

Title:	Opinion and Instruction Document Mitigating the risks of: uncontained in-flight fire; corrosion and fatigue in aircraft; and runway excursions.
Package Number	0005
Headline Purpose:	<ul style="list-style-type: none"> To prevent structural failure in aircraft due to corrosion and fatigue. To mitigate the risk of injuries or fatalities caused by uncontained in-flight fire. To mitigate the risk of runway excursion during landing.
Proposed action:	To amend Annex I (Part-26) to Commission Regulation (EU) 2015/640 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018 (" UK Reg (EU) No. 2015/640 ") and M.A.302(d) of Annex I (Part-M) Commission Regulation (EU) 1321/2014 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018 (" UK Reg (EU) No. 1321/2014 ").

Objective

In the CAA's opinion, changes to [UK Reg \(EU\) No. 2015/640](#) and [UK Reg \(EU\) No. 1321/2014](#) are needed to ensure the safe operation of ageing aircraft throughout their operational life, and to address the risks associated with in-flight fire and runway excursions during landing. Through these changes, the CAA's objectives are to:

- prevent catastrophic failures due to fatigue and corrosion;
- mitigate against the risk of injuries or fatalities in the event of an in-flight fire in the cargo or baggage compartment; and
- mitigate against the risk of runway excursions during landing.

In addition, it is the CAA's opinion that further amendments to the law are required to:

- Defer the date by which by which additional airworthiness requirements for the dynamic conditions of passenger and cabin crew seats are applied to newly produced large aeroplanes of a design which has already been certified by EASA. This is to avoid imposing an additional burden arising from the need to requalify the seats for aeroplanes whose production has been delayed by lockdown; and
- Correct minor drafting deficiencies in point 26.334 of Annex I of [UK Reg \(EU\) No. 2015/640](#).

Background

Fatigue and corrosion

Service experience has shown that there is a need continually to update industry knowledge about the structural integrity of ageing aircraft. Therefore, it is the CAA's opinion that new requirements for design approval holders and operators to obtain and maintain knowledge about the consequences of age (based on real-time operational experience) and the use of modern analytical tools and testing to detect ageing factors should be introduced.

By the changes which in the CAA's opinion should be introduced, design approval holders will be required to develop a comprehensive continuing structural integrity programme for aircraft types and to evaluate existing changes and repair designs for damage tolerance. At the same time, operators will be required to incorporate into their maintenance programme those data whilst addressing the adverse effects of changes and repairs on each airframe and its associated maintenance requirements.

In-flight fire in the cargo or baggage compartment

In September 2007, EASA introduced new design standards eliminating Class D cargo and baggage compartments from the certification specifications for large aeroplanes. A Class D cargo or baggage compartment is one in which:

- a) a fire occurring in it will be completely confined without endangering the safety of the aeroplane or the occupants;
- b) there are means of excluding hazardous quantities of smoke, flames, or other noxious gases from any compartment occupied by the crew or passengers;
- c) ventilation and draughts are controlled within each compartment so that any fire likely to occur in the compartment will not progress beyond safe limits; and
- d) consideration is given to the effect of heat within the compartment on adjacent critical parts of the aeroplane.

Those standards were aimed at mitigating the risk of injuries or fatalities in the event of an in-flight fire in the cargo or baggage compartment, but they only applied to large aeroplanes certified on the basis of requests made after September 2007. Class D cargo compartments are still to be found under the passenger cabin floor on a significant number of transport aircraft. However, it must be appreciated that certain dangerous goods are themselves oxygen producers. Therefore, it cannot be assumed that a fire in a Class D cargo compartment will necessarily self-extinguish.

The risk of uncontrollable fires in this type of compartment is considered high, in particular considering that the carriage of lithium batteries in cargo or baggage compartments has increased over recent years, together with the identified risk of thermal runaways and the subsequent fires related to those batteries.

The CAA now considers that the same design standards should apply to all in-service large aeroplanes, whenever they were certified. In the interests of safety, therefore, in the CAA's opinion all Class D cargo or baggage compartments must now be required to comply with the certification specifications applicable to:

- a) A Class C compartment where the aeroplane is used for the transport of passengers; or
- b) A Class C or a Class E compartment where the aeroplane is used for the transport of cargo only.

Runway Excursions

For the last few decades, runway excursions have been contributors to accidents worldwide and a significant risk to aviation safety. The [EASA Annual Safety Review 2018](#) identified runway excursions as one of the two highest key risk areas. Furthermore, runway excursions accounted for 30% of the non-fatal accidents over the same period and for the same population. It has also been identified by the CAA as a significant risk to aviation safety. The number of runway excursions during landings has increased in line with the growth in traffic. As aviation traffic is expected to continue to grow worldwide the number of runway excursions can also be expected to increase further if no action is taken.

