UK Civil Aviation Authority

Consultation: Conducting paid-for initial pilot training in UK National Permit to Fly Aeroplanes

CAP 1823

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The latest version of this document is available in electronic format at: www.caa.co.uk

Contents

Chapter 1

Executive Summary

1.1 In keeping with our approach to make the regulation of General Aviation (GA) more proportionate, we are launching a consultation to propose extending paid-for initial (Ab initio) pilot training to be conducted using certain aeroplanes which hold a UK national Permit to Fly (PtF). Furthermore, we are proposing that this training can now be undertaken by those pilots who are not owners of the aircraft. Currently, to undertake initial training in PtF aeroplanes, the student would need to be an owner or part-owner for this to be acceptable.

1.2 Within this consultation we explain:

- The current regulations surrounding pilot training
- The difference between Certificate of Airworthiness (CofA) aeroplanes and National Permit to Fly (PtF) aeroplanes
- The potential benefits and risks of this proposal
- A comparison of occurrence data comparing the PtF aeroplane fleet with the Certificates of Airworthiness (CofA) fleet, and
- The safety mitigations proposed by the Light Aircraft Association (LAA) to provide a comparable level of safety.

1.3 The CAA believes this consultation represents a comprehensive yet proportionate set of requirements and, by implementing the safety mitigation proposed by the LAA, provides a sound basis for maintaining appropriate safety standards of airworthiness as well as ensuring that training and testing for pilots is more accessible. The change could have a positive impact on the flight training sector, including potential cost savings that could encourage greater student up-take.

1.4 Permit to Fly aeroplanes covered within this consultation are:

a) Aircraft which have not been built by an approved aircraft manufacturer such as amateur-built aeroplanes including those that are kit-built

b) Aircraft which do not have Certificates of Airworthiness (CofA) because they have either never been Type Certificated, or the Type Certificate holder has withdrawn its support for the aircraft type

c) Aircraft which have not been designed and manufactured to specified civil standards, such as ex-military aeroplanes with a maximum total authorised weight below 2730kg and a piston engine rating of less than 400hp

1.5 Input from the GA community has been directly included in this consultation as the working group developing the proposal was comprised of key stakeholders from the sector including: flight training organisations, manufacturers, Aircraft Owners and Pilots Association (AOPA), the BMAA and the LAA.

1.6 This consultation considers a range of future options including amendments to Article 42 of the ANO, the proposal will be applicable for UK National and EASA Part-FCL licences.

1.7 An Amendment (EU) 2019/1747 to Commission Regulation (EU) 1178/2011 (Part-FCL) has been published and came into force 11 November 2019. This amendment to Part-FCL provides the possibility to recognise training and experience on certain Annex I Aircraft for the purpose of obtaining a Part-FCL licence.

1.8 Your feedback on the proposal is requested and a consolidated list of questions can be found in appendix A. A response to this consultation is requested by **17 February 2020**. The information received will be used to determine how to take this proposal forward.

Chapter 2

Next Steps and how to respond

2.1 A full list of the consultation questions can be found in appendix A.

2.2 Responses to this consultation which can be submitted electronically via https://consultations.caa.co.uk/ga/training-uk-national-permit-aeroplanes by no later than **17 February 2020.**

2.3 Any enquiries regarding this consultation should be submitted via email to ga@caa.co.uk

2.4 We will consider all responses and aim to publish a final decision in April 2020.

2.5 If the proposed change is supported, there will be an implementation period while we make the necessary changes to legislation. We will also need to finalise procedures with the associations on the regulation of these aircraft. It will be our intention to re-form the collaborative working group to progress this endeavour to a conclusion.

Chapter 3
Background

Our approach to GA regulation

3.1 In response to the Government's GA Red Tape Challenge (RTC) of 2013, we conducted a fundamental review of our approach to the regulation of GA, with a view to making it more proportionate and less burdensome.

3.2 This led to the creation of our GA Programme, a portfolio of projects designed to address issues and recommendations from the GA RTC and improve the regulation of UK GA in general. It is managed by our GA unit and involves drawing on resource and expertise from throughout the organisation.

3.3 The CAA has sought to deliver on the top-level principles for better GA regulation. These are:

a) Only regulate directly when necessary and do so proportionately

b) Deregulate where we can

c) Delegate where appropriate

d) Do not gold-plate and quickly and efficiently remove gold-plating that already exists

e) Help create a vibrant and dynamic GA sector in the UK

3.4 The CAA remains committed to delivering for the GA sector a programme of maximising delegation and deregulating where possible and will continue implementing Performance and Risk Based Oversight.

3.5 To achieve this, the CAA is working with the British Microlight Aircraft Association (BMAA) and the Light Aircraft Association (LAA) to ease the burden of regulation that impacts aircraft designers, manufacturers, airworthiness organisations, individuals, aircraft owners, pilots and flying clubs to support the growth of UK GA.

3.6 As part of that work, in January 2019 the CAA formed a working group and project team to investigate the opportunity to extend paid Ab initio flight training on certain aeroplanes with a UK National Permit to Fly (PtF) to pilots who are not owners of the aircraft.

3.7 The CAA believes that this should be achieved at an equivalent level of safety to that present in current flight training and this consultation explores how this may be achieved.

3.8 This proposal may introduce cost savings for flying schools. It could also provide an increased fleet for people to learn to fly.

