



Title: Airspace Infringement Seminar 12th July 2016

Subject Report and Recommendations

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1.0 Executive Summary

- FASVIG wishes to present the findings of this report to the CAA as soon as possible, ideally mid-August 2016.
- FASVIG recommends urgent review of the governance arrangements around the subject area as a positive signal for the launch/ re launch of the airspace infringement initiative and action plan.
- FASVIG regrets the need for the drive towards a more punitive regime but recognizes the need to press ahead as a means of discouragement to potential infringers.
- FASVIG supports any initiative that the CAA can launch to raise the profile of the infringement subject.
- Any improvements in electronic conspicuity are welcome however these in themselves will not stop infringements without a reciprocal radar service.
- Any CAA initiative to fund equipage is very positive, FASVIG wishes to support such an initiative to help ensure value.

2.0 Break Out Session Structure

2.1 Introduction.

Following a number of presentations aimed at highlighting the depth of the problem of airspace infringement, the attendees of the Infringement Seminar were divided into six groups. Each group contained GA stakeholders from a variety of GA organisations, plus a smattering of representatives from NATS and CAA, approximately 12 people being in each group.

2.2 Questionnaire.

The Groups were presented with six fundamental questions:

- 1) How can we encourage more pilots to adopt VFR GPS equipment?
- 2) How can training and maintenance of flying competency be adapted to prevent airspace infringement?
- 3) What could ANSPs do to facilitate transit aircraft through controlled airspace and minimise airspace infringements? What constitutes a known environment?
- 4) How could we routinely report the progress on Airspace Infringements and circulate the issue more widely? How do we obtain the data?



5) What role could the GA Associations play in managing this and other safety related risks?

6) How do we communicate the ethos that is unacceptable to infringe airspace? What communication channels exist or need to be created to achieve it?

2.3 Question sub-sections.

Each of the fundamental questions was divided into the eight sub divisions below. It was not always apparent how relevant these subdivisions were, and either due to misunderstanding or lack of time, not all sections were completed by all groups for all questions.

- A) What would a successful outcome look like?
- B) What would be the enabling actions?
- C) Who would need to be responsible for what?
- D) What would success depend upon?
- E) What risks might become barriers to success? How could they be mitigated?
- F) When could the measures be practically implemented and when could they be anticipated to become effective?
- G) How would you rate the proposed actions using the following where 1 is very low and 5 is very high?

	1	2	3	4	5
Time to implement?					
Degree of difficulty/complexity?					
Cost?					
Impact on airspace infringement reduction?					

H) What other measures are there to further control the risk of airspace infringements?

3. Feedback Received

3.1 How can we encourage more pilots to adopt VFR GPS equipment?

i) We need to understand why so many pilots are not using GPS and encourage a cultural change so they understand the importance of being absolutely sure of their position and how easily GPS can provide that.

ii) Whilst many feel that core navigational skills need to be retained they also felt that GPS navigation needs to become accepted as a primary means of navigation. To achieve this it needs to become part of the PPL syllabus.

For existing pilots, it could become part of the biennial flight, perhaps with an online training and test requirement prior to the flight.

iii) The CAA and the 'flying establishment' need to change their attitude towards the use of GPS as a primary aid and be seen to actively encourage its use, focusing primarily on its benefits:

- It simplifies navigation.
- Used properly it allows more 'heads up' time to maintain a good lookout.
- It reduces the risk of getting into a pilot overload situation.

iv) Manufacturers should be persuaded to provide proper training packages with their equipment so the user can more easily understand how to get the best from the device.

v) The CAA needs to clarify, and simplify where necessary, the fitting of non-certified GPS in certified aircraft as part of the instrument fit.

vi) Flight schools and flying clubs should be encouraged to fit VFR GPS and ensure that hirers know how to use it.

vii) CAA could add GPS sections to its Skyway App, and do a much better job of promoting the App, many people not even having heard about it.

viii) Associations are 'clusters of influence' that can help spread the positive attributes of using GPS to its members via articles, practical demonstrations at meetings and events etc.

ix) CAA/NATS could make access to electronic data simple and at minimum cost to encourage third party software providers to reduce costs to end users.

3.2 How should training and maintenance of flying competency be adapted to prevent airspace infringements?

To some extent, a number of answers to this question mirrored those in question 1) because the use of GPS and attitudes towards it were considered to have a bearing on the potential solution.

i) Take a fresh look at PPL training, particularly navigation, including the exams, and integrate the use of modern technology (GPS moving map etc) into the syllabus.

ii) Again, by making navigation part of the biennial review flight, with an on-line tutorial, was mooted but there were those who considered that such action was 'gold-plating' the review flight. Others considered the review flight was too

vague and had no defined structure, so mandating a navigation segment when we have a serious infringement problem would be a positive step.

iii) Airmanship needs to be improved. As well as asking those that infringe why and how it happened, should we be asking experienced cross country fliers what techniques work for them when they use or choose to avoid controlled airspace?

iv) Revising CAA guidance on GPS and mandating its carriage, should be considered.