In January 2020 EASA introduced new design standards for the installation of systems supporting flight crews in their decision-making during approach and landing. Those standards are aimed at reducing the risk of runway excursions during landing. It is the CAA's opinion, having due regard to the nature and risk of operations with large aeroplanes, that similar standards to those introduced by EASA should apply to all in-service large aeroplanes, and the CAA therefore intends to introduce such measures.

Commission Implementing Regulation (EU) 2020/1159 of 5 August 2020 ("[CIR \(EU\) 2020/1159](#)") amended Commission Regulation (EU) 2015/640 of 23 April 2015 '(Additional airworthiness specifications for operations' (Part-26)) ("[CR \(EU\) 2015/640](#)") as it was in force in Europe in relation to the matters set out above. These amendments were not in force at the end of the Transition period and accordingly no such amendments were made to [UK Reg \(EU\) No. 2015/640](#).

In order to ensure that those data, procedures, instructions and manuals produced on the basis of the new requirements were also used when maintaining large aeroplanes, [CIR \(EU\) 2020/1159](#) also amended point M.A.302 (d) of Annex I to Commission Regulation (EU) No. 1321/2014 ("[CR \(EU\) No. 1321/2014](#)") to create a link with the requirements introduced into Part-26 of Annex I to [CR \(EU\)](#)

[2015/640](#). For the same reason as above, no such change was automatically effective to amend these regulations as now retained in UK domestic law.

Following review of [CIR \(EU\) 2020/1159](#), it is the CAA’s opinion that similar amendments should be made to [UK Reg \(EU\) No. 2015/640](#) and [UK Reg \(EU\) No. 1321/2014](#) to ensure the safety of ageing aircraft and to reduce the risks of runway excursions and baggage/cargo compartment fires.

Other consequential changes

Commission Implementing Regulation (EU) 2021/97 of 28 January 2021 (“[CIR \(EU\) 2021/97](#)”) amended [CR \(EU\) 2015/640](#) to delay the date by which additional airworthiness requirements for the dynamic conditions of passenger and cabin crew seats are applied to newly produced large aeroplanes of a design which has already been certified by EASA in order to align various implementation dates. For similar reasons, the CAA considers that the first individual certification of airworthiness referred to in point 26.60 of Annex I to [UK Reg \(EU\) No. 2015/640](#), which is currently 18 February 2021, should be aligned with the application date of the list of aeroplane models which are not subject to certain provisions of Annex I [CR \(EU\) 2015/640](#) set out in Appendix I to [CIR \(EU\) 2020/1159](#).

Finally, the CAA considers it desirable to correct minor drafting deficiencies in point 26.334 of Annex I of [UK Reg \(EU\) No. 2015/640](#). The current text implies that all holders of supplemental type-certificate issued before 1 September 2003 will have to develop the damage tolerance data, whether or not this data is actually required by operators. However, the intention had been that this data should only be developed if required by operators and only upon their request, and it is the CAA’s opinion that this opportunity should be taken to rectify the position.

What legal powers are being used to achieve the change?

Articles 17(1) and 31 of Regulation (EU) 2018/1139 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2019 (“[the UK Basic Regulation](#)”).

Consequence of not making these legislative changes

Not making these legislative changes will mean the opportunity is lost to improve safety by introducing regulatory change intended to:

- prevent catastrophic failures due to fatigue and corrosion,
- mitigate against the risk of injuries or fatalities in the event of an uncontained in-flight fire in the cargo or baggage compartment, and
- mitigate against the risk of runway excursions during landing; and
- make minor related changes to existing legislation to improve clarity and align dates.

Affected Law (and, if applicable, UK AMC)

What is the existing UK legal framework which is relevant here?	Annex I (Part-26) to UK Reg (EU) No. 2015/640 and M.A.302(d) of Annex I (Part-M) to UK Reg (EU) No. 1321/2014
Identify the law that the CAA proposes be changed	Articles 1, 2, and Annex I (Part 26) UK Reg (EU) No. 2015/640 , and M.A.302(d) Annex I (Part-M) to UK Reg (EU) No. 1321/2014
Are any consequential amendments needed to other pieces of law?	No