Chapter 4

How the UK National PtF and CofA systems work

4.1 A focus of this consultation is the difference in airworthiness assurance and standards that can apply to Permit to Fly (PtF) aeroplanes and Certificate of Airworthiness (CofA) aeroplanes. In this chapter we will discuss the regulatory background to a PtF, compare the CofA and PtF system and describe the airworthiness requirements for each.

4.2 The Chicago Convention covering international civil aviation requires aircraft registered in contracting states to be provided with a Certificate of Airworthiness (CofA) for flight.

4.3 This provides the CAA with the highest level of assurance for both initial, continued and continuing airworthiness of aircraft.

4.4 For every International Civil Aviation Organization (ICAO) compliant CofA aircraft, the type will have been subject to a formal certification process. Once successfully completed, a Type Certificate (TC) is issued to the manufacturer. For this to remain valid the manufacturer (or TC holder as they become) must maintain support for the aircraft, including the ability to design and manufacture modifications and repairs. Continuing airworthiness management and maintenance for these aircraft are carried out by approved organisations.

4.5 Individual aircraft are issued with a CofA once it has been demonstrated to the national authority that the aircraft's build quality meets the design standard described in the Type Certificate. These aircraft can then fly internationally (provided that the state of registry is an ICAO member state).

4.6 The UK's Air Navigation Order 2016 (ANO) states that all aircraft operating in UK airspace shall have a valid CofA. However, if a British registered aircraft is unable to satisfy the requirements for the issue of a CofA it can, in particular circumstances, be issued with a United Kingdom Permit to Fly instead.

4.7 Guidance on how this works is published in the British Civil Airworthiness Requirements (BCARs) section A, Chapter A3-7. In many cases the CAA delegates the running of this system to organisations such as the LAA.

4.8 Although not ICAO compliant, a permit confirms that an aircraft is fit to fly regarding its overall design, construction and maintenance. The permit system is a proportionate measure which implies a lesser level of assurance of airworthiness than a CofA does, but nevertheless is intended to (and has proven to) ensure an acceptable standard of airworthiness for the type of flying that these aircraft undertake.

4.9 A permit will only be issued after the CAA or an organisation approved by the CAA to carry out such work has investigated the aircraft. This investigation will cover those elements necessary to make sure that the aircraft is fit to fly and has no unacceptable

operating or handling characteristics. When issued, the permit is non-expiring and will be revalidated by a Certificate of Validity which will be conditional upon the completion of the periodic maintenance, inspections and checks necessary for the aircraft to remain in an airworthy condition.

4.10 Not all permit aeroplanes are amateur-built. Some amateur-built aircraft may be designed and built completely from scratch. However, most amateur-built aeroplanes are purchased as kits and built in accordance with the guidance set out in CAP 659 which states that 51% of the construction must be completed by the builder. Most builders will complete their project under the supervision of the CAA or LAA. Whether under supervision of the CAA or LAA, the builder will still be required to work in accordance with an agreed build process.

4.11 Amateur-built aeroplanes are not intended to demonstrate the same level of assurance regarding product conformity required from a factory-built aeroplane.

4.12 Aeroplanes operating on a National Permit to Fly operate under a proportionate level of regulation and oversight. The responsibility for initial and continuing airworthiness rests directly with the owners, with support from appropriate associations.

4.13 It is appropriate and proportionate that this oversight is delegated to sporting associations which have the specialist knowledge and experience of key areas. Within the UK, this oversight is delegated by the CAA to national organisations under BCAR approvals such as the LAA and BMAA.

Chapter 5
Current Regulations

Paid for Flight Training

5.1 As Annex I aeroplanes are excluded from EU Regulation 2018/1139 (the Basic Regulation) they follow national requirements including the ANO.

5.2 Article 42 of the ANO is particularly relevant to Permit to Fly aeroplanes and states the following:

> ***Limitations of National Permit to Fly***
>
> ***42 –*** *(1) An aircraft flying in accordance with a national Permit to Fly –*
>
> *a) must not fly for public transport or commercial air transport; and*
> *b) must not fly without the permission of the CAA –*
> *i. for commercial operation other than commercial operation which consists of an aircraft flying for the purpose of a flying display, associated practice for a flying display, test and positioning flights or the exhibition or demonstration of the aircraft;*
> *ii. at night or in accordance with Instrument Flight Rules; or*
> *iii. for hire.*

5.3 Paid-for flight training is considered a commercial operation which is currently prohibited on PtF aeroplanes apart from two areas:

a) For post licence issue training. However, the aircraft used must be accepted to do this by the appropriate A8-25 or A8-26 organisation beforehand

b) Where owners of permit aircraft undertaking initial flight instruction and examination are using their own aircraft[1]

5.4 Initial paid-for flight training is currently not allowed on PtF aeroplanes (apart from by the owner or part-owner of the aircraft) as students may not have a full understanding of the difference between a factory produced aircraft and an amateur-built aircraft to the same level that the builder of the aircraft would. However, the regulation does not stop the original builder from selling the aeroplane on. Therefore, any future owner may not appreciate the associated risk, even for normal private flying, as they are not the builder of the aircraft.