v) Stress the benefits of GPS rather than the potential downsides, the latter having been the 'official' message to date.

vi) In training, give more time to ways to regain track, and how to plan to avoid infringing airspace.

vii) Produce Infringement reports similar to AAIB reports and disseminate widely. It is pilots relating to accident scenarios that get the safety message across and we must endeavour to use the same technique with infringements – *I learned about infringing from that!*

viii) Create a standard 'how not to infringe' lesson package for use by Schools and Clubs and encourage its adoption.

ix) Create a standard GPS training package for use in Clubs and Schools. The Royal Institute of Navigation has such a package that would probably make a good starting point.

x) Put the onus for ensuring adequate infringement training on CFIs and Examiners

3.3 What could ANSPs do to facilitate transit aircraft through controlled airspace and minimise airspace infringements? What constitutes a known environment?

i) Make radio calls 'friendlier' and ensure there is no 'them and us attitude', GA has to be considered a partner not an encumbrance.

ii) Fewer transit refusals would probably result in fewer infringements. Pilots should plan for a transit refusal, some clearly do not.

iii) Provide free Mode S transponders (or appropriate similar technology) and make their use mandatory. This will provide a known environment but there must be tangible benefits for GA as well as ATC.

iv) Provide more listening squawks and promulgate them better. Could they be included on the bottom of the chart, and within third party software?

- v) Provide well defined transit routes through controlled airspace with relevant training aids providing good quality graphics.
- vi) Review use of controlled airspace. Is it all required 24/7 or could some be released at certain times of the day/week?
- viii) Use clearly identifiable Visual Reporting Points.
- ix) Reduce separation requirement for slower aircraft.
- x) Provide interoperability between an aircraft's GPS and ATC to show the intended routing.
- xi) Provide more controllers (or LARS funding) so there could be better provision of ATC outside of, but adjoining controlled airspace.
- xii) Improve the confidence/capability of GA pilots using the radio.

3.4 How could we routinely report the progress on Airspace Infringements and circulate the issue more widely? How do we obtain the data?

- i) Make data less boring – accident reports are worth reading because they tell you what went wrong. Infringement reports also need to tell a 'story' to engage the reader.
- ii) Use a single ANSP post-incident questionnaire, send it to all infringers and incentivise completion.
- iii) Thoroughly analyse that data to better understand the issues involved.
- iv) Ensure wide dissemination of information. In recent years, the CAA switching to electronic data dissemination has meant significantly less take-up of data by pilot community. Use hard copy.
- v) Use a common information package and keep the message consistent.
- vi) Adopt a 'Just Culture' and use consistent, non-threatening peer questioning.
- vii) Everyone with a licence should attend an infringement seminar within two years.
- viii) Regular updates provided by the CAA to the GA Media, GA organisations – not a campaign once in a while!
- ix) Need better information to determine the background rate of activity to understand if the infringement problem is getting worse or better, particularly once new initiatives are being put into place.
- x) LAITs to engage with local GA over problem issues.

3.5 What role could the GA Associations play in managing this and other safety related risks?

- i) They can help to change the culture so infringements are recognised as a socially unacceptable.
- ii) They can disseminate information and best practice to large numbers of pilots, but that information has to be consistent across the GA community.
- iii) Only 40% of infringers belonged to a GA organisation. Increasing that number will help the infringement message reach a greater proportion of active pilots. Can CAA incentivise membership of GA organisations?
- iv) Some organisations are able extend the message to a wider audience beyond their own membership

3.6 How do we communicate the ethos that is unacceptable to infringe airspace? What communication channels exist or need to be created to achieve it?

- i) To change pilot culture towards infringements we need to seek the advice of expert change managers, even then culture change is likely to be a long term project.
- ii) To manage change we need a coalition in agreement and we don't currently have that.
- iii) Investigate what has worked in other countries to see if it can usefully be adapted in the UK airspace environment.
- iv) Instil the message that everybody in GA has a part to play through peer pressure, best practice and being prepared to challenge those who do not exercise good airmanship.
- v) Provide publicity about enforcement action - suspensions, prosecutions, etc.
- vi) Use aeromedical examiners, biennial check pilots etc., to hand out information.
- vii) Promote the fact that an infringement can be serious or trivial by chance, and that it is about far more than just safety implications.
- viii) Cost-quantify infringements so pilots understand the real world implications of their actions.
- ix) In driving home the message about infringement, always ensure that any resulting action is proportionate.
- x) GA Magazines associations must disseminate a common message.

xi) Protect the pilot from in-flight stress after an infringement, we need to understand not alienate if we are to find out what really caused the infringement.

4.0 Findings

Eleven key points that could make a significant difference.

4.1 The CAA and the 'flying establishment' need to change their attitude towards the use of GPS as a primary aid and be seen to actively encourage its use, focusing primarily on its benefits rather than its potential shortcomings:

- It simplifies navigation.
- Used properly it allows more 'heads up' time to maintain a good lookout.
- It reduces the risk of getting into a pilot overload situation.

