S transponder are shown in Table 9 below.

Estimated Cost Per Year Analysis - Private Gliders/SLMG	**High Equipage Numbers Assumption**			
	2009/2010	**2010/2011**	**2011/2012**	**TOTAL**
Low Cost Proportion	£10,499	£20,998	£73,493	£104,990
Discounted PV @ 3.5%	£10,499	£20,288	£68,606	£99,393
Medium Cost Proportion	£32,111	£64,223	£224,780	£321,114
Discounted PV @ 3.5%	£32,111	£62,052	£209,832	£303,996
High Cost Proportion	£147,516	£295,032	£1,032,610	£1,475,158
Discounted PV @ 3.5%	£147,516	£285,059	£963,942	£1,396,517
	£190,126	£367,400	£1,242,380	
Estimated Cost Per Year Analysis - Non-Private Gliders/SLMG	**High Equipage Numbers Assumption**			
	2009/2010	**2010/2011**	**2011/2012**	**TOTAL**
Low Cost Proportion	£4,109	£8,218	£28,762	£41,088
Discounted PV @ 3.5%	£4,109	£7,940	£26,849	£38,898
Medium Cost Proportion	£12,567	£25,134	£87,968	£125,669
Discounted PV @ 3.5%	£12,567	£24,284	£82,118	£118,970
High Cost Proportion	£57,731	£115,462	£404,115	£577,308
Discounted PV @ 3.5%	£57,731	£111,559	£377,242	£546,531
	£74,406	£143,783	£486,209	
Estimated Cost Per Year Analysis - All Gliders/SLMG	**High Equipage Numbers Assumption**			
	2009/2010	**2010/2011**	**2011/2012**	**TOTAL**
Low Cost Proportion	£14,608	£29,216	£102,255	£146,078
Discounted PV @ 3.5%	£14,608	£28,228	£95,455	£138,291
Medium Cost Proportion	£44,678	£89,357	£312,748	£446,783
Discounted PV @ 3.5%	£44,678	£86,336	£291,951	£422,965
High Cost Proportion	£205,247	£410,493	£1,436,726	£2,052,465
Discounted PV @ 3.5%	£205,247	£396,618	£1,341,184	£1,943,049
	£264,533	£511,183	£1,728,589	
			Average Cost per Glider	**£4,270**
			Average Cost per Year	**£881,776**

Table 9: One-Off Equipage Cost Calculations for the High Numbers Assumption

8.13 Routine ongoing costs associated with operating a Mode S transponder were calculated for the period 2009 to 2026 for each of the equipage numbers assumptions, using the equipage timing assumptions described in para 8.11 above. The costs over this period were discounted at 3.5% under Treasury rules to provide Present Value. The results of the calculations are shown in Table 10 below.

Summary of Total Ongoing Costs for the Period 2009-2026 (PV Discounted @ 3.5%)	Individual Cost	Assumption Totals		
		Low Equipage Numbers	Medium Equipage Numbers	High Equipage Numbers
2-Yearly Transponder Check Fee	£100	£71,352	£142,704	£356,760
WTA Licence Fee	£20	£24,545	£49,090	£122,725
		£95,897	£191,794	£479,485

Table 10: Summary of Total Ongoing Costs for the Period 2009 to 2026

8.14 An overall summary of the estimated costs for gliders is set out in Table 11 below.

Cost Element	Period	Low Equipage Numbers	Medium Equipage Numbers	High Equipage Numbers
Average Non-Discounted One-Off Equipage Costs Per Year	2009 – 2012	£176,355	£352,710	£881,776
Average Non-Discounted Ongoing Costs Per Year	2009 – 2026	£7,434	£14,868	£37,170
Total Discounted Cost (Present Value @ 3.5%)	**2009 – 2026**	£596,758	£1,193,516	£2,983,789

Table 11: Overall Summary of Costs for Gliders

8.15 By working with gliding associations and ATC agencies, the CAA considers that total costs of less than the 'Low Equipage Numbers' scenario are achievable.

9 IMPACT TEST RESULTS

9.1 **Competition Assessment**. The proposals do not directly limit the number of suppliers of air services, and their ability or their incentives to compete are not limited. There may be some cost differences generated by the proposed policy option in certain markets (such as flying schools) between suppliers that operate within Classification A controlled airspace or above Flight Level 100 and those that do not. As noted in the Impact Assessment, this effect could be mitigated by local arrangements with ATC or the definition of specific airspace volumes to provide access for non-transponder equipped aircraft.

9.2 **Small Firms Impact Test**.

These proposals primarily affect the gliding sector of the General Aviation community. This sector mainly comprises recreational and sporting flyers, supported by a network of around 90 clubs and many maintenance and repair organisations. Many of the gliding clubs are operated as voluntary or non-profit making organisations, but most have some permanent and/or part time employees and many gliding clubs are run along the lines of small businesses. The supporting maintenance and repair businesses, and the companies that supply gliding equipment, are assessed to be mostly SMEs. Gliding clubs are mostly based in rural areas and activities at many clubs indirectly support other local businesses, particularly those reliant on tourism and visitors from outside the immediate area.

Consultation with stakeholders has indicated that the main impact on the gliding community would be from having to meet the initial costs of equipage and the ongoing servicing costs for SSR transponders. It was argued that, as gliding is attractive because it is a low-cost aviation sport, a significant proportion of the gliding community could just cease flying rather than attempt

to meet these costs, and it may also become very difficult to attract new participants into the sport. It was argued strongly that many gliding clubs would then become unsustainable and have to close, with the resultant adverse knock-on impact on supporting businesses and local economies.

Local arrangements with ATC were acknowledged to be one way to mitigate these costs, but stakeholders also suggested broader exemptions and/or transferring some of the cost to commercial air transport operations, which, they consider, would stand to benefit most from the proposed policy.

Having revised its original proposals, the CAA considers that the current recommendations will address the concerns of the gliding sector about the potential direct and indirect impact of costs on small firms. Activity at and above Flight Level 100 without the need for SSR transponders will still be possible in defined areas, and the CAA will request the assistance of gliding associations and ATC providers to help identify these areas. Access to other volumes of mandatory transponder carriage airspace without transponders will still be possible in defined circumstances where existing Letters of Agreement with the appropriate ATC agencies can be maintained, or new ones put in place, to mitigate safety and efficiency concerns.

The CAA recognises that equipage of some gliders with transponders will inevitably be required in some areas and that the cost of this may result in some participants deciding to leave the sport or that some clubs may become unviable. The CAA does not consider that the current recommendations will result in a major reduction in UK gliding activities.

9.3 **Legal Aid**. The proposals do not introduce new criminal sanctions or civil penalties.

9.4 **Sustainable Development**. The proposals contribute towards wider efforts for achieving the sustainable approach to aviation that the Government is seeking to promote in 'The Future of Air Transport' White Paper. The option is an enabling measure to help ensure that airspace capacity can match the airport capacity aims, and to ensure that the limited airspace resource is used to maximum efficiency.

9.5 **Carbon Assessment**. The proposals aim to contribute to wider efforts to reduce the 'track miles' flown by commercial aircraft. By itself, the option will have a negligible direct impact on carbon emissions from aircraft but it is an enabling measure to help achieve greater efficiency in the way that UK airspace and aircraft routing is managed. Some sporting and recreational owners may decide to increase 'track miles' during their activities to avoid mandatory transponder carriage airspace rather then meet the expense of equipping their aircraft with Mode S. However, it is not possible to quantify this accurately.

9.6 **Other Environment**. The proposals aim to contribute to wider efforts to support the use of continuous descent approaches. This seeks to reduce the noise of arriving aircraft by ensuring that aircraft remain as high as possible for as long as possible and that segments of level flight during descent, which increase engine noise, are avoided. Where the Airspace Change Process is used to extend, on a case-by-case basis, the circumstances in which SSR transponders must be operated, consideration of potential direct and indirect environmental impacts is a mandatory requirement.

9.7 **Health Impact Assessment**. The CAA considers that a health impact assessment is not necessary for these proposals, as they do not have a significant adverse health impact on the whole population or a major sub-group of the population.

9.8 **Race, Gender and Disability Equality**. The proposals merely prescribe equipage requirements for aircraft that will be operated in certain airspace. The requirements would apply to any owner/operator of such aircraft, irrespective of race, gender or disability, who wishes to operate in this airspace. Consultation with stakeholders has raised no issues that lead the CAA to believe that the proposal would not be race, gender or disability neutral.

9.9 **Human Rights**. The CAA considers that the proposals have no direct implications on Human Rights.

9.10 **Rural Proofing**. The proposals could have an impact on rural areas in that many of the aircraft that are potentially affected by the equipage requirements are based at airfields in rural locations. If the proposals were to result in a significant number of recreational and sporting aircraft being taken out-of-service because of the equipage costs, this could have an adverse impact on some rural economies, particularly those reliant on tourism. The CAA considers that the impacts will not

be as significant as some stakeholders forecast during the consultations, because operators who choose not to equip their aircraft could still operate in airspace where the equipment is not mandatory, and there will still be opportunities to put mitigation in place for non-transponder equipped glider access to mandatory transponder carriage airspace in defined scenarios.

Specific Impact Tests: Checklist

Use the table below to demonstrate how broadly you have considered the potential impacts of your policy options.

Ensure that the results of any tests that impact on the cost-benefit analysis are contained within the main evidence base; other results may be annexed.

Type of testing undertaken	***Results in Evidence Base?***	***Results annexed?***
Competition Assessment	Yes	No
Small Firms Impact Test	Yes	No
Legal Aid	Yes	No
Sustainable Development	Yes	No
Carbon Assessment	Yes	No
Other Environment	Yes	No
Health Impact Assessment	Yes	No
Race Equality	Yes	No
Disability Equality	Yes	No
Gender Equality	Yes	No
Human Rights	Yes	No
Rural Proofing	Yes	No

Impact Assessment 3 - Summary: Intervention & Options

Department /Agency:	Title:	
Directorate of Airspace Policy **Civil Aviation Authority**	**Impact Assessment of Transfer of Design Function for Instrument Flight Procedures**	
Stage: Final Proposal	**Version: V 1**	**Date: 31 January 2008**
Related Publications:		

Available to view or download at:

http://www.caa.co.uk

Contact for enquiries: Peter Marks **Telephone: 0207 453 6510**

What is the problem under consideration? Why is government intervention necessary?

The Single European Sky (SES) legislation came into force in April 2004 and requires a formal functional split between air navigation service provision and its regulation, in order to improve the clarity of focus and effectiveness of both the provider of the services and the regulator. Instrument Flight Procedure (IFP) design is one of the few remaining elements of service provision within the Civil Aviation Authority (CAA). As such, the CAA is required to take steps to separate out the activity from its regulatory function. In order to effect the transfer an article is required within the Air Navigation Order 2005.

What are the policy objectives and the intended effects?

The objective is to achieve separation between regulation and service provision in the field of Instrument Procedure Design. The intended effect is to create a market of independent CAA-approved IFP designers. The transfer process is planned in two phases. Phase 1, Summer 2008 - Summer 2010, during which period the CAA will design and provide IFPs on a commercial basis, whilst allowing an independent pool of designers to be established. Phase 2, Sep 2010 onwards, the CAA will, in respect of IFPs, solely Regulate and Approve IFP designs and will continue to set and maintain UK policy for IFP design standards. Safety standards will be improved through a clear distinction between design and regulation.

What policy options have been considered? Please justify any preferred option.

The options that were considered are as follows:

i) to maintain the status quo,

ii) for the CAA to continue to supply the design service as a separate enterprise on a commercial basis, or

iii) to transfer the service provision activity from the regulator to private industry.

The preferred option is for the transfer of service provision to industry (option iii) above). Options i) & ii) do not fulfil the requirement for the separation of service provision from regulation.

When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects?

Autumn 2010

Ministerial Sign-off For final proposal/implementation stage Impact Assessments:

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister:

Paul Clark

.....Date:

Summary: Analysis & Evidence

Policy Option:	Description:
iii)	**To transfer the service provision activity from the regulator to private industry.**

COSTS

ANNUAL COSTS	
One-off (Transition) **Yrs**	
£ N/K	
Average Annual Cost (excluding one-off)	
£ 2K to 10K	

Description and scale of **key monetised costs** by 'main affected groups' The costs to aerodromes are dependent upon the number of IFPs that they have, with the smallest aerodromes paying the greatest relative cost (see Attachment 1 para 6.2.7). More detail is provided in the evidence base.

Total Cost (PV) **£ 2K - 57.5K**

Other **key non-monetised costs** by 'main affected groups'

Cessation of free technical advice to aerodromes from the CAA.

BENEFITS

ANNUAL BENEFITS	
One-off **Yrs**	
£ N/K	
Average Annual Benefit (excluding one-off)	
£ N/K	

Description and scale of **key monetised benefits** by 'main affected groups' The intention is to create a new market for procedure designers. The consultation received expressions of interest from 5 organisations and a similar number of individuals specialising in the task. In this respect it is difficult to quantify the benefits, although the industry has shown support for the proposal. (See Evidence Base Attachment 1, para 7,

Total Benefit (PV) **£ N/K**

Other **key non-monetised benefits** by 'main affected groups'

Meets European regulation requirements

A more flexible and timely service available to the aerodromes.

Allow the CAA to concentrate upon its Regulatory and Policy activities with respect to Instrument

Key Assumptions/Sensitivities/Risks The requirement to separate has come from the Single European Sky framework Regulation and in particular REGULATION (EC) No 549/2004 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 10 March 2004 laying down the framework for the creation of the single European sky, Article 4.2.

Price Base Year	Time Period Years	**Net Benefit Range** (NPV)	**NET BENEFIT** (NPV Best estimate)
		£	**£**

What is the geographic coverage of the policy/option?			UK, IOM, Ch Isles	
On what date will the policy be implemented?			16 July 2008	
Which organisation(s) will enforce the policy?			CAA	
What is the total annual cost of enforcement for these organisations?			£ 387K	
Does enforcement comply with Hampton principles?			Yes	
Will implementation go beyond minimum EU requirements?			No	
What is the value of the proposed offsetting measure per year?			£ N/A	
What is the value of changes in greenhouse gas emissions?			£ N/A	
Will the proposal have a significant impact on competition?			Yes it will increase	
Annual cost (£-£) per organisation (excluding one-off)	Micro	Small	Medium	Large
Are any of these organisations exempt?	No	No	N/A	N/A

Impact on Admin Burdens Baseline (2005 Prices) (Increase - Decrease)

Increase of £ N/A Decrease of £ N/A **Net Impact** **£** N/A

Key: **Annual costs and benefits: Constant Prices** **(Net) Present Value**

Evidence Base (for summary sheets)

1. The following pages of evidence and summary sheets consist of the previous Regulatory Impact Assessment as amended through consultation – Attachment 1. Attached to this assessment are the proposed legislation changes that are required and a report to support the benefits and costs of this change.
2. Costs to the industry are varied. For example, a complete redesign of 4 approach procedures, 4 arrivals, 3 holds and 2 departures with CAA Approval could cost up to £57.5K (this figure includes a 40% increase as indicated in Attachment 1, Annex B.) Estimated costs based on an annual maintenance contract are: Heathrow/Glasgow £8 - 10k p.a. down to small aerodromes at £2 – 3K p.a. (See also Attachment 1, para 12.2)

3. The impact on admin burdens was seen as negligible. The impact upon any designer would be minimal in that their preparation of data would still continue, albeit it is then submitted to the CAA for approval. The CAA staff would have their focus changed from service provision to regulation and any increase in the admin burden associated with regulation will be offset by a proportionate decrease in the admin burden associated with service provision.

4. The Hampton Principles Throughout the whole of this IA process it has been the aim to continue with the business of best practice as carried out by the CAA, but transferring the function of design to private enterprise. The process of consultation required varying amounts of contact with those who would be interested in entering this market and through this process it was apparent that there were enough interested parties with the required expertise to fulfill the objective. The CAA will also publish a Civil Aviation Publication (CAP) setting out the requirements for industry and the audit routines that industry can expect. The CAP will also set out accountability and review mechanisms.

5. Specific Impact Tests There are various assumptions that have been made in the writing of this submission relating to the specific impact tests:

    a. Many of the specific tests are not relevant, however, it is argued that the competition assessment and small firms impact test were in effect carried out through the initial stages of the RIA process and the two rounds of consultation.

    b. For the other tests:
        i. There is no foreseeable extra burden to be placed on the legal system.
        ii. Sustainable development is considered not relevant to this issue.
        iii. The design process involves an environmental assessment and in effect covers carbon and environmental aspects.
        iv. The other tests including health impact, race, disability and gender equality, human rights and rural proofing are not seen as being relevant to this issue.

Attachment 1

Regulatory Impact Assessment

Amendment to The Air Navigation Order 2005 (making it possible to transfer the design of Instrument Flight Procedures (IFPs) function, from the CAA to industry)

Impact Assessment:
Transfer of Design Function for Instrument Flight Procedures

This paper sets out proposals for the transfer of the design function for Instrument Flight Procedures (IFP) from the Civil Aviation Authority (CAA) to private industry, following the completion of a consultation process. It examines why the move is necessary, considers the options and the impact of the proposed changes and discusses the mechanisms by which they would be achieved.

1 THE PROPOSED MEASURE

Amendment to the Air Navigation Order 2005. This is a statutory instrument and requires Parliamentary approval (Negative Resolution Proposal). A text for inclusion in the ANO is attached at Annex A.

2 THE PURPOSE AND INTENDED EFFECT OF THE MEASURE

2.1 The Purpose

To change the ANO in order to facilitate the transfer of the provision of IFP design from the Civil Aviation Authority (CAA) to industry, through a two-phased approach, ultimately leaving the CAA with responsibility for policy matters, official approval of designs and the regulation of the overall function.

2.2 The background and objectives

2.2.1 The Single European Sky (SES) legislation came into force in April 2004 and requires a formal functional split between air navigation service provision and its regulation, in order to improve the clarity of focus and effectiveness of both the provider of the services and the regulator. IFP design is one of the few remaining elements of service provision within the CAA. As such, the CAA is required to take steps to separate out the activity from its regulatory function.

2.2.2 The CAA is, therefore, seeking to transfer the design service of IFPs to industry whilst continuing to regulate the overall function. Under this arrangement, the CAA would retain responsibility for:

- all pertaining policy matters;
- official approval of designs; and
- promulgation of procedures in the UK Aeronautical Information Publication (UK AIP) (together with the notification of any UK Differences to ICAO Doc 8168 Procedures for Air Navigation Services, Aircraft Operations, Volume II, Construction of Visual and Instrument Flight Procedures (PANS-OPS).

