

 <p>Working in partnership</p>	UK Reg 748/2012 Annex I Part 21 And its AMC/GM	Compiled 3 Sep 2022 Issue 1b
---	---	---

UK LAW 748/2012 ANNEX 1 PART 21 PLUS AMC AND GM

COMPILED BY AEROSYNERGY LIMITED.

 <p>Working in partnership</p>	UK Reg 748/2012 Annex I Part 21 And its AMC/GM	Compiled 3 Sep 2022 Issue 1b
---	---	---

Introduction

This document has been prepared by Aerosynergy as a working tool which is more accessible than the document published at the time by the CAA. Whilst every care has been taken to transpose the content accurately Aerosynergy cannot be liable for any errors or omissions discovered.

For reference to the source document, see the following link which was correct at the time:

(a) Part 21 regulation

<https://www.legislation.gov.uk/eur/2012/748/annex/I>

However, it was found that the above reference lacked many of the changes implemented in the UK Law (EU) 748/2012 published by the CAA at the following location: <https://www.caa.co.uk/media/wohheixe/law-748-2012-30-03-2021.pdf> and so, at issue 1b, this document has been corrected to the latter reference.

(b) AMC/GM

AMC for Reg 748/2012 as retained under the European Withdrawal Act 2018 Jan 2021 revision

Aerosynergy

Aerosynergy Ltd is an Airworthiness consultancy, founded in 2005. It specializes in:

- Support for applications for CAA/EASA ADOA, DOA, POA, MOA with model manual procedures to tailor to the customer requirements.
- Similar support to applicants to the MAA for DAOS and MAOS approvals.
- Independent monitoring of DOA, POA, MOA organizations.
- Certification support.
- Training in airworthiness codes and in specialist subjects such as critical parts management and cabin safety.

www.aerosynergy.co.uk

Configuration Status

The configuration of the source documents at the issue stated are as follows:

Issue status of this Document	Date of Issue of this document	Law 748/2012 Annex 1 (Part 21)	UK AMC and GM to Part 21	Notes
1	July 2022	UK LAW (EU) 748/2012 Annex 1 (Part 21 Published 30/3/2021)	UK AMC and GM (form of EASA AMC and GM current and applicable on 31 December 2020, adopted by CAA on 1 January 2021)	
1a	30/Aug/22	No Change	No Change	Add title page and preliminary paragraphs
1b	3/Sep/22	No Change	No Change	<p>Discrepancies noted between the Pdf version of UK Law (EU)748/2012 on the CAA website and the E-Document at</p> <div data-bbox="1102 1267 1347 1346" style="border: 1px solid black; padding: 2px; width: fit-content;"> https://www.legislation.gov.uk/eur/ </div> <p>These are mainly substitution of CAA for EASA/Agency.</p> <p>Throughout, iaw the CAA website published document,</p> <ul style="list-style-type: none"> • The CAA is substituted for The CAA or EASA • UKTSO is substituted for ETSO • UKPA is substituted for EPA

	UK Reg 748/2012 Annex I Part 21 And its AMC/GM	Compiled 3 Sep 2022 Issue 1b
---	---	---

Issue status of this Document	Date of Issue of this document	Law 748/2012 Annex 1 (Part 21)	UK AMC and GM to Part 21	Notes
				<ul style="list-style-type: none"> Other changes highlighted in blue

	UK Reg 748/2012 Annex I Part 21 And its AMC/GM	Compiled 3 Sep 2022 Issue 1b
---	---	---

Contents

Contents	
UK LAW 748/2012 ANNEX 1 PART 21 PLUS AMC AND GM	1
Introduction	2
Aerosynergy	2
Configuration Status	3
Contents	5
INTRODUCTION	41
ARTICLES	43
<i>Article 1</i> Scope and definitions	43
Article 2 Products, parts and appliances certification	46
Article 3 Continued validity of type-certificates and related certificates of airworthiness	47
Article 4 Continued validity of supplemental type-certificates	50
F1 Article 5 [F1Continued operation of certain aircraft registered by Member States]	51
Article 6 Continued validity of parts and appliances certificates	52
Article 7 Permit to fly	52
[F1 Article 7a Operational suitability data	52
Article 8 Design organisations	53
Article 9 Production organisations	54
Article 10 CAA measures	55
Article 11 Repeal	55
Article 12 Entry into force	55
Annex I PART 21	56
PART 21	
Certification of aircraft and related products, parts and appliances, and of design and production organisations	56
21.1 General	56
SECTION A TECHNICAL REQUIREMENTS	57
SUBPART A —GENERAL PROVISIONS	57
21.A.1 Scope	57
21.A.2 Undertaking by another person than the applicant for, or holder of, a certificate	57
21.A.3A Failures, malfunctions and defects	57

	UK Reg 748/2012 Annex I Part 21 And its AMC/GM	Compiled 3 Sep 2022 Issue 1b
---	---	---

AMC No 1 to 21.A.3A(a) Collection, investigation and analysis of data related to Flammability Reduction Means (FRM) reliability	58
AMC No 2 to 21.A.3A(a) Collection, investigation and analysis of data related to ETOPS significant occurrences	59
GM 21.A.3A(a) The system for collection, investigation and analysis of data	59
GM 21.A.3A(b) Occurrence reporting	59
AMC 21.A.3A(b)(2) Reporting to the CAA	59
21.A.3B Airworthiness directives	60
AMC 21.A.3B(b) Unsafe condition	61
GM 21.A.3B(b) Determination of an unsafe condition	62
GM 21.A.3B(d)(4) Defect correction – Sufficiency of proposed corrective action	67
21.A.4 Coordination between design and production	76
AMC 21.A.4 Transferring of information on eligibility and approval status from the design holder to production organisations	76
SUBPART B —TYPE-CERTIFICATES AND RESTRICTED TYPE-CERTIFICATES	

Error! Bookmark not defined.

21.A.11 Scope

Error! Bookmark not defined.

21.A.13 Eligibility

Error! Bookmark not defined.

21.A.14 Demonstration of capability

Error! Bookmark not defined.

AMC to 21.A.143, 21.A.243, 21.A.14(b), 21.A.112B(b) and 21.A.432B(b) Flight Test Operations Manual (FTOM)

Error! Bookmark not defined.

AMC 21.A.14(b) Alternative procedures to demonstrate design capability

Error! Bookmark not defined.

GM 21.A.14(b) Eligibility for alternative procedures

Error! Bookmark not defined.

21.A.15 Application

Error! Bookmark not defined.

AMC 21.A.15(a) Form and manner

Error! Bookmark not defined.

AMC 21.A.15(b) Content of the certification programme

Error! Bookmark not defined.

Appendix A to AMC 21.A.15(b) Means of compliance codes

Error! Bookmark not defined.

	UK Reg 748/2012 Annex I Part 21 And its AMC/GM	Compiled 3 Sep 2022 Issue 1b
---	---	---

AMC 21.A.15(b)(5) Breakdown of the certification programme into compliance demonstration items (CDIs)

Error! Bookmark not defined.

GM 21.A.15(c) Updates to the certification programme

Error! Bookmark not defined.

GM No 1 to 21.A.15(d) Application for the approval of operational suitability data – MMEL for ELA1 and ELA2

Error! Bookmark not defined.

GM No 2 to 21.A.15(d) Determination of type or variant

Error! Bookmark not defined.

GM No 3 to 21.A.15(d) OSD content

Error! Bookmark not defined.

GM No 4 to 21.A.15(d) Scope of operational suitability data

Error! Bookmark not defined.

GM No 1 to 21.A.15(d)6 Other type-related operational suitability elements

Error! Bookmark not defined.

GM 21.A.15(e) and (f) Period of validity for the application for a type certificate (TC) or restricted type certificate (RTC)

Error! Bookmark not defined.

21.A.16A Certification specifications

Error! Bookmark not defined.

21.A.16B Special conditions

Error! Bookmark not defined.

21.A.17A Type-certification basis

Error! Bookmark not defined.

21.A.17B Operational suitability data certification basis

Error! Bookmark not defined.

21.A.18 Designation of applicable environmental protection requirements and certification specifications

Error! Bookmark not defined.

21.A.19 Changes requiring a new type-certificate

Error! Bookmark not defined.

21.A.20 Demonstration of compliance with the type certification basis, operational suitability data certification basis and environmental protection requirements

Error! Bookmark not defined.

GM 21.A.20 Compliance demonstration process

Error! Bookmark not defined.

GM 21.A.20(b) Reporting on the compliance demonstration process

Error! Bookmark not defined.

AMC 21.A.20(c) Compliance documentation

Error! Bookmark not defined.



GM 21.A.20(d) Final statement

Error! Bookmark not defined.

21.A.21 Requirements for the issuance of a type certificate or restricted type certificate

Error! Bookmark not defined.

GM 21.A.21(a)(3)(A) Clarification of the term 'determined'

Error! Bookmark not defined.

GM 21.A.21(b), 21.A.95(c), 21.A.97(c), 21.A.115(c), 21.B.103(b), 21.B.107(b) and 21.B.111(b) Approval of operational suitability data (OSD)

Error! Bookmark not defined.

21.A.23 Issue of a restricted type-certificate

Error! Bookmark not defined.

21.A.31 Type design

Error! Bookmark not defined.

21.A.33 Inspections and tests

Error! Bookmark not defined.

AMC 21.A.33 Inspections and tests

Error! Bookmark not defined.

GM 21.A.33(d) Inspections and tests

Error! Bookmark not defined.

21.A.35 Flight Tests

Error! Bookmark not defined.

GM 21.A.35 Flight Tests

Error! Bookmark not defined.

GM 21.A.35(b)(2) Objective and Content of Function and Reliability Testing

Error! Bookmark not defined.

GM 21.A.35(f)(1) Flying Time for Function and Reliability Testing

Error! Bookmark not defined.

GM 21.A.35(f)(2) Flying Time for Function and Reliability Testing

Error! Bookmark not defined.

21.A.41 Type-certificate

Error! Bookmark not defined.

21.A.44 Obligations of the holder

Error! Bookmark not defined.

21.A.47 Transferability

Error! Bookmark not defined.

21.A.51 Duration and continued validity

Error! Bookmark not defined.

21.A.55 Record-keeping

Error! Bookmark not defined.



21.A.57 Manuals

Error! Bookmark not defined.

21.A.61 Instructions for continued airworthiness

Error! Bookmark not defined.

21.A.62 Availability of operational suitability data

Error! Bookmark not defined.

GM to 21.A.62, 21.A.108 and 21.A.120B Availability of Operational Suitability Data

Error! Bookmark not defined.

(SUBPART C — NOT APPLICABLE)

Error! Bookmark not defined.

SUBPART D —CHANGES TO TYPE-CERTIFICATES AND RESTRICTED TYPE-CERTIFICATES

Error! Bookmark not defined.

21.A.90A Scope

Error! Bookmark not defined.

GM 21.A.90A Scope

Error! Bookmark not defined.

21.A.90B Standard changes

Error! Bookmark not defined.

GM 21.A.90B Standard changes — Certification Specifications

Error! Bookmark not defined.

21.A.91 Classification of changes to a type-certificate

Error! Bookmark not defined.

GM 21.A.91 Classification of changes to a type certificate

Error! Bookmark not defined.

Appendix A to GM 21.A.91 Examples of Major Changes per discipline

Error! Bookmark not defined.

21.A.92 Eligibility

Error! Bookmark not defined.

21.A.93 Application

Error! Bookmark not defined.

AMC 21.A.93(a) Form and manner

Error! Bookmark not defined.

AMC 21.A.93(b) Certification programme for a change to a TC or an STC

Error! Bookmark not defined.

GM No 1 to 21.A.93(b)(1)(iii) Interaction of changes to the type design and changes to operational suitability data (OSD)

Error! Bookmark not defined.



GM No 2 to 21.A.93(b)(1)(iii) Interaction of changes to the type design and changes to the master minimum equipment list (MMEL)

Error! Bookmark not defined.

GM 21.A.93(c) Period of validity for the application

Error! Bookmark not defined.

21.A.95 Requirements for approval of a minor change

Error! Bookmark not defined.

AMC 21.A.95 Requirements for the approval of a minor change

Error! Bookmark not defined.

GM 21.A.95(b) Requirements for the approval of a minor change

Error! Bookmark not defined.

21.A.97 Requirements for approval of a major change

Error! Bookmark not defined.

AMC 21.A.97 Requirements for the approval of a major change

Error! Bookmark not defined.

GM 21.A.97(b) Requirements for the approval of a major change

Error! Bookmark not defined.

21.A.101 Type-certification basis, operational suitability data certification basis and environmental protection requirements for a major change to a type-certificate

Error! Bookmark not defined.

GM 21.A.101 Establishing the certification basis of changed aeronautical products

Error! Bookmark not defined.

Appendix A to GM 21.A.101 Classification of design changes

Error! Bookmark not defined.

Appendix B to GM 21.A.101 Application charts for changed product rule

Error! Bookmark not defined.

Appendix C to GM 21.A.101 A method to determine the changed and affected areas

Error! Bookmark not defined.

Appendix D to GM 21.A.101 Other guidance for affected areas

Error! Bookmark not defined.

Appendix E to GM 21.A.101 Procedure for evaluating material contribution to safety or impracticality of applying latest certification specifications to a changed product

Error! Bookmark not defined.

Appendix F to GM 21.A.101 The use of service experience in the exception process

Error! Bookmark not defined.

Appendix G to GM 21.A.101 Changed product rule (CPR) decision record

Error! Bookmark not defined.



Appendix H to GM 21.A.101 Examples of documenting the proposed certification basis list

Error! Bookmark not defined.

Appendix I to GM 21.A.101 Related documents

Error! Bookmark not defined.

Appendix J to GM 21.A.101 Definitions and terminology

Error! Bookmark not defined.

GM No 1 to 21.A.101(g) Establishment of the operational suitability data (OSD) certification basis for changes to type certificates (TCs)

Error! Bookmark not defined.

21.A.103 Issue of approval

Error! Bookmark not defined.

21.A.105 Record-keeping

Error! Bookmark not defined.

21.A.107 Instructions for continued airworthiness

Error! Bookmark not defined.

21.A.108 Availability of operational suitability data

Error! Bookmark not defined.

GM to 21.A.62, 21.A.108 and 21.A.120B Availability of Operational Suitability Data

Error! Bookmark not defined.

21.A.109 Obligations and UKPA marking

Error! Bookmark not defined.

SUBPART E —SUPPLEMENTAL TYPE-CERTIFICATES

Error! Bookmark not defined.

21.A.111 Scope

Error! Bookmark not defined.

21.A.112A Eligibility

Error! Bookmark not defined.

21.A.112B Demonstration of capability

Error! Bookmark not defined.

AMC to 21.A.143, 21.A.243, 21.A.14(b), 21.A.112B(b) and 21.A.432B(b) Flight Test Operations Manual (FTOM)

Error! Bookmark not defined.

GM No 1 to 21.A.112B Demonstration of capability for supplemental type-certificate (STC) cases

Error! Bookmark not defined.

21.A.113 Application for a supplemental type-certificate

Error! Bookmark not defined.

AMC 21.A.113(a) Form and manner

Error! Bookmark not defined.



21.A.114 Showing of compliance

Error! Bookmark not defined.

21.A.115 Requirements for approval of major changes in the form of a supplemental type-certificate

Error! Bookmark not defined.

AMC 21.A.115 Requirements for the approval of major changes in the form of a supplemental type certificate (STC)

Error! Bookmark not defined.

21.A.116 Transferability

Error! Bookmark not defined.

21.A.117 Changes to that part of a product covered by a supplemental type-certificate

Error! Bookmark not defined.

21.A.118A Obligations and UKPA marking

Error! Bookmark not defined.

21.A.118B Duration and continued validity

Error! Bookmark not defined.

21.A.119 Manuals

Error! Bookmark not defined.

21.A.120A Instructions for continued airworthiness]

Error! Bookmark not defined.

21.A.120B Availability of operational suitability data

Error! Bookmark not defined.

GM to 21.A.62, 21.A.108 and 21.A.120B Availability of Operational Suitability Data

Error! Bookmark not defined.

SUBPART F —PRODUCTION WITHOUT PRODUCTION ORGANISATION
APPROVAL

Error! Bookmark not defined.

21.A.121 Scope

Error! Bookmark not defined.

GM No 1 to 21.A.121 Applicability – Individual product, part or appliance

Error! Bookmark not defined.

GM No 2 to 21.A.121 Applicability – Applicable design data

Error! Bookmark not defined.

21.A.122 Eligibility

Error! Bookmark not defined.

AMC No 1 to 21.A.122 Eligibility – Link between design and production

Error! Bookmark not defined.

AMC No 2 to 21.A.122 Eligibility – Link between design and production

Error! Bookmark not defined.



21.A.124 Application

Error! Bookmark not defined.

GM 21.A.124(a) Application – Application form

Error! Bookmark not defined.

GM 21.A.124(b)(1)(i) Applicability – Inappropriate approval under Subpart G

Error! Bookmark not defined.

GM 21.A.124(b)(1)(ii) Certification or approval needed in advance of the issue of a POA

Error! Bookmark not defined.

GM 21.A.124(b)(2) Application – Minimum information to include with the application

Error! Bookmark not defined.

21.A.125A Issue of a letter of agreement

Error! Bookmark not defined.

GM No 1 to 21.A.125A Letter of agreement – Meaning of individual

Error! Bookmark not defined.