4.2 The CAA needs to clarify, and simplify where necessary, the fitting of non-certified GPS in certified aircraft as part of the instrument fit.

4.3 Flight schools and flying clubs should be encouraged to fit VFR GPS and ensure that hirers know how to use it.

4.4 Take a fresh look at PPL training, particularly navigation, including the exams, and integrate the use of modern technology (GPS moving map etc) into the syllabus. And give more time to planning on how to avoid infringing airspace.

4.5 Make navigation part of the biennial review flight, with an on-line tutorial that needs to be taken and passed before the flight. Despite the risk of being accused of 'gold-plating', the review flight is very vague and has no defined structure, so mandating a navigation segment when we have a serious infringement problem would be a positive step.

4.6 Produce Infringement reports similar to AAIB reports and disseminate widely. It is pilots relating to accident scenarios that gets the safety message across and we must endeavour to use the same technique with infringements – *I learned about infringing from that!*

4.7 Create standard 'How not to Infringe' and 'GPS Training' packages for use in Clubs and Schools and incentivise their use (the Royal Institute of Navigation is revising its GPS Nav package that would probably make a good starting point).

4.8 Provide free Mode S transponders (or appropriate technology) and make their use mandatory. This will provide a known environment but there must be tangible benefits for GA as well as CAT and ATC.

4.9 Provide more controllers (or LARS funding) so there could be better provision of ATC outside of, but adjoining controlled airspace.



4.10 Use a single ANSP post-incident questionnaire, send it to all infringers and incentivise completion. Then thoroughly analyse that data to better understand the subtleties of the issues involved.

4.11 Spread the word! Ensure wide dissemination of information using GA organisations, magazines, digital media and hard copy (a very large number of people simply do not read the CAA digital safety media). Ensure consistency of the message, making it interesting and thought provoking rather than preachy.

5.0 Recommendations

It is recommended that:

5.1 Governance

5.1.1 The governance around airspace infringements needs to be reviewed in certain key areas to become more effective in monitoring, analysing and taking corrective actions.

5.1.2 The CAA develop policy guidance on the subject of airspace infringements for the information of airspace users, airports and ANSPs.

5.1.3 The CAA creates a senior level Steering Committee to oversee the subject area, ensure policy is followed and developed over time, monitor performance and agree actions to continuously improve.

5.1.4 The CAA relaunches the AIWG with revised TOR's agreed with all stakeholders and appoints joint user/regulator chairmanship.

5.1.5 The CAA moves the reporting line for the Electronic (and Visual) Conspicuity Working Group to the new senior level Steering Committee.

5.1.6 The CAA, in conjunction with the ANSPs, develops an airspace infringement reporting package to be made available to all airspace users to enable wider communication of the subject and developing trends.

5.2 Communications

5.2.1 The CAA develop their existing databases of pilots and aircraft to expedite the identification of those responsible for airspace infringements to ensure more direct containment action can be commenced as soon as possible after the date of the infringement event.

5.2.2 The CAA develop, as part of their work to fulfil 5.2.1, a more accurate database for both licensed pilots and aircraft by self-completion and updating so as to avoid any inaccuracies that impinge on swift resolution of infringement events.

5.2.3 The CAA, in conjunction with the GA Associations, develop a communications network to ensure that reports and information pertinent to GA are promulgated accurately and expeditiously. The communications network could be launched with



regular timely reporting on airspace infringements, corrective actions and performance results.

5.3 Training

5.3.1 The RIN is contracted to develop a VFR/GPS training package for widespread use by ATO’s, Associations and Clubs

5.3.2 AOPA and/or the LAA and BMAA develops pre-flight training material to be provided to flight instructors and examiners to support the aircraft rating revalidation dual flight, potentially as an on-line training course.

5.3.3 All Airspace Infringement awareness and training material is hosted on line by a suitable provider (tbd)

5.4 Change Management

5.4.1 The CAA, in conjunction with FASVIG, prepare a requirements document for the appointment of a change management consultant who can be instrumental in bringing about changes in behaviour.

5.4.2 The CAA, in conjunction with FASVIG, NATS and other stakeholders prepare a short list of suitable providers to whom the requirements document can be sent and from whom expressions of interest may be received.

5.4.3 FASVIG prepare an application for funding from the FAS DSG based on expressions of interest received.

5.5 Enforcement

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5.6 Equipage

5.6.1 The CAA should ensure, through GA association consultation, that any funding investment foreseen to encourage wider use of VFR GPS is spent in the most cost effective manner and that the objectives of such investment are fully met.

5.6.2 FASVIG should advise the CAA on the terms and conditions of such funding to provide a strong incentive for equipage

5.6.3 The CAA should, in conjunction with FASVIG, sponsor the development of a roadmap for future GA surveillance together with users, ANSPs and equipment manufacturers

5.6.4 The CAA should urgently consider the change in separation minima from 5nm to 3nm within CTR/CTAs to provide a ‘buffer zone’ to be used to divert infringing traffic before a loss of separation occurs.