2.2.3 Accordingly, the CAA will need to put in place approval mechanisms for both designers and procedures.

2.3 Risk assessment

2.3.1 There are currently some 475 Instrument Approach Procedures (IAPs) notified for use at 66 aerodromes in the United Kingdom Aeronautical Information Publication (UK AIP). In addition there are 250 Standard Instrument Departure Routes (SIDs) notified in the UK AIP. These arrival and departure procedures are collectively referred to as Instrument Flight Procedures (IFP). They are currently founded on ground-based navigation systems that will either be phased out, replaced or relocated over the next ten to fifteen years, in order to improve coverage. Technological advances such as the advent of Precision Area Navigation (P-RNAV) and Global Navigation Satellite System (GNSS) approaches will lead to further review, redesign and a significant increase in the number of IFPs in operation. A number of new SIDs are also likely to be required, or existing SIDs redesigned, in line with the potential development of runways at a number of airports or revisions to airspace or ATC procedures.

2.3.2 Five main areas of vulnerability are outlined below, broadly in degree of importance:

i) If this proposal is not progressed, the CAA will be unable to fully separate its service provision from its regulatory function as prescribed by the SES Legislation;

ii) Current staffing levels are based on the CAA's regulatory role and take account of the service provision function. Presently, the CAA is just able to process requests for new procedures or changes to existing procedures within the timescales required by the customers, however, as demand for new procedures increases, the design task is likely to fall behind. It should be borne in mind that, as well as designing new procedures, there is a requirement for the CAA to undertake periodic reviews of existing procedures. Safety could be compromised if procedures become overdue for modification or review, or there is significant delay in their introduction and this situation will be exacerbated if the backlog grows in the future;

iii) The CAA is currently unable to demonstrate full transparency in its costs, not least because under the present arrangements, airlines not operating the procedures at a specific airport location, but over-flying UK airspace and using the provision of a procedure as a diversion option and thereby maintaining all-weather operations, are contributing to their production and promulgation through some element of the UK's en-route charge;

iv) Because the proposed arrangements have not been introduced anywhere else globally, there is a risk that the number of designers and/or design organisations applying for approval will be insufficient to operate the proposed arrangements effectively; and

v) There is a risk that CAA's existing designers might move across to industry as new possibilities are opened up. However, the CAA is aware of the risk and will take appropriate measures to ensure that the CAA's expertise in this area remains sufficient to discharge its modified responsibilities.

3 Options

SES legislation makes it very difficult for the CAA, as the UK Nationa Supervisory Authority, to continue to provide the IFP design service. The options have been considered and are evaluated as follows:

a) To continue with the status quo;

b) For the CAA to continue to supply the design service as a separate enterprise on a commercial basis; or

c) To transfer the service provision activity from the regulator to private industry.

3.1 Option a)

Under the current arrangements, aerodromes receive a free technical service. However, maintaining the status quo:

i) **does not** allow the CAA to fulfil its statutory regulatory function;

ii) **does not** permit the clear separation of service provision from regulation as required under SES legislation;

iii) **does not** allow transparency of costs;

iv) **does not** support the 'user pays' principle*;*

v) **does not** have the flexibility or resources to meet the anticipated requirement for new IFPs, created by the aviation industry's demand for P-RNAV/GNSS approaches.

3.2 Option b)

This option supports the 'user pays' principle.

However, it:

i) **does not** permit the clear separation of service provision from regulation as required under the SES legislation;

ii) **does not** allow the full transparency of costs; and

iii) **does not** reduce delays in the production, promulgation and review of IFP procedures.

3.3 Option c)

This option does fulfil the principal criteria. In particular:

i) **does** provide the clear separation of regulation and service provision required by SES legislation;

ii) **does** reduce production and promulgation times thereby maintaining, or on occasion raising, safety standards;

iii) **does** satisfy the 'user pays' principle;

iv) **does** have the potential to create efficiencies which could, in the longer term, be used to reduce en-route charges;

v) **does** create a market for IFP design and production that currently does not exist because of the CAA's monopoly position as the service provider.

4 The preferred option

4.1 Neither options a) nor b) meet the statutory requirement for the separation of the service provision and regulatory function, and are therefore discounted.

4.2 Option c) does fulfil that requirement and offers additional benefits and opportunities. The implications associated with its introduction are discussed below.

5 The implications

The implications fall broadly into three categories: the need to amend UK legislation; the effects on the CAA regulatory activities and associated new opportunities; and the financial impact in terms of compliance costs and en-route charges. They are discussed below under these three headings.

5.1 Amendment to UK Legislation

The proposed amendment to the ANO is attached at Annex A. The amendment specifies that all IFPs within the UK must be approved by the CAA, and goes on to deal with how the CAA will approve IFP designers.

5.2 The CAA's regulatory activities

5.2.1 As indicated above, the CAA's regulatory activities in relation to the new authorisation and design arrangements will be prescribed by the amendment to the ANO.

5.2.2 Although the CAA holds the view that the new measure should be administered with the minimum amount of direction and intervention, it must be assured that, due to their safety criticality, IFPs are being designed to an appropriate standard in line with international requirements. The criteria for the approval of individual designers and the approval mechanism will be set out in a Civil Aviation Publication (CAP). In essence, under the proposed scheme any individual applicant must satisfy the CAA of their competence and this will depend upon successful completion of a course in IFP design (ICAO PANS-Ops criteria), current design experience and previous aviation expertise. These criteria will be demonstrated through a documentary submission and an interview process. An "Appeals Procedure" will also be included in this process.

5.2.3 The design process itself will be regulated. Proposals for the criteria for the submission and approval of IFP designs are also set out in the CAP. The CAA will publish formal policy and mandatory design requirements for IFPs, in the form of CAPs and will highlight areas where UK policy differs from PANS-Ops criteria. In essence, methods for approval will follow those currently in operation internally within the CAA. The process will also address what happens if a design submission fails to meet the design requirements and how to appeal against such a decision.

5.2.4 The transfer of the design service will leave the CAA's own designers free to focus wholly on the regulatory duties such as IFP Policy formulation and the activities as part of the IFP design approval process. It will also allow more time for the management of the review process for

existing procedures, the standardisation of designs, and improvement in the time taken to action changes. The latter will maintain, and may enhance, safety and highly is likely to improve customer satisfaction.

5.3 Financial impact: 'user pays'

5.3.1 The most immediate financial impact of the proposed change will be that the costs will be borne where they fall and the aerodrome operator will be required to pay commercial rates for the design of procedures.

5.3.2 Since 2000, the annual costs for IFP design have been recovered as part of the overall cost of the CAA's services through a proportion of the UK en-route charges. This means that airlines that transit UK airspace and have no need to use an IFP, albeit that the availability of an IFP at an aerodrome enables it to be selected as a diversion, pay charges towards the production costs without gaining a discernable benefit. In addition, UK domestic operators pay for the facilities at every airport with IFPs regardless of whether they use them or not.

5.3.3 However, there is a perception that a proportion of the current Aerodrome Licence Fee is set aside for IFP design. This is not the case. CAA financial records show that during the function's transfer from the Safety Regulation Group to the Directorate in 2000, that all employment costs, accommodation costs and travel and related expenses were excluded from the Aerodrome Licensing Fee's cost-base. The function's costs appear wholly on DAP's cost-base which, in common with the major proportion of other DAP costs, are being recovered through the UK's unit rate since the year 2000. Therefore, there are no plans to alter the Aerodrome Licence Schedule of Charges in the light of the proposed changes; consequently, the cost of establishing and maintaining IFPs in future will be borne by the aerodrome that commissions their production.

6 Compliance costs

Full details of compliance costs are discussed in detail at Annex B. These are summarised below.

6.1 Costs to the CAA

6.1.1 The costs to the CAA will be neutral in the first instance; however, it is strongly believed that there will be a medium-term cost reduction. There will, however, be efficiency gains due to resources being focussed on regulation. The current annual cost to the CAA of providing the IFP design service is £387K. However, it is important to note that current resources are barely sufficient to meet existing needs, and future demand for additional procedures based on sophisticated technologies such as P-RNAV/GNSS. *(Note: the cost of Regulation has been increased from the original estimate as this now reflects the added role of Regulating new or redesigned SIDs and STARs.)*

6.1.2 The CAA proposes to introduce a scheme to charge for its current design service as soon as possible. Once the design function has been transferred to private industry, that scheme will be replaced by a new arrangement under which the CAA will charge for its regulatory function (i.e. designer and design approval) only.

6.2 Costs to customers

6.2.1 Customers will be required to pay the private contractor for the design of the IFP and the CAA for approval of the design. So far as the latter is concerned, costs will fall into two categories: recurring and non-recurring charges.

6.2.2 Some costs are difficult to assess because of the innovative nature of the proposed changes, and variations in the scale of work required, which derives largely from environmental differences between aerodromes.

6.2.3 As a general rule, one-off costs will be incurred when new equipment, like Instrument Landing or Microwave Landing Systems are installed, or new technologies, like the Global Navigation Satellite System, are provided. Current market indicators are that the scale of costs for the design of a procedure might be **in the range of £4,250 - £7,100 for the first precision approach followed by £2,300 per procedure thereafter.**

6.2.4 In addition, procedure validation is required for any new procedure or significant change to an existing one, in order to demonstrate safety. This generally comprises two parts: an obstacle

flight check, which provides visual confirmation of the obstacle environment against which the design is assessed, and a 'Flyability' check. Both can be conducted during a single flight, which should take no more than two hours. This requirement currently applies, so there would be **no additional cost to the aerodrome operator under the new arrangements.**

6.2.5 **Recurring costs** will arise as the result of regulatory activities such as reviews of existing procedures. Furthermore, **when the ICAO IFP Design Guidance Material (Doc 8168) changes**, UK procedures will be sampled to assess any possible impact. Where necessary, the CAA will alert the aerodromes that may be affected in order that the aerodrome **initiates a review**. Responsibility for conducting these reviews will transfer to those aerodromes with published procedures, but the CAA will set an appropriate and realistic timescale at the time it initiates a review. These requirements exist today.

6.2.6 It is possible that aerodromes with a significant number of IFPs might choose to enter into a **maintenance contract** with an individual or design organisation. Costs would be determined by the number of existing procedures and future needs, but it is estimated that contracts might cost between **£8,000 and £10,000 per annum** for aerodromes such as Heathrow, Manchester and Glasgow, and **£4,000 - £8,000** for aerodromes like Norwich, Exeter and Humberside.

6.2.7 The greatest relative impact will be on **the smallest of the UK's aerodromes.** A maintenance contract for them might cost in the region of **£2,000 - £3,000 per annum**. Although they are run on a commercial basis, their ability to recover costs incurred is limited to an increase in charges for landing fees or to aircraft operators for essential services such as refuelling and ground handling. So, whilst the regulatory impact will be the same for all, the financial burden will be greatest on those who have restricted means by which to defray the costs.

6.2.8 The CAA considers that **market forces are the most effective way to contain costs to airport operators and intends to operate its system of approval of Instrument Flight Procedure designers accordingly.**

7 Competition

7.1 Because the proposed scheme is new, and the CAA is currently the only organisation meeting the design requirement for IFPs in the UK , it has not been possible to make a formal competition assessment along the lines of the 'specific impact tests' suggested by the Department for Business, Enterprise and Regulatory Reform guidelines.

7.2 Moreover, there are fewer than 200 individuals worldwide with the appropriate instrument approach design qualifications, so the potential market is difficult to define, and limited. However, as a preliminary exercise, the CAA contacted the Small Business Service, the British Chamber of Commerce and the Confederation of British Industries with a view to identifying suitable small businesses who might be consulted, and, at the time of writing, the CAA has received expressions of interest from 5 organisations and a similar number of individuals specialising in the task.

7.3 It is the intention of the CAA to develop a competitive IFP design market. Barriers to submission for approval will, therefore, be closely scrutinised to ensure that they foster, rather than restrict, competition. Furthermore, although the design process is bounded by international criteria and high safety standards, the CAA is keen to ensure that regulation does not stifle innovation.

8 Consultation

8.1 In February 2003, DAP consulted with all the aerodromes and potential designers on a proposal to transfer the responsibility for the design of Instrument Approach Procedures (IAP) from the CAA to industry. The principles underlying the proposal were:

8.2 To separate what is viewed as a 'service provision' function from the Regulatory function; and

8.3 To implement a system whereby the 'user pays'.

8.4 A total of 211 individuals/organisations were consulted. Responses to the consultation were mixed but predictable; potential IAP designers were understandably enthusiastic, whilst aerodrome operators were uniformly against the proposal. From a total of 34 responses, 18 were against the proposal, 10 were for the proposal, with the remaining 6 non-committal responses.

8.5 The following is a summary of the main findings of the responses to the first round of consultation:

- **Founding principle.** The necessity to separate Service Provision from Regulation is challenged by a number of respondents.
- **Cost.** Aerodrome operators expressed concerns over the cost implications of the proposal. The apparent 'double-cost' of design plus regulation was highlighted. Also industry confusion exists over the funding arrangements in place for the current IAP design provision.
- **Safety.** Concerns expressed over safety implications, should design costs become prohibitive.
- **Liability.** Some concerns over liability in the event of an incident/accident attributed to an IAP design error.
- **IAP Design Market.** Doubts over realising a competitive IAP design market were expressed by a number of organisations.

8.6 A second consultation took place in March 2005 regarding the method by which the CAA will transfer the IAP task to industry and how the CAA intends to regulate that industry. The consultation was with every aerodrome/heliport that had IAPs currently published in the UK AIP, with other aerodromes licensed by the CAA, with NATMAC and other groups including potential designers.

8.7 A total of 202 consultees were approached and 52 responses were received, comprising 22% of aerodromes and 38% of other interested parties.

8.8 The following is a summary of the main findings of the responses to the second round of consultation:

- **Separating Regulation from Service Provision.** On the issue of the CAA's requirement to cease it's service provision activities. 81% agreed that the transfer of IAP design to industry is the preferred option to achieve this.
- **Market Competition.** When asked whether a competitive market focussed purely on service provision would provide a greater choice to the customer and would, therefore, be likely to lead to improved design times, 71% felt that it would.
- **Costs.** On the question of whether the costs associated with IAP design could be passed on by the aerodrome only 42% felt that this would be possible, with the focus on the inability of smaller GA aerodromes to absorb additional costs.
- **Transfer Options.** Asked whether the transfer of functions should be immediate or phased, 71% felt it should be undertaken in 2 phases, with the CAA designing alongside industry during the first phase whilst a market place becomes established.

9 Future Actions: monitoring and review of arrangements

Assuming that the proposed arrangements are put in place, **the CAA would conduct a review of the approval process within 3 years of the introduction of the new scheme,** with the intention of:

- **confirming the effectiveness** and the appropriateness of the new arrangements;
- ensuring that **barriers to acceptance are not too high**; and
- through the greater experience gained and new relationships established with the industry, to identify every opportunity to **relax the regulatory burden whilst maintaining the high technical and safety standards required.**

10 Summary and recommendations

10.1 Summary

10.1.1 The SES legislation came into force in April 2004 and requires a formal functional split between air navigation service provision and its regulation, in order to improve the clarity of focus and effectiveness of both the provider of the services and the regulator. IFP design is one of the

few remaining elements of service provision. As such, the CAA is required to take steps to separate out the activity from its regulatory function.

10.1.2 The CAA currently has sole responsibility for providing the design service for IFPs to UK aerodromes. Under these circumstances the CAA cannot meet the statutory requirement of its regulatory role and comply with the separation of tasks under current legislation.

10.1.3 Of the three options considered only one meets all the criteria, that is for the CAA to transfer the responsibility for provision of the design service for IFPs to private industry, whilst maintaining responsibility for policy matters, official approval of designs and the regulation of the function overall. Throughout, the CAA would have the duty of care to ensure both the effectiveness of the arrangements and the highest technical and safety standards; promote greater equity through the introduction of a 'user pays' policy; and minimise costs generally through the fostering of healthy competition amongst service providers.

Attachments:

Annex A Revised ANO text

Annex B Proposed Charging Mechanism

ANNEX A

Revised ANO text - Air Navigation Order 2005

New article XX

Approval of instrument flight procedures

XX(1) An instrument flight procedure within the United Kingdom must not be notified unless that procedure has been designed by or approved by the CAA.

(2) The CAA must not notify or approve an instrument flight procedure unless it is satisfied that the procedure is safe for use by aircraft.

(3) Subject to paragraph (4), the CAA may approve an instrument flight procedure where an application for approval of the procedure has been made.

(4) The CAA is not obliged to accept an application for the approval of an instrument flight procedure where that application is not supported by a report from a person approved under paragraph (6).

(5) An applicant for approval of an instrument flight procedure must furnish such evidence and reports as the CAA may require.

(6)(a) The CAA must approve a person for the purposes of this article if it is satisfied that he is competent having regard to his organisation, staffing, equipment, knowledge, experience, competence, skill and other arrangements to design an instrument flight procedure that is safe for use by aircraft.

(b) The applicant for an approval under this paragraph must furnish such evidence and undergo such examinations and tests and undertake such courses of training as the CAA may require.
(7) The CAA, may, for the purpose of this article, either absolutely or subject to such conditions as it

thinks fit-

(a) approve any course of training;

(b) authorise a person to conduct such examinations or tests as it may specify; and

(c) approve a person to provide any course of training.

Insert definitions in article 155

"Instrument flight procedure" means –
a standard instrument arrival;
an instrument approach procedure;
a standard instrument departure; or
a planned departure route."

"Standard instrument departure" means a departure route for use by an aircraft flying in accordance with the instrument flight rules which links an aerodrome or a specific runway of an aerodrome with a specified significant point from which the flight may safely continue and which is wholly contained within controlled airspace;

"Planned departure route" means a departure route for use by an aircraft flying in accordance with the instrument flight rules which links an aerodrome or a specific runway of an aerodrome with a specified

significant point from which the flight may safely continue and which is not wholly contained within controlled airspace;

“Standard instrument arrival” means an arrival route for use by an aircraft flying in accordance with the instrument flight rules which links a specified significant point with a point from which an instrument approach procedure may be commenced;

“Significant point” means a point notified as such;

ANNEX B

PROPOSED CHARGING MECHANISM

This Annex is divided into three sections – one setting out the charges the CAA would have to levy in order to recover its costs, one indicating costs which industry is proposing to levy[7], and another showing charges applicable to both scenarios.

1 CAA CHARGES

1.1 *Objective*

To recover the costs the CAA is currently incurring in designing IAPs.