GM No 1 to 21.A.125A(b) Letter of agreement – Contents of the Manual

Error! Bookmark not defined.

GM No 2 to 21.A.125A(b) Letter of agreement – Production Inspection System: Functional Tests

Error! Bookmark not defined.

GM 21.A.125A(c) Letter of agreement – Assistance

Error! Bookmark not defined.

21.A.125B Findings

Error! Bookmark not defined.

GM No 1 to 21.A.125B(a) Uncontrolled non-compliance with applicable design data

Error! Bookmark not defined.

GM No 2 to 21.A.125B(a) Examples for level one findings

Error! Bookmark not defined.

21.A.125C Duration and continued validity

Error! Bookmark not defined.

21.A.126 Production inspection system

Error! Bookmark not defined.

GM 21.A.126 Production inspection system

Error! Bookmark not defined.

GM 21.A.126(a)(1) Production inspection system – Conformity of supplied parts, appliances and material

Error! Bookmark not defined.

GM 21.A.126(a)(2) Production inspection system – Identification of incoming materials and parts

Error! Bookmark not defined.



GM No 1 to 21.A.126(a)(3) Production inspection system – List of specifications
Error! Bookmark not defined.

GM No 2 to 21.A.126(a)(3) Production inspection system – Means of checking of the
production processes
Error! Bookmark not defined.

GM 21.A.126(a)(4) Production inspection system – Applicable design/production data
procedures
Error! Bookmark not defined.

GM 21.A.126(b)(1) Production inspection system – Inspection of parts in process
Error! Bookmark not defined.

GM 21.A.126(b)(2) Production inspection system – Suitable storage and protection

Error! Bookmark not defined.

GM 21.A.126(b)(3) Production inspection system – Use of derived data instead of
original design data
Error! Bookmark not defined.

GM 21.A.126(b)(4) Production inspection system – Segregation of rejected material

Error! Bookmark not defined.

GM 21.A.126(b)(5) Production inspection system – Engineering and manufacturing
review procedure
Error! Bookmark not defined.

GM 21.A.126(b)(6) Production inspection system – Recording and record keeping

Error! Bookmark not defined.

21.A.127 Tests: aircraft
Error! Bookmark not defined.

GM 21.A.127 Approved production ground and flight tests
Error! Bookmark not defined.

21.A.128 Tests: engines and propellers
Error! Bookmark not defined.

GM No 1 to 21.A.128 Acceptable functional test – Engines
Error! Bookmark not defined.

GM No 2 to 21.A.128 Acceptable functional test – Variable pitch propellers
Error! Bookmark not defined.

GM No 3 to 21.A.128 Acceptable functional test – Engines and Propellers
Error! Bookmark not defined.

21.A.129 Obligations of the manufacturer
Error! Bookmark not defined.

GM 21.A.129(a) Availability for inspection by the competent authority
Error! Bookmark not defined.

	UK Reg 748/2012 Annex I Part 21 And its AMC/GM	Compiled 3 Sep 2022 Issue 1b
---	---	---

AMC No 1 to 21.A.129(c) Obligations of the manufacturer – Conformity of prototype models and test specimens

Error! Bookmark not defined.

AMC No 2 to 21.A.129(c) Obligations of the manufacturer – Conformity with Applicable Design Data

Error! Bookmark not defined.

AMC No 3 to 21.A.129(c) Obligations of the manufacturer – Condition for safe operation

Error! Bookmark not defined.

21.A.130 Statement of conformity

Error! Bookmark not defined.

AMC No 1 to 21.A.130(b) Statement of conformity for complete aircraft

Error! Bookmark not defined.

AMC No 2 to 21.A.130(b) Statement of Conformity for Products (other than complete aircraft), parts, appliances and materials - The Authorised Release Certificate (CAA Form 1)

Error! Bookmark not defined.

GM 21.A.130(b)(4) Definitions of engine type certification date and production date

Error! Bookmark not defined.

AMC 21.A.130(b)(4)(i) Applicable engine exhaust emissions requirements

Error! Bookmark not defined.

AMC 21.A.130(b)(4)(ii) Applicable aeroplane CO2 emissions requirements

Error! Bookmark not defined.

AMC 21.A.130(c) Validation of the Statement of Conformity

Error! Bookmark not defined.

AMC 21.A.130(c)(1) Initial transfer of ownership

Error! Bookmark not defined.

SUBPART G —PRODUCTION ORGANISATION APPROVAL

Error! Bookmark not defined.

21.A.131 Scope

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.131 Scope

Error! Bookmark not defined.

GM-ELA No 1 to 21.A.131 Scope – General applicability of AMC-ELA and the use of AMC-ELA as a baseline outside its scope

Error! Bookmark not defined.

GM-ELA No 2 to 21.A.131 Scope – AMC-ELA as a complete, self-contained set of AMC

Error! Bookmark not defined.

GM-ELA No 3 to 21.A.131 Scope – Applicable design data

Error! Bookmark not defined.



GM-ELA No 4 to 21.A.131 Scope – Explanation of terms used in AMC-ELA

Error! Bookmark not defined.

GM 21.A.131 Scope – Applicable design data

Error! Bookmark not defined.

21.A.133 Eligibility

Error! Bookmark not defined.

GM 21.A.133(a) Eligibility – Approval appropriate for showing conformity

Error! Bookmark not defined.

AMC No 1 to 21.A.133(b) and (c) Eligibility – Link between design and production organisations

Error! Bookmark not defined.

AMC No 2 to 21.A.133(b) and (c) Eligibility – Link between design and production organisations

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.133(c) Eligibility – Link between design and production

Error! Bookmark not defined.

AMC-ELA No 2 to 21.A.133(c) Eligibility – Link between design and production

Error! Bookmark not defined.

21.A.134 Application

Error! Bookmark not defined.

GM 21.A.134 Application – Application form and manner

Error! Bookmark not defined.

GM-ELA No 1 to 21.A.134 Scope – Application

Error! Bookmark not defined.

21.A.135 Issue of production organisation approval

Error! Bookmark not defined.

21.A.139 Quality System

Error! Bookmark not defined.

GM-ELA No 1 to 21.A.139(a) Quality system

Error! Bookmark not defined.

GM-ELA No 2 to 21.A.139(a) Quality system

Error! Bookmark not defined.

GM No 1 to 21.A.139(a) Quality System

Error! Bookmark not defined.

GM No 2 to 21.A.139(a) Quality System – Conformity of supplied parts or appliances

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.139(b)(1) Quality system – Control procedures

Error! Bookmark not defined.

GM-ELA No 1 to 21.A.139(b)(1) Quality system – Control procedures

Error! Bookmark not defined.



GM-ELA No 2 to 21.A.139(b)(1) Conformity of supplied parts or appliances

Error! Bookmark not defined.

GM 21.A.139(b)(1) Quality System – Elements of the quality system

Error! Bookmark not defined.

AMC No 1 to 21.A.139(b)(1)(ii) Vendor and sub-contractor assessment, audit and control – Production Organisation Approval (POA) holder using documented arrangements with other parties for assessment and surveillance of a supplier.

Error! Bookmark not defined.

AMC No 2 to 21.A.139(b)(1)(ii) Vendor and sub-contractor assessment, audit and control – Production Organisation Approval (POA) holder using other party supplier certification

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.139(b)(2) Quality system – Independent quality assurance function

Error! Bookmark not defined.

GM-ELA No 1 to 21.A.139(b)(2) Quality system – Independent quality assurance function

Error! Bookmark not defined.

GM No 1 to 21.A.139(b)(2) Quality System – Independent quality assurance function

Error! Bookmark not defined.

GM No 2 to 21.A.139(b)(2) Quality System – Adequacy of procedures and monitoring function

Error! Bookmark not defined.

21.A.143 Exposition

Error! Bookmark not defined.

AMC to 21.A.143, 21.A.243, 21.A.14(b), 21.A.112B(b) and 21.A.432B(b) Flight Test Operations Manual (FTOM)

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.143 Exposition

Error! Bookmark not defined.

GM-ELA No 1 to 21.A.143 Exposition

Error! Bookmark not defined.

GM 21.A.143 Exposition – Production Organisation Exposition (POE)

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.143(a)(13) Exposition – Policies and procedures related to flight test

Error! Bookmark not defined.

AMC-ELA No 2 to 21.A.143(a)(13) Exposition – Policies and procedures related to flight test

Error! Bookmark not defined.



21.A.145 Approval requirements

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.145(a) Approval requirements – General

Error! Bookmark not defined.

GM 21.A.145(a) Approval requirements

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.145(b) Approval requirements – Airworthiness noise fuel venting and exhaust emissions data

Error! Bookmark not defined.

GM 21.A.145(b)(2) Approval requirements – Airworthiness and environmental protection, production/quality data procedures

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.145(c) Approval requirements – Management and staff

Error! Bookmark not defined.

GM 21.A.145(c)(1) Approval requirements – Accountable manager

Error! Bookmark not defined.

GM 21.A.145(c)(2) Approval requirements – Responsible managers

Error! Bookmark not defined.

AMC 21.A.145(d)(1) Approval requirements – Certifying staff

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.145(d)(1) Approval requirements – Certifying staff

Error! Bookmark not defined.

AMC 21.A.145(d)(2) Approval requirements – Record of certifying staff

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.145(d)(2) Approval requirements – Records of certifying staff

Error! Bookmark not defined.

AMC 21.A.145(d)(3) Approval requirements – Evidence of authorization

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.145(d)(3) Approval requirements – Evidence of authorization

Error! Bookmark not defined.

21.A.147 Changes to the approved production organization

Error! Bookmark not defined.

GM-ELA No 1 to 21.A.147 Changes to the approved production organization

Error! Bookmark not defined.

GM 21.A.147(a) Changes to the approved production organisation – Significant changes

Error! Bookmark not defined.

21.A.148 Changes of location

Error! Bookmark not defined.



AMC 21.A.148 Changes of location – Management during change of location
Error! Bookmark not defined.

GM-ELA No 1 to 21.A.148 Changes of location
Error! Bookmark not defined.

21.A.149 Transferability
Error! Bookmark not defined.

GM 21.A.149 Transferability
Error! Bookmark not defined.

21.A.151 Terms of approval
Error! Bookmark not defined.

GM 21.A.151 Terms of approval – Scope and categories
Error! Bookmark not defined.

21.A.153 Changes to the terms of approval
Error! Bookmark not defined.

AMC 21.A.153 Changes to the terms of approval – Application for a change to the terms of approval
Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.153 Changes to the terms of approval – Application for a change to the terms of approval
Error! Bookmark not defined.

21.A.157 Investigations
Error! Bookmark not defined.

GM 21.A.157 Investigations – Arrangements
Error! Bookmark not defined.

GM-ELA No 1 to 21.A.157 Investigations – Arrangements
Error! Bookmark not defined.

21.A.158 Findings
Error! Bookmark not defined.

GM-ELA No 1 to 21.A.158 Findings
Error! Bookmark not defined.

GM No 1 to 21.A.158(a) Uncontrolled non-compliance with applicable design data
Error! Bookmark not defined.

GM No 2 to 21.A.158(a) Examples of level one findings
Error! Bookmark not defined.

21.A.159 Duration and continued validity
Error! Bookmark not defined.

GM 21.A.159(a)(3) Evidence of a lack of satisfactory control
Error! Bookmark not defined.

21.A.163 Privileges
Error! Bookmark not defined.



AMC No 1 to 21.A.163(c) Computer generated signature and electronic exchange of the CAA Form 1

Error! Bookmark not defined.

AMC No 2 to 21.A.163(c) Completion of CAA Form 1

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.163(c) Privileges to issue authorised release certificates

Error! Bookmark not defined.

AMC 21.A.163(d) Privileges – Maintenance

Error! Bookmark not defined.

AMC 21.A.163(e) Procedure for the issue of a permit to fly including approval of the flight conditions

Error! Bookmark not defined.

21.A.165 Obligations of the holder

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.165(a);(b) Obligations of the holder – Basic working document

Error! Bookmark not defined.

GM 21.A.165(a) Obligations of the holder – Basic working document

Error! Bookmark not defined.

GM-ELA No 1 to 21.A.165(c) Obligations of the holder

Error! Bookmark not defined.

GM No 1 to 21.A.165(c) Obligations of the holder – Conformity of prototype models and test specimens

Error! Bookmark not defined.

GM No 2 to 21.A.165(c) Obligations of holder – Conformity with type design

Error! Bookmark not defined.

GM No 3 to 21.A.165(c) Obligations of the holder – Condition for safe operation

Error! Bookmark not defined.

GM No 4 to 21.A.165(c) Airworthiness Release or Conformity Certificate

Error! Bookmark not defined.

AMC 21.A.165(c)(3) Applicable engine exhaust emissions requirements

Error! Bookmark not defined.

GM 21.A.165(c)(3) Definitions of engine type certification date and production date

Error! Bookmark not defined.

AMC 21.A.165(c)(4) Applicable aeroplane CO2 emissions requirements

Error! Bookmark not defined.

GM 21.A.165(d) and (h) Obligations of the holder – Recording and archiving system

Error! Bookmark not defined.



AMC-ELA No 1 to 21.A.165(d) Obligations of the holder – Recording and archiving system

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.165(e);(f) Obligations of the holder – Reporting to the design holder

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.165(g) Obligations of the holder – Continuing airworthiness assistance

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.165(d);(h) Obligations of the holder – Recording and archiving system

Error! Bookmark not defined.

SUBPART H —CERTIFICATES OF AIRWORTHINESS AND RESTRICTED CERTIFICATES OF AIRWORTHINESS

Error! Bookmark not defined.

21.A.171 Scope

Error! Bookmark not defined.

21.A.172 Eligibility

Error! Bookmark not defined.

21.A.173 Classification

Error! Bookmark not defined.

21.A.174 Application

Error! Bookmark not defined.

21.A.175 Language

Error! Bookmark not defined.

21.A.177 Amendment or modification

Error! Bookmark not defined.

21.A.179 Transferability and re-issuance [..]

Error! Bookmark not defined.

21.A.180 Inspections

Error! Bookmark not defined.

21.A.181 Duration and continued validity

Error! Bookmark not defined.

21.A.182 Aircraft identification

Error! Bookmark not defined.

SUBPART I —NOISE CERTIFICATES

Error! Bookmark not defined.

21.A.201 Scope

Error! Bookmark not defined.

21.A.203 Eligibility

Error! Bookmark not defined.



21.A.204 Application

Error! Bookmark not defined.

21.A.207 Amendment or modification

Error! Bookmark not defined.

21.A.209 Transferability and re-issuance [...]

Error! Bookmark not defined.

21.A.210 Inspections

Error! Bookmark not defined.

21.A.211 Duration and continued validity

Error! Bookmark not defined.

SUBPART J —DESIGN ORGANISATION APPROVAL

Error! Bookmark not defined.

21.A.231 Scope

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.231 Scope

Error! Bookmark not defined.

GM-ELA No 1 to 21.A.231 Scope

Error! Bookmark not defined.

GM-ELA No 2 to 21.A.231 Scope – AMC-ELA as a complete, self- contained set of AMC

Error! Bookmark not defined.

GM-ELA No 3 to 21.A.231 Scope – Explanation of terms used in AMC-ELA

Error! Bookmark not defined.

21.A.233 Eligibility

Error! Bookmark not defined.

21.A.234 Application

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.234 Application

Error! Bookmark not defined.

21.A.235 Issue of design organisation approval

Error! Bookmark not defined.

21.A.239 Design assurance system

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.239(a) Design assurance system – Definition

Error! Bookmark not defined.

AMC-ELA No 2 to 21.A.239(a) Design assurance system – Ensuring compliance

Error! Bookmark not defined.

AMC-ELA No 3 to 21.A.239(a) Design assurance system – Discharge of responsibilities

Error! Bookmark not defined.

	UK Reg 748/2012 Annex I Part 21 And its AMC/GM	Compiled 3 Sep 2022 Issue 1b
---	---	---

AMC-ELA No 4 to 21.A.239(a) Design assurance system – Independent system monitoring

Error! Bookmark not defined.

GM No 1 to 21.A.239(a) Design assurance system

Error! Bookmark not defined.

GM No 2 to 21.A.239(a) Design assurance system for minor changes to type design or minor repairs to products

Error! Bookmark not defined.

AMC 21.A.239(a)(3) Design assurance system – Independent system monitoring

Error! Bookmark not defined.

AMC 21.A.239(b) Design assurance system – Independent checking function of the demonstration of compliance

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.239(b) Design assurance system – Independent checking function

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.239(c) Design assurance system – Acceptability of tasks performed by external parties

Error! Bookmark not defined.

GM 21.A.239(c) Design assurance system

Error! Bookmark not defined.

21.A.243 Data

Error! Bookmark not defined.

AMC to 21.A.143, 21.A.243, 21.A.14(b), 21.A.112B(b) and 21.A.432B(b) Flight Test Operations Manual (FTOM)

Error! Bookmark not defined.

AMC No 1 to 21.A.243(a) Data requirements

Error! Bookmark not defined.

AMC No 2 to 21.A.243(a) Data requirements – Model content of handbook for organisations designing minor changes to type design or minor repairs to products

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.243 Data – Design organisation handbook

Error! Bookmark not defined.

AMC-ELA No 2 to 21.A.243 Data – Policies and procedures in relation to flight tests

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.243(d) Data – Statement of qualifications and experience

Error! Bookmark not defined.