5.5 Initial flight training has always been treated differently to post licence training because the holder of a licence is judged to already hold a certain level of knowledge and

[1] This is allowed as payments made by the owner or part-owner of the aircraft, for example to an instructor, are deemed non-commercial.

understanding of the assurance differences between factory-built and amateur-built aeroplanes, and the implications of maintenance schedules and operational procedures. Thus, a licensed pilot is able to provide a level of informed consent when choosing to train in an amateur-built aeroplane compared to a student with no prior knowledge.

Chapter 6

Background to PtF and CofA safety levels

6.1 The CAA provides safety assurance to the public in accordance with our statutory duties. We also follow the principles of better regulation which means that our interventions should be proportionate and targeted to achieve the desired safety benefit without imposing undue burdens on stakeholders.

6.2 In order for a regulation change to take legal effect, we are obligated to ensure that there is a level of safety that is acceptable but also comparable to the standards already set within the current legislation.

6.3 We therefore must be satisfied that there will be a comparable level of safety between aircraft already used for initial flight training and those proposed under this consultation.

6.4 Anyone hiring an aircraft needs some assurance of the condition of the aircraft before they go flying. The CofA system provides that assurance easily because there is a defined standard and the system is continuously monitored. The permit system does not in itself provide the same assurance.

6.5 EASA has also proposed a list that the competent authorities must use to establish a comparable level of safety between the UK National PtF and CofA aircraft, in order for those aircraft to be considered for flight training.

6.6 The considerations proposed to be used to check that an aircraft has a comparable level of safety per individual aircraft (not type) include:

a) Initial assessment by the competent authority

b) National requirements on which basis the airworthiness certificate of the aircraft has been issued

c) Aircraft has similarity to a certified variant

d) Aircraft has a satisfactory in-service experience as training aircraft

e) Aircraft design is simple and conventional

f) Aircraft should not have design features or details that experience has shown to be hazardous

g) Aircraft systems, equipment and appliances should be operable without needing exceptional skill or strength

6.7 Aircraft utilised for flying training are typically used intensively and have to withstand more robust flying than the average GA aircraft. Some aircraft, regardless of their certification, may not be capable of withstanding this kind of use. Some flight schools will

choose aircraft that are suitable for their individual school using their own criteria, which will be in addition to that of the delgated A8-26 organisation.

6.8 This is particuluarly important with some permit aircraft as they were not designed and manufactured with this use in mind. This is one reason why they have traditionally been separated and treated differently within the regulations.

6.9 Some permit aeroplanes have been approved on the basis of private use, and not used for flight training. In many cases permit aeroplanes may not have the same history and experience within the flight training enviroment as compared to the CofA fleet already in use. Therefore it is difficult for the CAA to make a meaningful comparison on the level of safety with permit aircraft to those of the certified training fleet.

6.10 However, with the mitigations in place (as described in the proposal section) we believe the risk would remain acceptable and comparable to the current flight training fleet.

6.11 The proposals include maintenance inspection times and an annual inspection to check for potential fatigue, mechanical, powerplant and electrical problems. Well-defined maintenance requirements and the fact that maintenance will be carried out or overseen by approved organisations or engineers should be sufficient to deliver a comparable level of safety assurance.

Chapter 7

Proposal

7.1 In line with our GA principles of deregulation, the working group has focussed on generating a proposal to ensure that there is a comparable level of airworthiness assurance between certain PtF aeroplanes that will be used for initial paid-for pilot training and factory-built CofA aeroplanes.

7.2 We are proposing a relaxation of the ANO to allow paid-for initial pilot training on Permit to Fly aeroplanes.

7.3 To help readers build a picture of the relativity of incidents between PtF Aeroplanes to CofA aeroplanes within the UK, a comparison of technical occurrences can be found in appendix B. and further information on the individual types of PtF aeroplanes can be found in appendix C.

7.4 As there are a wide range of aircraft in the permit system and understanding that not all will be suitable for initial flight training, the working group recommended that microlights and aeroplanes should be split into two separate consultations (**for microlights, see** Consultation: Conducting paid-for initial pilot training in amateur-built UK National Permit to Fly Microlights**).**

7.5 This proposal splits the permit aeroplanes into three categories to give stakeholders a more accurate and reasonable approach while not excluding or including aircraft as an unintended consequence.

Option 1.	To allow paid-for initial pilot training in amateur-built aeroplanes

Option 2.	To allow paid-for initial pilot training in aeroplanes that have previously held a CofA

Option 3.	To allow paid-for initial pilot training in aeroplanes that are ex-military who are not required to be operated in accordance with CAP632

Option 4.	No change to the existing regulatory framework

Options 1, 2 and 3

7.6 If, via consultation, paid-for initial pilot training in more than one option is the preferred choice, then any aeroplane being proposed to be used for initial flight training will need to be evaluated to assess the suitability of the aircraft for use in that role.

7.7 The CAA would intend to delegate the acceptance of aeroplanes for Ab initio flight training to the appropriate A8-26 organisations (such as the LAA). This acceptance

would be based on specific aeroplanes (not generic types) being suitable for such training.

7.8 Each delegated organisation will be required to have a process in place to achieve the acceptance mentioned in 7.7 above. In addition, initial proposals on the process from the LAA, along with their proposed safety mitigations can be found in Appendix D.