1.2 *Methodology*

1.2.1 To determine how much the CAA would need to charge to recover its costs, an Activity Based Costing methodology has been applied:

$$\frac{\text{Total Cost of IAP Design (Employment + Software + Overheads)}}{\text{Total Chargeable Hours Spent on IAP Design Activities}} = \text{cost per hour}$$

1.2.2 This cost per hour was applied back to each activity performed to give a cost per activity.

1.2.3 This calculation makes the assumption that the volume of work remains constant, which is an unrealistic assumption, and therefore at the end of the year there will either be a profit, or a loss incurred. However this is expected to be minimal, and is an inherent risk in charging mechanisms that will be eliminated once the entire task has been transferred to industry.

1.2.4 The table below sets out the calculations used to establish the CAA's charges:

Code	Element	Hours	Cost
	New / Revised Design		
A[8]	Preparation and Checking for New or Revised Designs	11	£1,971
B	**Precision Approach**	16	£2,867
C	*Non-Precision Approach*	13	£2,330
D	*Holds*	1.5	£269
E	*Direct Arrivals*	3	£538
F	*Omni-Directional Departures*	7	£1,254
	Design Approval from CAA[9]		
G	Preparation and Checking for New or Revised Designs	2.75	£493
H	**Precision Approach**	4	£717
I	*Non-Precision Approach*	3.25	£582
J	*Holds*	0.38	£67
K	*Direct Arrivals*	0.75	£134
L	*Omni-Directional Departures*	1.75	£314
	IAP Maintenance Review (5 Yearly)		
M	Fixed Cost for an Aerodrome Review (all procedures)	7	£1,254
	Safeguarding		
N	Enquiry	3	£538

1.2.5 There are 3 types of cost scenarios:

a) A maintenance review of an aerodrome's procedures is required

Review: M = £1,254

[7] These quotes have been obtained from a number of qualified IAP designers external to the CAA.

[8] This fixed preparation and checking cost includes VMC and MSA designs and revisions and will be incurred if any of the procedures listed beneath it are designed or revised.

[9] The approval of designs has been estimated at being 25% the workload of the design activity itself; design approval is currently being conducted for CAA-designed procedures.

Approval: None

Note: A fixed cost has been levied as it primarily involves data verification rather than detailed reviews of each procedure, and will be levied according to the frequency of review stipulated by the CAA – which currently stands at every 5 years[10].

b) A Safeguarding request

Request: N = £538

Approval: None

Note: A fixed cost has been levied as the most appropriate method of charging.

c) Procedures are to be designed or revised

Design: A + (p)B + (q)C + (r)D + (s)E + (t)F[11]

Approval: G + (p)H + (q)I + (r)J + (s)K + (t)L

Example 1:

If a maintenance review, or an Airspace Change, demands the need for a redesign of certain IAPs, the cost of 1 Precision Approach, 2 Holds, 1 Direct Arrival, and 1 Omni-Directional Departure would be:

£1,971 + 1(£2,867) + 2(£269) + 1(£538) + 1(£1,254) = £7,168

The cost for approval from CAA would be:

£493 + 1(£717) + 2(£67) + 1(£134) + 1(£314) = £1,792

Giving a total of:

£6,899 + £1,725 = £8,960

Example 2:

In the unlikely event of the establishment of a new airport, or a complete redesign of all an airport's IAPs, the cost of 1 Precision Approach, 3 Non-Precision Approaches, 3 Holds, 4 Direct Arrivals, and 2 Omni-Directional Departures would be:

£1,971 + 1(£2,867) + 3(£2,330) + 3(£269) + 4(£538) + 2(£1,254) = £34,857

The cost for approval from CAA would be:

£493 + 1(£717) + 3(£582) + 3(£67) + 4(£134) + 2(£314) = £8,714

Giving a total of:

£34,857 + £8,714 = £43,571

Note: When the design task is performed by industry, it is the designer's responsibility to pay the approval fee and recover the costs from the aerodrome themselves. In order to keep these approval costs at a minimum, each designer will be issued with a standard template to which the design needs to be submitted to the CAA for approval.

2 INDUSTRY CHARGES

2.1 *Objective*

To set a competitive, yet profitable, price to attract aerodromes as their customers on a long-term basis.

2.2 *Methodology*

Having consulted with industry, indications are that the pricing methodology employed is similar to that employed by the CAA. However due to not having a monopoly on aerodromes, the unit costs are likely to be higher than those of the CAA. Quotes obtained from industry already indicate that costs would be between 15% and 40% higher, however this does not account for the possibility of fixed-price maintenance contracts or other similar pricing negotiations between the aerodrome and a competitive market for designers.

[10] To keep the costs charged by industry at a minimum, the procedure will be provided to industry in an electronic format that will allow rapid review without the need to design the entire procedure anew.

[11] Where (p) (q) (r) (s) (t) are the number of each type of procedure requiring design work.

3 OTHER CHARGES

3.1 *Aerodrome*

3.1.1 *Objective*

To highlight those charges which will be incurred by the aerodromes in carrying out the function of Instrument Approach Procedure design.

3.1.2 *Methodology*

Activity	***Charge***
Flight Checking	Negotiable by aerodrome with organisation
Travel & Related Expenses	Negotiable by aerodrome with designer

3.2 *Designer Charges*

3.2.1 *Objective*

To highlight those charges that will need to be incurred by the Designer of Instrument Approach Procedures

3.2.2 *Methodology*

The charges outlined below are fixed administrative fees that will be levied by the CAA on each designer:

Activity	***Frequency***	***Charge***
CAA Designer Approval	One-off	£1,500
CAA Designer Approval Renewal	5 yearly	£100

Specific Impact Tests: Checklist

Use the table below to demonstrate how broadly you have considered the potential impacts of your policy options.

Ensure that the results of any tests that impact on the cost-benefit analysis are contained within the main evidence base; other results may be annexed.

Type of testing undertaken	***Results in Evidence Base?***	***Results annexed?***
Competition Assessment	No	No
Small Firms Impact Test	No	No
Legal Aid	No	No
Sustainable Development	No	No
Carbon Assessment	No	No
Other Environment	No	No
Health Impact Assessment	No	No
Race Equality	No	No
Disability Equality	No	No
Gender Equality	No	No
Human Rights	No	No
Rural Proofing	No	No

Impact Assessment 4 - Summary: Intervention & Options

Department /Agency: **Civil Aviation Authority Safety Regulation Group**	**Title: Proposed change to the Air Navigation Order to ensure that all changes and repairs to aircraft are approved by the CAA, EASA or an EASA Part 21 Design Organisation Approval holder, or a BCAR A8-21 approval holder.**	
Stage: Final	**Version: 1**	**Date: 31 October 2008**
Related Publications: CAP 393 Air Navigation: The Order and the Regulations		

Available to view or download at: http://www.caa.co.uk/docs/33/CAP393.pdf

Contact for enquiries: Graham Owers
Airworthiness Strategy and Policy Department
Email: graham.owers@caa.co.uk

What is the problem under consideration?

The Air Navigation Order needs to be amended so that the CAA may recognise the ability of an organisation to issue a certificate or approval under the new British Civil Aviation Requirements (BCAR) A8-21. The proposal also refers to the use of type certificate holder data for overhaul, removal or replacement.

What are the policy objectives and the intended effects?

The approvals allow the relevant organisations to have the privilege to categorise changes and repairs as major/minor in accordance with defined criteria and to approve minor changes and repairs. The effect would be to enable organisations to approve minor changes and repairs without the costs and charges associated with CAA or EASA involvement. The ANO change is required to recognise the impact this has upon the conditions whereby a Certificate of Airworthiness is rendered valid.

What policy options have been considered? Please justify any preferred option.

Two options have been identified:

(1) Do nothing. This would prevent CAA from being able to make effective use of the valuable privileges given to the organisations affected, which would prevent them from realising the time and cost savings associated with the new privileges, and maintain their dependence upon the CAA or the Agency.

(2) Make the proposed changes, so as to realise the significant benefits for the industry and the Authority which will accrue from the privileges conferred by Part 21 and BCAR A8-21.

When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects?

EASA Part 21 has already been adopted across the EU, and its workings are well understood. This proposal simply enables the CAA to fulfil its obligations regarding those organisations subject to EASA Part 21, and extends those benefits to those organisations for which the CAA is still fully responsible and which meet the approval requirements of BCAR A8-21.

Ministerial Sign-off For final proposal/implementation stage Impact Assessments:

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister:

Paul Clark..... Date:.....

Evidence Base

1. Purpose and Intended Effect

a) Issue which the regulatory proposal is intended to address:

EC Regulation 1592/2002 established the European Aviation Safety Agency and enabled the subsequent introduction of Implementing Rule – Regulation (EC) 1702/2003 containing an Annex - Part 21 'certification of aircraft, products, parts and appliances, and the approval of design and production organisations'.

More recently, British Civil Airworthiness Requirements Section A, Chapter A8-21 has been introduced, outlining revised design and production approval requirements for those aircraft which are still fully the responsibility of the CAA. Chapter A8-21 is closely modelled on Part 21, so as to provide as much uniformity of regulation in this field as possible.

Both of these regulations follow the concept of the regulator being able to devolve to approved organisations the privilege to categorise modifications and repairs as major or minor. Therefore, there is a corresponding need to amend UK legislation so as to permit the CAA to authorise the relevant organisations to categorise changes and repairs as major/minor in accordance with defined criteria and to approve those minor changes and repairs. recognise the revised function of these approved organisations in relation to the validity of a Certificate of Airworthiness.

The effect of the change would be to allow the relevant approved organisations to have the privilege to categorise changes and repairs as major/minor in accordance with defined criteria and to approve **minor** changes and repairs without the costs and charges associated with involvement of the CAA or the European Aviation Safety Agency.

b) Scale of the issue:

The number of companies with a Part 21 approval at the present time, is 176, and the number of companies which will ultimately be approved to to BCAR A8-21 is likely to be 21. This gives a total of 197 companies affected by this proposal.

c) Relevant decisions:

None.

d) Brief statement of the objectives of the regulatory proposal:

The effect of the change would be to allow recognition of the relevant approved organisations to have the privilege to categorise changes and repairs as major/minor in accordance with defined criteria and to approve minor changes and repairs without the costs and charges associated with CAA or Agency involvement. The ANO change is required to recognise the impact this has upon the conditions whereby a Certificate of Airworthiness is rendered valid.

e) Who are affected:

Companies involved in the design and/or manufacture of aircraft and aircraft parts.

f) Safety Assessment:

Reliance will need to be placed on the approved companies to correctly categorise modifications and repairs as major/minor, however, the initial approval of the relevant organisations to Part 21 and BCAR A8-21 establishes the competency of the affected organisations to perform this work and subsequent auditing by the CAA and EASA monitors and confirms their competencies on a regular basis.

2. Options

(1) Do nothing. This would prevent CAA from being able to make effective use of the valuable privileges given to the organisations affected, which would prevent them from realising the time and cost savings associated with the new privileges, and maintain their dependence upon the CAA or the Agency.

(2) Make the proposed changes, so as to realise the significant benefits for the industry and the Authority which will accrue from the privileges conferred by Part 21 and BCAR A8-21.

3. Impacts

There will be no adverse impacts. The changes are needed to realise the cost savings available as part of the approvals.

4. Compliance Costs

Nil costs. There will be cost savings for the organisations affected by this change.

5. Consultation

A consultation of the organisations affected by the introduction of BCAR A8-21 was carried out between May and August 2007. A proposal to change the Air Navigation Order was included as part of the consultation package. No comments were received regarding the proposed ANO changes.

6. Summary and Final Assessment

The proposed change will allow the relevant approved organisations to have the privilege to categorise modifications and repairs as major/minor in accordance with defined criteria and to approve those minor modifications and repairs. The effect would be to enable these approved organisations to approve minor modifications and repairs without the costs and changes associated with CAA or Agency involvement. This would allow the easier embodiment of a modification or repair to reinstate the validity of an aircraft's Certificate of Airworthiness. It is concluded, that it is in the interests of both the approved organisations and the CAA/EASA to make this change to the ANO.

Annexes

Annex 1 – Proposed changes to the Air Navigation Order

"Validity of national certificate of airworthiness and issue of airworthiness directives for non-EASA aircraft

10. (1) Subject to paragraph (3), a national certificate of airworthiness or a certificate of validation issued for a non-EASA aircraft registered in the United Kingdom ceases to be in force where—

(a) the aircraft or any part of the aircraft or such of its equipment as is necessary for the airworthiness of the aircraft has been overhauled, repaired, replaced, modified or maintained.

(b) maintenance of the aircraft or of any equipment necessary for the airworthiness of the aircraft has become required by a maintenance schedule approved by the CAA for that aircraft;

(c) maintenance of the aircraft or of any equipment necessary for the airworthiness of the aircraft has been made mandatory by a directive issued by the CAA

(d) an inspection for the purpose of ascertaining whether the aircraft remains airworthy has been made mandatory by a directive issued by the CAA; or

(e) any modification of the aircraft or of any equipment necessary for the airworthiness of the aircraft is carried out, being a modification required by a directive issued by the CAA for the purpose of ensuring that the aircraft remains airworthy.

(2) A certificate of airworthiness or a certificate of validation which has ceased to be in force under paragraph (1) becomes valid again on the issue of a certificate of release to service in accordance with article 10A relating to the overhaul, repair, replacement, inspection or modification.

(3) A certificate of airworthiness which would otherwise not be in force by reason of paragraph (1) is deemed to be in force when an aircraft is flying in the circumstances specified in article 10A(3) or 10B.

Requirement for a certificate of release to service for non-EASA aircraft

10.**A** (1) This article applies to any non-EASA aircraft registered in the United Kingdom which has a certificate of airworthiness except any such aircraft which is required to be maintained in accordance with Part 145.

(2) Except as provided in article 10B an aircraft to which this article applies must not fly unless there is in force for the aircraft a certificate of release to service issued under this Order if the aircraft or any part of the aircraft or such of its equipment as is necessary for the airworthiness of the aircraft has been overhauled, repaired, replaced, modified, maintained, or has been inspected as provided in article 10(1)(d).

(3) If a repair or replacement of a part of an aircraft or its equipment is carried out when the aircraft is at a place where it is not reasonably practicable—

(a) for the repair or replacement to be carried out in such a manner that a certificate of release to service under this Order can be issued; or

(b) for such a certificate to be issued while the aircraft is at that place;

it may fly to a place which satisfies each of the criteria in paragraph (5).

(4) In such case the commander of the aircraft must cause written information about the flight, and the reasons for making it, to be given to the CAA within 10 days thereafter.

(5) A place satisfies the criteria in this paragraph if it is—

(a) the nearest place at which a certificate of release to service under this Order can be issued;

(b) a place to which the aircraft can, in the reasonable opinion of the commander, safely fly by a route for which it is properly equipped; and

(c) a place to which it is reasonable to fly having regard to any hazards to the liberty or health of any person on board.

(6) Subject to paragraph (8), equipment provided in compliance with Schedule 4 (except equipment specified in paragraph 4 of the Schedule) must not be installed or placed on board for use in an aircraft to which this article applies after being overhauled, repaired, modified or inspected.

(7) Subject to paragraph (8), radio communication and radio navigation equipment provided for use in an aircraft or in any survival craft carried in an aircraft, whether or not such apparatus is provided in compliance with this Order or any regulations made under this Order must not be installed or placed on board for use in an aircraft to which this article applies after being overhauled, repaired, modified or inspected.

(8) Equipment specified in paragraphs (6) and (7) may be installed or placed on board for use in an aircraft if there is in force for the aircraft at the time when it is installed or placed on board a certificate of release to service issued under this Order.

Circumstances where a certificate of release to service is not required

10.**B** (1) A certificate of release to service is not required to be in force for an aircraft to which article 10A applies of which the maximum total weight authorised does not exceed 2730kg if it has in force a certificate of airworthiness in the special category referred to in Part B of Schedule 3, unless the CAA gives a direction to the contrary in a particular case.

(2) A certificate of release to service is not required to be in force for an aircraft to which article 10A applies of which the maximum total weight authorised does not exceed 2730kg and which is a private aircraft if it flies in the circumstances specified in paragraph (3).

(3) The circumstances referred to in paragraph (2) are—

(a) the only repairs or replacements for which a certificate of release to service is not in force are of such a description as may be prescribed;

(b) such repairs or replacements have been carried out personally by the holder of a pilot's licence granted or rendered valid under this Order who is the owner or operator of the aircraft;

(c) the person carrying out the repairs or replacements keeps in the aircraft log book kept for the aircraft under article 22 a record which identifies the repairs or replacement and signs and dates the entries; and

(d) any equipment or parts used in carrying out such repairs or replacements are of a type approved by EASA or the CAA either generally or in relation to a class of aircraft or one particular aircraft.

(4) An aircraft to which article 10A applies does not require to have in force a certificate of release to service issued under this Order if it has in force a certificate of release to service issued in accordance with paragraph 21A.163(d) of Part 21.

Contents of a certificate of release to service

11. (1) A certificate of release to service issued under this Order where the aircraft or any part of the aircraft or its equipment has been overhauled, repaired, replaced, modified or maintained must—

(a) certify that the specified work has been completed with material of a type approved by EASA or the CAA either generally or in relation to a class of aircraft or the particular aircraft;

(b) in the case of an overhaul, removal or replacement, certify that the specified work conforms with the continuing airworthiness instructions issued by the relevant type certificate holder;

(c) (i) certify that the specified work has been completed in a manner approved by EASA or the CAA either generally or in relation to a class of aircraft or the particular aircraft; or

(ii) in the case of a repair or modification which has been classified as minor and approved by a person authorised by the CAA for the purpose, has been completed in accordance with that approval;

(d) identify the overhaul, repair, replacement, modification or maintenance to which the certificate relates; and

(e) include detailed information about the work done.

(2) A certificate of release to service issued under this Order in relation to any inspection required by the CAA must certify that the aircraft or the part of the aircraft or its equipment which has been required to be inspected—

(a) has been inspected in accordance with the requirements of the CAA; and

(b) that any consequential repair, replacement or modification has been satisfactorily carried out.

(3) In this article, a minor repair or modification means one which has no appreciable effect on the mass, balance, structural strength, reliability, operational characteristics, noise, fuel venting, exhaust emission, or other characteristics affecting the airworthiness of the aircraft or part.