GM No 1 to 21.A.243(d) Statement of qualifications and experience

Error! Bookmark not defined.



GM No 2 to 21.A.243(d) Data requirements – Statement of the qualification and experience – Organisations that design minor changes to type designs or minor repairs to products

Error! Bookmark not defined.

21.A.245 Approval requirements

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.245 Approval requirements

Error! Bookmark not defined.

GM No 1 to 21.A.245 Requirements for approval

Error! Bookmark not defined.

GM No 2 to 21.A.245 Requirements for approval – Organisations designing minor changes to type design or minor repairs to products

Error! Bookmark not defined.

21.A.247 Changes in design assurance system

Error! Bookmark not defined.

GM 21.A.247 Significant changes in the design assurance system

Error! Bookmark not defined.

GM-ELA No 1 to 21.A.247 Changes in design assurance system

Error! Bookmark not defined.

21.A.249 Transferability

Error! Bookmark not defined.

GM 21.A.249 Transferability

Error! Bookmark not defined.

21.A.251 Terms of approval

Error! Bookmark not defined.

GM No 1 to 21.A.251 Terms of approval

Error! Bookmark not defined.

GM No 2 to 21.A.251 Terms of approval – Organisations that design minor changes to type design or minor repairs to products

Error! Bookmark not defined.

GM-ELA No 1 to 21.A.251 Terms of approval

Error! Bookmark not defined.

21.A.253 Changes to the terms of approval

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.253 Changes to the terms of approval

Error! Bookmark not defined.

21.A.257 Investigations

Error! Bookmark not defined.

GM-ELA No 1 to 21.A.257 Investigations – Arrangements

Error! Bookmark not defined.



GM 21.A.257(a) Investigations

Error! Bookmark not defined.

21.A.258 Findings

Error! Bookmark not defined.

21.A.259 Duration and continued validity

Error! Bookmark not defined.

21.A.263 Privileges

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.263 Privileges and AMC-ELA No 1 to 21.A.265(h) Obligations of the holder

Error! Bookmark not defined.

AMC No 1 to 21.A.263(c)(1) Procedure for the classification of changes to a type certificate (TC) or to a supplemental type certificate (STC) and of repair designs as 'minor' or 'major'

Error! Bookmark not defined.

AMC No 2 to 21.A.263(c)(1) Privileges – Organisations that design minor changes to a type certificate (TC) or a supplemental type certificate (STC) and minor repairs to products: classification procedure

Error! Bookmark not defined.

AMC No 1 to 21.A.263(c)(2) Procedure for the approval of minor changes to a type certificate (TC), APU UKTSO or a supplemental type certificate (STC), and minor repairs

Error! Bookmark not defined.

AMC No 2 to 21.A.263(c)(2) Privileges – Organisations that design minor changes to a type certificate (TC), APU UKTSO or a supplemental type certificate (STC) and minor repairs to products: procedure for the approval of minor changes to a TC, APU UKTSO or minor repairs

Error! Bookmark not defined.

AMC No 3 to 21.A.263(c)(2) Procedure for the approval of minor changes to a type certificate (TC) which affect the aircraft flight manual (AFM)

Error! Bookmark not defined.

AMC 21.A.263(c)(6) Procedure for the approval of the conditions for issuing a permit to fly

Error! Bookmark not defined.

AMC 21.A.263(c)(7) Procedure for the issue of a permit to fly

Error! Bookmark not defined.

AMC No 1 to 21.A.263(c)(5), (8) and (9) Scope and criteria

Error! Bookmark not defined.

AMC No 2 to 21.A.263(c)(5), (8) and (9) Procedure for the approval of a major repair, a major change to a type certificate (TC), or a supplemental type certificate (STC) by a design organisation approval (DOA) holder under their privileges

Error! Bookmark not defined.



GM 21.A.263(c)(5), (8) and (9) Numbering system for supplemental type certificates (STCs), major changes and major repairs issued by design organisation approval (DOA) holders, and information to CAA

Error! Bookmark not defined.

21.A.265 Obligations of the holder

Error! Bookmark not defined.

AMC 21.A.265(a) Administration of the Handbook

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.265(a) Obligations of the holder – Administration of the design organisation handbook

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.265(b) Obligations of the holder – Use of the design organisation handbook as a basic working document

Error! Bookmark not defined.

GM 21.A.265(b) Use of the Handbook

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.265(c) Obligations of the holder – Determination of compliance

Error! Bookmark not defined.

AMC-ELA No 1 to 21.A.265(e) Obligations of the holder – Providing information in response to airworthiness directives

Error! Bookmark not defined.

GM 21.A.265(h) Designation of data and information issued under the authority of a design organisation approval (DOA) holder

Error! Bookmark not defined.

SUBPART K —PARTS AND APPLIANCES

Error! Bookmark not defined.

21.A.301 Scope

Error! Bookmark not defined.

21.A.303 Compliance with applicable requirements

Error! Bookmark not defined.

AMC 21.A.303(c) Standard Parts

Error! Bookmark not defined.

GM No 2 to 21.A.303(c) Officially recognised Standards

Error! Bookmark not defined.

21.A.305 Approval of parts and appliances

Error! Bookmark not defined.

21.A.307 Release of parts and appliances for installation

Error! Bookmark not defined.

(SUBPART L — NOT APPLICABLE)

Error! Bookmark not defined.



SUBPART M —REPAIRS

Error! Bookmark not defined.

21.A.431 A Scope

Error! Bookmark not defined.

GM 21.A.431A Scope

Error! Bookmark not defined.

GM 21.A.431A(e) Repairs to UK technical standard order (UKTSO) articles other than auxiliary power units (APUs)

Error! Bookmark not defined.

21.A.431B Standard repairs

Error! Bookmark not defined.

GM 21.A.431B Standard repairs – Certification Specifications

Error! Bookmark not defined.

21.A.432A Eligibility

Error! Bookmark not defined.

21.A.432B Demonstration of capability

Error! Bookmark not defined.

GM 21.A.432B(b) Alternative procedures

Error! Bookmark not defined.

AMC to 21.A.143, 21.A.243, 21.A.14(b), 21.A.112B(b) and 21.A.432B(b) Flight Test Operations Manual (FTOM)

Error! Bookmark not defined.

21.A.432C Application for a repair design approval

Error! Bookmark not defined.

AMC 21.A.432C(a) Form and manner

Error! Bookmark not defined.

AMC 21.A.432C(b) Certification programme for a repair design approval

Error! Bookmark not defined.

21.A.433 Requirements for approval of a repair design

Error! Bookmark not defined.

AMC 21.A.433(b) and 21.A.447 Repair design and record keeping

Error! Bookmark not defined.

21.A.435 Classification and approval of repair designs

Error! Bookmark not defined.

GM 21.A.435(a) Classification of repairs

Error! Bookmark not defined.

GM 21.A.435(b) Repair design approval

Error! Bookmark not defined.

21.A.437 Issue of a repair design approval

Error! Bookmark not defined.



21.A.439 Production of repair parts

Error! Bookmark not defined.

GM 21.A.439 Production of repair parts

Error! Bookmark not defined.

21.A.441 Repair embodiment

Error! Bookmark not defined.

GM 21.A.441 Repair embodiment

Error! Bookmark not defined.

21.A.443 Limitations

Error! Bookmark not defined.

GM 21.A.443 Limitations

Error! Bookmark not defined.

21.A.445 Unrepaired damage

Error! Bookmark not defined.

21.A.447 Record-keeping

Error! Bookmark not defined.

AMC 21.A.433(b) and 21.A.447 Repair design and record keeping

Error! Bookmark not defined.

21.A.449 Instructions for continued airworthiness

Error! Bookmark not defined.

21.A.451 Obligations and **UKPA** marking

Error! Bookmark not defined.

SUBPART N — (NOT APPLICABLE)

Error! Bookmark not defined.

SUBPART O — **UNITED KINGDOM** TECHNICAL STANDARD ORDER
AUTHORISATIONS

Error! Bookmark not defined.

21.A.601 Scope

Error! Bookmark not defined.

21.A.602A Eligibility

Error! Bookmark not defined.

21.A.602B Demonstration of capability

Error! Bookmark not defined.

AMC 21.A.602B(b)(2) Procedures for UKTSO authorisations

Error! Bookmark not defined.

21.A.603 Application

Error! Bookmark not defined.

21.A.604 **UKTSO** authorisation for an auxiliary power unit (APU)

Error! Bookmark not defined.

21.A.605 Data requirements

Error! Bookmark not defined.



AMC 21.A.605(a)(1) Certification programme

Error! Bookmark not defined.

GM 21.A.605(b) Reporting from the compliance demonstration process and updates to the certification programme

Error! Bookmark not defined.

21.A.606 Requirements for the issuance of an UKTSO authorisation

Error! Bookmark not defined.

AMC 21.A.606(d) Declaration

Error! Bookmark not defined.

21.A.607 UKTSO authorisation privileges

Error! Bookmark not defined.

21.A.608 Declaration of Design and Performance (DDP)

Error! Bookmark not defined.

AMC 21.A.608 Declaration of Design and Performance

Error! Bookmark not defined.

21.A.609 Obligations of holders of UKTSO authorisations

Error! Bookmark not defined.

21.A.610 Approval for deviation

Error! Bookmark not defined.

21.A.611 Design changes

Error! Bookmark not defined.

GM to 21.A.611 Design change UK

Error! Bookmark not defined.

21.A.613 Record-keeping

Error! Bookmark not defined.

21.A.615 Inspection by the CAA

Error! Bookmark not defined.

21.A.619 Duration and continued validity

Error! Bookmark not defined.

21.A.621 Transferability

Error! Bookmark not defined.

SUBPART P —PERMIT TO FLY

Error! Bookmark not defined.

GM to Subpart P

Error! Bookmark not defined.

21.A.701 Scope

Error! Bookmark not defined.

GM 21.A.701 Scope

Error! Bookmark not defined.



GM 21.A.701(a) Permit to fly when a certificate of airworthiness or a restricted certificate of airworthiness is not appropriate

Error! Bookmark not defined.

21.A.703 Eligibility

Error! Bookmark not defined.

GM 21.A.703 Applicant for a permit to fly

Error! Bookmark not defined.

21.A.705 Competent authority

Error! Bookmark not defined.

GM 21.A.705 CAA

Error! Bookmark not defined.

21.A.707 Application for permit to fly

Error! Bookmark not defined.

GM 21.A.707(b) Application

Error! Bookmark not defined.

21.A.708 Flight conditions

Error! Bookmark not defined.

GM 21.A.708(b)(6) Continuing airworthiness

Error! Bookmark not defined.

GM No 1 to 21.A.708(c) Safe flight

Error! Bookmark not defined.

GM No 2 to 21.A.708(c) Substantiations

Error! Bookmark not defined.

GM No 3 to 21.A.708(c) Operation of Overweight Aircraft

Error! Bookmark not defined.

GM 21.A.708(d) Control of aircraft configuration

Error! Bookmark not defined.

21.A.709 Application for approval of flight conditions

Error! Bookmark not defined.

AMC 21.A.709(b) Submission of documentation supporting the establishment of flight conditions

Error! Bookmark not defined.

21.A.710 Approval of flight conditions

Error! Bookmark not defined.

GM 21.A.710 Approval of flight conditions

Error! Bookmark not defined.

21.A.711 Issue of a permit to fly

Error! Bookmark not defined.

GM 21.A.711(e) Additional conditions and restrictions

Error! Bookmark not defined.



21.A.713 Changes

Error! Bookmark not defined.

GM 21.A.713 Changes

Error! Bookmark not defined.

21.A.715 Language

Error! Bookmark not defined.

21.A.719 Transferability

Error! Bookmark not defined.

GM 21.A.719 Transfer of a permit to fly

Error! Bookmark not defined.

21.A.721 Inspections

Error! Bookmark not defined.

21.A.723 Duration and continued validity

Error! Bookmark not defined.

21.A.725 Renewal of permit to fly

Error! Bookmark not defined.

21.A.727 Obligations of the holder of a permit to fly

Error! Bookmark not defined.

21.A.729 Record-keeping

Error! Bookmark not defined.

SUBPART Q —IDENTIFICATION OF PRODUCTS, PARTS AND APPLIANCES

Error! Bookmark not defined.

21.A.801 Identification of products

Error! Bookmark not defined.

21.A.803 Handling of identification data

Error! Bookmark not defined.

21.A.804 Identification of parts and appliances

Error! Bookmark not defined.

GM 21.A.804(a)(1) Identification of parts and appliances

Error! Bookmark not defined.

21.A.805 Identification of critical parts

Error! Bookmark not defined.

21.A.807 Identification of UKTSO articles

Error! Bookmark not defined.

SECTION B PROCEDURES FOR THE CAA

Error! Bookmark not defined.

SUBPART A —GENERAL PROVISIONS

Error! Bookmark not defined.

21.B.5 Scope

Error! Bookmark not defined.



21.B.20 Obligations of the competent authority
Error! Bookmark not defined.

GM 21.B.20 Responsibility for implementation
Error! Bookmark not defined.

21.B.25 Requirements for the organisation of the competent authority
Error! Bookmark not defined.

GM 21.B.25(a) Organisation
Error! Bookmark not defined.

GM 21.B.25(b) Resources
Error! Bookmark not defined.

GM 21.B.25(c) Qualification and training
Error! Bookmark not defined.

21.B.30 Documented procedures
Error! Bookmark not defined.

AMC 21.B.30(a) Documented procedures
Error! Bookmark not defined.

21.B.35 Changes in organisation and procedures
Error! Bookmark not defined.

21.B.40 Resolution of disputes
Error! Bookmark not defined.

21.B.45 Reporting/coordination
Error! Bookmark not defined.

21.B.55 Record-keeping
Error! Bookmark not defined.

GM 21.B.55 Record keeping for design approvals transferred to the CAA
Error! Bookmark not defined.

21.B.60 Airworthiness directives
Error! Bookmark not defined.

SUBPART B —TYPE-CERTIFICATES AND RESTRICTED TYPE-CERTIFICATES

Error! Bookmark not defined.

21.B.70 Certification specifications
Error! Bookmark not defined.

21.B.75 Special conditions
Error! Bookmark not defined.

GM 21.B.75 Special conditions
Error! Bookmark not defined.

21.B.80 Type-certification basis for a type-certificate or restricted type-certificate
Error! Bookmark not defined.

	<p>UK Reg 748/2012 Annex I Part 21 And its AMC/GM</p>	<p>Compiled 3 Sep 2022 Issue 1b</p>
---	--	--

GM 21.B.80 Type-certification basis for a type certificate (TC) or restricted type certificate (RTC)

Error! Bookmark not defined.

21.B.82 Operational suitability data certification basis for an aircraft type-certificate or restricted type-certificate

Error! Bookmark not defined.

GM 21.B.82 Operational suitability data (OSD) certification basis for an aircraft type certificate (TC) or restricted type certificate (RTC)

Error! Bookmark not defined.

21.B.85 Designation of applicable environmental protection requirements and certification specifications for a type-certificate or restricted type-certificate

Error! Bookmark not defined.

21.B.100 Level of involvement

Error! Bookmark not defined.

AMC 21.B.100(a) and 21.A.15(b)(6) Level of involvement (LoI) in a certification project for a type certificate (TC), a major change to a TC, a supplemental type certificate (STC), a major repair design or UK technical standard order (UKTSO) authorisation for an auxiliary power unit (APU)

Error! Bookmark not defined.

AMC No 1 to 21.B.100(b) Level of involvement (LoI) in projects for minor changes and minor repairs

Error! Bookmark not defined.

AMC No 2 to 21.B.100(b) Level of involvement (LoI) in UK technical standard order authorisation (UKTSOA) projects

Error! Bookmark not defined.

21.B.103 Issuance of a type-certificate or restricted type-certificate

Error! Bookmark not defined.

SUBPART C — (NOT APPLICABLE)

Error! Bookmark not defined.

SUBPART D —CHANGES TO TYPE-CERTIFICATES AND RESTRICTED TYPE-CERTIFICATES

Error! Bookmark not defined.

[21.B.105 Type-certification basis, environmental protection requirements and operational suitability data certification basis for a major change to a type-certificate

Error! Bookmark not defined.

21.B.107 Issuance of an approval of a change to a type-certificate

Error! Bookmark not defined.

GM 21.B.107 and 21.B.111 Operational suitability data (OSD) considerations for the approval of changes to type certificates (TCs) or supplemental type certificates (STCs)

Error! Bookmark not defined.



SUBPART E —SUPPLEMENTAL TYPE-CERTIFICATES

Error! Bookmark not defined.

21.B.109 Type-certification basis, environmental protection requirements and operational suitability data certification basis for a supplemental type-certificate

Error! Bookmark not defined.

21.B.111 Issuance of a supplemental type-certificate

Error! Bookmark not defined.

SUBPART F —PRODUCTION WITHOUT PRODUCTION ORGANISATION APPROVAL

Error! Bookmark not defined.

21.B.120 Investigation

Error! Bookmark not defined.

AMC 21.B.120(a) Investigation team – Qualification criteria for the investigation team members

Error! Bookmark not defined.

AMC 21.B.120(c)(1) Evaluation of applications

Error! Bookmark not defined.

GM 21.B.120(c)(3) Investigation preparation and planning

Error! Bookmark not defined.

GM 21.B.120(c)(5) and (6) Auditing and investigation findings

Error! Bookmark not defined.