7.9 The LAA will be required to:

a) Ensure that each aeroplane undergoes a full inspection, irrespective of the time since its last permit renewal inspection

b) Carry out and document a comprehensive risk assessment to identify any additional risks which may be incurred due to initial flight training use by these aeroplanes and put in place appropriate measures to mitigate those identified issues

c) Create and maintain records, including a database of aeroplanes accepted, which should also be accessible online by the GA community

d) Keep all relevant inspectors and engineers up to date with industry standards and regulations through the use of mandatory continuation training

e) Instruct all operators of accepted aeroplanes to comply with an Occurrence Reporting regime

f) Monitor the compliance of operators so that they are operating in accordance with any applicable technical leaflets issued by the LAA

g) Ensure that the continuing airworthiness management and maintenance on aeroplanes is carried out by an organisation or person approved in accordance with the requirements set out in CAP553 (BCAR Section A) or by a BCAR section L licensed engineer

Option 4

7.10 If, via consultation, no change to the existing regulatory framework is the preferred option, then this will be discussed with the relevant stakeholders, working group members and CAA representatives to analyse the comments and keep the regulatory framework as it currently stands.

Chapter 8

Benefits and Risks

8.1 The proposal will require a change to the ANO. To ensure we have accurate information to support this potential legislative change, we have included some assumptions in this section and would welcome your views when answering the questions detailed in appendix A.

8.2 Although subjective, listed below are the potential key benefits and risks set out by the working group.

Benefits

8.3 The potential key benefits of providing remunerated flight training in PtF aeroplanes for non-owners could include:

a) An opportunity to introduce cheaper, modern, fuel efficient aircraft for flight training and replacing ageing CofA aircraft

b) An opportunity to introduce new technologies to the UK flight training fleet, such as electric/hybrid powerplants

c) The growth of the flight training sector through lower aircraft capital and operating costs

d) Increasing the types of aircraft available as training platforms, which in turn could increase the attractiveness and interest of a club's fleet, offering additional incentives for students and qualified pilots alike to increase their flying currency and experience

e) Allowing students to be trained and tested for a licence, rating or certificate in a similar type of aircraft to the one they may fly after gaining their licence

f) Encouraging greater flying club member involvement through the non-commercial construction of an aircraft in a club environment

g) Pilots gaining knowledge of aircraft construction and maintenance not currently offered in the initial training curriculum

h) Avoiding or reducing the costs associated with the current ongoing airworthiness arrangements for certified aircraft

Risks

8.2 Potential risks of providing remunerated flying training in PtF aeroplanes for non-owners could include:

a) Uncertainty as to who would be liable should an accident occur as a result of build or maintenance issues, as amateur-built aircraft may not have been built with the intention of being used for initial flight training

b) The outline benefit of increasing the numbers of student pilots and cheaper costs for the student pilot is not guaranteed, as there is no indication that having a permit aircraft on a training fleet would automatically lead to an increase in the number of new students, or that the financial saving would be significant enough for flying schools to be able to afford to pass them onto the students

c) As with any aircraft, including those that are factory-built, the aircraft could suffer from an accident due to a latent error during the build process and not identified during routine inspections

d) The aircraft could now be used in an environment that it may not have been designed and tested for

e) The regulation and supporting implementing rules already in place for certified aircraft are robust and provide a framework that minimises risks, and this proposal moves away from that system

f) Existing schools may be forced to sell their fleet and buy new aircraft in order to be competitive, a change that they may be unable or unwilling to make

g) There could be an increase in aircraft fatigue arising from higher use which could ultimately outweigh potential savings from lower fuel costs if the aircraft has a shortened operational life

h) The UK could see a significant reduction in the value of CofA aircraft and a reduced income for Part M maintenance organisations, parts supply chain, aircraft and parts manufacturers

i) Flying schools will not be able to ask unapproved manufacturers to build them an aircraft to be used within their flying school. As when constructing an amateur-built aircraft, the CAA and LAA will need to be satisfied that both the building and operation of the aircraft will be solely for the education and recreation of the amateur builder. This means that he or she would not be permitted to commission someone else to build the aircraft or even, subject to the provisions of the 51% rule, significant parts of it, with the exception of the engine(s) or propellers.

APPENDIX A

Consultation Questions

A1 In this appendix we are now seeking feedback from our stakeholders in order to shape the future of paid-for initial pilot training using PtF aeroplanes. The overall feedback from these questions will help determine our next steps.

A2 We welcome the views of stakeholders in answering the questions below via the online consultation tool. The online survey contained within the consultation tool includes

Question 1
Do you support the proposal to allow paid-for initial pilot training in amateur-built aeroplanes for non-owners which are subject to continuing airworthiness management and oversight by the LAA or BMAA?
YES **NO** **NO OPINION / DON'T KNOW**

Question 2
Do you support the proposal to allow paid-for initial pilot training in Ex-Certificate of Airworthiness aeroplanes for non-owners which are subject to continuing airworthiness management and oversight by the LAA?
YES **NO** **NO OPINION / DON'T KNOW**

Question 3
Do you support the proposal to allow paid-for initial pilot training in Ex-Military PtF aeroplanes of which are subject to continuing airworthiness management and oversight by the LAA?
YES **NO** **NO OPINION / DON'T KNOW**

Question 4
Considering all of the information provided in the consultation and appendices are there any additional restrictions you would like to include or exclude?
YES **NO** **NO OPINION / DON'T KNOW**