Who may issue a certificate of release to service

11.A (1) A certificate of release to service issued under this Order may be issued only by—

(a) the holder of an aircraft maintenance engineer's licence—

(i) granted under this Order, being a licence which entitles him to issue that certificate; or

(ii) granted under the law of a country other than the United Kingdom and rendered valid under this Order, in accordance with the privileges endorsed on the licence;

(b) (i) subject to sub-paragraph (ii), the holder of an aircraft maintenance engineer's licence or authorisation as such an engineer granted or issued by or under the law of any Contracting State other than the United Kingdom in which the overhaul, repair, replacement, modification, maintenance or inspection has been carried out;

(ii) a person described in sub-paragraph (i) may only issue a certificate of release to service for aircraft to which this article applies of which the maximum total weight authorised does not exceed 2730kg and in accordance with the privileges endorsed on the licence or authorisation;

(c) a person approved by the CAA as being competent to issue such certification, and in accordance with that approval;

(d) a person whom the CAA has authorised to issue the certificate in a particular case, and in accordance with that authority;

(e) in relation only to the adjustment and compensation of direct reading magnetic compasses, the holder of a United Kingdom Airline Transport Pilot's Licence (Aeroplanes) or a JAR-FCL Airline Transport Pilot Licence (Aeroplane) or a Flight Navigator's Licence granted or rendered valid under this Order;

(f) a person approved in accordance with Part 145, and in accordance with that approval; or

(g) the holder of an aircraft maintenance licence granted by the CAA under Part 66, in accordance with the privileges endorsed on the licence.

(2) In this article, the expression 'repair' includes in relation to a compass the adjustment and compensation thereof and the expression 'repaired' is to be construed accordingly."

Impact Assessment 5 - Summary: Intervention & Options

Department /Agency:	Title:	
CIVIL AVIATION AUTHORITY	**Impact Assessment of amending the Air Navigation Order 2005: Article 128(1), Article 155 and Schedule 13 to Article 128**	
Stage: Final Proposal	**Version:**	**Date:** 22 February 2007
Related Publications: Proposal to amend the ANO 2005 Article 128(1), Licensing of Aerodromes, Article 155, Interpretation, and Schedule 13 to Article 128(7), Aerodrome Manual		

Available to view or download at:

http://www.caa.co.uk/consultations

Contact for enquiries: **Telephone:**

What is the problem under consideration? Why is government intervention necessary?

The ANO 2005 specifies the essential criteria for the competence and organisational arrangments, facilites and services that are required by applicants for an aerodrome license issued by the CAA. Whilst the CAA has, over the past 10 years, published guidance and criteria for aerodrome license holders with respect to developing and implementing a Safety Management System (SMS), this has not been a legal requirement. ICAO have recently placed a responsibility on States to require licensed aerodrome operators to implement a SMS.

What are the policy objectives and the intended effects?

To introduce a legal requirement for SMS to be established and maintained at aerodromes in the UK licensed by the CAA, and to align with international SMS requirements for aerodromes and other aviation operations. The amendment also introduces the term "Accountable Manager" and proposes updates to Schedule 13 to Article 128(7) in line with the licensing criteria specified in CAP168, Licensing of Aerodromes.

What policy options have been considered? Please justify any preferred option.

(1) Do nothing

(2) Amendment of the ANO

When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects? 2010

Ministerial Sign-off For final proposal/implementation stage Impact Assessments:

I have read the Impact Assessment and I am satisfied that (a) it represents a fair and reasonable view of the expected costs, benefits and impact of the policy, and (b) the benefits justify the costs.

Signed by the responsible Minister:

Paul Clark

.....Date:

Summary: Analysis & Evidence

Policy Option: 1	Description: **Analysis of the impact of Policy Option #1**

COSTS

ANNUAL COSTS	Description and scale of **key monetised costs** by 'main affected groups'
One-off (Transition) **Yrs**	
£ 0.00	
Average Annual Cost (excluding one-off)	
£ 0.00	**Total Cost** (PV) **£ 0.00**

Other **key non-monetised costs** by 'main affected groups'

BENEFITS

ANNUAL BENEFITS	Description and scale of **key monetised benefits** by 'main affected groups'
One-off **Yrs**	
£ 0.00	
Average Annual Benefit (excluding one-off)	
£ 0.00	**Total Benefit** (PV) **£ 0.00**

Other **key non-monetised benefits** by 'main affected groups'

Key Assumptions/Sensitivities/Risks A key risk is that the UK would be viewed as non-compliant in an audit by the International Civil Aviation Organisation (ICAO) in Febrary 2009 if the requirements were not adopted in law. In addition, industry would be ill-prepared for future European requirements under development by the European Aviation Safety Agency.

Price Base Year 2008	Time Period Years 1	**Net Benefit Range** (NPV) **£**	**NET BENEFIT** (NPV Best estimate) **£**

What is the geographic coverage of the policy/option?			UK	
On what date will the policy be implemented?			n/a	
Which organisation(s) will enforce the policy?			CAA	
What is the total annual cost of enforcement for these organisations?			£	
Does enforcement comply with Hampton principles?			Yes/No	
Will implementation go beyond minimum EU requirements?			No	
What is the value of the proposed offsetting measure per year?			£	
What is the value of changes in greenhouse gas emissions?			£	
Will the proposal have a significant impact on competition?			No	
Annual cost (£-£) per organisation (excluding one-off)	Micro **n/k**	Small **n/k**	Medium **n/k**	Large **n/k**
Are any of these organisations exempt?	No	No	N/A	N/A

Impact on Admin Burdens Baseline (2005 Prices) (Increase - Decrease)

Increase of £ nil Decrease of £ nil **Net Impact** **£** nil

Summary: Analysis & Evidence

Policy Option: 2 **Description: Analysis of the impact of Policy Option #2**

COSTS	ANNUAL COSTS	Description and scale of **key monetised costs** by 'main affected groups'	
	One-off (Transition) **Yrs**		
	£ negligable		
	Average Annual Cost (excluding one-off)		
	£ negligable	**Total Cost** (PV)	**£ negligable**
	Other **key non-monetised costs** by 'main affected groups'		

BENEFITS	ANNUAL BENEFITS	Description and scale of **key monetised benefits** by 'main affected groups'	
	One-off **Yrs**		
	£ n/k		
	Average Annual Benefit (excluding one-off)		
	£ n/k	**Total Benefit** (PV)	**£ n/k**
	Other **key non-monetised benefits** by 'main affected groups' The UK will be compliant with ICAO Annex 14 Volume 1 SARPs for SMS. The UK will be prepared for future EASA Implementing Rules for aerodromes. Schedule 13 to Article 128(7) will be current.		

Key Assumptions/Sensitivities/Risks The proposed amendment does not alter the current conditions in which the safety of operations at a licensed aerodrome is required to be managed. The person nominated as the Accountable Manager will be an existing Manager within the aerodrome operator's organisation. No additional posts or duties are required.

Price Base Year 2008	Time Period Years 1	**Net Benefit Range** (NPV) **£**	**NET BENEFIT** (NPV Best estimate) **£**

What is the geographic coverage of the policy/option?			UK	
On what date will the policy be implemented?			Summer 2008	
Which organisation(s) will enforce the policy?			CAA	
What is the total annual cost of enforcement for these organisations?			£ negligable	
Does enforcement comply with Hampton principles?			Yes	
Will implementation go beyond minimum EU requirements?			No	
What is the value of the proposed offsetting measure per year?			£	
What is the value of changes in greenhouse gas emissions?			£	
Will the proposal have a significant impact on competition?			No	
Annual cost (£-£) per organisation (excluding one-off)	Micro **n/k**	Small **n/k**	Medium **n/kk**	Large **n/k**
Are any of these organisations exempt?	Yes	Yes/No	N/A	N/A

Impact on Admin Burdens Baseline (2005 Prices) (Increase - Decrease)

Increase of £ Decrease of £ **Net Impact** **£**

Key: **Annual costs and benefits: Constant Prices** **(Net) Present Value**

Evidence Base (for summary sheets)

Option 1

The legal status of aerodrome SMS in the UK will not align with international SMS requirements for aerodromes and other aviation operations. Draft EASA Implementing Rules *Part Management Systems* also require certified organisations to implement a management system and nominate an Accountable Manager.

An audit of the UK by the International Civil Aviation Organisation (ICAO) under its Universal Safety Oversight Audit Programme will take place in February 2009. The audit will, *inter alia*, cover the UK adoption and implementation of Annex 14 standards and recommended practices (SARPs). Amendment 8 to Annex 14 Volume 1 to the Convention on International Civil Aviation (Chicago, 1944), published by ICAO, introduced SARPs for the implementation of SMS at certified (i.e. licensed) aerodromes, applicable from 23 November 2006. The UK would be viewed as non-compliant with the SMS SARPs if they were not adopted in law.

Option 2

Criteria for the establishment and implementation of a SMS at an aerodrome licensed by the CAA have existed for over a decade. In 1998, the CAA published "*The Management of Safety*", a booklet aimed at air traffic service providers and Aerodrome Licence Holders, which outlined the principle components and guidance on the implementation of a SMS. This booklet later became CAP 728. Further guidance on safety management has since been published by other CAA Departments, including CAP 726, *Guidance for Developing and Auditing a Formal Safety Management System* and CAP 760, *Guidance on the Conduct of Hazard Identification, Risk assessment and the Production of Safety Cases.*

CAP 168 at Chapter 2 specifies the criterion for a SMS and its inclusion in the Aerodrome Manual, and Appendix 2C outlines the essential components of a SMS. The CAA will only grant an aerodrome licence to those applicants that are able to demonstrate that an appropriate system of managing safety is in place at the aerodrome.

Amendment of the Air Navigation Order 2005 Article 128(1) as detailed in Appendix B will align the UK regulations for the implementation and maintenance of SMS at licensed aerodromes with that of international SMS requirements for aerodromes and other aviation operations. In particular, the aerodrome requirement for SMS will align with those of the air traffic services under the Single European Sky Regulations.

Amendment of Schedule 13 to Article 128(7) as detailed in Appendix B will:

- propose a title (Accountable Manager) for the official nominated by the Aerodrome Licence Holder as having accountability for ensuring that compliance with the licensing criteria is maintained;
- provide for inclusion of SMS details;
- address an issue related to the prescribed scale of maps - aerodromes with large movement areas can be unnecessarily restricted in the production of maps, particularly now that the CAA prefers all required documentation to be submitted in electronic form (see NOTAL 3/2007);
- update the entry on bird risk management in line with CAP 168 and CAP 772, *Birdstrike Risk Management for Aerodromes*; and
- correct the term used for aeronautical ground lighting.

Specific Impact Tests: Checklist

Use the table below to demonstrate how broadly you have considered the potential impacts of your policy options.

Ensure that the results of any tests that impact on the cost-benefit analysis are contained within the main evidence base; other results may be annexed.

Type of testing undertaken	***Results in Evidence Base?***	***Results annexed?***
Competition Assessment	Yes	No
Small Firms Impact Test	Yes	No
Legal Aid	No	No
Sustainable Development	No	No
Carbon Assessment	No	No
Other Environment	No	No
Health Impact Assessment	No	No
Race Equality	No	No
Disability Equality	No	No
Gender Equality	No	No
Human Rights	No	No
Rural Proofing	No	No

Impact Assessment 6 - Summary: Intervention & Options

Department /Agency:	Title:	
Safety Regulation Group / Civil Aviation Authority	**Impact Assessment of Proposal to amend the Air Navigation Order 2005 Article 25(8)(c)**	
Stage: Final Proposal	**Version:** 1	**Date: 1 May 2008**
Related Publications: Air Navigation Order 2005 (ANO)		

Available to view or download at:

http://www.caa.co.uk/publications

Contact for enquiries: FOP.Admin@caa.co.uk **Telephone:** 01293 573914

What is the problem under consideration? Why is government intervention necessary?

Police helicopter operations in the UK have been conducted for many years with a flight crew or equipment alleviation compared to other forms of public transport. It is now considered prudent to require those standards to be harmonised and for police helicopters to meet the same levels of equipment requirement and crew composition as other public transport helicopters. The increase in safety is a positive benefit and reflects the thrust of the recommendations of the CAA study into helicopter accidents occurring during flight in degraded visual conditions.

What are the policy objectives and the intended effects?

To improve the safety of police operations by harmonising the requirements for the composition of crews of police helicopters with those of public transport helicopters by removing the alleviation for single pilot IFR operations without the required autopilot being fitted. The improved level of safety provided by this change has already been widely achieved as the majority of police units now operate compliant helicopters.

What policy options have been considered? Please justify any preferred option.

1. Do nothing. This option would not recognise the findings of the CAA study into the causes of helicopter accidents in conditions of degraded visibility and would not allow the enhanced safety benefits of better-equipped helicopters to be realised.

2. Amend Article 25(8)(c) of the ANO to remove the alleviation for police helicopters to operate single pilot Instrument Flight Rules (IFR) flights without an appropriate autopilot being fitted thereby improving safety and reducing risk.

Option 2 is the preferred option if safety enhancement in this area of police aviation is to be achieved.

When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects?

The increased levels of safety have to a large extent already been achieved and will continue to be monitoredunder the normal safety oversight of these operations by the CAA who will conduct a full review in 2015.

Ministerial Sign-off For final proposal/implementation stage Impact Assessments:

I have read the Impact Assessment and I am satisfied that (a) it represents a fair and reasonable view of the expected costs, benefits and impact of the policy, and (b) the benefits justify the costs.

Signed by the responsible Minister:

Paul Clark

.....Date:

Summary: Analysis & Evidence

Policy Option: 2	Description: **Amend the ANO 2005 Article 25(8)(c) to require an autopilot for single pilot IFR police helicopter operations**

COSTS

ANNUAL COSTS	
One-off (Transition)	**Yrs**
£ 17.5M	10
Average Annual Cost (excluding one-off)	
£ N/A	

Description and scale of **key monetised costs** by 'main affected groups'

The sum of the costs to reach compliance is likely to be in the region of £4.5M per police operating unit less a trade-in value of approximately £1M. The total cost will be in the order of £17.5M split between the Police Air Operations units concerned and the Home Office. Average annual costs are expected to be equivalent to current operational costs and therefore neutral.

Total Cost (PV) **£ 17M**

Other **key non-monetised costs** by 'main affected groups'

There will be little if any social, environmental or other cost.

BENEFITS

ANNUAL BENEFITS	
One-off	**Yrs**
£ N/A	
Average Annual Benefit (excluding one-off)	
£ N/A	

Description and scale of **key monetised benefits** by 'main affected groups'

The proposal will have a positive safety effect on the operation of police helicopters for flights under IFR, including at night, and provide an enhanced level of safety to helicopter occupants and third parties alike and reduce the risk of an accident and loss of life.

Total Benefit (PV) **£ N/A**

Other **key non-monetised benefits** by 'main affected groups'

This proposal will harmonise safety features of the equipment or crewing requirements for all public transport helicopters operating under Article 25(8) of the ANO and reduce the risk of an accident and loss of life.

Key Assumptions/Sensitivities/Risks

Operators of older police helicopters will be able to procure newer helicopters that meet the equipment requirements or provide extra pilots to meet the crewing requirement in order to comply with the new regulation and not to be restricted in their operational obligations. It is anticipated that in the main this commitment will have already been addressed within normal re-equipment procurement cycles.

Price Base Year 2008	Time Period Years 10	**Net Benefit Range** (NPV) **£ 0 to –17.5M**	**NET BENEFIT** (NPV Best estimate) **£ -17M**

What is the geographic coverage of the policy/option?			UK	
On what date will the policy be implemented?			2009	
Which organisation(s) will enforce the policy?			CAA / Home Office	
What is the total annual cost of enforcement for these organisations?			£ Negligible	
Does enforcement comply with Hampton principles?			Yes	
Will implementation go beyond minimum EU requirements?			No	
What is the value of the proposed offsetting measure per year?			£ Nil	
What is the value of changes in greenhouse gas emissions?			£ Nil	
Will the proposal have a significant impact on competition?			No	
Annual cost (£-£) per organisation (excluding one-off)	Micro **N/A**	Small **N/A**	Medium **N/A**	Large **N/A**
Are any of these organisations exempt?	No	No	N/A	N/A

Impact on Admin Burdens Baseline (2005 Prices) (Increase - Decrease)

Increase of £ Nil Decrease of £ Nil **Net Impact** **£** Nil

Key: **Annual costs and benefits: Constant Prices** **(Net) Present Value**

Evidence Base (for summary sheets)

PROPOSAL FOR THE AMENDMENT OF THE AIR NAVIGATION ORDER 2005 ARTICLE 25 TO CHANGE THE CREW COMPOSITION REQUIREMENTS FOR HELICOPTERS FLYING UNDER AND IN ACCORDANCE WITH THE TERMS OF A POLICE AIR OPERATOR'S CERTIFICATE

1 Title of proposal

1.1 Amendment to Article 25 of the Air Navigation Order 2005 (ANO) to change the crew composition requirements for helicopters flying under and in accordance with the terms of a Police Air Operator's Certificate (PAOC).

2 Purpose and intended effect

2.1 Background

2.1.1 A flight by an aircraft registered in the UK in the service of a police authority is deemed to be, for the purposes of the ANO, a public transport flight. With this comes all the associated requirements for public transport operations including the grant of a PAOC to the operator who has demonstrated competency in securing the safe operation of aircraft in the specified circumstances. Alleviation from some of the requirements is contained in certain Articles of the ANO due to the nature of police operations. One of these alleviations affects the crew composition for Instrument Flight Rules (IFR), including at night, whilst another permits operations at lower weather limits.

2.2 Issue

2.2.1 In accordance with Article 25(1) of the ANO, an aircraft shall not fly unless it carries a flight crew of the number and description required by the law of the country in which it is registered. Article 25(2)(a) requires that any aircraft registered in the United Kingdom shall carry a flight crew adequate in number and description to ensure the safety of the aircraft, whilst Article 25(2)(b) requires that the number of flight crew shall be no less than that defined in the flight manual. In addition, aircraft having a predetermined level of complexity are required to carry approved autopilots.

2.2.2 Under Article 25(7), the minimum flight crew must be two pilots for helicopters with a maximum total authorised weight of 5700 kg or less flying for the purposes of public transport under IFR, which includes flight at night. Article 25(8), however, provides alleviation from this latter helicopter requirement by allowing the flight crew to be reduced to one pilot if the helicopter is equipped with an autopilot with at least altitude hold and heading mode. Additionally, this article currently further alleviates and allows helicopters flying in accordance with the terms of a PAOC to be flown single pilot under IFR, including at night, without the required autopilot.

2.2.3 When Article 25(7) was originally amended to fall in line with the European standard of JAR-OPS 3, most police operators could not meet these autopilot requirements. The CAA recognised that police support activities would be dramatically affected if the requirements were extended to include PAOC holders, and therefore they were specifically alleviated from the requirement. The last ten years has seen a significant change in the availability and introduction of new generation aircraft into police service, with nearly all police operators now meeting the autopilot equipment standards required of an Air Operator's Certificate (AOC) public transport operator.