21.B.125 Findings

Error! Bookmark not defined.

GM 21.B.125(a) Objective evidence

Error! Bookmark not defined.

21.B.130 Issue of letter of agreement

Error! Bookmark not defined.

AMC 21.B.130 Issue of the letter of agreement

Error! Bookmark not defined.

GM 21.B.130(b) Issue of the letter of agreement

Error! Bookmark not defined.

21.B.135 Maintenance of the letter of agreement

Error! Bookmark not defined.

21.B.140 Amendment of a letter of agreement

Error! Bookmark not defined.

AMC 21.B.140 Amendment of a letter of agreement

Error! Bookmark not defined.

21.B.145 Limitation, suspension and revocation of a letter of agreement

Error! Bookmark not defined.

21.B.150 Record-keeping

Error! Bookmark not defined.

	UK Reg 748/2012 Annex I Part 21 And its AMC/GM	Compiled 3 Sep 2022 Issue 1b
---	---	---

GM 21.B.150(d) Record keeping – Traceability of release certificates

Error! Bookmark not defined.

SUBPART G —PRODUCTION ORGANISATION APPROVAL

Error! Bookmark not defined.

21.B.220 Investigation

Error! Bookmark not defined.

GM-ELA No 1 to 21.B.220 Investigation

Error! Bookmark not defined.

GM-ELA No 1 to 21.B.220(a) Investigation team

Error! Bookmark not defined.

GM 21.B.220(a) Investigation team

Error! Bookmark not defined.

AMC-ELA No 1 to 21.B.220(b) Extent of the investigation

Error! Bookmark not defined.

AMC 21.B.220(c) Procedures for investigation – Evaluation of applications

Error! Bookmark not defined.

AMC-ELA No 1 to 21.B.220(c) Procedures for investigation – Evaluation of applications

Error! Bookmark not defined.

AMC-ELA No 2 to 21.B.220(c) Procedures for investigation – General

Error! Bookmark not defined.

GM No 1 to 21.B.220(c) Procedures for investigation – Investigation preparation and planning

Error! Bookmark not defined.

GM No 2 to 21.B.220(c) Procedures for investigation – General

Error! Bookmark not defined.

GM No 3 to 21.B.220(c) Procedures for investigation – POA applications received from organisations with facilities/partners/ suppliers/sub-contractors located in a third country

Error! Bookmark not defined.

GM No 4 to 21.B.220(c) Procedures for investigation – Competent authority surveillance of suppliers of a POA holder located in other States

Error! Bookmark not defined.

21.B.225 Findings

Error! Bookmark not defined.

GM 21.B.225(a) Objective evidence

Error! Bookmark not defined.

AMC 21.B.225(a) Notification of findings

Error! Bookmark not defined.

21.B.230 Issue of certificate

Error! Bookmark not defined.



AMC No 1 to 21.B.230 Issue of the certificate
Error! Bookmark not defined.

GM-ELA No 1 to 21.B.230 Issue of certificate
Error! Bookmark not defined.

21.B.235 Continued surveillance
Error! Bookmark not defined.

AMC-ELA No 1 to 21.B.235 Continued surveillance
Error! Bookmark not defined.

GM-ELA No 1 to 21.B.235 Continued surveillance
Error! Bookmark not defined.

GM 21.B.235(a)(4) Guide to the conduct of monitoring production standards.
Error! Bookmark not defined.

GM 21.B.235(b) Maintenance of the POA - Work allocation within the CAA
Error! Bookmark not defined.

GM 21.B.235(b) and (c) Continued surveillance
Error! Bookmark not defined.

AMC 21.B.235(c) Continuation of POA
Error! Bookmark not defined.

21.B.240 Amendment of a production organisation approval
Error! Bookmark not defined.

AMC No 1 to 21.B.240 Application for significant changes or variation of scope and terms of the POA
Error! Bookmark not defined.

AMC-ELA No 1 to 21.B.240 Amendment of a production organisation approval
Error! Bookmark not defined.

21.B.245 Suspension and revocation of a production organisation approval
Error! Bookmark not defined.

AMC-ELA No 1 to 21.B.245 Suspension and revocation of a production organisation approval
Error! Bookmark not defined.

GM 21.B.245 Continued validity
Error! Bookmark not defined.

AMC 21.B.245 Corrective action plan
Error! Bookmark not defined.

21.B.260 Record-keeping
Error! Bookmark not defined.

SUBPART H —CERTIFICATES OF AIRWORTHINESS AND RESTRICTED
CERTIFICATES OF AIRWORTHINESS
Error! Bookmark not defined.

21.B.320 Investigation
Error! Bookmark not defined.



GM 21.B.320(b)(6) Investigation

Error! Bookmark not defined.

21.B.325 Issue of airworthiness certificate

Error! Bookmark not defined.

GM 21.B.325(a) Airworthiness certificates

Error! Bookmark not defined.

GM 21.B.325(b) Completion of the Airworthiness Review Certificate

Error! Bookmark not defined.

21.B.326 Certificate of airworthiness

Error! Bookmark not defined.

21.B.327 Restricted certificate of airworthiness

Error! Bookmark not defined.

21.B.330 Suspension and revocation of certificates of airworthiness and restricted certificates of airworthiness

Error! Bookmark not defined.

21.B.345 Record-keeping

Error! Bookmark not defined.

SUBPART I —NOISE CERTIFICATES

Error! Bookmark not defined.

21.B.420 Investigation

Error! Bookmark not defined.

21.B.425 Issue of noise certificates

Error! Bookmark not defined.

GM 21.B.425(a) Noise certificates

Error! Bookmark not defined.

21.B.430 Suspension and revocation of a noise certificate

Error! Bookmark not defined.

21.B.445 Record-keeping

Error! Bookmark not defined.

SUBPART J —DESIGN ORGANISATION APPROVAL

Error! Bookmark not defined.

SUBPART K —PARTS AND APPLIANCES

Error! Bookmark not defined.

(SUBPART L — NOT APPLICABLE)

Error! Bookmark not defined.

SUBPART M —REPAIRS

Error! Bookmark not defined.

21.B.450 Type-certification basis and environmental protection requirements for a repair design approval

Error! Bookmark not defined.



21.B.453 Issuance of a repair design approval

Error! Bookmark not defined.

(SUBPART N — NOT APPLICABLE)

Error! Bookmark not defined.

SUBPART O —EUROPEAN TECHNICAL STANDARD ORDER

Error! Bookmark not defined.

21.B.480 Issuance of an UKTSO authorisation

Error! Bookmark not defined.

SUBPART P —PERMIT TO FLY

Error! Bookmark not defined.

21.B.520 Investigation

Error! Bookmark not defined.

AMC 21.B.520(b) Application for a permit to fly

Error! Bookmark not defined.

21.B.525 Issue of permits to fly

Error! Bookmark not defined.

21.B.530 Revocation of permits to fly

Error! Bookmark not defined.

21.B.545 Record-keeping

Error! Bookmark not defined.

SUBPART Q —IDENTIFICATION OF PRODUCTS, PARTS AND APPLIANCES

Error! Bookmark not defined.

Appendices

Error! Bookmark not defined.

CAA FORMS

Error! Bookmark not defined.

Appendix I Authorised Release Certificate — EASA Form 1 referred to in Annex I
(Part 21)

Error! Bookmark not defined.

Instructions for the use of CAA Form 1

Error! Bookmark not defined.

1.PURPOSE AND USE

Error! Bookmark not defined.

2.GENERAL FORMAT

Error! Bookmark not defined.

[Appendix II (Form 15a ARC)

Error! Bookmark not defined.

Appendix III

Error! Bookmark not defined.

Appendix IV

Error! Bookmark not defined.



Appendix V

Error! Bookmark not defined.

Restricted Certificate of Airworthiness — CAA Form 24

Error! Bookmark not defined.

Appendix VI

Error! Bookmark not defined.

Certificate of Airworthiness — CAA Form 25

Error! Bookmark not defined.

Appendix VII CAA Form 45 Noise Certificate

Error! Bookmark not defined.

Appendix VIII

Error! Bookmark not defined.

Aircraft statement of conformity — CAA Form 52

Error! Bookmark not defined.

Instructions for the use of the Aircraft Statement of Conformity EASA Form 52

Error! Bookmark not defined.

Appendix IX

Error! Bookmark not defined.

CERTIFICATE OF RELEASE TO SERVICE — CAA FORM 53

Error! Bookmark not defined.

COMPLETION INSTRUCTIONS

Error! Bookmark not defined.

Appendix X

Error! Bookmark not defined.

Production Organisation Approval Certificates referred to in Subpart G of Annex I
(Part 21) — CAA Form 55

Error! Bookmark not defined.

Appendix XI

Error! Bookmark not defined.

Letter of agreement — CAA Form 65 — referred to in Subpart F of Annex I (Part 21)

Error! Bookmark not defined.

[Appendix XII (F8)

Error! Bookmark not defined.

Categories of flight tests and associated flight test crew qualifications

Error! Bookmark not defined.

A. General

Error! Bookmark not defined.

B .Definitions

Error! Bookmark not defined.

	<p>UK Reg 748/2012 Annex I Part 21 And its AMC/GM</p>	<p>Compiled 3 Sep 2022 Issue 1b</p>
---	--	--

C. Categories of flight tests

Error! Bookmark not defined.

[D .Competence and experience of pilots and lead flight test engineers [F8]

Error! Bookmark not defined.

E .Competence and experience of other flight test engineers

Error! Bookmark not defined.

AMC No 1 to Appendix XII – Training courses for Lead Flight Test Engineers (LFTEs)

Error! Bookmark not defined.

AMC No 2 to Appendix XII – Conditions for appointment of Lead Flight Test Engineers (LFTEs) – Medical fitness

Error! Bookmark not defined.

AMC No 3 to Appendix XII – Demonstration of compliance with competence level 1 or level 2 requirements

Error! Bookmark not defined.

GM No 1 to Appendix XII – Lead Flight Test Engineer (LFTE)

Error! Bookmark not defined.

GM No 2 to Appendix XII – Competence and experience of pilots for Category 3 and Category 4 flight tests and of Lead Flight Test Engineers (LFTEs)

Error! Bookmark not defined.

GM No 3 to Appendix XII. Demonstration of compliance with competence level 1 or level 2 requirements

Error! Bookmark not defined.

ANNEX II

Error! Bookmark not defined.

ANNEX III

Error! Bookmark not defined.

 <p>Working in partnership</p>	UK Reg 748/2012 Annex I Part 21 And its AMC/GM	Compiled 3 Sep 2022 Issue 1b
---	---	---

INTRODUCTION

COMMISSION REGULATION (EU) No 748/2012

of 3 August 2012

laying down implementing rules for the airworthiness and environmental certification of aircraft and related products, parts and appliances, as well as for the certification of design and production organisations

(recast)

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EC) No 216/2008 of the European Parliament and of the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, and repealing Council Directive 91/670/EEC, Regulation (EC) No 1592/2002 and Directive 2004/36/EC(1), and in particular Articles 5(5) and 6(3) thereof,

Whereas:

- (1) Commission Regulation (EC) No 1702/2003 of 24 September 2003 laying down implementing rules for the airworthiness and environmental certification of aircraft and related products, parts and appliances, as well as for the certification of design and production organisations(2) has been substantially amended several times(3). Since further amendments are to be made, it should be recast in the interests of clarity.
- (2) Regulation (EC) No 216/2008 establishes common essential requirements to provide for a high uniform level of civil aviation safety and environmental protection. It requires the Commission to adopt the necessary implementing rules to ensure their uniform application. It establishes the 'European Aviation Safety Agency' (hereinafter referred to as the 'Agency') to assist the Commission in the development of such implementing rules.
- (3) It is necessary to lay down common technical requirements and administrative procedures to ensure the airworthiness and environmental compatibility of aeronautical products, parts and appliances, subject to Regulation (EC) No 216/2008. Such requirements and procedures should specify the conditions to issue, maintain, amend, suspend or revoke the appropriate certificates.
- (4) Organisations involved in the design and production of products, parts and appliances should be required to comply with certain technical requirements in order to demonstrate their capability and means to discharge their obligations and

	<p>UK Reg 748/2012 Annex I Part 21 And its AMC/GM</p>	<p>Compiled 3 Sep 2022 Issue 1b</p>
---	--	--

associated privileges. The Commission is required to lay down measures to specify conditions to issue, maintain, amend, suspend or revoke certificates attesting such compliance.

(5) In laying down measures for the implementation of common essential requirements in the field of airworthiness, the Commission must take care that they reflect the state of the art and the best practices, take into account worldwide aircraft experience and scientific and technical progress and allow for immediate reaction to established causes of accidents and serious incidents.

(6) The need to ensure uniformity in the application of common airworthiness and environmental requirements for aeronautical products, parts and appliances requires that common procedures be followed by the competent authorities of the Member States and, where applicable, the CAA to assess compliance with these requirements. The CAA should develop certification specifications and guidance material to facilitate the necessary regulatory uniformity.

(7) It is necessary to recognise the continuing validity of certificates issued before the entry into force of Regulation (EC) No 1702/2003, in accordance with Article 69 of Regulation (EC) No 216/2008.

(8) In order to maintain a high uniform level of aviation safety in Europe, it is necessary to introduce changes to requirements and procedures for the certification of aircraft and related products, parts and appliances and of design and production organisations, in particular to elaborate the rules related to the demonstration of compliance with the type-certification basis and environmental protection requirements and to introduce the possibility to choose to comply with later standards for changes to type-certificates.

(9) The concept and complexity of auxiliary power units (APU) resembles that of aircraft engines and in some cases APU designs are even derived from engine designs. Changes to provisions for repairs to APU are therefore needed to restore consistency with repairs process to engines.

(10) In order to subject non-complex motor-powered aircraft, recreational aircraft and related products, parts and appliances to measures that are proportionate to their simple design and type of operation, while maintaining a high uniform level of aviation safety in Europe, it is necessary to introduce changes to requirements and procedures for the certification of those aircraft and related products, parts and appliances and of design and production organisations and in particular, for the owners of European Light Aircraft below 2 000 kg (ELA2) or below 1 200 kg (ELA1), to introduce the possibility to accept certain not safety critical parts for installation without an EASA Form 1.

(11) The CAA prepared draft implementing rules and submitted them as opinions No 01/2009 on 'Possibility to deviate from airworthiness code in case of design changes', No 02/2009 on 'Repair and design changes to European Technical Standard Order', No 01/2010 on 'SubPart J DOA' and Opinion No 01/2011 on 'ELA

	<p>UK Reg 748/2012 Annex I Part 21 And its AMC/GM</p>	<p>Compiled 3 Sep 2022 Issue 1b</p>
---	--	--

Process and “standard changes and repairs” to the Commission in accordance with Article 19(1) of Regulation (EC) No 216/2008.

(12) The measures provided for in this Regulation are in accordance with the opinion of the European Aviation Safety Agency Committee established by Article 65(1) of Regulation (EC) No 216/2008,
HAS ADOPTED THIS REGULATION:

ARTICLES

Article 1 Scope and definitions

1. This Regulation lays down, in accordance with Article 5(5) and Article 6(3) of Regulation (EC) No 216/2008, common technical requirements and administrative procedures for the airworthiness and environmental certification of products, parts and appliances specifying:

- (a) the issue of type-certificates, restricted type-certificates, supplemental type-certificates and changes to those certificates;
- (b) the issue of certificates of airworthiness, restricted certificates of airworthiness, permits to fly and authorised release certificates;
- (c) the issue of repair design approvals;
- (d) the showing of compliance with environmental protection requirements;
- (e) the issue of noise certificates;
- (f) the identification of products, parts and appliances;
- (g) the certification of certain parts and appliances;
- (h) the certification of design and production organisations;
- (i) the issue of airworthiness directives.

2. For the purpose of this Regulation, the following definitions shall apply:

- (a) ‘ JAA’ means the ‘Joint Aviation Authorities’;
- (b) ‘ JAR’ means ‘Joint Aviation Requirements’;

	<p>UK Reg 748/2012 Annex I Part 21 And its AMC/GM</p>	<p>Compiled 3 Sep 2022 Issue 1b</p>
---	--	--

(c) 'Part 21' means the requirements and procedures for the certification of aircraft and related products, parts and appliances, and of design and production organisations laid down in Annex I to this Regulation;

[F1(d) ' Provision repealed before document was retained.