Question 5
Considering all of the information provided in the consultation and appendices are there any additional benefits you would like to include or exclude?
YES **NO** **NO OPINION / DON'T KNOW**

Question 6
Would you prefer the regulations to stay as they are, thereby not allowing paid-for initial pilot training in PtF aeroplanes?
YES **NO** **NO OPINION / DON'T KNOW**

Question 7
Do you feel that a comparable level of safety between the CofA fleet and PtF fleet can be achieved?
YES **NO** **NO OPINION / DON'T KNOW**

APPENDIX B

Technical Occurrences

B1 The UK Annex I fleet are not mandated to report an occurrence, and all reported occurrences are done so voluntary. This appendix details reported[2] occurrences that occurred to aeroplanes on the UK register between 2014-2018. We have compared LAA PtF aeroplanes occurrences with CofA aeroplane occurrences to help inform the reader when answering the questions in Appendix A. It is important for the reader to note that CofA aeroplanes have long been used for paid-for initial pilot training.

B2 High severity occurrences are occurrences that have either resulted in damage to the aircraft or serious/fatal injury to aircraft occupants. The Occurrences included in the data analysis were limited to technical faults/issues that occurred during the normal operation of the aircraft with pilot induced structural failures excluded. It should be noted that a percentage of the occurrences to amateur-built aircraft arose during flight testing, either of a new aircraft or after major engineering, rather than in normal flight operations. This would be mitigated by a requirement for a minimum hour flown before entering service.

B3 Occurrence report data from January 2014 to December 2018 was included in the data summary in Figure 1. During this period a total of 104 high severity technical[3] occurrences involving fixed wing aeroplanes were received and processed by the UK CAA. 56 were reported to have involved an aeroplane operating under a Certificate of Airworthiness (CofA) with 48 operating under a Light Aircraft Association (LAA) permit to fly. Expressed as a rate per 100,000 flying hours this equates to 2.78 high severity technical occurrences per 100,000 hours for CofA aeroplanes compared with 12.71 high severity technical occurrences per 100,000 hours for LAA permit to fly aeroplanes.

B4 When considering factory-built aeroplanes during the analysis period there were 15 high severity technical occurrences reported to have involved factory built LAA PtF aeroplanes compared with 33 for amateur-built LAA PtF aeroplanes. Expressed as rate[4], this equates to 12.13 and 13.00 high severity technical occurrences per 100,000 hours respectively.

B5 In terms of causal factor, engine failure events were found to be the most frequently observed factor high severity technical occurrences reports for both CofA and LAA aeroplanes with a high severity occurrence rate of 1.89 and 9.54 occurrences per 100,000 hours respectively.

[2] (EU) 376/2014 mandates organisations and operators (including pilots) to establish occurrence reporting systems and report occurrences within 72 hours of the incident / accident. Annex I aircraft are not mandated to report an occurrence.

[3] High severity occurrences are occurrences that have either resulted in damage to the aircraft or serious/fatal injury to aircraft occupants.

[4] Rates have been used in in the calculations to represent the data on the same scale and account for the differences in the number of flying hours flown by the respective fleets

B6 The tables and graphs below (Figures 1 and 2) show technical occurrences with a comparison between amateur-built and factory-built aeroplanes for the LAA fleet, showing both fatal and serious injuries attributed to technical occurrences. These graphs portray data from a five-year period from 2014- mid-2019, where structural or mechanical issues were a possible factor. Occurrences will generally be higher on the CofA fleet due to the number on the fleet, to make this number relatable to the permit fleet, a rate of occurrences per 100,000 hours has been established.

B7 Figure 2 shows an occurrence rate per 100,000 hours. Our rationale for showing a 100,000-hour rate is based on the data we have which shows the fleet year on year flies in excess of 100,000 hours, thereby making this a realistic rate comparison.