2.2.4 A recent study by the CAA into helicopter flight in degraded visual conditions has led to a change in the weather minima for Visual Flight Rules (VFR) and IFR and highlighted the vulnerability to the loss of control of helicopters in such environments. Holders of PAOCs will, however, continue to be able to operate at lower weather and operating minima than any other similar style of operation in accordance with the rigorous standards laid down in *CAP 612 Police Air Operations*

Manual. Training and testing of flight crew along with aircraft performance and equipment fit are all taken into account when mitigating the extra risk involved in such operations. However, to continue to ignore the significant safety enhancements offered by aircraft fitted with an autopilot system can no longer be justified. It is therefore proposed to remove the alleviation and require police helicopters to meet the same autopilot equipment fit and flight crew composition as those necessary for other public transport helicopters.

2.2.5 The proposed change to Article 25(8) is wholly in line with the findings and recommendations of the study which can be found at CAA Paper 2007/3 *(Helicopter Flight in Degraded Visual Conditions)*.

2.3 Objective of proposal

2.3.1 The objective of the proposed change to Article 25(8) is to enhance flight safety and harmonise police operations with other public transport flights by removing the alleviation for helicopters flying under and in accordance with the terms of a PAOC to be permitted to fly single pilot without an autopilot under IFR, including at night.

3 Options

3.1 Two options were considered:

Option 1. Do nothing. This option would not recognise the findings of the CAA study into the causes of helicopter accidents in conditions of degraded visibility and would not allow the enhanced safety benefits of better-equipped helicopters to be realised.

Option 2. Amend ANO Article 25(8). This option would have a positive safety benefit to police helicopter operations and require them to operate to similar standards as those required of all other public transport flights providing an enhanced level of safety to helicopter occupants and third parties alike.

Option 2 is the preferred option if practical safety enhancement in this area of police aviation is to be fully realised.

4 Sectors concerned

4.1 This proposal will only affect UK police operators of helicopters.

4.2 Of those affected, approximately 75% are already compliant with the proposed equipment requirement to allow single pilot operation under IFR, including at night. Those remaining non-compliant helicopters are likely to be replaced in the near future regardless of the change to the regulations, either in the normal procurement cycle or for other reasons.

5 Impacts

5.1 Safety

5.1.1 The proposal will have a positive safety effect on the operation of police helicopters for flights under IFR, including at night, by requiring them either to be equipped with an autopilot with at least altitude hold and heading mode when using a single pilot, or to be operated with two pilots. This will harmonise safety features of the equipment requirements for all public transport helicopters operating under Article 25(8). However, police units are unlikely to wish to utilise the two pilot solutions as the police crew concept of operations and the equipment fit of the helicopters concerned require that one of the police crewmembers occupies the co-pilot seat. A two pilot crew would have significant effects on aircraft configuration and equipment requirements, crew training and resourcing, and be difficult to manage.

5.2 Economic

5.2.1 There will be a cost to operators of older aircraft in the procurement of newer types that meet the equipment requirements or the provision of extra pilots. As mentioned above, it is unlikely that a two pilot alternative would be chosen by police units therefore replacement helicopters will be required. Additional costs for such a programme update may include training and support arrangements necessary for the operation of a different type of helicopter. The sum of these costs is likely to be in the region of £4.5M per operation less a trade-in value of approximately £1M. The total cost will be in the order of £17.5M split between the Police Air Operations units concerned and the Home Office. But it is likely that in the main this commitment will have already been addressed within normal re-equipment procurement cycles.

5.2.2 One unit is likely to be affected by higher lease charges associated with the requirement for a more capable helicopter.

5.3 Environmental, Rural and Health

5.3.1 The change will have little if any environmental, rural or health impact as the operations will still be conducted by helicopters similar in these respects to those already in use.

5.4 Social

5.4.1 There are not expected to be any social effects caused by this change covering: human rights, race, gender and disability equality.

5.5 Small Firms Impact Test

5.5.1 The CAA does not consider this matter to be an issue for those police helicopter operators likely to be affected by this proposal.

5.6 Other impacts

5.6.1 No other impacts have been identified that will result as a consequence of this change.

5.7 Equity and fairness

5.7.1 It is considered that the proposed change is both equitable and fair. Many of the operators affected have already become compliant with the new requirements through the normal updating and change of equipment programme. For those operators who have not yet progressed to the higher standard, there will be a financial impact, but this should be ameliorated by prior financial planning for the event which had been indicated by the Home Office several years ago together with its financial support.

5.8 Competition Assessment

5.8.1 With regards to competition, it is considered that the proposed amendment to the ANO will not:

a. Directly limit the number or range of suppliers.

b. Indirectly limit the number or range of suppliers.

c. Limit the ability of suppliers to compete.

d. Reduce supplier's incentives to compete vigorously.

6 Enforcement, sanctions and monitoring

6.1 The mechanism for enforcement through the ANO already exists and no additional resources will be required in this regard. The CAA's Safety Regulation Group, as part of its safety oversight function, will monitor and review the effectiveness of the legislation. The CAA recognises that once the change has occurred operators will be expected to be compliant but that, subject to a case-by-case assessment, short-term alleviation to allow any procurement processes to be completed could be considered, in the normal manner within their powers under Article 153 of the ANO.

7 Implementation and Delivery Plan

7.1 The changes to UK legislation implemented by this IA have been anticipated for several years by the UK police aviation operators who have been briefed and consulted with. Affected operators will in the main be compliant with the new requirements when the ANO is amended or have in place arrangements acceptable to the CAA to become compliant.

8 Post-Implementation Review

8.1 The CAA, as part of its continuing oversight of aircraft operations, will assess the effect of this and any further amendments on police air operators. Should amendments be required, the CAA will consult on proposals that would modify or supersede the requirements proposed in this IA.

9 Consultation

9.1 In the Letter of Consultation (L of C) of 30 November 2007 (FODCOM 37/2007), the CAA detailed a proposal to amend the ANO to introduce a change in the crew composition requirements for helicopters flying under and in accordance with the terms of a Police Air Operator's Certificate. Comments were invited on the proposal.

9.2 Comments were received from four police authorities and one commercial operator:

a. Bedfordshire Police

b. Northumbria Police – North East Air Support Unit

c. North Wales Police Air Support Unit

d. Police Aviation Services

e. West Midlands Police Air Operations Unit

The comments supported and recognised the positive safety benefit of the proposal. A summary of the comments and the CAA responses is tabulated below. Several of the respondents preferred that their actual comments should remain in confidence and therefore only the general subject matter is recorded. One commenter indicated that the cost of compliance would be in line with the estimations detailed in the IA.

9.3 The comments were predominantly focused on the timing of any change to the ANO and therefore the date by which compliance would be required. This particularly affects those operators who will have to procure, or who are in the process of procuring, compliant helicopters. The CAA has responded by indicating that once the change has come into force operators will be expected to be compliant but that, subject to a case-by-case assessment, short-term alleviation to allow any procurement processes to be completed could be considered in the normal manner.

9.4 Comments and responses are tabulated at Annex 1. The CAA is satisfied that the views expressed by interested parties during the consultation have been taken into account.

10 Summary and Recommendations

10.1. Police helicopter operations in the UK have been conducted for many years with a flight crew or equipment alleviation compared to other forms of public transport. It is now considered prudent to require those standards to be harmonised and for police helicopters to meet the same levels of equipment requirement and crew composition as other public transport helicopters. There is a positive benefit to safety and the change reflects the thrust of the recommendations of the CAA study into helicopter accidents occurring during flight in degraded visual conditions. As the use of two pilots in accordance with Article 25(7) is unlikely to be adopted, the total cost of re-equipping with single pilot compliant helicopters under Article 25(8) will be in the order of £17.5M split between the Police Air Operations units concerned and the Home Office. But it is likely that in the main this commitment will have already been addressed within normal equipment procurement cycles.

10.2 The CAA believes that Option 2 will provide an enhanced level of safety to helicopter occupants and third parties alike and is minded to recommend to the Secretary of State for Transport that the ANO be amended at Article 25(8).

10.3 Option 1 to do nothing was rejected as it would not recognise the findings of the CAA study into the causes of helicopter accidents in conditions of degraded visibility and would not allow the enhanced safety benefits of better-equipped helicopters to be realised.

Specific Impact Tests: Checklist

Type of testing undertaken	***Results in Evidence Base?***	***Results annexed?***
Competition Assessment	No	No
Small Firms Impact Test	Yes	No
Legal Aid	No	No
Sustainable Development	No	No
Carbon Assessment	Yes	No
Other Environment	Yes	No
Health Impact Assessment	Yes	No
Race Equality	Yes	No
Disability Equality	Yes	No
Gender Equality	Yes	No
Human Rights	Yes	No
Rural Proofing	Yes	No

Annex 1

Comments and Responses

Commenter	Comments	Responses
Bedfordshire Police	In these times of severe financial constraint and future year-on-year budgetary reductions, there is a real risk that the high capital costs in meeting the demands of the removal of the current alleviation will prove too high and that no replacement aircraft will be sought. It would be highly regrettable to lose a serviceable and operationally effective aircraft to meet the demands of an arbitrary date when there is considerable life remaining on the existing airframes. A more realistic date would provide time for budgetary planning to be put in place and a staged transition to new airframes that comply with the ANO.	Noted. The effective date for compliance will be provided by the change to the ANO 2005 Article 25(8). The process of amendment has been conducted following an initiative by the Home Office. The CAA recognises that there may be a need for some flexibility in achieving compliance with the amended regulation when it comes into effect. The CAA under Article 153 of the ANO has the authority to address such issues as they arise. The text of the IA has been amended to reflect this.
Northumbria Police – NEASU	Effective date of compliance.	See above.
North Wales Police – ASU	Effective date of compliance.	See above.
Police Aviation Services	Effective date of compliance.	See above.
West Midlands Police – AOU	We support the proposals to change the ANO. However, we would like to ensure that we get some sort of alleviation should the autopilot be unserviceable for a number of days. At the moment we are allowed to fly single pilot at night should our autopilot be unserviceable under certain restrictions and in accordance with the Minimum Equipment List (MEL).	Noted. Article 25(8)(b) partly covers the situation of autopilot unserviceablities, albeit on start up, and the CAA will review the MEL requirements and weather minima for visual flight at night for police operations as contained in *CAP 612 Police Air Operations Manual Part 1*.

Impact Assessment 7 - Summary: Intervention & Options

Department /Agency:	Title:	
Safety Regulation Group Civil Aviation Authority	**Impact Assessment of a proposal to amend the Air Navigation Order to address the regulation of Unmanned Aircraft Systems**	
Stage: Final Proposal	**Version:** 1	**Date:** 30 March 2009
Related Publications: The Air Navigation Order 2005 (CAP 393)		

Available to view or download at:

http://www.caa.co.uk/publications

Contact for enquiries: FOP.Admin@caa.co.uk **Telephone:** 01293 573914

What is the problem under consideration? Why is government intervention necessary?

Emerging Unmanned Aircraft Systems (UAS) technology is being viewed by the Police and Fire Services as a very affordable alternative to helicopter assets, where they currently exist, for certain emergency situations. Such technology may also be used by commercial companies for news-gathering, surveillance and other data and intelligence gathering purposes. As operations are very likely to involve flying Unmanned Aerial Vehicles (UAVs) in congested areas and above assemblies of persons, it is apparent that the safety of the public may be compromised unless steps are taken through government intervention to regulate the activity.

What are the policy objectives and the intended effects?

The policy objective is to introduce regulation for Unmanned Aircraft Systems with a vehicle component mass of 20 kg or less where the existing regulation is deemed to be inadequate.

The intended effect is to give protection to the public without adversely affecting recreational model aircraft activities.

What policy options have been considered? Please justify any preferred option.

1. No intervention.
2. A simple change to the Air Navigation Order (ANO) to remove existing weight discriminants.
3. A change to the ANO to add operational restrictions.
4. A change to the ANO to add operational restrictions and equipment criteria.

The CAA prefers Option 4 because it achieves the objective of protecting the public whilst having minimal impact on recreational model aircraft activities. It also clarifies the requirement for the aircraft to be visually monitored at all times to avoid collisions.

When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects?

The policy will be reviewed three years after implementation, unless it becomes necessary, for any clear reason, to do so earlier.

Ministerial Sign-off For final proposal Impact Assessments:

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister:

Paul Clark

..... Date:

Summary: Analysis & Evidence

Policy Option: 4	Description: **A change to the Air Navigation Order Article 98 to add operational restrictions and equipment criteria**

COSTS

ANNUAL COSTS		Description and scale of **key monetised costs** by 'main affected groups'
One-off (Transition)	**Yrs**	The cost of a one-off permission, for example a trial UAS operation, is £100. For a multi-operation permission the cost is £200. Numbers of applications are difficult to predict but it is estimated that there could be an annual requirement for 50 applications for a multiple operations permission.
£ Nil	10	
Average Annual Cost (excluding one-off)		
£ 10k		**Total Cost** (PV) **£ 85k**

Other **key non-monetised costs** by 'main affected groups'

Operators will be required to prepare and present a safety case covering their operations. Application for a permission will impose a small administrative burden on the applicant but this is considered to be small and will be kept to a minimum by simplified and proportionate application processes.

BENEFITS

ANNUAL BENEFITS		Description and scale of **key monetised benefits** by 'main affected groups'
One-off	**Yrs**	None Identified.
£ N/A		
£ N/A		**Total Benefit** (PV) **£ N/A**

Other **key non-monetised benefits** by 'main affected groups'

The General Public: public safety will be better assured by CAA oversight of small UAV operations.

Industry: the reputation of the emerging UAS industry will be protected from potentially irresponsible operators.

Key Assumptions/Sensitivities/Risks

While it is impossible to accurately assess the number of permissions that will be requested, a 'best guess' estimate of 50 has been used as a baseline. In 2007 20 applications for permission for Aerial Work operations of UAVs in the range 7-20 kg were received by the CAA. Industry sources and inquiries from potential operators are indicating significant interest in UAVs below 7 kg.

Price Base Year 2009	Time Period Years 10	**Net Benefit Range** (NPV) **£ 0 to –85k**	**NET BENEFIT** (NPV Best estimate) **£ -85k**

What is the geographic coverage of the policy/option?				UK
On what date will the policy be implemented?				2009
Which organisation(s) will enforce the policy?				CAA
What is the total annual cost of enforcement for these organisations?				£ negligible
Does enforcement comply with Hampton principles?				Yes
Will implementation go beyond minimum EU requirements?				No
What is the value of the proposed offsetting measure per year?				£ N/A
What is the value of changes in greenhouse gas emissions?				£ N/A
Will the proposal have a significant impact on competition?				No
Annual cost (£-£) per organisation (excluding one-off)	Micro **200**	Small **200**	Medium **200**	Large **200**
Are any of these organisations exempt?	No	No	N/A	N/A

Impact on Admin Burdens Baseline (2005 Prices) (Increase - Decrease)

Increase of £ Nil Decrease £ Nil **Net Impact** **£** Nil

Key: **Annual costs and benefits: Constant Prices** **(Net) Present Value**

Evidence Base (for summary sheets)

1 Introduction

1.1 The ANO currently makes provision for "Small Aircraft" (not more than 20 kg mass) to operate with minimal constraints. No permission is required to operate a Small Aircraft that is not employed in Aerial Work. In particular, for aircraft of 7 kg or less there is no requirement for any permission, approval or exemption to be issued whatever it is used for. In most cases the only obligation on a person operating an aircraft of 7 kg or less is not to endanger persons or property, and the only means of the CAA exercising regulatory control is to issue a Direction prohibiting flight of the aircraft on the basis that such a flight would be a cause of danger. The CAA can only issue a Direction if it is aware that a flight is planned and it becomes apparent that such a flight would be a cause of danger.

1.2 These Small Aircraft provisions were originally designed to facilitate the operation of model aircraft flown for the enjoyment of their owners, and have been satisfactory in that context. However, in recent years there have been significant developments in the use of unmanned aircraft for non-recreational purposes and many of these aircraft fall within the Small Aircraft definition. In May 2007, a UK Police Force announced its intent to use a UAV (under 1 kg) for surveillance purposes over built-up areas. This proposed police operation and associated public statements that such aircraft are "not required to comply with CAA rules" has raised a number of concerns:

a) Model aircraft enthusiasts generally operate away from centres of population (for safety and to avoid complaints about noise), and fly well within visual range (as the purpose of the flight is to see the aircraft fly). Conversely, the most common purpose for the operation of a UAV is to observe human activity; such activity might possibly not be in the direct view of the operator. There may therefore be an intention to fly a UAV close to people and/or buildings/property, potentially at night as well as in daylight. This suggests that the safety risks associated with such operations will potentially be very different to those associated with model aircraft.

b) Other organisations or individuals (including private security firms, investigators, journalists, paparazzi etc.) may follow the precedent of the police and start to use other small aircraft (up to 7 kg) over centres of population.

c) Operation of UAVs near major incidents involving the emergency services (by the news media companies as well as the emergency services themselves) may cause a hazard to police aircraft and Helicopter Emergency Medical Service (HEMS) aircraft.

1.3 This kind of operation was not envisaged when the existing ANO Articles were written and so a need has arisen to review the adequacy of the current legislation with a view to identifying any necessary amendments.

1.4 Unmanned Aircraft System (UAS) means the UAV and the command and control systems required to operate it, including the UAV pilot or the UAS commander, as appropriate. The UAV is the flying component of the UAS.

2 Proposal Development

2.1 The CAA, utilising its internal regulatory development process and liaising with external stakeholders, studied the problem and drafted the proposed changes to the ANO. The draft proposals were agreed through management and committee approvals in accordance with current Better Regulation principles before being published for consultation.

2.2 On completion of the public consultation, the proposal was reviewed in light of comments received and adjustments made accordingly before being subject again to the CAA internal

management process for regulatory development. Managerial agreement was reached within this process leading to the intention to proceed with the amendment to the legislation.

3 Public Consultation

3.1 A public consultation was carried out by the CAA through its website and also directly with organisations most concerned with the proposal. The objective of this consultation was to seek industry views on whether regulatory intervention was required for UAVs under 20 kg (particularly for UAVs of 7 kg or less) and, if deemed necessary, to amend the ANO accordingly, but without adversely affecting the operation of model aircraft.

3.2 A total of 26 comments were received, the majority of which supported a change to the ANO to improve the adequacy of the regulations to help ensure the protection of the public. Opinions differed though in how this should be achieved and the CAA has taken note of these views and adjusted the proposal to accommodate them without substantially altering the content or intent of the proposal. The revised proposal will have the additional benefit of being able to reduce the regulatory burden and impact on the operators from that previously envisaged. The Comment Response Document was published on the CAA website on 3 February 2009. A summary of the comments and responses is at Annex 2.