(e) 'principal place of business' means the head office or registered office of the undertaking within which the principal financial functions and operational control of the activities referred to in this Regulation are exercised;

(f) 'article' means any part and appliance to be used on civil aircraft;

(g) 'UKTSO' means United Kingdom Technical Standard Order]. The United Kingdom Technical Standard Order is a detailed airworthiness specification issued by the Civil Aviation Authority (the 'CAA') to ensure compliance with the requirements of this Regulation as a minimum performance standard for specified articles;

(h) 'UKPA ' means United Kingdom Part Approval. United Kingdom Part Approval of an article means the article has been produced in accordance with approved design data not belonging to the type-certificate holder of the related product, except for UKTSO articles;

(i)' ELA1 aircraft' means the following manned European Light Aircraft:

(i) an aeroplane with a Maximum Take-off Mass (MTOM) of 1 200 kg or less that is not classified as complex motor-powered aircraft;

(ii) a sailplane or powered sailplane of 1 200 kg MTOM or less;

(iii) a balloon with a maximum design lifting gas or hot air volume of not more than 3 400 m³ for hot air balloons, 1 050 m³ for gas balloons, 300 m³ for tethered gas balloons;

(iv) an airship designed for not more than 4 occupants and a maximum design lifting gas or hot air volume of not more than 3 400 m³ for hot air airships and 1 000 m³ for gas airships;

(j) 'ELA2 aircraft' means the following manned European Light Aircraft:

(i) an aeroplane with a Maximum Take-off Mass (MTOM) of 2 000 kg or less that is not classified as complex motor-powered aircraft;

(ii) a sailplane or powered sailplane of 2 000 kg MTOM or less;

(iii) a balloon;

(iv) a hot air airship;

	<p>UK Reg 748/2012 Annex I Part 21 And its AMC/GM</p>	<p>Compiled 3 Sep 2022 Issue 1b</p>
---	--	--

- (v) a gas airship complying with all of the following characteristics:
- 3 % maximum static heaviness,
 - Non-vectorred thrust (except reverse thrust),
 - Conventional and simple design of: structure, control system and ballonnet system,
 - Non-power assisted controls;

(vi) a Very Light Rotorcraft[F2;]

[F3(k) 'Operational Suitability Data (OSD) ' means data, which are part of an aircraft type-certificate, restricted type-certificate or supplemental type-certificate, consisting of all of the following:

- (i) the minimum syllabus of pilot type rating training, including determination of type rating;
- (ii) the definition of scope of the aircraft validation source data to support the objective qualification of simulators or the provisional data to support their interim qualification;
- (iii) the minimum syllabus of maintenance certifying staff type rating training, including determination of type rating;
- (iv) determination of type or variant for cabin crew and type specific data for cabin crew;
- (v) the master minimum equipment list.]

Textual Amendments

F1 Deleted by [Commission Delegated Regulation \(EU\) 2020/570 of 28 January 2020 amending and correcting Regulation \(EU\) No 748/2012 as regards the alignment of rules for continuing airworthiness of aircraft and aeronautical products, parts and appliances with Regulation \(EU\) No 1321/2014 \(Text with EEA relevance\).](#)

F2 Substituted by [Commission Delegated Regulation \(EU\) 2019/897 of 12 March 2019 amending Regulation \(EU\) No 748/2012 as regards the inclusion of risk-based compliance verification in Annex I and the implementation of requirements for environmental protection \(Text with EEA relevance\).](#)

F3 Inserted by [Commission Delegated Regulation \(EU\) 2019/897 of 12 March 2019 amending Regulation \(EU\) No 748/2012 as regards the inclusion of risk-based compliance verification in Annex I and the implementation of requirements for environmental protection \(Text with EEA relevance\).](#)

 <p>Working in partnership</p>	UK Reg 748/2012 Annex I Part 21 And its AMC/GM	Compiled 3 Sep 2022 Issue 1b
---	---	---

Article 2 Products, parts and appliances certification

1. Products, parts and appliances shall be issued certificates as specified in Annex I (Part 21).
2. By way of derogation from point 1, aircraft, including any installed product, part and appliance, which are not registered in **the United Kingdom** shall be exempted from the provisions of Subparts H and I of Annex I (Part 21). They shall also be exempted from the provisions of Subpart P of Annex I (Part 21) except when aircraft identification marks are prescribed by the **Secretary of State**.

	<p>UK Reg 748/2012 Annex I Part 21 And its AMC/GM</p>	<p>Compiled 3 Sep 2022 Issue 1b</p>
---	--	--

Article 3 Continued validity of type-certificates and related certificates of airworthiness

1. With regard to products which had a type-certificate, or a document allowing the issuing of a certificate of airworthiness, issued before 28 September 2003 by a Member State (or the United Kingdom), the following provisions shall apply:

(a) the product shall be deemed to have a type-certificate issued in accordance with this Regulation when:

(i) [F1its type-certification basis was:

the JAA type-certification basis, for products that have been certificated under JAA procedures, as defined in their JAA data sheet, or

for other products, the type-certification basis as defined in the type-certificate data sheet of the State of design, if that State of design was:

a Member State, unless The CAA determines, taking into account, in particular, certification specifications used and service experience, that such type-certification basis does not provide for a level of safety equivalent to that required by Regulation (EC) No 216/2008 and this Regulation, or

a State with which a Member State had concluded a bilateral airworthiness agreement or similar arrangement under which such products have been certificated on the basis of the certification specifications of that State of design, unless The CAA determines that such certification specifications or service experience or the safety system of that State of design do not provide for a level of safety equivalent to that required by Regulation (EC) No 216/2008 and this Regulation.

[...]

(ii) the environmental protection requirements were those laid down in Annex 16 to the Chicago Convention, as applicable to the product;

(iii) the applicable airworthiness directives were those of the State of design;

(b) the design of an individual aircraft, which was on the register of a Member State before 28 September 2003, shall be deemed to have been approved in accordance with this Regulation when:

	<p>UK Reg 748/2012 Annex I Part 21 And its AMC/GM</p>	<p>Compiled 3 Sep 2022 Issue 1b</p>
---	--	--

- (i) its basic type design was part of a type-certificate referred to in point (a);
- (ii) all changes to this basic type design, which were not under the responsibility of the type-certificate holder, had been approved; and
- (iii) the airworthiness directives issued or adopted by the Member State of registry before 28 September 2003 were complied with, including any variations to the airworthiness directives of the State of design agreed by the Member State of registry.

2. With regard to products for which a type-certification process was proceeding through the JAA or a Member State on 28 September 2003, the following shall apply:

- (a) if a product is under certification by several Member States, the most advanced project shall be used as the reference;
- (b) points **21.A.15(a)**, (b) and (c) of Annex I (Part 21) shall not apply;

[F1(c) by way of derogation from point **21.A.17A** of Annex I (Part 21), the type-certification basis shall be that established by the JAA or, where applicable, the Member State at the date of application for the approval;

- (d) compliance findings made under JAA or Member State procedures shall be deemed to have been made by the Agency for the purpose of complying with points 21.A.20(a) and (d) of Annex I (Part 21).

3. With regard to products that have a national type-certificate, or equivalent, and for which the approval process of a change carried out by a Member State was not finalised at the time when the type-certificate had to be in accordance with this Regulation, the following shall apply:

- (a) if an approval process is being carried out by several Member States, the most advanced project shall be used as the reference;
- (b) point **21.A.93** of Annex I (Part 21) shall not apply;
- (c) the applicable type-certification basis shall be that established by the JAA or, where applicable, the Member State at the date of application for the approval of change;
- (d) compliance findings made under JAA or Member State procedures shall be deemed to have been made by the CAA for the purpose of complying with points **21.A.103(a)(2)** and (b) of Annex I (Part 21).

4. With regard to products that had a national type-certificate, or equivalent, and for which the approval process of a major repair design carried out by a Member State was not finalised at the time when the type-certificate had to be determined in

 <p>Working in partnership</p>	UK Reg 748/2012 Annex I Part 21 And its AMC/GM	Compiled 3 Sep 2022 Issue 1b
---	---	---

accordance with this Regulation, compliance findings made under JAA or Member State procedures shall be deemed to have been made by the CAA for the purpose of complying with point **21.A.433(a)** of Annex I (Part 21).

5. A certificate of airworthiness issued by a Member State attesting conformity with a type-certificate determined in accordance with point 1 shall be deemed to comply with this Regulation.

Textual Amendments

F1

Substituted by Commission Regulation (EU) No 69/2014 of 27 January 2014 amending Regulation (EU) No 748/2012 laying down implementing rules for the airworthiness and environmental certification of aircraft and related products, parts and appliances, as well as for the certification of design and production organisations (Text with EEA relevance).

 <p>Working in partnership</p>	UK Reg 748/2012 Annex I Part 21 And its AMC/GM	Compiled 3 Sep 2022 Issue 1b
---	---	---

Article 4 Continued validity of supplemental type-certificates

1. With regard to supplemental type-certificates issued by a Member State or the United Kingdom under JAA procedures or applicable national procedures and with regard to changes to products proposed by persons other than the type-certificate holder of the product, which were approved by a Member State or the **United Kingdom** under applicable national procedures, if the supplemental type-certificate, or change, was valid on 28 September 2003, the supplemental type-certificate, or change shall be deemed to have been issued under this Regulation.

2. With regard to supplemental type-certificates for which a certification process was being carried out by a Member State on 28 September 2003 under applicable JAA supplemental type-certificate procedures and with regard to major changes to products, proposed by persons other than the type-certificate holder of the product, for which a certification process was being carried out by a Member State on 28 September 2003 under applicable national procedures, the following shall apply:

- (a) if a certification process was being carried out by several Member States, the most advanced project shall be used as the reference;
- (b) point 21.A.113 (a) and (b) of Annex I (Part 21) shall not apply;
- (c) the applicable certification basis shall be that established by the JAA or, where applicable, the Member State at the date of application for the supplemental type-certificate or the major change approval;
- (d) The compliance findings made under JAA or Member State procedures shall be deemed to have been made by the CAA for the purpose of complying with point 21.A.115(a) of Annex I (Part 21).

 <p>Working in partnership</p>	UK Reg 748/2012 Annex I Part 21 And its AMC/GM	Compiled 3 Sep 2022 Issue 1b
---	---	---

F1 Article 5 [F1Continued operation of certain aircraft registered by Member States]

.....

Provision repealed before document was retained.

Textual Amendments

F1

Deleted by Commission Regulation (EU) No 69/2014 of 27 January 2014 amending Regulation (EU) No 748/2012 laying down implementing rules for the airworthiness and environmental certification of aircraft and related products, parts and appliances, as well as for the certification of design and production organisations (Text with EEA relevance)

	<p>UK Reg 748/2012 Annex I Part 21 And its AMC/GM</p>	<p>Compiled 3 Sep 2022 Issue 1b</p>
---	--	--

Article 6 Continued validity of parts and appliances certificates

1. Approvals of parts and appliances issued by a Member State **[or the United Kingdom]** and valid on 28 September 2003 shall be deemed to have been issued in accordance with this Regulation.
2. With regard to parts and appliances for which an approval or authorisation process was being carried out by a Member State on 28 September 2003, the following shall apply:
 - (a) if an authorisation process was being carried out by several Member States, the most advanced project shall be used as the reference;
 - (b) point 21.A.603 of Annex I (Part 21) shall not apply;
 - (c) the applicable data requirements laid down in point 21.A.605 of Annex I (Part 21) shall be those established by the relevant Member State, at the date of application for the approval or authorisation;
 - (d) compliance findings made by the relevant Member State shall be deemed to have been made by the CAA for the purpose of complying with point 21.A.606(b) of Annex I (Part 21).

Article 7 Permit to fly

The conditions determined before 28 March 2007 by the Member States **[or the United Kingdom]** for permits to fly or other airworthiness certificate issued for aircraft which did not hold a certificate of airworthiness or restricted certificate of airworthiness issued under this Regulation, are deemed to have been determined in accordance with this Regulation, unless the CAA has determined before 28 March 2008 that such conditions do not provide for a level of safety equivalent to that required by Regulation (EC) No 216/2008 or this Regulation.

[F1 Article 7a Operational suitability data

1. The holder of an aircraft type-certificate issued before 17 February 2014 intending to deliver a new aircraft to an EU operator **[or a UK operator]** on or after 17 February 2014 shall obtain approval in accordance with point 21.A.21(e) of Annex I (Part 21) except for the minimum syllabus of maintenance certifying staff type rating training and except for aircraft validation source data to support the objective qualification of simulator(s). The approval shall be obtained not later than 18 December 2015 or before the aircraft is operated by an EU operator **[or a UK operator]**, whichever is the latest. The operational suitability data may be limited to the model which is delivered.

	<p>UK Reg 748/2012 Annex I Part 21 And its AMC/GM</p>	<p>Compiled 3 Sep 2022 Issue 1b</p>
---	--	--

2. The applicant for an aircraft type-certificate for which the application was filed before 17 February 2014 and for which a type-certificate is not issued before 17 February 2014 shall obtain approval in accordance with point 21.A.21(e) of Annex I (Part 21) except for the minimum syllabus of maintenance certifying staff type rating training and for aircraft validation source data to support the objective qualification of simulator(s). The approval shall be obtained not later than 18 December 2015 or before the aircraft is operated by an EU operator or a UK operator, whichever is the latest. Compliance findings made by the authorities in Operational Evaluation Board processes conducted under the responsibility of the JAA or the CAA before the entry into force of this Regulation shall be accepted by the CAA without further verification.

3. Operational Evaluation Board reports and master minimum equipment lists issued in accordance with JAA procedures or by the CAA before the entry into force of this Regulation shall be deemed to constitute the operational suitability data approved in accordance with point 21.A.21(e) of Annex I (Part 21) and shall be included in the relevant type-certificate. Before 18 June 2014 the relevant type-certificate holders shall propose the CAA a division of the operational suitability data in mandatory data and non-mandatory data.

4. Holders of a type-certificate including operational suitability data shall be required to obtain approval of an extension of the scope of their design organisation approval or procedures alternative to design organisation approval, as applicable, to include operational suitability aspects before 18 December 2015 .]

Textual Amendments

F1

Inserted by Commission Regulation (EU) No 69/2014 of 27 January 2014 amending Regulation (EU) No 748/2012 laying down implementing rules for the airworthiness and environmental certification of aircraft and related products, parts and appliances, as well as for the certification of design and production organisations (Text with EEA relevance).

Article 8 Design organisations

1. An organisation responsible for the design of products, parts and appliances or for changes or repairs thereto shall demonstrate its capability in accordance with Annex I (Part 21).

2. By way of derogation from point 1, an organisation whose principal place of business is in a foreign State may demonstrate its capability by holding a certificate issued by that State for the product, part and appliance for which it applies, provided:

- (a) that State is the State of design; and
- (b) the CAA has determined that the system of that State includes the same independent level of checking of compliance as provided by this Regulation, either through an equivalent system of approvals of organisations or through direct involvement of the competent authority of that State.

	<p>UK Reg 748/2012 Annex I Part 21 And its AMC/GM</p>	<p>Compiled 3 Sep 2022 Issue 1b</p>
---	--	--

3. Design organisation approvals issued or recognised by a Member State or the **United Kingdom** in accordance with the JAA requirements and procedures and valid before 28 September 2003 shall be deemed to comply with this Regulation.

Article 9 Production organisations

1. An organisation responsible for the manufacture of products, parts and appliances shall demonstrate its capability in accordance with the provisions of Annex I (Part 21).

2. By way of derogation from point 1, a manufacturer whose principal place of business is in a **[foreign]** State may demonstrate its capability by holding a certificate issued by that State for the product, part and appliance for which it applies, provided:
(a) that State is the State of manufacture; and

(b) the **CAA** has determined that the system of that State includes the same independent level of checking of compliance as provided by this Regulation, either through an equivalent system of approvals of organisations or through direct involvement of the competent authority of that State.

3. Production organisation approvals issued or recognised by a Member State **[or the United Kingdom]** in accordance with the JAA requirements and procedures and valid before 28 September 2003 shall be deemed to comply with this Regulation.

[F1

4. By way of derogation from paragraph 1, the production organisation may apply to the **CAA** for exemptions from the environmental requirements referred to in the first subparagraph of Article 9(2) of Regulation (EU) 2018/1139 (1) .]

Textual Amendments

F1 Inserted by Commission Delegated Regulation (EU) 2019/897 of 12 March 2019 amending Regulation (EU) No 748/2012 as regards the inclusion of risk-based compliance verification in Annex I and the implementation of requirements for environmental protection (Text with EEA relevance).

(1) [F1 Regulation (EU) 2018/1139 of the European Parliament and of the Council of 4 July 2018 on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency, and amending Regulations (EC) No 2111/2005, (EC) No 1008/2008, (EU) No 996/2010, (EU) No 376/2014 and Directives 2014/30/EU and 2014/53/EU of the European Parliament and of the Council, and repealing Regulations (EC) No 552/2004 and (EC) No 216/2008 of the European Parliament and of the Council and Council Regulation (EEC) No 3922/91 (OJ L 212, 22.8.2018, p. 1).]

 <p>Working in partnership</p>	UK Reg 748/2012 Annex I Part 21 And its AMC/GM	Compiled 3 Sep 2022 Issue 1b
---	---	---

Textual Amendments

F1

Inserted by Commission Delegated Regulation (EU) 2019/897 of 12 March 2019 amending Regulation (EU) No 748/2012 as regards the inclusion of risk-based compliance verification in Annex I and the implementation of requirements for environmental protection (Text with EEA relevance).

Article 10 CAA measures

1. The **CAA** shall develop acceptable means of compliance (hereinafter called 'AMC') that competent authorities, organisations and personnel may use to demonstrate compliance with the provisions of the Annex I (Part 21) to this Regulation.
2. The AMC issued by the **CAA** shall neither introduce new requirements nor alleviate the requirements of the Annex I (Part 21) to this Regulation.
3. Without prejudice to Articles 54 and 55 of Regulation (EC) No 216/2008, when the acceptable means of compliance issued by the **CAA** are used, the related requirements of the Annex I (Part 21) to this Regulation shall be considered as met without further demonstration.

Article 11 Repeal

Regulation (EC) No 1702/2003 is repealed.

References to the repealed Regulation shall be construed as references to this Regulation and shall be read in accordance with the correlation table in Annex III.