Figure 1

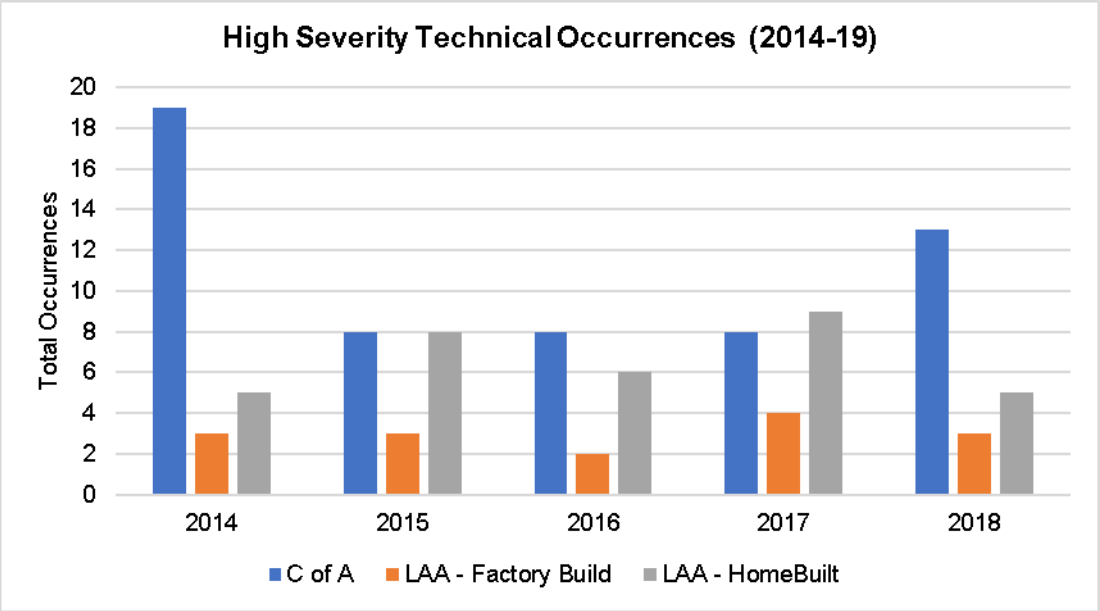
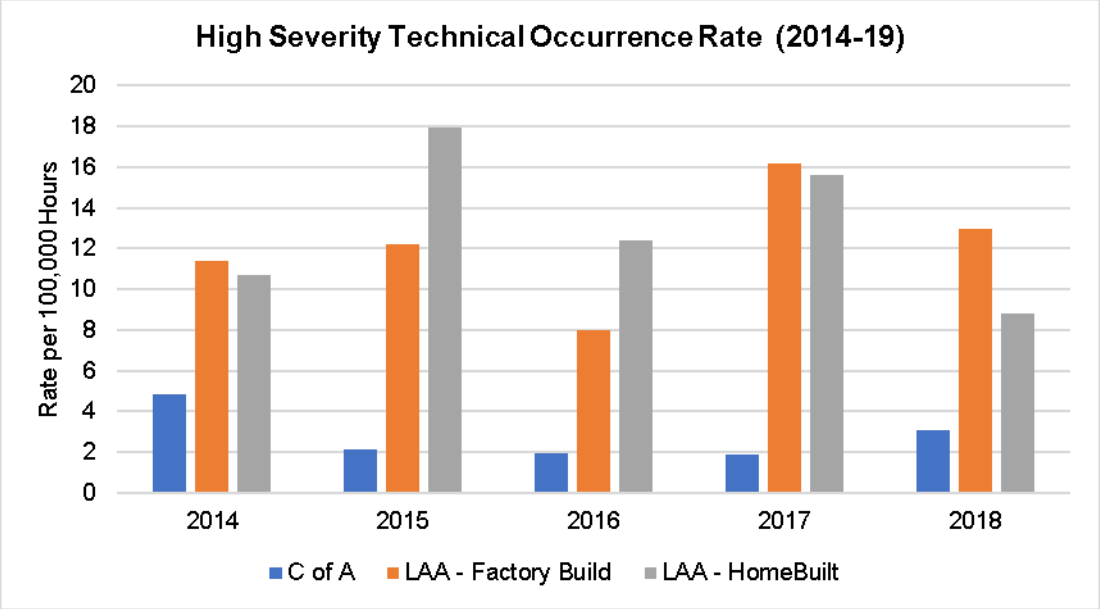


Figure 2



APPENDIX C

Types of Permit to Fly Aeroplanes

Amateur-Built Aeroplanes

C1 With certain exceptions, aircraft flying in the UK must comply with regulations that define their airworthiness state. Compliance is signified by holding either a Permit to Fly or a Certificate of Airworthiness. All amateur built aeroplanes hold a UK Permit to Fly and are operated under the Light Aircraft Association (LAA).

C2 The build is scrutinised to ensure that it complies with the design approval basis identified by the LAA. The scrutiny includes strength calculations, physical testing of component parts and flight testing. If the build and design meet the requirements the type is approved, and further individual aircraft can be constructed.

C3 In order to satisfy the conditions for a Permit to Fly, an amateur-built aeroplane must undergo a detailed design survey and flight tests, either by the CAA or by the LAA. For a new amateur-built kit, LAA Engineering is required to check that the design meets all the fundamental requirements of whatever airworthiness code would apply if it were a fully certified aircraft, i.e. CS-VLA (or JAR-VLA) or CS 23 (or FAR-23). This is done by examining the design itself (by inspection, looking at drawings and build manuals etc), by checking stress analysis submissions, and flight test results.

C4 They could not be used for any training of non-owners until 2018. This limitation was lifted by the UK CAA to allow remunerated conversion training of licence holders. Amateur-built aeroplanes can now be hired to non-owners. This also was not allowed until 2018. These changes in permitted utilisation demonstrate an acceptance of the airworthiness standards of amateur built aeroplanes and support the essence of the proposal.

Ex-Certificate of Airworthiness aeroplanes now on a Permit to Fly

C5 These aircraft may previously have qualified for a CofA but may have been issued with a PtF if it was no longer being supported by a Type Certificate holder or manufacturer. These aircraft were manufactured under a Type Certificate and, the design and maintenance documented.

C6 If an aircraft is eligible to hold a CofA and that there is an active Type Certificate holder, then the aircraft cannot be placed onto a PtF. There are some exceptions to this and there are some types of aircraft on the UK G-Register that are able to hold either a CofA or a PtF. In the UK a company might set up a ‘Type Responsibility Agreement’ (TRA) with the CAA to look after a particular type or types of aircraft where the manufacturer no longer exists or is unable to hold the Type Certificate. These aircraft are operated under the PtF system or a CofA.