3.3 Building on the results of the consultation, the proposed amendment to the ANO Article 98 required under Option 4 has been adjusted to accommodate better the particular requirements of the recreational model aircraft operators. In the original proposal, the model aircraft operators wishing to continue to conduct flights with a camera attached to their small aircraft would be deemed to be carrying out surveillance or data acquisition and would have been affected directly by the amended regulation. They would have needed to seek permission for each flight or alleviation, possibly through a blanket permission, granted on the basis of membership of an approved club such as the British Model Flying Association. This was not considered to be a practical solution and a different approach has been introduced.

3.4 By adding some prescriptive separation and operating criteria into the regulation, based on existing permissions and model aircraft operating best practice, a clear distinction can now be drawn between recreational and other flying when the purpose is to conduct surveillance or data acquisition. When such flying is conducted outside of the separation criteria, then no permission needs to be sought. However, when such a flight is intended to capture data closer to people or property, then tighter control is needed to ensure that the safety of the public and property has been adequately considered and allowed for. This will require operators to seek approval from the CAA before conducting such flights. As part of the approval process, the CAA will consider the submissions of operators who will need to demonstrate how they intend to mitigate the risks through air vehicle standards, operational procedures, qualifications, training and risk assessment. Guidelines for such applications will be provided and will tailor the requirements to the nature of the intended operation.

3.5 Following the consultation, the Options were reviewed. Option 4 remains the preferred option but has been revised to include the introduction of a new Article 98A detailing the separation requirements and other factors for the use of Small Aircraft equipped to undertake surveillance or data acquisition.

4 Other Factors Considered

4.1 ANO Article 98 specifies limitations for the operation of Small Aircraft exceeding 7 kg, and requires that permission be obtained for any flight for the purposes of Aerial Work. Recent experience, such as facilitating the Parc Aberporth UAV events, has shown the use of permissions under this Article to be a satisfactory and flexible means to regulate UAVs in the range 7-20 kg being operated for Aerial Work. It has also shown that operational restrictions are adequate for this type of aircraft at present and that there is no need to consider requiring formal airworthiness certification for aircraft under 20 kg.

4.2 This is further supported by the current regulatory approach to heavier UAVs, which is to approve an industry body or other competent body to qualitatively assess the safe operation and airworthiness of UAVs between 20 and 150 kg. Therefore introducing an airworthiness code for UAVs below 20 kg would be disproportionate and inconsistent with the approach to heavier UAVs.

4.3 While, currently, UAVs under 20 kg are subject neither to any airworthiness requirements nor to any operational limitations, the increased number of such UAVs coming to market and the applications to which they may be put gives rise to legitimate concerns over public safety. The permission of the CAA is required to operate a UAV for Aerial Work, but only if it is in excess of 7 kg. As, for the reasons stated above, it is not considered appropriate to introduce airworthiness requirements for such UAVs, operational limitations are the only means by which their use may be controlled.

4.4 ANO Article 164 provides exceptions from application of the provisions of the Order for certain classes of aircraft including Small Aircraft. As a consequence of the proposed change to Article 98 and the introduction of a new Article 98A, Article 164 will also require minor amendment to reflect this. This amendment is detailed at Annex 1.

5 Options Analysis

5.1 Option One

Description – No Intervention

This option would have left the responsibility for public safety with the operator of a UAS in accordance with ANO Article 74 (endangering). Such an operator would only have been aware of this responsibility if he were aware of the ANO and this could not be assumed as a UAS may be sold to persons without any aviation knowledge or experience.

Costs

The only potential cost of this option that was apparent was that of investigating an alleged endangerment by an operator and any subsequent prosecution that might have been necessary.

Benefits

Nil.

Net Impact

This option of “no intervention” would not have provided an adequate assurance of public safety, in that UAVs could potentially impact with people, property and other airspace users (including police aircraft and HEMS helicopters operating in the vicinity of an incident).

Key Assumptions

The responsibility for public safety would have remained with the operator of a UAS who might not have been aware of the requirements of the ANO not to endanger others.

Sensitivities

The emerging UAS industry in the UK is concerned that it should gain a reputation for safe and responsible operation to guarantee future commercial success. Any threat to public safety from UAS operations is, at present, only a perceived threat as there have been no incidents of note involving very light UAVs. However, some UAVs have already been flown over

people and built-up areas and it cannot be further predicted with any certainty to what extent UAS technology will be adopted and whether it will be managed responsibly.

Risks

If there is no intervention the risk is that public safety would not be assured.

5.2 **Option Two**

Description – A simple change to the ANO to remove existing weight restrictions
The simplest change to the ANO, to address recent light UAV developments, would have been to remove the reference to 7 kg, so that the limitations of Article 98(2) would have applied to all aircraft under 20 kg and any flying for the purpose of Aerial Work would have required the permission of the CAA. However, this would have made it illegal to even throw a paper aeroplane anywhere that happened to be within an Air Traffic Zone, or where Class A, C, D or E airspace extended to ground level. Removing the 7 kg threshold would also have had a significant impact on model aircraft (7 kg and under) that regularly fly in the airspace specified and/or above 400 ft (e.g. during model glider endurance competitions).

Aside from the question of the effects on model aircraft of removing the 7 kg threshold, such a simple change might not have achieved the required objective for UAVs up to 20 kg. This was because some of the UAV operations that might have been regulated might have been private (as distinct from Aerial Work). This led to the conclusion that there would have been a need to make a distinction in the ANO between model aircraft and UAVs. However, it might have been difficult to categorise operations reliably as for either “recreational purposes” or “non-recreational purposes”.

Costs
In addition to the estimated cost of enforcement, the introduction of this option would have required every aircraft below 20 kg undertaking aerial work to have obtained a permission imposing a small administrative burden on the applicant.

Benefits
The safety of the general public would have been better assured if the CAA had oversight of UAS operations. Additionally, the reputation of the growing UAS industry would have been protected from the actions of irresponsible operators.

Net Impact
This option would have achieved the objective of protecting the industry and the general public but the costs to the industry and anybody participating in recreational model flying would have been unsustainable and disproportionate.

Key Assumptions
Nil.

Sensitivities
Recreational model flying in the UK is a long-established pastime enjoyed safely by many enthusiasts. This situation has been achieved by virtue of the light touch application of regulation along with a positive working relationship between the regulator and model flying associations. Any additional burden on the model flying community would have been justifiably criticised and might have resulted in this pastime becoming accessible to fewer individuals.

Risks
Enforcement of the regulations proposed in this option would have been difficult, if not impossible, because of the wide scope of activities it encompasses.

5.3 **Option Three**

Description – Proposed ANO change adding operational restrictions
A third option would have been to take the view that those operating model aircraft for recreation should have no need to fly in close proximity to, or over, congested areas, but that this was the kind of UAV operation that should be regulated. Legislation could have been revised to apply operating constraints based upon proximity to congested areas such that operations close to persons, vehicles, vessels or structures would have required the permission of the CAA. The unintended consequence of this option would have been that throwing a paper aeroplane in a back garden and other such harmless activities (including model aircraft flight inside buildings) would have required a formal permission to be granted.

Costs
The current cost of permission for a one-off UAS operation such as a trial or demonstration flight is £100 per application. A permission for multiple UAS operations costs £200. It was difficult to assess the number of applications likely to be received, especially when considering the scope of activities that would have been required to obtain permission, but the total annual costs were estimated to be well in excess of £10,000. Application for a permission would have imposed a small administrative burden on the applicant.

Benefits
The safety of the general public would have been better assured if the CAA had oversight of UAS operations. Additionally, the reputation of the growing UAS industry would have been protected from the actions of irresponsible operators.

Net Impact
This option would have achieved the objective of protecting the industry and the general public but the costs to the industry and anybody participating in recreational model flying would have been unsustainable.

Key Assumptions
In 2007 the CAA issued 20 Aerial Work permissions for UAVs in the 7-20 kg range and industry sources suggested that there was significant interest in UAVs of 7 kg and below. It was impossible to assess the number of applications that might have been received for model aircraft but it was thought to be significant. A ‘best guess’ figure of 50 applications, not including model aircraft, had been used as a baseline for the monetary cost calculations.

Sensitivities
Recreational model flying in the UK is a long-established pastime enjoyed safely by many enthusiasts. This situation has been achieved by virtue of the light touch application of regulation along with a positive working relationship between the regulator and model flying associations. Any additional burden on the model flying community might be criticised and result in this pastime becoming accessible to fewer individuals. Some individuals might have decided not to comply with a new regulation if they perceived it as disproportionate or unnecessary for their activities.

Risks
Enforcement of the regulations proposed in this option would have been difficult, if not impossible, because of the scope of activities it encompasses.

5.4 **Option Four**

Description – Proposed ANO change adding operational restrictions and equipment criteria

In addition to the operating restrictions proposed at Option Three, consideration of all of the above factors led to the view that, as UAVs invariably carry cameras or other sensors, the ANO could be amended to add restrictions to aircraft that are "equipped to undertake surveillance or data acquisition". Such operating restrictions must be devised so as not to unreasonably restrict current recreational use of model aircraft. The proposed change to the ANO, detailed at Annex 1, would amend Article 98 and introduce a new Article 98A dealing with the use of 'small surveillance aircraft' and detailing operating restrictions which are not expected to impinge on the accepted use of model aircraft.

A further factor that has been taken into account is that recent enquiries from potential UAS operators have revealed a lack of understanding of the need for visual monitoring of the UAV whilst airborne in order to avoid collisions. This is addressed in the proposed ANO change.

Costs

The current cost of permission for a one-off UAS operation such as a trial or demonstration flight is £100 per application. A permission for multiple UAS operations is £200. It is difficult to accurately assess the number of applications likely to be received but a 'best guess' estimate of 50 applications for a multiple operations permission costing an annual total of £10,000 has been used. Application for a permission would impose an administrative burden on the applicant but this is considered to be small and will be kept to a minimum by simplified and proportionate application processes.

Benefits

The safety of the general public would be better assured if the CAA has oversight of UAS operations. Additionally, the reputation of the growing UAS industry would be protected from the actions of irresponsible operators.

Net Impact

This option would achieve the objective of protecting the industry and the general public whilst limiting costs to a nominal monetary figure and minimal administrative burdens.

Key Assumptions

In 2007 the CAA issued 20 Aerial Work permissions for UAVs in the 7-20 kg range and industry sources are suggesting that there is significant interest in UAVs of 7 kg and below. It is difficult to accurately assess the number of applications that might be received but a 'best guess' figure of 50 applications has been used as a baseline for the monetary cost calculations.

Sensitivities

Recreational model flying in the UK is a long-established pastime enjoyed safely by many enthusiasts. This situation has been achieved by virtue of the light touch application of regulation along with a positive working relationship between the regulator and model flying associations. Any additional burden on the model flying community may be criticised and result in a decline in interest in the pastime. Some individuals may decide not to comply with a new regulation if they were to perceive it as disproportionate or unnecessary for their activities. The proposal has been devised so as not to affect model flying unreasonably.

Risks

Nil.

5.5 **Preferred Option**

The preferred option is Option 4. This option will produce the desired improvement in the safety of the general public from operations of small aircraft without unduly restricting the accepted recreational use of model aircraft.

6 Competition Assessment

6.1 As the proposed regulatory change will apply equally to all operators, it is assessed that there are no implications for competitions.

7 Small Firms Impact Test

7.1 It is envisaged that all but the largest UAS operating companies would qualify as small businesses. The proposal would introduce a cost (£200) to operators and a human resource requirement to prepare an application for a permission. However, this is not viewed as disproportionate when compared to the potential benefit of securing the reputation of the emerging industry.

8 Legal Aid

8.1 There do not appear to be any legal aid implications in the proposal.

9 Sustainable Development and Rural Proofing

9.1 As UAVs of the small size involved in the proposal do not usually require airfields for deployment to their task, it is not envisaged that any development issues will result from the proposal. The proposal has been assessed against the DEFRA Rural Proofing checklist. It is not envisaged that any significant development in rural areas will occur as a direct result of the proposal.

10 Carbon Assessment, Environment and Health

10.1 As most UASs whose UAVs are within the weight range involved in this proposal use electric motors powered by re-chargeable batteries, it is not envisaged that there will be any noticeable increase in CO_2 emissions. Where internal combustion engines might be used, for example in some UAV designs derived from model helicopters (although these appear to be very much in the minority of emerging UASs), these would be so small as to produce only very small amounts of CO_2.

10.2 It is not anticipated that there will be any significant increase in noise resulting from the proposal as the electric motor and propeller/rotor combinations that most UAVs of this size use are very quiet. Where internal combustion engines are to be used that might present a noise nuisance in certain circumstances, the CAA would assess the likely noise impact in the context of the operations for which a permission was being sought before deciding whether or not to grant such a permission.

10.3 The potential impact on health of the proposal is considered as generally insignificant. Where it would appear that a noise nuisance might be created by a UAS operation, the CAA would take that into account when deciding whether or not to grant a permission.

11 Social

11.1 There are not expected to be any social effects caused by this change covering: human rights, race, gender and disability equality.

12 Enforcement and Sanctions and Monitoring

12.1 The mechanism for enforcement through the ANO already exists, and no additional resources will be required in this regard. The CAA's Safety Regulation Group, as part of its safety oversight function, will monitor and review the effectiveness of the legislation.

13 Implementation and Delivery Plan

13.1 The changes to UK legislation implemented by this IA have been anticipated by those operators of small aircraft likely to be affected who have also been consulted with. It is not anticipated that implementation will cause any unnecessary complications for such operators.

14 Post-Implementation Review

14.1 The CAA, as part of its continuing oversight of aircraft operations, will assess the effect of this and further amendments on the operation of small aircraft but in any case review the situation three years after implementation. Should amendments be required, the CAA will consult further on proposals that would modify or supersede the requirements proposed in this Impact Assessment.

15 European Legislation

15.1 The operation of Small Aircraft is not affected by European aviation legislation.

16 *Summary and Recommendations*

16.1 The CAA believes that Option 4 will produce the desired improvement in the safety of the general public from operations of small aircraft without unduly restricting the accepted recreational use of model aircraft and is minded to recommend to the Secretary of State for Transport that the ANO be amended at Articles 98 and 164 and introducing Article 98A.

16.2 Option 1 was rejected as “no intervention” would not have provided an adequate assurance of public safety, in that UAVs could potentially impact with people, property and other airspace users. Option 2 would have achieved the objective of protecting the industry and the general public but the costs to the industry and anybody participating in recreational model flying would have been unsustainable and disproportionate. Option 3 would have achieved the objective of protecting the industry and the general public but the costs to the industry and anybody participating in recreational model flying would have been unsustainable.

Specific Impact Tests: Checklist

Type of testing undertaken	***Results in Evidence Base?***	***Results annexed?***
Competition Assessment	Yes	No
Small Firms Impact Test	Yes	No
Legal Aid	Yes	No
Sustainable Development	Yes	No
Carbon Assessment	Yes	No
Other Environment	Yes	No
Health Impact Assessment	Yes	No
Race Equality	Yes	No
Disability Equality	Yes	No
Gender Equality	Yes	No
Human Rights	Yes	No
Rural Proofing	Yes	No

Impact Assessment 8 - Summary: Intervention & Options

Department /Agency: Civil Aviation Authority Safety Regulation Group	Title: Proposed change to the Air Navigation Order 2005 and the Rules of the Air Regulations 2007 in respect of the overflight of congested areas when engaged in test flying.	
Stage: Final	**Version: 2**	**Date: 20/05/2008**
Related Publications: CAP 393 Air Navigation: The Order and the Regulations		

Available to view or download at: http://www.caa.co.uk/docs/33/CAP393corr.pdf

Contact for enquiries: Cliff Whittaker,
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What is the problem under consideration?

It has long been UK national policy that the flight testing of aircraft should not take place over the congested areas of cities, towns, or settlements. This prohibition remains in place in the "A and B Conditions" provisions contained in the Air Navigation Order, and is included in the conditions set out on permits to fly issued by the Safety Regulation Group to aircraft that are to be test flown under national rules. The prohibition no longer applies to aircraft that have been deregulated in respect of airworthiness (as they are no longer subject to airworthiness approval), nor does it apply to aircraft that are being test flown under European rules, (because EASA views this as an operational matter rather than airworthiness and the Agency has yet to establish the detail of its policies and regulations for aircraft operations).

The purpose of this proposal is to restore a uniform rule for all aircraft and thereby reduce the risk to public safety that might arise were any test flying to be carried out above a city, town or settlement.

What are the policy objectives and the intended effects?

The objective is to restore the previous position of the prohibition on test flying over congested areas being applicable to all aircraft, and thereby reduce the risk to public safety that such activities may cause.

What policy options have been considered? Please justify any preferred option.

1. Do nothing.

2. Remove the restriction for all aircraft testing.

3. Replace the existing restrictions by a change to the Rules of the Air, which will apply to all aircraft operating in UK airspace.

Option 3 is the preferred option as it will preserve the current restriction on aircraft that are test flown to national rules and re-apply the restriction uniformly to all aircraft that are being tested in the UK, thereby restoring a uniform level of protection for the public.

When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects?

As the proposal is cost neutral and restores a previous regulatory position, no formal review date will be set. However, rulemaking by EASA will be monitored to determine whether there should be a further amendment of the ANO.

Ministerial Sign-off For final proposal/implementation stage Impact Assessments:

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister:

Paul Clark..... Date.....

Evidence Base

1. Purpose and Intended Effect

a) Issue which the regulatory proposal is intended to address:

The proposal addresses an inconsistency in the regulation of aircraft when engaged in flight testing.

b) Scale of the issue:

If adopted the proposal will amend the Rules of the Air to prohibit flight testing over congested areas in the UK by any aircraft that does not have a Certificate of Airworthiness in force, (except when taking off or landing or where the CAA has granted permission for overflight).

c) Relevant decisions:

None.

d) Brief statement of the objectives of the regulatory proposal:

The objective is to restore the previous position of the prohibition on test flying over congested areas being applicable to all aircraft, and thereby reduce the risk to public safety that such activities may cause.

e) Who are affected:

The new rule will apply to aircraft undergoing test flying.

f) Safety Assessment:

The purpose of the proposal is to restore the mandatory prohibition for all categories of aircraft. Its purpose therefore is to continue to assure safety. Safety issues only arise if the proposal is not implemented, or indeed if all restrictions on overflight when engaged in flight testing are removed.

2. Options

1. Do nothing.
2. Remove the restriction for all aircraft testing.
3. Replace the existing restrictions by a change to the Rules of the Air, which will apply to all aircraft operating in UK airspace.