Article 12 Entry into force

This Regulation shall enter into force on the twentieth day following that of its publication in the Official Journal of the European Union.

 <p>Working in partnership</p>	UK Reg 748/2012 Annex I Part 21 And its AMC/GM	Compiled 3 Sep 2022 Issue 1b
---	---	---

Annex I PART 21

PART 21 Certification of aircraft and related products, parts and appliances, and of design and production organisations

21.1 General

Point 21.1 is repealed by Aviation Safety (Amendment etc.) (EU Exit) Regulations 2019/645 Pt 4(1) reg.194(2) (December 31, 2020: repeal has effect subject to savings and transitional arrangements specified in the SI 2019/645 reg.427 and Sch.3 para.1)

 <p>Working in partnership</p>	UK Reg 748/2012 Annex I Part 21 And its AMC/GM	Compiled 3 Sep 2022 Issue 1b
---	---	---

SECTION A TECHNICAL REQUIREMENTS

SUBPART A —GENERAL PROVISIONS

21.A.1 Scope

This Section establishes general provisions governing the rights and obligations of the applicant for, and holder of, any certificate issued or to be issued in accordance with this Section.

21.A.2 Undertaking by another person than the applicant for, or holder of, a certificate

The actions and obligations required to be undertaken by the holder of, or applicant for, a certificate for a product, part or appliance under this Section may be undertaken on its behalf by any other natural or legal person, provided the holder of, or applicant for, that certificate can show that it has made an agreement with the other person such as to ensure that the holder's obligations are and will be properly discharged.

21.A.3A Failures, malfunctions and defects

(a) System for Collection, Investigation and Analysis of Data

The holder of a type-certificate, restricted type-certificate, supplemental type-certificate, United Kingdom Technical Standard Order (UKTSO) authorisation, major repair design approval or any other relevant approval deemed to have been issued under this Regulation shall have a system for collecting, investigating and analysing reports of and information related to failures, malfunctions, defects or other occurrences which cause or might cause adverse effects on the continuing airworthiness of the product, part or appliance covered by the type-certificate, restricted type-certificate, supplemental type-certificate, UKTSO authorisation, major repair design approval or any other relevant approval deemed to have been issued under this Regulation. Information about this system shall be made available to all known operators of the product, part or appliance and, on request, to any person authorised under other associated implementing Regulations.

	UK Reg 748/2012 Annex I Part 21 And its AMC/GM	Compiled 3 Sep 2022 Issue 1b
---	---	---

(b) Reporting to the CAA

1. The holder of a type-certificate, restricted type-certificate, supplemental type-certificate, UKTSO authorisation, major repair design approval or any other relevant approval deemed to have been issued under this Regulation shall report to the CAA any failure, malfunction, defect or other occurrence of which it is aware related to a product, part, or appliance covered by the type-certificate, restricted type-certificate, supplemental type-certificate, UKTSO authorisation, major repair design approval or any other relevant approval deemed to have been issued under this Regulation, and which has resulted in or may result in an unsafe condition.

2. These reports shall be made in a form and manner established by the CAA, as soon as practicable and in any case dispatched not later than 72 hours after the identification of the possible unsafe condition, unless exceptional circumstances prevent this.

(c) Investigation of Reported Occurrences

1. When an occurrence reported under point (b), or under points **21.A.129(f)(2)** or **21.A.165(f)(2)** results from a deficiency in the design, or a manufacturing deficiency, the holder of the type-certificate, restricted type-certificate, supplemental type-certificate, major repair design approval, UKTSO authorisation, or any other relevant approval deemed to have been issued under this Regulation, or the manufacturer as appropriate, shall investigate the reason for the deficiency and report to the CAA the results of its investigation and any action it is taking or proposes to take to correct that deficiency.

2. If the CAA finds that an action is required to correct the deficiency, the holder of the type-certificate, restricted type-certificate, supplemental type-certificate, major repair design approval, UKTSO authorisation, or any other relevant approval deemed to have been issued under this Regulation, or the manufacturer as appropriate, shall submit the relevant data to the CAA.

AMC No 1 to 21.A.3A(a) Collection, investigation and analysis of data related to Flammability Reduction Means (FRM) reliability

Holders of a type-certificate, restricted type-certificate, supplemental type-certificate or any other relevant approval deemed to have been issued under Part 21 and which have included a FRM in their design should assess on an on-going basis the effects of aeroplane component failures on FRM reliability. This should be part of the system for collection, investigation and analysis of data required by **21.A.3A(a)**. The applicant/holder should do the following:

(a) Demonstrate effective means to ensure collection of FRM reliability data. The means should provide data affecting FRM reliability, such as component failures.

	<p>UK Reg 748/2012 Annex I Part 21 And its AMC/GM</p>	<p>Compiled 3 Sep 2022 Issue 1b</p>
---	--	--

(b) Unless alternative reporting procedures are approved by the CAA, provide a report to the CAA every six months for the first five years after service introduction. After that period, continued reporting every six months may be replaced with other reliability tracking methods found acceptable to the CAA or eliminated if it is established that the reliability of the FRM meets, and will continue to meet, the exposure specifications of paragraph M25.1 of Appendix M to CS-25.

(c) Develop service instructions or revise the applicable aeroplane manual, according to a schedule approved by the CAA, to correct any failures of the FRM that occur in service that could increase any fuel tank's Fleet Average Flammability Exposure to more than that specified by paragraph M25.1 of Appendix M to CS-25.

AMC No 2 to 21.A.3A(a) Collection, investigation and analysis of data related to ETOPS significant occurrences

(1) Holders of a type-certificate, restricted type-certificate, supplemental type-certificate or any other relevant approval deemed to have been issued under Part 21 and which includes extended range operation with two-engined aeroplane (ETOPS) capability should implement a specific tracking, reporting and resolution system for ETOPS significant occurrences, suitable to ensure the initial and continued fleet compliance with the applicable ETOPS reliability objectives. This system should be part of the system for collection, investigation and analysis of data required by **21.A.3A(a)**.

Appropriate coordination should exist between engine TC holder, propeller TC holder and APU UKTSO authorisation holder with the aircraft TC holder to ensure compliance with the ETOPS reliability objectives.

(2) For tracking, reporting and resolution of ETOPS significant occurrences refer to the latest edition of AMC 20-6 (see AMC-20 document).

GM 21.A.3A(a) The system for collection, investigation and analysis of data

In the context of this requirement the word 'Collection' means the setting up of systems and procedures which will enable relevant malfunctions, failures and defects to be properly reported when they occur.

GM 21.A.3A(b) Occurrence reporting

For occurrence reporting, refer to the latest edition of AMC 20-8 (see AMC-20 document).

AMC 21.A.3A(b)(2) Reporting to the CAA

	<p>UK Reg 748/2012 Annex I Part 21 And its AMC/GM</p>	<p>Compiled 3 Sep 2022 Issue 1b</p>
---	--	--

Within the overall limit of 72 hours the degree of urgency for submission of a report should be determined by the level of hazard judged to have resulted from the occurrence.

Where an occurrence is judged by the person identifying the possible unsafe condition to have resulted in an immediate and particularly significant hazard the CAA expects to be advised immediately and by the fastest possible means (telephone, fax, email, telex, etc.) of whatever details are available at that time. This initial report must be followed up by a full written report within 72 hours. A typical example would be an uncontained engine failure resulting in damage to aircraft primary structure. Where the occurrence is judged to have resulted in a less immediate and less significant hazard, report submission may be delayed up to the maximum of three days in order to provide more details.

21.A.3B Airworthiness directives

(a) An airworthiness directive means a document issued or adopted by the CAA which mandates actions to be performed on an aircraft to restore an acceptable level of safety, when evidence shows that the safety level of this aircraft may otherwise be compromised.

(b) The CAA shall issue an airworthiness directive when:

1. an unsafe condition has been determined by the CAA to exist in an aircraft, as a result of a deficiency in the aircraft, or an engine, propeller, part or appliance installed on this aircraft; and
2. that condition is likely to exist or develop in other aircraft.

(c) When an airworthiness directive has to be issued by the CAA to correct the unsafe condition referred to in point (b), or to require the performance of an inspection, the holder of the type-certificate, restricted type-certificate, supplemental type-certificate, major repair design approval, UKTSO authorisation or any other relevant approval deemed to have been issued under this Regulation, shall:

1. propose the appropriate corrective action or required inspections, or both, and submit details of these proposals to the CAA for approval;
2. following the approval by the CAA of the proposals referred to under point (1), make available to all known operators or owners of the product, part or appliance and, on request, to any person required to comply with the airworthiness directive, appropriate descriptive data and accomplishment instructions.

(d) An airworthiness directive shall contain at least the following information:

1. an identification of the unsafe condition;

	<p>UK Reg 748/2012 Annex I Part 21 And its AMC/GM</p>	<p>Compiled 3 Sep 2022 Issue 1b</p>
---	--	--

2. an identification of the affected aircraft;
3. the action(s) required;
4. the compliance time for the required action(s);
5. the date of entry into force.

AMC 21.A.3B(b) Unsafe condition

An unsafe condition exists if there is factual evidence (from service experience, analysis or tests) that:

(a) An event may occur that would result in fatalities, usually with the loss of the aircraft, or reduce the capability of the aircraft or the ability of the crew to cope with adverse operating conditions to the extent that there would be:

- (i) A large reduction in safety margins or functional capabilities, or
- (ii) Physical distress or excessive workload such that the flight crew cannot be relied upon to perform their tasks accurately or completely, or
- (iii) Serious or fatal injury to one or more occupants unless it is shown that the probability of such an event is within the limit defined by the applicable certification specifications, or

(b) There is an unacceptable risk of serious or fatal injury to persons other than occupants, or

(c) Design features intended to minimise the effects of survivable accidents are not performing their intended function.

Note 1: Non-compliance with applicable certification specifications is generally considered as an unsafe condition, unless it is shown that possible events resulting from this non-compliance do not constitute an unsafe condition as defined under paragraphs (a), (b) and (c).

Note 2: An unsafe condition may exist even though applicable airworthiness requirements are complied with.

Note 3: The above definition covers the majority of cases where the CAA considers there is an unsafe condition. There may be other cases where overriding safety considerations may lead the CAA to issue an airworthiness directive.

	<p>UK Reg 748/2012 Annex I Part 21 And its AMC/GM</p>	<p>Compiled 3 Sep 2022 Issue 1b</p>
---	--	--

Note 4: There may be cases where events can be considered as an unsafe condition if they occur too frequently (significantly beyond the applicable safety objectives) and could eventually lead to consequences listed in paragraph (a) in specific operating environments. Although having less severe immediate consequences than those listed in paragraph (a), the referenced events may reduce the capability of the aircraft or the ability of the crew to cope with adverse operating conditions to the extent that there would be, for example, a significant reduction in safety margins or functional capabilities, a significant increase in crew workload, or in conditions impairing crew efficiency, or discomfort to occupants, possibly including injuries.

GM 21.A.3B(b) Determination of an unsafe condition

It is important to note that these guidelines are not exhaustive. However, this material is intended to provide guidelines and examples that will cover most cases, taking into account the applicable certification requirements.

1. INTRODUCTION

Certification or approval of a product, part or appliance is a demonstration of compliance with requirements which are intended to ensure an acceptable level of safety. This demonstration however includes certain accepted assumptions and predicted behaviours, such as:

- fatigue behaviour is based on analysis supported by test,
- modelling techniques are used for Aircraft Flight Manual performances calculations,
- the systems safety analyses give predictions of what the systems failure modes, effects and probabilities may be,
- the system components reliability figures are predicted values derived from general experience, tests or analysis,
- the crew is expected to have the skill to apply the procedures correctly, and
- the aircraft is assumed to be maintained in accordance with the prescribed instructions for continued airworthiness (or maintenance programme), etc.

In service experience, additional testing, further analysis, etc., may show that certain initially accepted assumptions are not correct. Thus, certain conditions initially demonstrated as safe, are revealed by experience as unsafe. In this case, it is necessary to mandate corrective actions in order to restore a level of safety consistent with the applicable certification requirements.

	<p>UK Reg 748/2012 Annex I Part 21 And its AMC/GM</p>	<p>Compiled 3 Sep 2022 Issue 1b</p>
---	--	--

See **AMC 21.A.3B(b)** for definition of 'unsafe condition' used in **21.A.3A(b)**.

2. GUIDELINES FOR ESTABLISHING IF A CONDITION IS UNSAFE

The following paragraphs give general guidelines for analysing the reported events and determining if an unsafe condition exists, and are provided for each type of product, part or appliance subject to a specific airworthiness approval: type-certificates (TC) or supplemental type-certificates (STC) for aircraft, engines or propellers, or United Kingdom Technical Standard Orders (UKTSO).

This analysis may be qualitative or quantitative, i.e. formal and quantitative safety analyses may not be available for older or small aircraft. In such cases, the level of analysis should be consistent with that required by the certification specifications and may be based on engineering judgement supported by service experience data.

2.1 Analysis method for aircraft

2.1.1 Accidents or incidents without any aircraft, engines, system, propeller or part or appliance malfunction or failure

When an accident/incident does not involve any component malfunction or failure but when a crew human factor has been a contributing factor, this should be assessed from a man-machine interface standpoint to determine whether the design is adequate or not. Paragraph 2.5 gives further details on this aspect.

2.1.2 Events involving an aircraft, engines, system, propeller or part or appliance failure, malfunction or defect

The general approach for analysis of in-service events caused by malfunctions, failures or defects will be to analyse the actual failure effects, taking into account previously unforeseen failure modes or improper or unforeseen operating conditions revealed by service experience.

These events may have occurred in service, or have been identified during maintenance, or been identified as a result of subsequent tests, analyses, or quality control.

These may result from a design deficiency or a production deficiency (non-conformity with the type design), or from improper maintenance. In this case, it should be determined if improper maintenance is limited to one aircraft, in which case an airworthiness directive may not be issued, or if it is likely to be a general problem due to improper design and/or maintenance procedures, as detailed in paragraph 2.5.

2.1.2.1 Flight

An unsafe condition exists if:

- There is a significant shortfall of the actual performance compared to the approved performance (taking into account the accuracy of the performance calculation method), or

	<p>UK Reg 748/2012 Annex I Part 21 And its AMC/GM</p>	<p>Compiled 3 Sep 2022 Issue 1b</p>
---	--	--

- The handling qualities, although having been found to comply with the applicable certification specifications at the time of initial approval, are subsequently shown by service experience not to comply.

2.1.2.2 Structural or mechanical systems

An unsafe condition exists if the deficiency may lead to a structural or mechanical failure which:

- Could exist in a Principal Structural Element that has not been qualified as damage tolerant. Principal Structural Elements are those which contribute significantly to carrying flight, ground, and pressurisation loads, and whose failure could result in a catastrophic failure of the aircraft. Typical examples of such elements are listed for large aeroplanes in AMC 25.571(a) 'Damage tolerance and fatigue evaluation of structure', and in the equivalent material for rotorcraft.
- Could exist in a Principal Structural Element that has been qualified as damage tolerant, but for which the established inspections, or other procedures, have been shown to be, or may be, inadequate to prevent catastrophic failure.
- Could reduce the structural stiffness to such an extent that the required flutter, divergence or control reversal margins are no longer achieved.
- Could result in the loss of a structural piece that could damage vital parts of the aircraft, cause serious or fatal injuries to persons other than occupants.
- Could, under ultimate load conditions, result in the liberation of items of mass that may injure occupants of the aircraft.
- Could jeopardise proper operation of systems and may lead to hazardous or catastrophic consequences, if this effect has not been taken adequately into account in the initial certification safety assessment.

2.1.2.3 Systems

The consequences of reported systems components malfunctions, failures or defects should be analysed.

For this analysis, the certification data may be used as supporting material, in particular systems safety analyses.

The general approach for analysis of in-service events caused by systems malfunctions, failures or defects will be to analyse the actual failure effects.

As a result of this analysis, an unsafe condition will be assumed if it cannot be shown that the safety objectives for hazardous and catastrophic failure conditions are still

	<p>UK Reg 748/2012 Annex I Part 21 And its AMC/GM</p>	<p>Compiled 3 Sep 2022 Issue 1b</p>
---	--	--

achieved, taking into account the actual failure modes and rates of the components affected by the reported deficiency.

The failure probability of a system component may be affected by:

- A design deficiency (the design does not meet the specified reliability or performance).
- A production deficiency (non-conformity with the certified type design) that affects either all components, or a certain batch of components.
- Improper installation (for instance, insufficient clearance of pipes to surrounding structure).
- Susceptibility to adverse environment (corrosion, moisture, temperature, vibrations etc.).
- Ageing effects (failure rate increase when the component ages).
- Improper maintenance.

When the failure of a component is not immediately detectable (hidden or latent failures), it is often difficult to have a reasonably accurate estimation of the component failure rate since the only data available are usually results of maintenance or flight crew checks. This failure probability should therefore be conservatively assessed.

As it is difficult to justify that safety objectives for the following systems are still met, a deficiency affecting these types of systems may often lead to a mandatory corrective action:

- back up emergency systems, or
- fire detection and protection systems (including shut off means).

Deficiencies affecting systems used during an emergency evacuation (emergency exits, evacuation assist means, emergency lighting system ...) and to locate the site of a crash (Emergency Locator Transmitter) will also often lead to mandatory corrective action.