<p>If the change proposed is to retained EU Implementing Rules made under the retained Basic Regulation is there any UK Acceptable Means of Compliance (“AMC”), Guidance Material (“GM”) Certification Specification (“CS”) that will be changed/newly adopted as a consequence?</p>	<p>The CAA intends to adopt amendments to the following UK AMC/GM/CS in support of the law change at the earliest opportunity:</p> <ul style="list-style-type: none"> • Issue 3 of the Certification Specifications and Guidance Material for Additional airworthiness specifications for operations, ‘CS-26 — Issue 3’; • Amendment 20 to the General Acceptable Means of Compliance for Airworthiness of Products, Parts and Appliances, ‘AMC-20 — Amendment 20’; • Amendment 4, Issue 2 of the Acceptable Means of Compliance and Guidance Material Annex I (Part-M) to CR (EU) No. 1321/2014, ‘AMC and GM to Annex I (Part-M) to CR (EU) No. 1321/2014, ‘Issue 2 — Amendment 4’ covering ‘Ageing aircraft structures; Reduction of runway excursions; Conversion of class D compartments’. <p>Information on these proposed changes will be published on the CAA’s website, and the decision to adopt revised AMC/GM/CS will be published here: List of ORS9 – CAA Decisions</p>
<p>Is this proposal related to changes the EU have made that are not retained EU law (e.g. EU law that was published but not in force and so did not come across under the terms of the Withdrawal Act), or EU law changes since End of Transition?</p>	<p>Yes.</p> <p>As set out above, CIR (EU) 2020/1159 amended CR (EU) No. 1321/2014 and (CR (EU) 2015/640 as regards the introduction of new additional airworthiness requirements.</p> <p>CIR (EU) 2021/97 amended and corrected CR (EU) 2015/640 as regards the introduction of new additional airworthiness requirements.</p>
<p>Is there an EU Notice of Proposed Amendment considering the same issue?</p>	<p>A Notice of Proposed Amendment (NPA 2013-07) was issued by EASA prior to the introduction of CIR (EU) 2020/1159. Throughout the process, the CAA’s opinion was that the proposed changes were in the interests of safety and should be made. There has been no material change in circumstances since the issue of the NPA and no change in the CAA’s opinion.</p>
<p>Does this proposal relate to an international treaty or obligation (e.g. an ICAO SARP)?</p>	<p>Yes. The amendments proposed here would ensure UK compliance with the ICAO SARPs.</p>
<p>Is a consultation required?</p>	<p>These proposals were fully developed by EASA and were consulted upon as part of NPA 2013-07 prior to the publication of EASA’s opinion.</p> <p>The amendments now proposed are materially the same as the amendments adopted into EU law. The CAA does not consider that there has been any material change in circumstances since the date of the EASA consultation.</p>

	As the EASA consultation meets the requirement for consultation under Article 115 of the UK Basic Regulation for the purpose of these proposed amendments, there is no requirement to carry out an additional consultation.
Is an Impact Assessment under the Better Regulation Framework necessary?	No. EASA carried out an Impact Assessment in respect of these proposed changes prior to publishing NPA 2013-07 in 2013. There has in the CAA's view been no material change in circumstances since the Impact Assessment was carried out, and therefore a further Impact Assessment is not needed.
When is it intended that these provisions should be brought into force?	On the earliest possible date after the SI is made, subject to the different implementation dates which are included within the proposed legislative changes.
Has an SI "slot" been agreed with the Department for Transport?	October 2021
Will there be any criminal offences?	The Department for Transport is looking for the earliest parliamentary opportunity to grant the Secretary of State the power to make breach of requirements to retained EU aviation safety law an offence. It is therefore anticipated that offences will be created once such powers are available.
If so, is a Justice Impact Test required?	Once the power to impose criminal sanctions has been granted, the question of a Justice Impact Test will be considered by the CAA in collaboration with the Department for Transport.
What is the intended extent of the provision?	The UK
Are there any devolved issues?	No
Are any transitional provisions needed?	No

Suggested Changes to existing wording of Law

As set out above, the substance of the amendments detailed below have already been the subject of consultation. These proposals are therefore published for information purposes only. It should be noted that the amendments set out in this section constitute the CAA's initial opinion on possible amendments to the relevant legislation. While it is anticipated that any amendments ultimately enacted will broadly reflect the CAA's proposals, all amendments to legislation are subject to an iterative legislation drafting process by Government. The proposals set out below may therefore not be the final wording in the UK law.

[CIR \(EU\) 2020/1159](#) and [CIR \(EU\) 2021/97](#) together set out the changes made to European law to introduce the new safety requirements set out above.

It is the CAA's opinion that similar amendments should be made to the existing UK law in the interests of safety for the reasons already given. The CAA therefore proposes to adopt the content of the two Regulations referred to above subject to any amendment that may be necessary in order to give effect to these requirements in UK law, and to amend the following UK legislation in accordance with those proposed amendments:

- Point M.A.302(d) of Annex I (Part-M) to [UK Reg \(EU\) No. 1321/2014](#); and
- Articles 1 and 2 of, and Annex I (Part 26) to [UK Reg \(EU\) No. 2015/640](#).

As part of the UK rulemaking process, the CAA has reviewed the deadline dates contained within [CIR \(EU\) 2020/1159](#) and [CIR \(EU\) 2021/97](#). It is the CAA's opinion that the deadline dates for 2021 and beyond set out in these two Implementing Regulations which operators would have to meet are to be deferred by 12 months to allow time for industry to comply.