Option 1 - Doing nothing would retain the current inconsistent position whereby only those aircraft that are subject to the CAA's regulatory oversight of flight testing are prohibited from flying over congested areas.

Option 2 - Removing the restriction entirely would increase the risk to the public of an aircraft crashing in a populated area during testing. The risk is considered to be significantly greater than that which arises during normal operation because the purpose of testing is often to take the aircraft to the limits of controllability and performance. It is therefore during testing that unexpected departure from controlled flight is most likely to occur.

Option 3 - This is the preferred option as it will preserve the current restriction on aircraft that are test flown to national rules and re-apply the restriction uniformly to all aircraft that are being tested. Moving the restriction to the Rules of the Air and making it specific to test flying would be a reduction in regulation as the prohibition would no longer apply to other flights carried out under A or B Conditions. (e.g. Moving, demonstrating or

providing training with an aircraft that does not have a certificate of airworthiness in force).

3. Impacts

There should be no impacts. This is because the proposed Rule will mandate current practice, and restore the regulatory position that existed previously.

4. Compliance Costs

Nil

5. Consultation

Twenty-three companies known to have in interest in the flight testing of aircraft were consulted directly by correspondence. Comments were also invited by placing the proposal on the CAA website. Responses were produced to all comments received. A combined Comment/Response document was placed on the CAA website and a second consultation letter was issued allowing the opportunity for further comments. Two further comments were received. These highlighted that the proposed rule would be more restrictive than the regulations that had previously been in place, as it would apply additionally to aircraft operating with Certificates of Airworthiness in force. The proposal was amended to take account of these comments so that the proposed rule will not be more restrictive. No further comments have been received.

6. Summary and Final Assessment

The proposed change will restore the uniformity of application of a long-standing rule that is intended to protect the public from the additional risks to safety that arise during test flying. A consultation was carried out and, as a result of the comments received, the proposal was amended. As amended and set out in Annex 1 the proposed rule would reinstate uniformly the restriction on test flying and remove the restriction from other flights conducted under A or B Conditions. It is concluded that the change should be implemented.

Impact Assessment 9 - Summary: Intervention & Options

Department /Agency: **Civil Aviation Authority Safety Regulation Group**	Title: Proposed ANO Change To Amend the Description of a Small Aircraft	
Stage: Final	**Version: 1**	**Date: 19 May 2008**
Related Publications:	CAP 393 Air Navigation: The Order and the Regulations	

Available to view or download at: http://www.caa.co.uk/docs/33/CAP393corr.pdf

Contact for enquiries: Cliff Whittaker,
Airworthiness Standards and Policy Department **Email: cliff.whittaker@caa.co.uk**

What is the problem under consideration?

The current text is inconsistent with European legislation, in that it applies a weight limit, rather than a mass limit to define a category of unmanned aircraft.

What are the policy objectives and the intended effects?

The objective is to ensure consistency of national categorisation of unmanned aircraft with the upper limit of the scope of national regulations as it is defined in EU legislation (Regulation 216/2008). The proposed change also provides for the correct association of quantities and units and clarifies the position with respect to unmanned airships.

What policy options have been considered? Please justify any preferred option.

Two options have been identified.

(1) Leave the text as it is.
(2) Amend the text as proposed.

Option 2 is preferred as it reduces the possibility of confusion and misinterpretation, particularly in respect of the use of small unmanned airships.

When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects?

As the proposal is cost-neutral no formal review date will be set. However, in the event of unforeseen impacts becoming apparent, this will be reconsidered.

Ministerial Sign-off For final proposal/implementation stage Impact Assessments:

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister:

Paul Clark..... Date……..

Evidence Base

1. Purpose and Intended Effect

a) Issue which the regulatory proposal is intended to address:

The proposal would address the inconsistency between the current wording and EU legislation and would provide a clearer statement of the criterion the categorisation of aircraft, particularly in the case of unmanned airships. Also, “mass” rather than “weight” is the correct usage when the units are defined in kilograms.

b) Scale of the issue:

Unmanned aircraft are an emerging sector. It is predicted that their use will become widespread over the next few years. It is important that the regulations are clear and unambiguous.

c) Relevant decisions:

None.

d) Brief statement of the objectives of the regulatory proposal:

Improved clarity.

e) Who are affected:

Designers, manufacturers and users of small aircraft up to 20 kg mass.

f) Safety Assessment:

There are no safety implications.

2. Options

Two options have been identified.

(1) Leave the text as it is.
(2) Amend the text as proposed.

Option 2 is selected as it reduces the possibility of confusion and misinterpretation, particularly in respect of the use of small unmanned airships.

3. Impacts

All impacts Identified:

The impact of the change will be greater clarity and therefore less likelihood of resources being wasted by the relevant sector through misunderstanding. There should also be a benefit to the CAA through a reduction in the frequency of questions of clarification to be answered.

Impact Assessment 10 - Summary: Intervention & Options

Department /Agency: **Civil Aviation Authority Safety Regulation Group**	Title: **Proposed ANO Change To Allow An Aircraft With An EASA Certificate of Airworthiness to be Used for State Purposes**	
Stage: Final	**Version: 1**	**Date: 30 January 2008**
Related Publications: CAP 393 Air Navigation: The Order and the Regulations		

Available to view or download at: http://www.caa.co.uk/docs/33/CAP393corr.pdf

Contact for enquiries: Michael Poole,
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What is the problem under consideration?

Under the EASA Basic Regulation, EASA does not have any responsibility for aircraft engaged in military, police, customs or similar services. Such aircraft civil-registered in the UK remain subject to regulation under the Air Navigation Order and associated CAA requirements and procedures. As they are not EASA aircraft their current certificates of airworthiness are not "*deemed to have been issued*" under the EASA Regulation; they remain UK certificates of airworthiness issued under Article 9 of the Air Navigation Order 2005.

What are the policy objectives and the intended effects?

The objective is to simplify the use of EASA aircraft for State purposes. This proposal is to allow an aircraft with an EASA Certificate of Airworthiness to be used for State purposes in accordance with the ANO rather than by exempting from it.

What policy options have been considered? Please justify any preferred option.

Three options have been identified.

(1) Revoke General Exemption 646 and require aircraft being used for State activity to hold a UK national Certificate Airworthiness. This option would reintroduce the administrative burdens on both operators and the CAA.
(2) Extend the validity period of the general exemption. Whilst this would maintain the status quo and retain the flexibility of being able to use an aircraft with an EASA CofA for State operations it does not provide a permanent reconciliation of the provisions.
(3) Change the ANO to introduce the current provisions of the general exemption. This would have the benefits both of maintaining the current flexibility of the provisions of the exemption and also formalising these.

As the provisions of the General Exemption have been in force since 30 September 2005 and as no adverse implications have been identified or notified since this point, CAA has concluded that Option 3 is preferred as it formalises the provisions of General Exemption 646 within the ANO.

When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects?

As the proposal is cost-neutral no formal review date will be set. However, in the event of unforeseen impacts becoming apparent, this will be reconsidered.

Ministerial Sign-off For final proposal/implementation stage Impact Assessments:

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister:

Paul Clark..... Date:……..

Evidence Base

1. Purpose and Intended Effect

A. Issue which the regulatory proposal is intended to address:

The purpose of this proposed ANO change is to allow an aircraft that holds an EASA Certificate of Airworthiness to be used for State Purposes without having the EASA certificate revoked and replaced by a national Certificate of Airworthiness issued under the Air Navigation Order.

Under the EASA Basic Regulation, EASA does not have any responsibility for aircraft engaged in military, police, customs or similar services. Such aircraft civil-registered in the UK remain subject to regulation under the Air Navigation Order and associated CAA requirements and procedures. As they are not EASA aircraft their current certificates of airworthiness are not "*deemed to have been issued*" under the EASA Regulation; they remain UK certificates of airworthiness issued under Article 9 of the Air Navigation Order 2005.

Under the International Convention on Civil Aviation (ICAO), military, customs and police aircraft are State aircraft and do not have the right to exercise the freedom to cross national borders that is enshrined in the convention. The continued airworthiness management, including maintenance, of aircraft that have UK Certificates of Airworthiness that are not deemed to be EASA certificates of airworthiness must continue to comply with the Air Navigation Order and the applicable requirements notified from time to time by the CAA.

For any particular State aircraft this situation will remain as long as the aircraft is operated only in support of the applicable service. If such an aircraft is used, at any time, for conventional civilian purposes (i.e. not military, police, customs or similar), it will be within the scope of EU legislation and subject to regulation by EASA, i.e. the design of the aircraft, including all modifications will have to be approved by EASA and the aircraft will need a valid EASA certificate of airworthiness. The owner must ensure that the UK national certificate of airworthiness is cancelled and a valid EASA certificate of airworthiness obtained. It is the responsibility of the owner or operator of the aircraft to ensure that when the aircraft is to be flown there is a certificate of airworthiness in force that is appropriate for the intended flight.

B. Scale of the issue:

The current UK interpretation of Article 1(2) of the EASA Regulation is given in Airworthiness Notice 13. In accordance with AN13, all operators of aircraft engaged in Police, Customs and Excise, military training, target towing/simulation for the military, plus any other activity necessary for national security are excluded from EASA and are regulated nationally. In the UK this totals in excess of 40 companies operating more than 200 aircraft. In most cases there is no change from their operations with an aircraft holding an EASA Certificate of Airworthiness, however in a number of cases there may be additional restrictions applied on how the operations are conducted – this might be having to seek permission to enter the airspace of another state, or the need to regularly swap between EASA and UK National certificates of airworthiness and thus introducing time, financial and administrative penalties.

This proposal does not seek to address where the State aircraft is to be used for civil purposes in a planned way. It is to address those occasional occurrences where an operator has the need to temporarily utilise an aircraft holding an EASA Certificate of Airworthiness at very short notice in order to provide cover for a State aircraft that is unavailable, for example due to unserviceability.

C. Relevant decisions:

On 30 September 2005 the CAA issued a General Exemption to allow an aircraft with an EASA Certificate of Airworthiness to be used for State purposes (published as Official Records Series 4 Number 572 and subsequently replaced by Number 646). This General Exemption was issued

when the problem of unplanned State aircraft unserviceability was recognised. That exemption has been running since that date (30 September 2005) with no issues arising.

D. Brief statement of the objectives of the regulatory proposal:

These proposals seek to simplify the use of EASA aircraft for State purposes. This proposal is intended to have the same effect as the current General Exemption in accordance with the ANO rather than by exempting from it.

E. Who are affected:

Operators of aircraft engaged in the following activities are excluded from EASA and are regulated nationally: Police, Customs and Excise, military training, target towing/simulation for the military, plus any other activity necessary for national security.

F. Safety Assessment:

The proposal allows for the use for State purposes an aircraft holding an EASA Certificate of Airworthiness issued by the CAA. It is not considered that there is any impact on safety or any increased risk as the aircraft must:

(a) comply with the Basic EASA Regulation and any Implementing Rules made under that Regulation which would apply if it were an EASA aircraft;

(b) not fly within the airspace of another state without the permission of the competent authority of that state; and

(c) comply with any applicable UK national requirements issued in Section 4 of CAP 747 Mandatory Requirements for Airworthiness.

2. Options

Three options have been identified.

(1) Revoke the general exemption and require aircraft being used for State activity to hold a UK national Certificate Airworthiness. This option would reintroduce the administrative burdens on both operators and the CAA.
(2) Extend the validity period of the general exemption. Whilst this would maintain the status quo and retain the flexibility of being able to use an aircraft with an EASA CofA for State operations it does not provide a permanent reconciliation of the provisions.
(3) Change the ANO to introduce the current provisions of the general exemption. This would have the benefits both of maintaining the current flexibility of the provisions of the exemption and also formalising these.

As the provisions of the General Exemption have been in force since 30 September 2005 and as no adverse implications have been identified or notified since this point, CAA has concluded that it is appropriate to adopt option 3 and formalise the provisions of General Exemption 646 in the ANO.

3. Impacts

All impacts Identified:

The impact of both the General Exemption and the proposed ANO change that formalises this is to give the benefit to operators of affected aircraft the operational flexibility of being able to utilise an aircraft holding an EASA CofA without having to cancel this and obtain a national CofA in its place in order to carry out a State activity. This benefit may be additionally quantified both in terms of time saved during the process to cancel one CofA and reissue another and also in the associated charges that would be levied by CAA for this action. This may also be seen as a benefit to CAA in terms of the resources that would be required to cancel and reissue CsofA.

4. Compliance Costs

a) Sectors Affected

All operators of aircraft engaged in Police, Customs and Excise, military training, target towing/simulation for the military, plus any other activity necessary for national security are excluded from EASA and are regulated nationally. This totals in excess of 40 companies operating more than 200 aircraft. Approximate figures are given below.

Activity	Number of Operators	Number of Aircraft
Police	28	c. 70
Customs and Excise	3	9
Military Training:	1	c. 100
Target towing/simulation for the military	1	16
Mil Parachuting:	3	6
Other	7	7

b) Compliance Costs

No additional costs have been identified as a result of the implementation of this proposal.

5. Consultation

All identified owners/operators/providers of civil aircraft, registered in the UK that are, or may be, engaged in police, military, customs, or similar activities as identified under 4.a) above were contacted on 17 February 2005 to advise of the potential impact on their operations from the EU legislation. The potential concerns and responses to that consultation are given in the background section of this Impact Assessment. Subsequent to this consultation CAA issued the General exemption as noted above. As no adverse implications have been identified or notified since this point it is therefore not proposed to carry out any further consultation in order to make this provision permanent by amendment of the ANO.

6. Summary and Final Assessment

a) Aircraft to be used for State purposes

It is preferred that exclusively State use aircraft should have a National certificate of airworthiness. UK civil registered State aircraft remain the responsibility of the CAA. Issuing such aircraft with a national CofA discharges this responsibility. Whilst an aircraft with an EASA CofA is flying for State purposes on the basis of an exemption or under the ANO when it is amended, the CAA will become the regulator responsible for continuing airworthiness.

If, for the State role, the aircraft has to be modified with non-EASA approved modifications, or has additional UK requirements applied, or is in any way different from an EASA aircraft standard, it will have to have a national CofA.

b) Aircraft to be used for non-State purposes

Where an aircraft having been used for the police or customs under a national C of A is to be used for non-State purposes, it will need to hold an EASA C of A in order to meet the requirements laid down by the EASA regulations. The only possibility for setting aside this requirement and allowing an aircraft with a national certificate of airworthiness to operate for non-State purposes would be if CAA were to issue an exemption in accordance with the provisions of Article 10(3) of the EASA Basic Regulation. However, the CAA is not prepared to pursue this

option as it considers that it is not appropriate to utilise a provision intended to cover short term operational needs for an aircraft coming under planned long-term EASA regulation.

c) Aircraft moving from non-State to State use

An EASA aircraft with an EASA CofA, which has been used for non-State purposes, may need to be used for State purposes. This might occur where a police operator needs to hire in a helicopter from a commercial operator as cover for an unserviceable machine or perhaps simply to obtain extra capacity in an emergency. However such an operation could not be carried out under EASA's responsibility under an EASA CofA because it is excluded from EASA's responsibilities.

Dual use aircraft that meet the EASA standard and will not be modified or have any additional requirement or limitation placed on them shall have an EASA CofA that will be deemed to be a UK national CofA without ICAO rights when the aircraft is operating for State purposes. However, a time limit will not be placed on the rendering valid of the EASA CofA for this purpose.

d) Proposed CAA action

(i) It is proposed that the CAA allows an aircraft to be used for state purposes on the basis of an EASA certificate of airworthiness. In effect, deeming the EASA CofA to be a national CofA by rendering it valid whilst the aircraft is being used for state purposes.

(ii) A trial period to allow an aircraft to be used for state purposes on the basis of an EASA certificate of airworthiness has been in force since 30 September 2005 through the use of a general exemption. As no adverse implications have been identified or notified it is therefore proposed to make this provision permanent by amendment to the ANO.

Impact Assessment 11 - Summary: Intervention & Options

Department /Agency:	Title:	
Civil Aviation Authority Safety Regulation Group	**Impact Assessment of the amendment of Article 6 and Article 138 of the Air Navigation Order 2005 (ANO)**	
Stage: Final	**Version:** 1	**Date:** 5 February 2009
Related Publications: Civil Aviation Publication 393 - Air Navigation: The Order and the Regulations		

Available to view or download at:

http://www.caa.co.uk/consultations

Contact for enquiries: ed.golden@caa.co.uk **Telephone:** 01293 573539

What is the problem under consideration? Why is government intervention necessary?

The ANO contains no specific regulation that would make the advertising of what are identified as illegal public transport flights an offence. Conducting public transport flights without an Air Operator's Certificate (AOC) is an offence under Article 6 of the ANO but historically the enforcement of that article by way of criminal sanction has been problematic because of the difficulty of obtaining the necessary evidence. The difficulty of enforcement of Article 6 means that without some kind of prohibition of the advertisement of illegal public transport flights, such operations will continue unchecked.

What are the policy objectives and the intended effects?

The objective is that these operations will be unable to obtain customers (except by word of mouth) and therefore their operations will be severely affected. The proposal has been extended to outlaw the advertising of public transport services with a non-UK registered aircraft when the operator does so without a permission (with or without conditions) as issued by the Secretary of State for Transport.

What policy options have been considered? Please justify any preferred option.

Two options were considered:

Option 1: No Intervention. This was considered unacceptable. Without some kind of prohibition of the advertisement of illegal public transport flights, such operations will continue unchecked.

Option 2: This option amends the ANO to prohibit advertising of flights which are identified as illegal public transport.

The CAA's preferred option is Option 2.

When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects?

The proposal will be reviewed after four years on 31 July 2012. However, in the event of unforeseen impacts becoming apparent, this will be reconsidered.

Ministerial Sign-off For final proposal/implementation stage Impact Assessments:

I have read the Impact Assessment and I am satisfied that (a) it represents a fair and reasonable view of the expected costs, benefits and impact of the policy, and (b) the benefits justify the costs.

Signed by the responsible Minister:

Paul Clark

.....Date:

Summary: Analysis & Evidence

Policy Option: 2	Description: **Amend the ANO to prohibit advertising of flights which are identified as illegal public transport**

COSTS

ANNUAL COSTS	
One-off (Transition)	**Yrs**
£ 0	10
Average Annual Cost (excluding one-off)	
£ 6,000-15,000	

Description and scale of **key monetised costs** by 'main affected groups'

The cost of investigating an alleged offence and of any subsequent prosecution based on figures for the known costs of CAA investigations into other breaches of the ANO, where the defendant pleaded not guilty, is estimated at between £6K and £15K. The average annual cost estimate is based on one investigation per year.