C7 A change from operating on a CofA to a PtF can result in additional limitations on the operation of the aircraft. In consideration of this, strict adherence to the maintenance system stipulated by the manufacturer is no longer mandated. As a consequence, the owner is often able to reduce the operating costs by taking a more practical role in the upkeep of the aircraft, under the supervision of an LAA inspector.

Ex-Military aeroplanes not operated under CAP632

C8 If an aircraft is of military origin and is not eligible for a CofA, the aircraft will be issued with a Permit to Fly.

C9 Ex-military aircraft have been factory designed and built to requirements that differ from those of civilian aircraft. Consequently, the airworthiness review of an ex-military aircraft considers associated issues such as the operational role of the aircraft and the accident record.

C10 The majority of ex-military aircraft require the involvement of a design organisation approved in accordance with BCAR Section A, or subject to a Type Responsibility Agreement (TRA). This organisation will catalogue the conformity of the aircraft build standard to the 'type design standard', the modification record and the maintenance history, and review the operational history of the type, and development of an Airworthiness Approval Note, in order to provide a report upon which the CAA can consider the issue of a Permit to Fly.

C11 The ex-military aircraft in discussion within this consultation are those aircraft below 2,730kgs maximum take-off weight, that are not required to be operated in-accordance with CAP632 – Operation of 'Permit to Fly' ex-military aircraft on the UK register.

APPENDIX D

Safety Mitigations

D1 Although the LAA is confident that there is no fundamental difference between the airworthiness of PtF aeroplanes which are subject to LAA airworthiness oversight and those aircraft that are on the CofA, the LAA is required to put in place certain conditions for the use of individual aircraft which are to be used in the proposed role.

D2 These additional conditions are:

a) Implement a mechanism to provide protection to the original builder of a PtF home-built aircraft which maybe used for ab initio training. One such approach could be: Before an aircraft can be used for flight training the original builder of the aeroplane must be made aware that it is to be used for this purpose and invited to agree in writing to the use, in consideration for an indemnity. This is to ensure that the builder can make an informed decision to accept the possibility that, in the case of an accident during flight training they might be held in some way liable for the initial airworthiness of the aircraft. The CAA will consider alternative approaches as part of the consultation feedback.

b) Create an acceptance process for allowing the aircraft to be used in the flight training environment, considering the initial design, initial airworthiness, continued airworthiness, flight testing, and suitability of the aircraft on an individual case by case basis not on an aircraft type basis and issue a certificate of acceptance.

c) The initial airworthiness of the aircraft type must have been approved by the LAA using a recognised design code as a basis, using suitable additions or alternative means of compliance as deemed appropriate by the LAA.

d) The aircraft must be of a type that has been considered by the LAA to be suitable as a flight training platform.

e) The individual aircraft must hold a valid Permit to Fly and Certificate of Validity.

f) The aircraft must have been approved individually as suitable for flight training in respect of:

   i. Instrumentation
   ii. Control layout
   iii. Modifications
   iv. Communications

g) Changes to the aircraft equipment must be notified to and approved by the LAA.

h) Ensure compliance with a maintenance schedule approved by the LAA, which must include at least a 50-hour, 100-hour and annual inspection including any life limited items within the aircraft.

i) A suitable Pilot's Operating Handbook must be available for the aircraft.

j) The aeroplane will have to be operated under an Approved Training Organisation (ATO) or a Declared Training Organisation (DTO).

k) The engine condition must not be allowed to run beyond the manufacturer's recommended overhaul period or an agreed alternative means of compliance.

l) Owners are required to keep records of all maintenance carried out within the aircraft technical logbook.

D3 The conditions imposed on the ATOs / DTOs are:

a) Additional aircraft assessment by an instructor qualified and nominated by the Head of Training (HT) of the ATO/DTO school which should demonstrate through an evaluation report that the aircraft is appropriately equipped and suitable for the training courses provided.

b) The aeroplane should be safely controllable and manoeuvrable under all anticipated operating conditions including following the failure of one or, if appropriate, more propulsion systems.

c) The aeroplane should have such stability as to ensure that the demands made on the pilot are not excessive and take into account the phase of flight and its duration.

d) The aeroplane should allow a smooth transition from one flight phase to another without requiring exceptional piloting skill, alertness, strength or workload under any probable operating condition.

e) The assessment should take into account the control forces, the cockpit environment, pilot workload and other human-factor considerations depending on the phase of flight and its duration.

f) A process of informed consent, informing the potential student to the nature of which the aircraft is non-certificated and what that means in practice. This informed consent must be given in writing. If the student pilot is under 16 years of age the consent must be signed by the legal parent or guardian.

D4 Currently, not all PtF aeroplanes are subject to a factory maintenance schedule. As a mitigation condition to ensure a comparable level of safety to CofA aircraft used in Ab initio flight training environment, it will be requirement that the PtF aeroplanes that are accepted under this proposal are maintained in accordance with an approved maintenance schedule which will be reviewed at the time of application by the appropriate approved organisation and subsequently checked by an inspector as part of the aircraft's annual permit revalidation process.

D5 Mandatory Occurrence Reporting (MOR) is currently only a legal requirement for EASA regulated aircraft. However, the Working Group considered that the reporting should be mandated for all aircraft used in a flight training environment. The LAA will enter into an agreement with the CAA to create, maintain and share intelligence on occurrences.