2.1.2.4 Others

In addition to the above, the following conditions are considered unsafe:

- There is a deficiency in certain components which are involved in fire protection or which are intended to minimise/retard the effects of fire/smoke in a survivable crash, preventing them to perform their intended function (for



instance, deficiency in cargo liners or cabin material leading to non-compliance with the applicable flammability requirements).

- There is a deficiency in the lightning or High Intensity Radiated Fields protection of a system which may lead to hazardous or catastrophic failure conditions.
- There is a deficiency which could lead to a total loss of power or thrust due to common mode failure.

If there is a deficiency in systems used to assist in the enquiry following an accident or serious incident (e.g., Cockpit Voice Recorder, Flight Data Recorder), preventing them to perform their intended function, the CAA may take mandatory action.

2.2 Engines

The consequences and probabilities of engine failures have to be assessed at the aircraft level in accordance with paragraph 2.1, and also at the engine level for those failures considered as Hazardous in CS E-510.

The latter will be assumed to constitute unsafe conditions, unless it can be shown that the consequences at the aircraft level do not constitute an unsafe condition for a particular aircraft installation.

2.3 Propellers

The consequences and probabilities of propeller failures have to be assessed at the aircraft level in accordance with paragraph 2.1, and also at the propeller level for those failures considered as hazardous in CS P-70.

The latter will be assumed to constitute unsafe conditions, unless it can be shown that the consequences at the aircraft level do not constitute an unsafe condition for a particular aircraft installation.

2.4 Parts and appliances

The consequences and probabilities of equipment failures have to be assessed at the aircraft level in accordance with paragraph 2.1.

2.5 Human factors aspects in establishing and correcting unsafe conditions

This paragraph provides guidance on the way to treat an unsafe condition resulting from a maintenance or crew error observed in service.

It is recognised that human factors techniques are under development. However, the following is a preliminary guidance on the subject.

Systematic review should be used to assess whether the crew or maintenance error raises issues that require regulatory action (whether in design or other areas), or

	<p>UK Reg 748/2012 Annex I Part 21 And its AMC/GM</p>	<p>Compiled 3 Sep 2022 Issue 1b</p>
---	--	--

should be noted as an isolated event without intervention. This may need the establishment of a multidisciplinary team (designers, crews, human factors experts, maintenance experts, operators etc.)

The assessment should include at least the following:

- Characteristics of the design intended to prevent or discourage incorrect assembly or operation;
- Characteristics of the design that allow or facilitate incorrect operation,
- Unique characteristics of a design feature differing from established design practices;
- The presence of indications or feedback that alerts the operator to an erroneous condition;
- The existence of similar previous events, and whether or not they resulted (on those occasions) in unsafe conditions;
- Complexity of the system, associated procedures and training (has the crew a good understanding of the system and its logic after a standard crew qualification programme?);
- Clarity/accuracy/availability/currency and practical applicability of manuals and procedures;
- Any issues arising from interactions between personnel, such as shift changeover, dual inspections, team operations, supervision (or lack of it), or fatigue.

Apart from a design change, the corrective actions, if found necessary, may consist of modifications of the manuals, inspections, training programmes, and/or information to the operators about particular design features. The CAA may decide to make mandatory such corrective action if necessary.

GM 21.A.3B(d)(4) Defect correction – Sufficiency of proposed corrective action

This GM provides guidelines to assist in establishing rectification campaigns to remedy discovered defects.

1. STATUS



This document contains GM of a general nature for use in conjunction with engineering judgement, to aid airworthiness engineers in reaching decisions in the state of technology at the material time.

While the main principles of this GM could be applied to small private aeroplanes, helicopters, etc. the numerical values chosen for illustration are appropriate to large aeroplanes for public transport.

2. INTRODUCTION

2.1 Over the years, target airworthiness risk levels underlying airworthiness requirements have developed on the basis of traditional qualitative airworthiness approaches; they have been given more precision in recent years by being compared with achieved airworthiness levels (judged from accident statistics) and by the general deliberations and discussions which accompanied the introduction of rational performance requirements, and more recently, the Safety Assessment approach in requirements.

Although the target airworthiness risk level tends to be discussed as a single figure (a fatal accident rate for airworthiness reasons of not more than 1 in 10 000 000 flights/flying hours for large aeroplanes) it has to be recognised that the requirements when applied to particular aircraft types will result in achieved airworthiness levels at certification lying within a band around the target level and that thereafter, for particular aircraft types and for particular aircraft, the achieved level will vary within that band from time to time.

2.2 The achieved airworthiness risk levels can vary so as to be below the target levels, because it is difficult if not impossible to design to the minimum requirements without being in excess of requirements in many areas; also because aircraft are not always operated at the critical conditions (e.g., aircraft weight, CG position and operational speeds; environmental conditions - temperature, humidity, degree of turbulence).

The achieved level may vary so as to be above the target level because of undetected variations in material standards or build standards, because of design deficiencies, because of encountering unforeseen combinations of failures and/or combinations of events, and because of unanticipated operating conditions or environmental conditions.

2.3 There is now a recognition of the need to attempt to monitor the conditions which tend to increase the level and to take appropriate corrective action when the monitoring indicates the need to do so in order to prevent the level rising above a predetermined 'ceiling'.

2.4 The CAA also has a duty in terms of providing the public with aviation services and therefore should consider the penalties associated with curtailment or even removal (by 'grounding') of aviation services when establishing the acceptability of any potential variation in airworthiness level.

 <p>Working in partnership</p>	UK Reg 748/2012 Annex I Part 21 And its AMC/GM	Compiled 3 Sep 2022 Issue 1b
---	---	---

2.5 Thus, the purpose of this GM is:

(a) To postulate basic principles which should be used to guide the course of actions to be followed so as to maintain an adequate level of airworthiness risk after a defect has occurred which, if uncorrected, would involve a potential significant increase of the level of risk for an aircraft type.

(b) For those cases where it is not possible fully and immediately to restore an adequate level of airworthiness risk by any possible alleviating action such as an inspection or limitation, to state the criteria which should be used in order to assess the residual increase in risk and to limit it to an appropriate small fraction of the mean airworthiness through life risk.

3. DISCUSSION

3.1 Several parameters are involved in decisions on safety matters. In the past the cost of proposed action has often been compared with the notional 'risk cost', i.e. the cost of a catastrophe multiplied by its probability of occurrence.

3.2 This can be a useful exercise, but it should be held within the constraint of acceptable airworthiness risk levels, i.e., within airworthiness risk targets which represent the maximum levels of risk with which an aircraft design must comply, i.e., in the upper part of the 'band'. Currently for large aeroplanes the mean airworthiness risk level is set at a catastrophe rate for airworthiness reasons of not more than one in every ten- million flights/flying hours. The constraint is overriding in that any option, which could be permitted on risk cost considerations, or other grounds, is unacceptable if it leads to significant long-term violation of this safety requirement.

3.3 While it should clearly be the objective of all to react to and eliminate emergency situations, i.e., those involving a potentially significant increase of airworthiness risk levels, without unreasonable delay, the CAA should be able finally to rule on what is a minimum acceptable campaign programme. It has therefore seemed desirable to devise guidelines to be used in judging whether a proposed campaign of corrective actions is sufficient in airworthiness terms, and clearly this ought to be based on determining the summation of the achieved airworthiness risk levels for the aircraft and passengers during any periods of corrective action and comparing them with some agreed target.

3.4 As the period of corrective action will not be instantaneous (unless by grounding), there is potentially an increase in the achieved airworthiness risk level possibly to and, without controls, even above the higher part of the 'band', and the amount by which the level is above the mean target figure, and the period for which it should be allowed to continue, has been a matter of some arbitrary judgement.

3.5 It would appear desirable to try to rationalise this judgement. For example, if an aircraft were to spend 10 % of its life at a level such that the risk of catastrophe was increased by an order of magnitude, the average rate over its whole life would be doubled which may not be in the public interest. A more suitable criterion is perhaps



one which would allow an average increase in risk of, say one third on top of the basic design risk when spread over the whole life of the aircraft an amount which would probably be acceptable within the concept (See Figure 1). It would then be possible to regard the 'through life' risk to an aircraft - e.g., a mean airworthiness target of not more than one airworthiness catastrophe per 10 million (10⁷) hours, as made up of two parts, the first being 3/4 of the total and catering for the basic design risk and the other being 1/4 of the total, forming an allowance to be used during the individual aircraft's whole life for unforeseen campaign situations such as described above.

3.6 Investigation has shown that a total of ten such occasions might arise during the life of an individual aircraft.

3.7 Using these criteria, there could then be during each of these emergency periods (assumed to be ten in number) a risk allowance contributed by the campaign alone of:

- 1 x 10⁻⁷ for 2.5% of the aircraft's life; or
- 5 x 10⁻⁷ for 0.5% of the aircraft's life; or
- 1 x 10⁻⁶ for 0.25% of the aircraft's life; or
- 1 x 10⁻⁵ for 0.025% of the aircraft's life, etc.

without exceeding the agreed 'allowance' set aside for this purpose.

3.8 Thus a 'reaction table' can be created as indicated in Table 1 (the last two columns assuming a typical aircraft design life of 60,000 hours and an annual utilisation of 3 000 hours per annum) showing the flying or calendar time within which a defect should be corrected if the suggested targets are to be met.

Estimated catastrophe rate to aircraft due to the defect under consideration (per a/c hour)	Average reaction time for aircraft at risk (hours)	On a calendar basis
4 x 10 ⁻⁸	3 750	15 months
5 x 10 ⁻⁸	3 000	12 months
1 x 10 ⁻⁷	1 500	6 months
2 x 10 ⁻⁷	750	3 months
5 x 10 ⁻⁷	300	6 weeks
1 x 10 ⁻⁶	150	3 weeks
1 x 10 ⁻⁵	15	Return to base

Table 1

3.9 These principles may be applied to a single aircraft or a number of aircraft of a fleet but in calculating risk, all the risk should be attributed to those aircraft which may carry it, and should not be diluted by including other aircraft in the fleet which are known to be free of risk. (It is permissible to spread the risk over the whole fleet when a source is known to exist without knowing where). Where a fleet of aircraft is involved Column 2 may be interpreted as the mean time to rectification and not the time to the last one.



3.10 There is one further constraint. However little effect a situation may have on the 'whole life' risk of an aircraft, the risk should not be allowed to reach too high a level for any given flight.

Thus while a very high risk could be tolerated for a very short period without unacceptable degradation of the overall airworthiness target, the few flights involved would be exposed to a quite unacceptable level of risk. It is therefore proposed that the Table 1 should have a cut-off at the 2×10^{-6} level so that no flight carries a risk greater than 20 times the target. At this level the defect is beginning to contribute to a greater likelihood of catastrophe than that from all other causes, including non-airworthiness causes, put together.

If the situation is worse than this, grounding appears to be the only alternative with possibly specially authorised high-risk ferry flights to allow the aircraft to return to base empty. Figures 2 and 3 show a visualisation chart equivalent to Table 1, giving average rectification time (either in flight hours or months) based on probability of defect that must be corrected.

3.11 It will be seen that the above suggestions imply a probability of catastrophe from the campaign alone of 1.5/10 000 per aircraft during each separate campaign period (i.e., $p = 0.015$ per 100 aircraft fleet).

3.12 In addition, in order to take into account large fleet size effect, the expected probability of the catastrophic event during the rectification period on the affected fleet shall not exceed 0.1. See Figure 4.

3.13 It should also be noted that in assessing campaign risks against 'design risk', an element of conservatism is introduced, since the passenger knows only 'total risk' (i.e. airworthiness plus operations risks) and the fatal accident rate for all reasons is an order of magnitude greater than that for airworthiness reasons only (i.e., 10^{-6} as against 10^{-7}). The summated campaign risk allowance proposed by this GM is therefore quite a small proportion of the total risk to which a passenger is subject. When operating for short periods at the limit of risk proposed (2×10^{-6} per hour) the defect is however contributing 100 % more risk than all other causes added together.

3.14 A similar approach is proposed to cover the case of defects associated to hazardous failure conditions for which the safety objectives defined by the applicable certification specifications are not met. According to CS 25.1309, the allowable probability for each hazardous failure condition is set at 10^{-7} per flight hour compared to 10^{-9} per flight hour for a catastrophic failure condition. Figure 5 is showing a visualisation chart giving average rectification time based on probability of defect that should be corrected. This is similar to Figure 2 but with lower and upper boundaries adapted to cover the case of hazardous failure conditions (probabilities of 10^{-7} and 2×10^{-4} respectively).

3.15 In addition, in order to take into account large fleet size effect, the expected probability of the hazardous event during the rectification period on the affected fleet shall not exceed 0.5. See Figure 6.

	<p>UK Reg 748/2012 Annex I Part 21 And its AMC/GM</p>	<p>Compiled 3 Sep 2022 Issue 1b</p>
---	--	--

4. GUIDELINES

4.1 The above would lead to the following guidelines for a rectification campaign to remedy a discovered defect associated to a catastrophic failure condition without grounding the aircraft:

- (i) Establish all possible alleviating action such as inspections, crew drills, route restrictions, and other limitations.
- (ii) Identify that part of the fleet, which is exposed to the residual risk, after compliance has been established with paragraph (i).
- (iii) Using reasonably cautious assumptions, calculate the likely catastrophic rate for each aircraft carrying the risk in the affected fleet.
- (iv) Compare the speed with which any suggested campaign will correct the deficiency with the time suggested in Figure 2. The figure should not be used beyond the 2×10^{-6} level, except for specially authorised flights.
- (v) Also ensure that the expected probability of the catastrophic event during the rectification period on the affected fleet is in accordance with Figure 4.

4.2 Similarly, the following guidelines would be applicable for a rectification campaign to remedy a discovered defect associated to a hazardous failure condition without grounding the aircraft:

- (i) Establish all possible alleviating action such as inspections, crew drills, route restrictions, and other limitations.
- (ii) Identify that part of the fleet, which is exposed to the residual risk, after compliance has been established with paragraph (i).
- (iii) Using reasonably cautious assumptions, calculate the likely hazardous rate for each aircraft carrying the risk in the affected fleet.
- (iv) Compare the speed with which any suggested campaign will correct the deficiency with the time suggested in Figure 5.
- (v) Also ensure that the expected probability of the hazardous event during the rectification period on the affected fleet is in accordance with Figure 6.

4.3 It must be stressed that the benefit of these guidelines will be to form a datum for what is considered to be the theoretically maximum reaction time. A considerable amount of judgement will still be necessary in establishing many of the input factors and the final decision may still need to be tempered by non-numerical considerations, but the method proposed will at least provide a rational 'departure point' for any exercise of such judgement.



4.4 It is not intended that the method should be used to avoid quicker reaction times where these can be accommodated without high expense or disruption of services.