Total Cost (PV) **£ £51,600-£129,000**

Other **key non-monetised costs** by 'main affected groups'

BENEFITS

ANNUAL BENEFITS	
One-off	**Yrs**
£ Nil	0
Average Annual Benefit (excluding one-off)	
£ Nil	

Description and scale of **key monetised benefits** by 'main affected groups'

Total Benefit (PV) **£ 0**

Other **key non-monetised benefits** by 'main affected groups'

Significantly increased safety - lower risk of injury on illegal public transport flights which may be on aircraft maintained to a lower standard than legal public transport flights.

Key Assumptions/Sensitivities/Risks

There are no additional licence costs as it is assumed that all operators requiring a licence would apply for one whether or not this proposal were implemented.

Price Base Year 2008	Time Period Years 10	**Net Benefit Range** (NPV) **£ (minus) 51,600-129,000**	**NET BENEFIT** (NPV Best estimate) **£ (minus) 92,500**

What is the geographic coverage of the policy/option?			UK	
On what date will the policy be implemented?			2009	
Which organisation(s) will enforce the policy?			CAA	
What is the total annual cost of enforcement for these organisations?			£ 6,000-15,000	
Does enforcement comply with Hampton principles?			Yes	
Will implementation go beyond minimum EU requirements?			No	
What is the value of the proposed offsetting measure per year?			£ n/a	
What is the value of changes in greenhouse gas emissions?			£ n/a	
Will the proposal have a significant impact on competition?			No	
Annual cost (£-£) per organisation (excluding one-off)	Micro	Small	Medium	Large
Are any of these organisations exempt?	No	No	N/A	N/A

Impact on Admin Burdens Baseline (2005 Prices) (Increase - Decrease)

Increase of £ 0 Decrease of £ 0 **Net Impact** **£** 0

Key: **Annual costs and benefits: Constant Prices** **(Net) Present Value**

Evidence Base (for summary sheets)

PROPOSAL TO AMEND ARTICLE 6 AND ARTICLE 138 OF THE AIR NAVIGATION ORDER 2005 FOR THE PURPOSE OF MAKING IT AN OFFENCE TO ADVERTISE FLIGHTS IDENTIFIED AS ILLEGAL PUBLIC TRANSPORT

1 Title of Proposal

1.1 Impact Assessment (IA) for the amendment of Article 6 and Article 138 of the Air Navigation Order 2005 (ANO).

2 Purpose and Intended Effect

2.1 Objective

2.1.1 To make it an offence to advertise flights which are identified as illegal public transport and thus suppress the means of marketing by individuals/companies on which such operations rely.

2.1.2 The amendment to the ANO Article 6(3) and 6(4) will make it an offence to advertise flights by UK registered aircraft which are operating what is identified as illegal public transport. **The CAA proposes to amend the ANO Article 6(3) and 6(4) accordingly.**

2.1.3 The amendment to ANO Article 138 will make it an offence to advertise flights by non-UK registered aircraft which are operating what is identified as illegal public transport. **The CAA proposes to amend the ANO Article 138 accordingly.**

2.1.4 For the purpose of this consultation, the term 'public transport' includes 'commercial air transport'. The concept of commercial air transport was introduced into UK law in July 2008, with the coming into force of Regulation (EC) No.1899/2006, Annex III (EU-OPS).

2.2 Background

2.2.1 An operator of UK registered aircraft must hold an AOC granted by the CAA in order to conduct public transport flights. The purpose of the AOC is to show that the operator has demonstrated the ability to operate the flights safely. Members of the public who buy flights from unregulated companies may well assume that the flights are properly regulated in the interests of safety, but that may not be the case. Carrying out public transport flights without an AOC is an offence under Article 6 of the ANO but historically the enforcement of that article by way of criminal sanction has been problematic because of the difficulty of obtaining the necessary evidence. This normally requires the co-operation of either the operator, which is usually not forthcoming for obvious reasons, or the person being carried who is often reluctant to co-operate with the CAA's investigation. Consequently, prosecutions have tended to be rare.

2.2.2 At present, the ANO contains no specific regulation that would make it an offence to advertise what are identified as illegal public transport flights. This enables companies to advertise what are illegal public transport operations, and the CAA believes this has led to an increase in such operations. The difficulty of enforcement of Article 6 means that without some kind of prohibition of the advertisement of illegal public transport flights, such operations will continue unchecked. The CAA is seriously concerned at the possibility that eventually there will be an accident involving one of these operations and that a member of the public will be either injured or even killed and the passengers' life insurances may be invalidated. The prohibition of advertising, except where the operator holds an AOC, is seen as an effective way of addressing this problem since, without such advertisements, these operations will be unable to obtain customers (except by word of mouth) and therefore their operations will be severely affected.

2.2.3 Additionally, the Department for Transport foresee the possibility that such a provision could be by-passed by people offering flights on non-UK registered aircraft. Such flights would be operated in contravention of the requirement to have a permit from the Secretary of State under Article 138 of the ANO. Therefore, the proposal has been extended to outlaw the advertising of public

transport services with a non-UK registered aircraft when the operator does so without a permission (with or without conditions) as issued by the Secretary of State for Transport.

2.2.4 While it was anticipated that there would be no objection to the proposal as drafted, there may have been unintended consequences of the proposal. The consultation process provided the opportunity for any unforeseen 'knock on' effects which had not been considered to be identified.

3 Rationale for Government Intervention

3.1 The risks of not making these changes to the ANO are that eventually there will be an accident involving one of these operations, which are not overseen by the CAA as part of the AOC process, and that a member of the public will be either injured or killed.

4 Consultation

4.1 Within Government

4.1.1 The Department for Transport were consulted on this proposal.

4.2 Public Consultation

4.2.1 All interested parties within the aviation industry were consulted. The Letter of Consultation and Impact Assessment have been made available on the CAA consultation website.

4.2.2 Comments were received from the following, these are summarised in Annex A:

(1) Mr M Ellis
(2) Pennine Helicopters
(3) British Hang-gliding and Paragliding Association
(4) Tiger Airways
(5) Mr Nash
(6) Acorne Limited
(7) British Business and General Aviation Association
(8) British Helicopter Advisory Board
(9) Mr D Coplowe

4.2.3 Most of the commenters supported the proposals although a number expressed reservations. Some commenters expressed concern about the potential effect that the proposed legislation would have on the issuance of vouchers by legitimate third parties. Two commenters were concerned about the effect on market research prior to establishing a new business and advance bookings for an operation that has the firm intention to start operations after AOC issue. Others were concerned about having to define pleasure flights and introductory flying lessons but which proved to be outside the scope of this proposal. The CAA has considered these concerns and has, as a result, decided to add a further sub-paragraph to the articles proposed in the amendment to ensure that where possible these concerns were addressed without altering the intent of the original proposal.

5 Options

5.1 One option was considered against the 'do nothing' base case, as required by the Department for Transport's Appraisal Guidance.

Option 1

Do nothing. Without some kind of prohibition of the advertisement of illegal public transport flights, such operations would continue unchecked. There is a risk that eventually there would be an accident involving one of these operations and that a member of the public would be either injured or killed. It is unknown how this risk would evolve over time, so for the purposes of this IA it has been assumed to remain constant. Anyone wishing to legally undertake public transport operations must apply for an AOC, which involves a cost of at least £6,000.

Option 2

This option amends the ANO to prohibit advertising of flights which are identified as illegal public transport. This prohibition is seen as an effective way of addressing this problem since, without such advertisements, these operations will be unable to obtain customers (except by word of mouth) and therefore their operations will be curtailed or at least severely affected.

6 Costs and Benefits – Option 2

Costs: There would be some costs involved in enforcing the regulation and investing and prosecuting offenders. This has been estimated by the CAA as £6,000 - £15,000 per prosecution, and it is estimated that around one investigation per year will occur.

Benefits: There would be a significant increase in the safety of public transport flights. This has not been monetised, however.

This option is the CAA's preferred option as it is seen as an effective way of addressing this problem since, without such advertisements, these operations will be unable to obtain customers (except by word of mouth) and therefore their operations will be curtailed or at least severely affected. Those organisations wishing to legally undertake public transport would be required to apply for an AOC with the associated costs involved in doing so – however, this requirement is unchanged from the base case.

6.1 Sectors and Groups Affected

6.1.1 All operators of aircraft conducting flights which are identified as illegal public transport aircraft will be affected.

6.1.2 The proposals outlined in the consultation are not intended to affect those flights which are considered under the ANO to be 'aerial work' and include 'trial lessons' and glider towing.

7 Small Firms Impact Test

7.1 The proposals will have an impact on any operator of an aircraft who does not hold an AOC but who operates flights which are public transport and therefore illegal.

8 Competition Assessment

8.1 It is considered that the proposed amendment to the ANO will not:

a) directly limit the number and range of suppliers;

b) indirectly limit the number and range of suppliers;

c) limit the ability of suppliers to compete; or

d) reduce suppliers' incentives to compete vigorously.

9 Environmental, Rural and Health

9.1 The change will have no environmental, carbon, rural or health impact.

10 Social

10.1 There is not expected to be any social impact from this change including human rights, race, gender and disability equality.

11 Enforcement, Sanctions and Monitoring

11.1 The mechanism for enforcement through the ANO already exists and no additional resources will be required in this regard. The position will be kept under continuing review as part of the ongoing transition process.

12 Implementation and Delivery Plan

12.1 The changes to UK legislation implemented by this IA clarify and enhance measures to curb the advertising of an illegal practice which has been known about by industry for a number of years. Introducing these measures as soon as practical will aid the departments of the CAA who will enforce the measures and make it difficult for those who would aid and abet such activities. The impact of the measures will be assessed over a period of four years, but will be modified as required if further measures are required before that date.

13 Post-implementation Plan

13.1 The CAA, as part of its continuing oversight of aircraft operations, will assess the effect of this measure and, should amendments be required, will consult on proposals that would modify or supersede the requirements proposed in this IA.

14 Summary and Recommendations

14.1 The CAA believes that Option 2 will provide the most effective way of addressing the problem of illegal public transport since, without such advertisements, these operations will be unable to obtain customers (except by word of mouth) and therefore their operations will be severely affected. The CAA is minded to recommend to the Secretary of State for Transport that the ANO be amended at Articles 6 and 138.

14.2 Without intervention, there would be a continuing risk that without the oversight by the CAA, eventually there would be an accident involving one of these operations and a member of the public would be either injured or killed.

Specific Impact Tests: Checklist

Use the table below to demonstrate how broadly you have considered the potential impacts of your policy options.

Ensure that the results of any tests that impact on the cost-benefit analysis are contained within the main evidence base; other results may be annexed.

Type of testing undertaken	***Results in Evidence Base?***	***Results annexed?***
Competition Assessment	Yes	No
Small Firms Impact Test	Yes	No
Legal Aid	No	No
Sustainable Development	No	No
Carbon Assessment	No	No
Other Environment	No	No
Health Impact Assessment	No	No
Race Equality	No	No
Disability Equality	No	No
Gender Equality	No	No
Human Rights	No	No
Rural Proofing	No	No

Annexes

ANNEX A

SUMMARY OF COMMENTS AND RESPONSES

	Commenter	Comments	Responses
1	Mr M Ellis	I would like to express my support of these proposals in general. I am, however, slightly concerned at the impact (or rather the lack of impact) these proposals may have on ventures which offer flights sold as "air experience flights" (trial lessons) through vouchers sold by major retail chains but which are, to all intents and purposes, actually pleasure flights.	Noted. Your comments are outside the scope of this proposal and could be the subject of further work by the CAA. The CAA will monitor the impact of the proposal on these activities.
2	Ms J Ruddy Operations Manager Pennine Helicopters Ltd	There is a 'grey' area with 'trial lessons', whereby a family member or friend may accompany the trainee pilot, with the instructor. This is actively advertised by many "agencies" purporting to offer trial lessons and is a cheap way of obtaining a pleasure flight for 1 - 4 passengers. As regards 'aerial work', again this should be clarified. A great deal of illegal PT work has taken place recently by foreign registered helicopters, in ferrying 3rd party ground crew from A to B to assist in ground operations. This should be outlawed to avoid the disguise of a 'trial lesson' as a pleasure flight. The law should be simplified to allow an A to A flight for the purpose of a recce to inform/ instruct the pilot, but A to B flights should not be allowed and any violation should result in the operator having their permissions revoked.	Noted. Your comments regarding defining trial lessons and aerial work are outside the scope of this proposal and could be the subject of further work by the CAA.
3	Mr T Hardie British Hang-gliding & Paragliding Association (BHPA)	Whilst the BHPA has no direct interest in the "Proposal to amend the Air Navigation Order to ban the advertising of illegal public transport flights" we believe that, unless we have misread it, it has the potential to set an undesirable precedent that in this example could seriously hamper the establishment of new businesses. Indeed as written it could well affect market research prior to a decision to establish a new business. Were this to be an area of concern to us we would be objecting most strongly. The precedent that we are concerned about is that whilst it is perfectly acceptable and understandable to make it illegal to advertise	The proposal is not designed to restrict legitimate business initiatives but to target those who offer flights which are deemed to be public transport/commercial air transport on aircraft by operators who do not hold an air operator's certificate. For an operator to conduct market research does not require them to offer flights or advertise such flights. Research can be

	Commenter	Comments	Responses
		something that actually is illegal, we feel that it is not acceptable to make it illegal to advertise, or conduct market research on, something where there is every intention that it will be legal by the time of consumption.	conducted by an established research organisation. Nevertheless the CAA recognises that the proposed amendment could preclude advance advertising before the AOC had been granted, which might hinder the set-up plans of legitimate businesses which had every intention of getting an AOC and trading lawfully. Additional text has been added to the proposal which, although not changing the intent, will address this issue. *(4) Paragraph (3) shall not apply to any person if:* *(a) he or that other person has applied for an air operator's certificate under this article or an EU-OPS air operator's certificate; and* *(b) he reasonably believes that he or that other person will hold such a certificate by the time the advertised flight is made.*
4	Mr C Rollings Tiger Airways	On the information available to me so far, I have grave concerns about this. It seems to me quite possible that the effect would be to impose a ban on the advertising of perfectly legitimate flights, such as introductory lessons, unless the wording of the advert went to great and tedious length in explaining the legal differences between a passenger flight and an introductory lesson. Whilst such wording might then make the advert compliant with the proposed new legislation, its verbosity would make it unlikely to attract much custom.	The proposal is not designed to restrict legitimate business initiatives but to target those who offer flights which are deemed to be public transport/ commercial air transport on aircraft by operators who do not hold an air operator's certificate. If the flights advertised and operated as an initial flying lesson are properly conducted so that they constitute a flying lesson and not a pleasure flight, then they will not be affected by the current proposal. Any adverts will need to identify the flights as initial lessons and not

	Commenter	Comments	Responses
			pleasure flights. The IA states that the proposals outlined in the consultation are not intended to affect those flights which are considered under the ANO to be 'aerial work' and include 'trial lessons' and glider towing.
5	Mr R Nash	Could you clarify please whether the intention is that advertisers other than AOC holders would need to disclose, within their advertising, the identity the operator? I would imagine that this would cause difficulties for air charter brokers and also for those companies like, for example, Red Letter Days who offer experiences which are sold by way of a voucher which can be redeemed by any one of a number of operators.	As drafted the identity of the AOC holder would not have to be disclosed in the advert. As long as it is made clear to the recipient of the voucher that it can only be redeemed with an AOC holder then this is not affected by the proposed legislation. (Details of AOC holders can be found on the CAA website.)
6	Mr A Dent	It is not at all clear from the proposal as promulgated whether the sale by third parties such as ourselves (not holding AOCs) of vouchers which can be exchanged for flights with legal AOC holders (eg Balloon Operators) will be affected by the legislation when drafted.	As long as it is made clear to the recipient of the voucher that it can only be redeemed with an AOC holder then this is not affected by the proposed legislation. (Details of AOC holders can be found on the CAA website.)
7	Mr G Lachlan Chief Executive British Business and General Aviation Association	1. BBGA is pleased that this issue is receiving attention, and is fully supportive of Public Transport flights being conducted entirely by entities authorised to perform the flight in question. In the past, I believe that even when members have alerted the CAA to the fact that illegal public transport flights have taken place (sometimes with documentary evidence), they have found the CAA unable or unwilling to take action against the companies & individuals concerned even though they are empowered to do so. 2. Provision would have to be made in the amendment to allow third-parties, such as charter brokers, to continue their legitimate business. 3. Without a specific aircraft registration mentioned in an advertisement, it would be	1. The CAA is contacted occasionally with details of what is considered to be illegal public transport and takes all such matters with due seriousness, but usually it is difficult to proceed with a prosecution due to lack of evidence. 2. The CAA does not consider that the proposal will adversely impact legitimate charter brokers or that such an amendment is needed. The CAA maintains a list of AOC holders on its website which any broker can check at any time. 3. Noted. The CAA will monitor the effect and

	Commenter	Comments	Responses
		difficult to prove whether an existing AOC does indeed cover the advertised availability. 4. Provision would have to be made for an AOC holder to advertise availability of an aircraft in advance of that aircraft actually being on their AOC, for example before new aircraft delivery. 5. A permit for non-UK registered aircraft issued under Art 138 of the ANO is issued only after a specific movement is proposed, ie after it has been advertised and provisionally sold to prospective passengers, so all foreign charter operators would fall foul of the proposed amendment unless this was considered. 6. A large part of this problem is the number of foreign aircraft operating either without the requisite permit from the Secretary of State, or those operating with the permit only because of the difficulty domestic UK operators face in lawfully challenging the proposed movement. This is due to the very unequal treatment of proposed third-country public transport movements in the UK as compared to other countries, notably the US – especially concerning the timescale required for non-US operators to apply for US movements (10 working days at least), compared with the UK (frequently next-day).	enforcement of the proposal. 4. Please see the proposed amendment at Comment 3 which the CAA believes will address this issue. 5. The CAA does not consider this proposal will affect legitimate foreign charter operators. 6. With respect to the movement of foreign aircraft, this is outside the scope of this proposal and is a matter for the DfT to address separately.
8	Mr P Norton Chief Executive British Helicopter Advisory Board	This response is provided on behalf of the 245 members of the British Helicopter Advisory Board. We thank you for the opportunity to comment on the proposals set out in FODCOM 20/2008 and we welcome and fully support the specific proposal contained in paragraph 5.1 Option 2.	Noted.
9	Mr D Coplowe	There is far too much legislation already and this just increases it. You have no evidence that this practice is widespread and certainly legislating on the basis of "somebody, somewhere sometime may be killed" is yet another nanny state response.	Noted.