APPENDIX E

Glossary of Terms

Term	Definition
A8-26 organisation Approval (LAA)	*An organisation supporting recreational aviation and is a representative body that encompasses a specific sector of the industry involved in sport, recreational and/or leisure flying and performs operational and airworthiness related functions. The A8-26 approval standards were developed to meet the needs of sporting organisations without imposing restrictions and working practices designed for commercial air transport. Instead they provide regulation that is proportionate to the activity and risk.*
Air Navigation Order (ANO)	*Air Navigation Order 2016, as amended (See CAP 393 for a consolidated version, showing amendments to date)*
Certificate of Airworthiness (CofA)	*An aircraft will normally be issued with a Certificate of Airworthiness by its 'State of Registry', and this document attests to that National Aviation Authority being satisfied with the design and workmanship and the materials used in the construction of the aircraft. After a 'State of Design' has investigated all aspects of an aircraft's design, construction and flight characteristics, it will issue a 'type certificate', and it is compliance with this document that forms the basis on which individual CofA will subsequently be issued.* *In the case of aircraft that are British registered, but which have been designed and manufactured in another country, the CAA will normally carry out a review of the certification process undertaken by the State of Design, and then survey the individual aircraft in order to ensure that the conditions required for the UK to issue a CofA have been satisfied.*
Permit to Fly (PtF)	*Notwithstanding the international requirement for an aircraft to have a Certificate of Airworthiness, all aeroplanes are not able to qualify for the issue of a Certificate of Airworthiness. In this case, the CAA may issue a National Permit to Fly which allows aircraft to fly within United Kingdom airspace.* *This confirms that an aircraft is fit to fly having regard to its overall design, construction and maintenance. Due to the reduced airworthiness level of assurance, to ensure that an adequate level of safety is maintained, additional limitations and conditions are placed upon the operation of these aircraft.*
Amateur-built Aircraft	*Aircraft, including those supplied in kit form, where at least 51% of the fabrication and assembly tasks are performed by the builder, for their own purposes and without any commercial objective*
Kit Built Aircraft	*An aircraft that is constructed from a manufactured kit that may include some major sub-assemblies and/or pre-assembled components.*
CS-VLA	*An EASA airworthiness design code applicable to aeroplanes with a single engine (spark- or compression-ignition) having not more than two seats, with a Maximum Certificated Take-off Weight of not more than 750 kg and a stalling speed in the landing configuration of not more than 83 km/h (45 knots) (CAS), to be approved for day-VFR only.*
CS-23	*An EASA airworthiness design code applicable to aeroplanes with a passenger seating configuration of 19 or less and a maximum certified take-off mass of 8 618 kg (19 000 pounds) or less.*

51% Rule	*A rule applied from Annex I to Basic Regulation (EU) 2018/1139, which requires that more than half of the assembly and fabrications tasks involved in building an aircraft are undertaken by an amateur builder and on a not-for-profit basis*
Ab initio	*Ab initio is a Latin term meaning "from the beginning". When used within this consultation it has the meaning of training where the trainee does not already hold a licence in the same aircraft category and is considered initial pilot training. Within this consultation the terms Ab initio and Initial are interchanged throughout with the same meaning.*
ANO Article 7 'Commercial Operations'	***Meaning of "commercial operation"*** *7 - For the purposes of this Order, "commercial operation" means any flight by a small unmanned aircraft (SUA) except a flight for public transport, or any operation of any other aircraft except an operation for public transport—* *a) which is available to the public; or* *b) which, when not made available to the public,* *i. in the case of a flight by a small unmanned aircraft, is performed under a contract between the SUA operator and a customer, where the latter has no control over the remote pilot; or* *ii. in any other case, is performed under a contract between an operator and a customer, where the latter has no control over the operator, in return for remuneration or other valuable consideration.*
Remuneration ANO Paragraph 4 of Part 1 of Schedule 8	***Remuneration condition*** *1) In this Part, a reference to the "remuneration condition" in the privileges for aeroplane, helicopter, gyroplane and balloon and airship private pilot's licences is to the condition set out in this paragraph.* *2) The condition is that* *a) in the case of—* *i. instruction, the holder's licence includes an appropriate instructor certificate;* *ii. flying examinations, the holder is authorised to conduct such examinations by the CAA; and* *b) remuneration or other valuable consideration is received for—* *i. the provision of flight instruction for the same type of licence;* *ii. the conduct of skill tests and proficiency checks for such a licence;* *the training, testing and checking for the ratings or certificates attached to such a licence.*
Valuable consideration Schedule 1 ANO	*Means any right, interest, profit or benefit, forbearance, detriment, loss or responsibility accruing, given, suffered or undertaken under an agreement, which is of more than a nominal nature.*
Annex I Aircraft	*The European Regulation (EU) 2018/1139 known as the Basic Regulation contains the scope, common rules and essential requirements for civil aviation and establishes a framework for aircraft certification, operation, aircrew training, testing and licensing for EASA aircraft.* *Annex I within the Basic Regulation lists the various aircraft to which the European Basic Regulation does not apply to and is left to each individual National Aviation Authority (NAA) to regulate accordingly. These are referred to as Annex I or Non-EASA aircraft. All aircraft in this consultation are Annex I aircraft.*