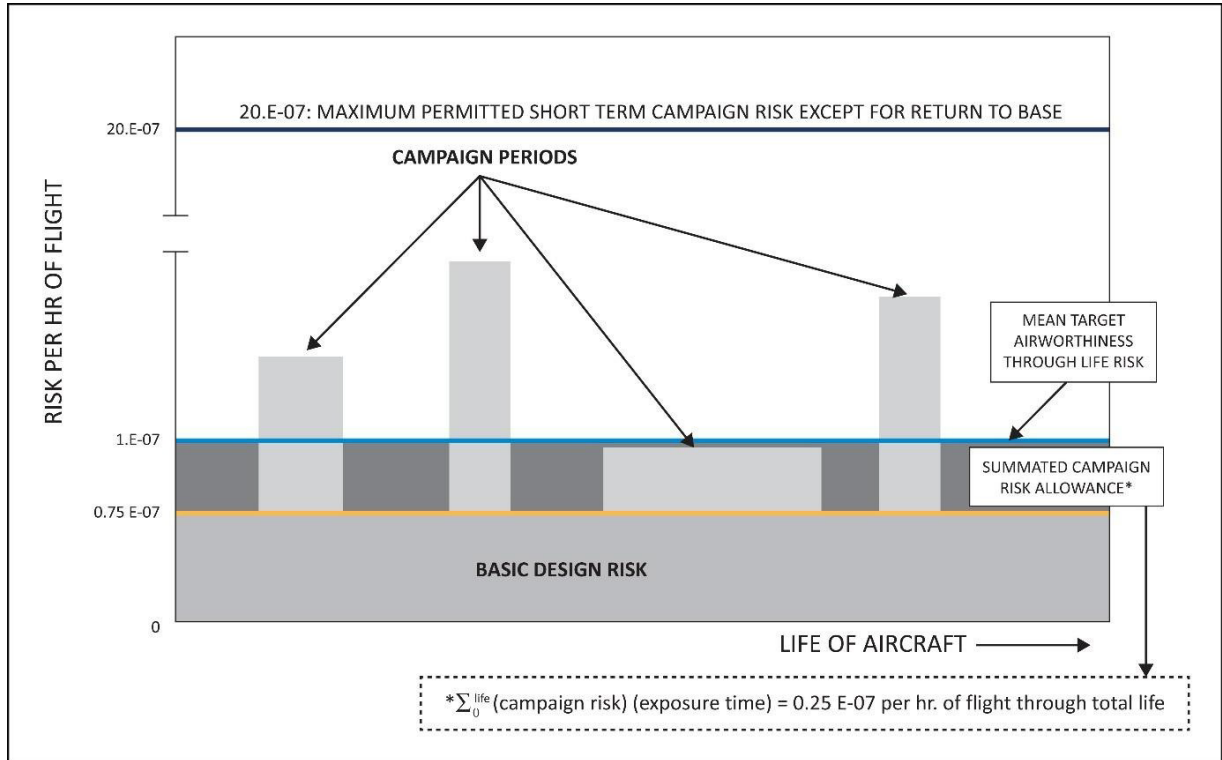


Figure 1 - Visualisation Chart for CS-25

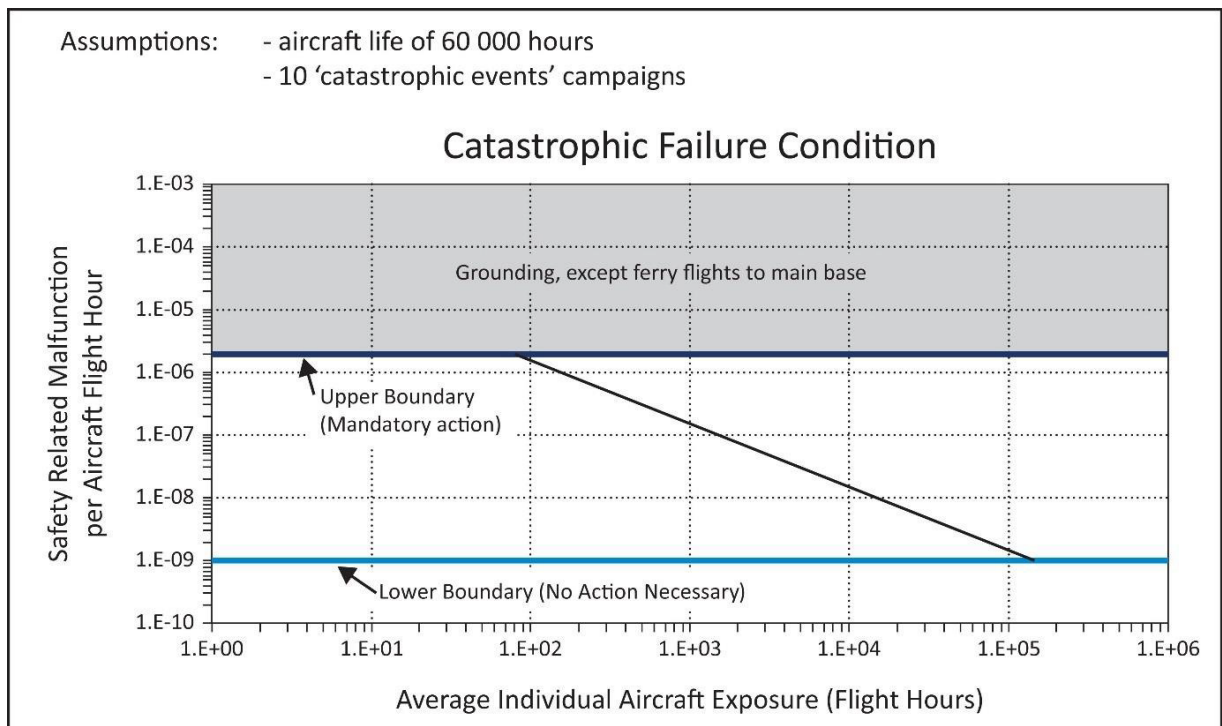


Figure 2 - Visualisation Chart for CS-25 (Flight hours)

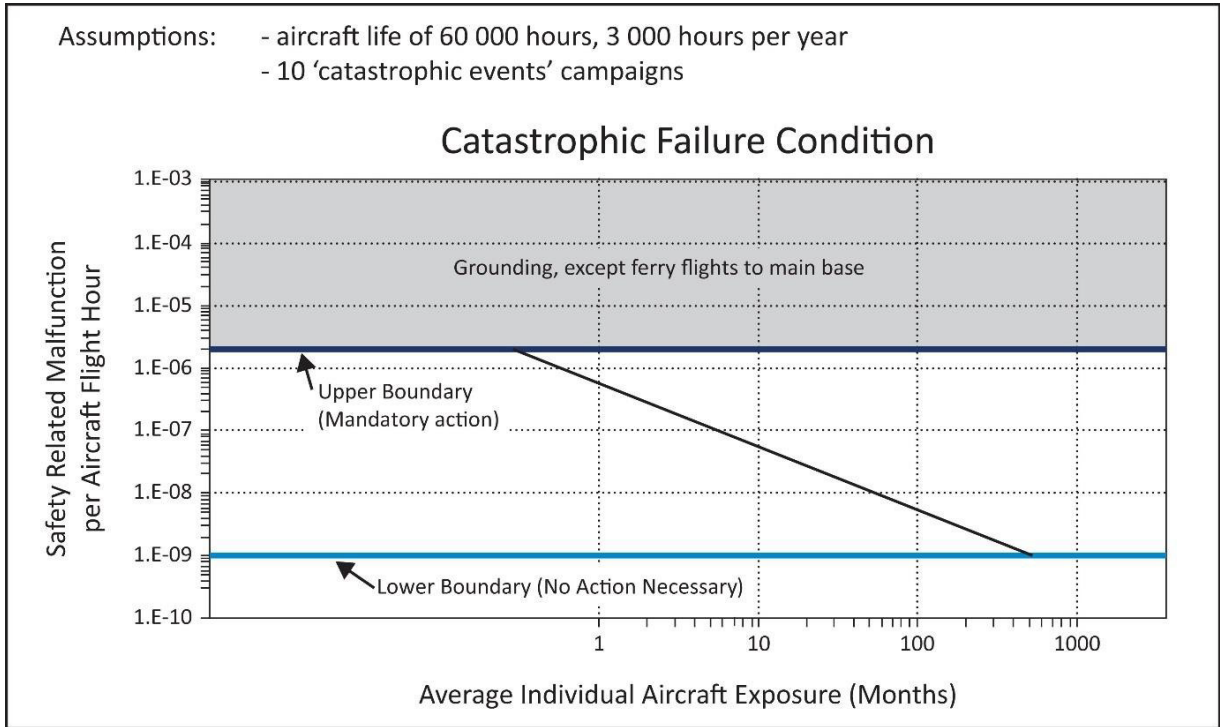


Figure 3 - Visualisation Chart for CS-25 (Calendar basis)

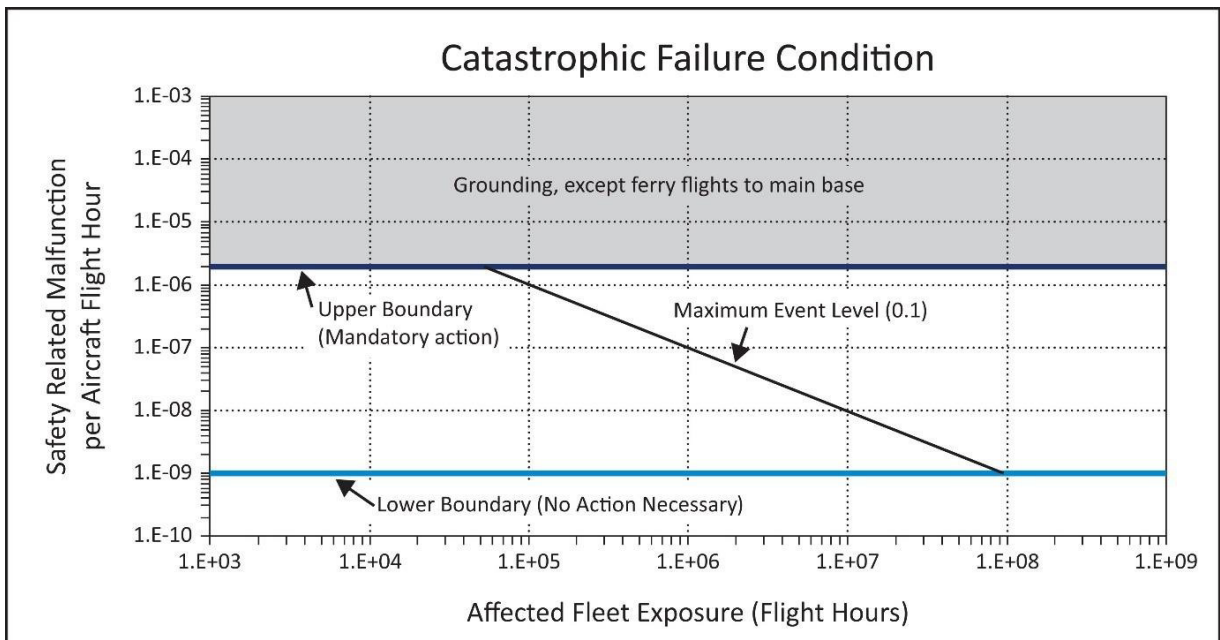


Figure 4 - Visualisation Chart for CS-25 (Flight Hours)

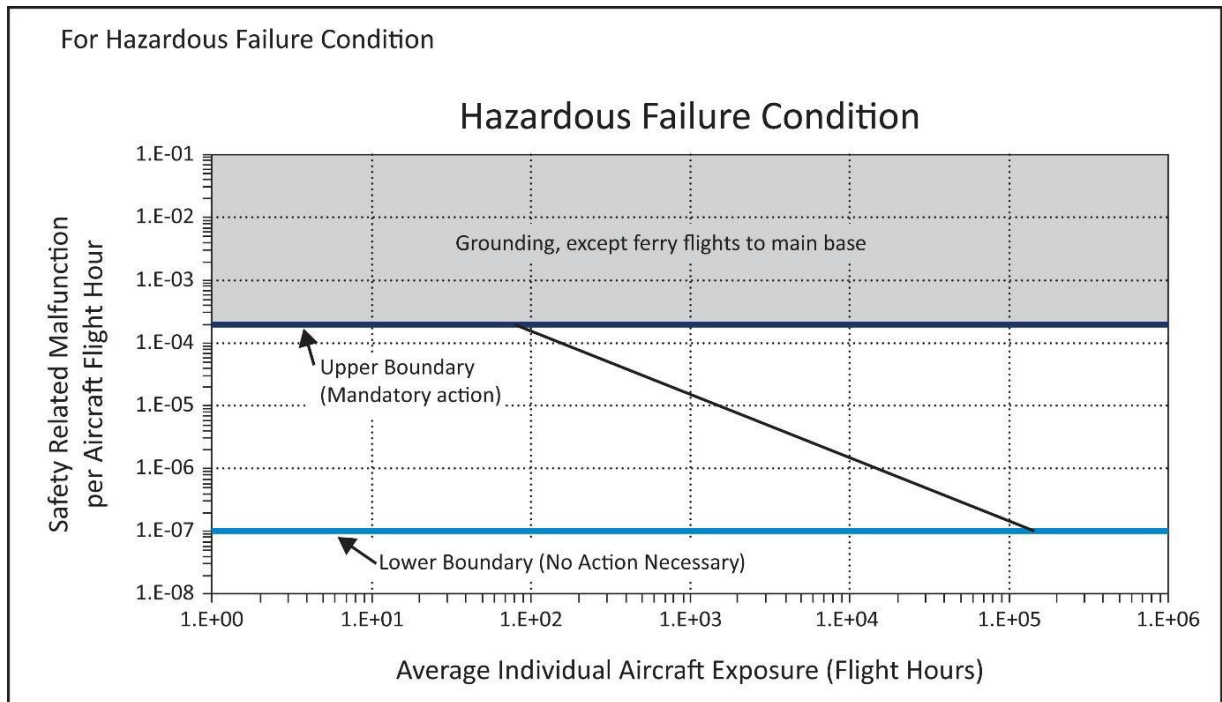


Figure 5 - Visualisation Chart for CS-25 (Flight hours)

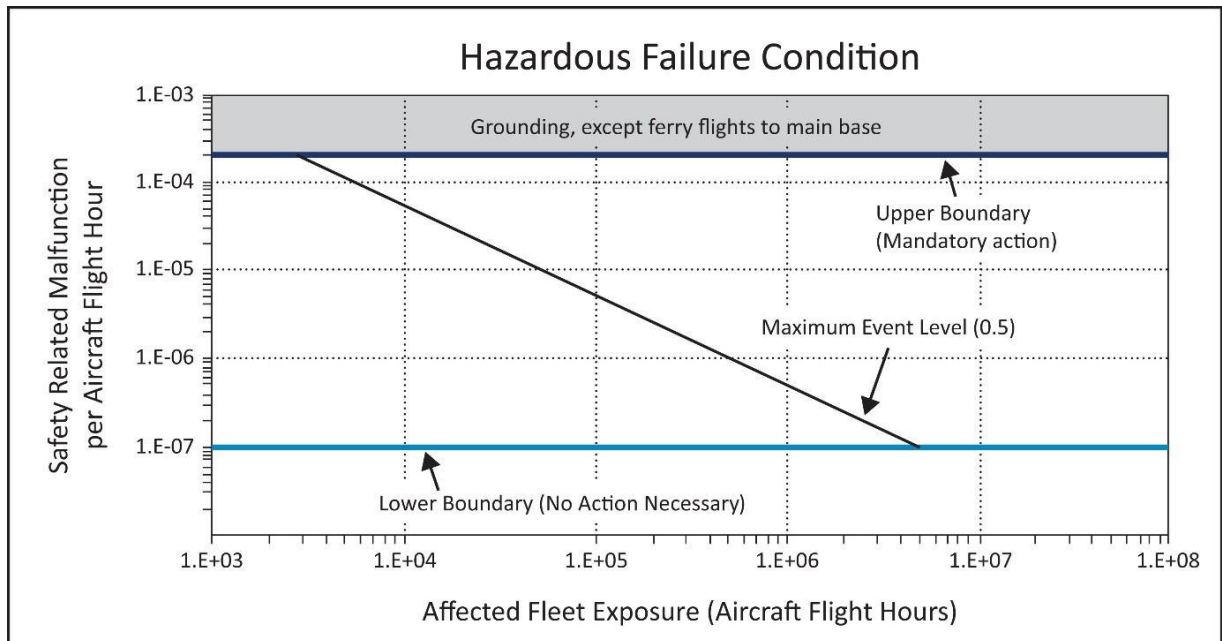


Figure 6 - Visualisation Chart for CS-25 (Flight hours)

	<p>UK Reg 748/2012 Annex I Part 21 And its AMC/GM</p>	<p>Compiled 3 Sep 2022 Issue 1b</p>
---	--	--

21.A.4 Coordination between design and production

[F1

Each holder of a type-certificate, restricted type-certificate, supplemental type-certificate, UKTSO authorisation, approval of a change to type-certificate or approval of a repair design, shall collaborate with the production organisation as necessary to ensure:

(a) the satisfactory coordination of design and production required by 21.A.122, 21.A.130(b)(3) and (4), 21.A.133 and 21.A.165(c)(2) and (3) as appropriate, and

(b) the proper support of the continued airworthiness of the product, part or appliance.]

Textual Amendments

F1 Substituted by [Commission Regulation \(EU\) No 69/2014 of 27 January 2014 amending Regulation \(EU\) No 748/2012 laying down implementing rules for the airworthiness and environmental certification of aircraft and related products, parts and appliances, as well as for the certification of design and production organisations \(Text with EEA relevance\).](#)

AMC 21.A.4 Transferring of information on eligibility and approval status from the design holder to production organisations

Where there is a need to provide (normally outside the design organisation) a visible statement of approved design data or airworthiness, operational suitability or environmental protection data associated with the approved design data, the following minimum information must be provided. The need for a visible statement may be in relation to Company holding a production organisation approval (POA) in relation to **21.A.163(c)**.

The procedures related to the use of forms or other electronic means to provide this information must be agreed with the CAA.

Information to be provided:

Company Name: the name of the responsible design organisation (TC, STC, approval of repair or minor change design, UKTSO authorisation holder) issuing the information.

Date: the date at which the information is released.

	<p>UK Reg 748/2012 Annex I Part 21 And its AMC/GM</p>	<p>Compiled 3 Sep 2022 Issue 1b</p>
---	--	--

Eligibility: indicate the specific products or articles, in case of UKTSO authorisation, for which data have been approved.

Identification: the part number of the part or appliance. Preference should be given to the use of the Illustrated Parts Catalogue (IPC) designation.

Alternatively the reference to the instruction for continued airworthiness (e.g., SB, AMM, etc.) could be stated. Marking requirements of Part 21 Section A Subpart Q should be taken into account.

Description: the name or description of the part or document should be given. In the case of a part or appliance preference should be given to use of IPC designation.

The description is to include reference to any applicable UKTSO authorisation or UKPA marking, or previous national approvals still valid.

Purpose of data: the reason for the provision of the information should be stated by the design approval holder.

Examples:

- a) Provision of approved design data to a production organisation to permit manufacture (**AMC No 1 to 21.A.133(b) and (c)**)
- b) Information regarding eligibility for installation (replacement parts, repair, modification, etc.)
- c) Direct Delivery Authorisation (**AMC No 1 to 21.A.133(b) and (c)**)

If the data is in support of a change or repair, then reference to the aircraft level approval should be given (make reference to the approved STC, change or repair).

Limitations/Remarks: state any information, either directly or by reference to supporting documentation that identifies any particular data or limitations (including specific importing requirements) needed by a production organisation to complete Block 12 of the CAA Form 1.

Approval: provide reference information related to the approval of the data (CAA document or DOA privilege).

Authorised signature: name and hand-written normal or electronic signature of a person who has written authority from the design organisation, as indicated in the procedures agreed with the CAA.