Alternative means of compliance

CAP 1721

The UK AMC, GM, CS applicable to UK registered aircraft, pilots, aircraft engineers, other persons and organisations involved in UK aviation are published here UK regulations | Civil Aviation Authority. UK AltMoC proposed and accepted by the UK prior to 31 December 2020 continues from 1 January 2021 to be means by which the requirements in the applicable assimilated legislation, can be met. UK AltMOC should therefore be read alongside UK AMC.

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Introduction

Acceptable Means of Compliance (AMC) adopted by the CAA are means by which the requirements in the UK Regulation (EU) 2018/1139 (UK Basic Regulation) and its Implementing Rules can be met.

Since requirements can be met by other means, regulated persons and organisations may apply for permission to use alternative means to comply with the law by the use of Alternative Means of Compliance (AltMoC). For the CAA to accept AltMoC the applicant will need to demonstrate that the alternative approach nonetheless maintains compliance with the law.

Applicants may also apply for AltMoCs as a means to establish compliance with the UK Basic Regulation and its Implementing Rules for which no associated AMC has been adopted.

Where regulated persons or organisations wish to utilise their own alternative means of compliance, they must first obtain the approval of the CAA.

Requests for CAA approval will incur a fee as set out in the CAA Scheme of Charges.

Where the CAA has itself issued a general AltMoC, it is detailed in full below and may be used by any person or organisation regulated by the CAA.

Where an AltMoC has been approved by the CAA for use by a regulated person or organisation, it is listed with basic identifying information only, this is to protect any commercially confidential information. Further details may be sought from the originator of the AltMoC, although it should be noted that they are not obliged to provide it.

The UK AMC, Guidance Material and Certification Specifications applicable to UK registered aircraft, pilots, aircraft engineers, other persons and organisations involved in UK aviation is published here https://www.caa.co.uk/uk-regulations. UK AltMoC proposed and accepted by the UK prior to 31 December 2020 continues from 1 January 2021 to be means by which the requirements in the applicable assimilated legislation, can be met. UK AltMoC should therefore be read alongside UK AMC.

All references to “UK Reg (EU) XXXX/XXX” and “UK Reg (EU) No XXX/XXXX” are to those Regulations as assimilated in UK domestic law pursuant to the Retained EU Law (Revocation and Reform) Act 2023.

Revision history

Edition 10 June 2025

Contents added

The following new AltMoCs have been added to Chapter 6:

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UK CAA 2024-003	CAT.IDE.H.190	Capital Air Services	Flight Data Recorder	151

Edition 9 October 2023

This edition includes:

An amendment to

SECTION	SUBJECT			Page
Inside cover	To amend email address to send enquiries regarding this CAP			2
Introduction	To remove references to EASA and add a caveat regarding the numerous references to EU Regulations			
ALTMOC REF	REGULATION	ORIGINATOR	SUBJECT	Page
2020-00026	CAMO.A.305	CAA	The Contents page and AltMoC 2020-00026 have been amended to correct the regulatory reference number from CAMO.A.305(c) (e)' to 'Point (e) of AMC1 CAMO.A.305(c)	
2013-0004	Article 8(2) & 8(3)	CAA	Correction to Level Experience credit from 15 hours to 5 hours	
2014-00021	CAT.IDE.A.225	Monarch	Correction to regulatory reference previously transposed as CAT.A.IDE	
2014-00022	CAT.IDE.A.225	TUI Airways Ltd		
2014-00023	CAT.IDE.A.225	British Airways		
2014-00024	CAT.IDE.A.220 CAT.IDE.A.225	Virgin Atlantic Airways		

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The following new AltMoCs have been added to Chapter 6:

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UK-CAA 2023-00010	CAMO.A.305(c)	Kingmoor Aviation Ltd	Compliance Monitoring and Safety Manager	
UK-CAA 2023-00011	CAMO.A.305(c)	West Atlantic UK Ltd	Requirements for Safety Managers	
UK-CAA 2023-00012	CAMO.A.305(c)	London Air Ambulance Ltd	Requirements for Safety Manager	
UK-CAA 2023-00013	CAMO.A.305(c)	Heliflight AOC Ltd	Requirements for Compliance Monitoring Manager	
UK-CAA 2023-00014	CAMO.A.305(c)	Heliflight AOC Ltd	Requirements for Safety Manager	
UK-CAA 2023-00015	CAMO.A.305(c)	Heli Services Ltd	Requirements for Safety Manager	
UK-CAA 2023-00016	CAMO.A.305(c)	Helicentre Aviation Ltd	Requirements for Continuing Airworthiness Manager	
UK CAA 2023-00017	CAMO.A.305 (c)	Helicentre Aviation Ltd	Requirements For Compliance Monitoring Manager	
UK CAA 2023-00018	ORO.CC.135	British Airways	Cabin Crew Familiarisation	
UK CAA 2023-00019	CAT.IDE.H.190	CHC Scotia Ltd	Flight Data Recorder	

ALTMOC REF	REGULATION	ORIGINATOR	SUBJECT	Page
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UK CAA 2023-00021	CAT.IDE.H.190	Capital Air Services	Flight Data Recorder	
UK CAA 2023-00022	SPA.LVO.105	ASL Airlines UK Ltd	Credit for Operator, Aircraft and Crew LVO Capability and Experience	
UK CAA 2023-00023	CAT.OP.MPA.160	Alto Aerospace	Carriage of Live Animals Over 8kg in Cabin	

A new Chapter 7 has been added to list AltMoCs revoked by the UK CAA from November 2022.

Contents removed

ALTMOC REF	REGULATION	SUBJECT
2015-00033	CAT.IDE.285(a)	Access to Life Jackets AltMoC revoked by ORS9 Decision 15
2020-00031	CAT.OP.MPA.140	Maximum distance from an adequate aerodrome for two-engined aeroplanes without an ETOPS approval AltMoC revoked by ORS9 Decision 15
UK0001	ORO.FC.230(c)	CAT Line Checks AltMoC revoked by ORS9 Decision 34
UK0003	ORO.FC.230(d)	Emergency and Safety Equipment Training and Checking AltMoC revoked by ORS9 Decision 34

Edition 8 June 2021

This edition includes:

An amendment to

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2018-00017	ORO.CC.135	easyJet Airline Co Ltd Aircraft familiarisation	Name of originator amended to reflect name change to easyJet UK Ltd	153
UK0002	ORO.FTL.110	easyJet Airline Co Ltd Publication of Rosters	Name of originator amended to reflect name change to easyJet UK Ltd	153
2015-00013	ORO.FTL.110(a)	Easyjet - Operator Responsibilities – Publication of duty roster	Name of originator amended to reflect name change to easyJet UK Ltd	153
2014-00022	CAT.A.IDE.A225	Thomson Airways - Emergency Medical Kit	Name or originator amended to reflect name change to TUI Airways Ltd	153
2015-00018	SPA.RVSM.105(d)	Thomson Airways - RVSM operational approval	Name or originator amended to reflect name change to TUI Airways Ltd	153

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Edition 7 October 2020

This edition includes:

An amendment to

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UK0002 *	ORO.FTL.110	Easyjet UK Ltd	Publication of rosters	
2020-00026	CAMO.A.305(c)(e)	UK CAA	Requirements for Safety Managers	
UK0003 *	ORO.FC.230(d)	UK CAA	Emergency and safety equipment training and checking	

* Temporary AltMoC related to COVID-19 – to be revoked when circumstances dictate reversion to normal operations

Edition 6 April 2020

This edition includes:

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2020-00008	ORA.AeMC.215	Birmingham Medical Centre	Facility Requirements, Medical Technical Facilities	143

Edition 5 November 2019

This edition includes:

An amendment to

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2019-00028	ORA.AeMC.215	National Air Traffic Services (NATS)	Facility Requirements, Medical Technical Facilities	142

Edition 4 July 2019

Contents added

This edition includes:

AIR OPERATIONS Commission Regulation (EU) No 965/2012

EASA REF	REGULATION	ORIGINATOR	SUBJECT	Page
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The following has been removed:

Air Operations Commission Regulation (EU) No 965/2012

EASA REF	REGULATION	SUBJECT
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Edition 3 May 2019

Contents removed

The following has been removed:

AIR OPERATIONS Commission Regulation (EU) No 965/2012

EASA REF	REGULATION	SUBJECT
2016-00024	CAT.OP.MPA.160	Carriage of live animals in passenger cabin

Edition 2 March 2019

Contents added

This edition includes:

AERODROMES Commission Regulation (EU) No 139/2014

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Contents removed

The following has been removed:

ATCO Licensing Commission Regulation (EU) 2015/340

EASA REF	REGULATION	SUBJECT
2017-00005	ATCO AR.F.005	European Class 3 Medical Certificate pertaining to ATCO Licence

AIR OPERATIONS Commission Regulation (EU) No 965/2012

EASA REF	REGULATION	SUBJECT
2016-00027	ORO.FC.220 (a) to (e)	Operator Conversion Training and Checking

Chapter 1

Aircrew Licensing UK Regulation (EU) No 1178/2011

EASA Ref 2012-00007 – Article 8(2)&(3) – Conversion of 3rd country Instrument Ratings

Purpose:

The UK CAA AltMoC advises ATOs that they may assume that a recommendation for a minimum of 15 hours of training is "determined" to be acceptable by the CAA without recommendation or request for agreement.

Date of notification to EASA: 21 September 2012

1.1 **Conversion of 3rd country Instrument Ratings – Alternative Means of Compliance with Article 8(2)/(3):**

1.1.1 **Course Credit Policy**

In accordance with the provisions of Article 8 (2 & 3) of EU Regulation 1178/2011 applicants for Part-FCL licences already holding an equivalent licence, rating or certificate issued in accordance with Annex I of the Chicago Convention may be given credit towards meeting the requirements of Part-FCL. The credit given to the applicant shall be determined by the Member State on the basis of a recommendation from an Approved Training Organisation. The UK CAA is applying the following alternative Means of Compliance which may be utilised by an ATO conducting conversion training on ICAO licence holders for a Part-FCL IR(A) or (H) to be issued by the UK CAA without seeking prior approval from the Authority for each individual applicant.

These arrangements will provide a route to a UK CAA-issued Part-FCL IR(A) or (H) qualification for the following holders of a current and valid equivalent ICAO IR(A) or (H) as applicable, issued in accordance with ICAO Annex 1.

The holder of an ICAO IR(A) or (H) shall attend an Approved Training Organisation and complete an approved modular course of IR(A) or (H) flying training, as applicable. On the basis of assessment by the ATO the course is reduced, but not to less than the minimum requirements set out below, the determination of acceptability by the CAA as required by Article 8 may be assumed.

If during the course the Head of Training determines that completion of the reduced course requirements set out in this part if unwarranted, the Head of Training may make a written recommendation for a further reduction, and L&TS will give the recommendation consideration.

Prerequisites:

Prior to commencing the flight training specified below for the IR (A) or (H) the applicant shall be the holder of a Part-FCL PPL(A), CPL(A), or Part-FCL PPL(H), CPL(H) (as applicable), either licence to include the privileges to fly by night, issued in accordance with Part-FCL. The applicant must hold a valid Class or Type rating or meet the requirements for the issue of the Class or Type rating for the aircraft used in the Skill test or Assessment of Competence.

Minimum course content without submission of a recommendation to the CAA.

1.2 **ICAO IR(A) holder to Part-FCL IR(A)**

1.2.1 Undertake Part-FCL IR(A) theoretical knowledge instruction as determined by the Head of Training of an approved training provider and pass all Part-FCL theoretical knowledge examinations at IR level. Applicants who wish to attempt the ATPL(A) examinations must undertake the full 650 hour course of approved theoretical knowledge instruction and pass all Part-FCL ATPL(A) examinations.

1.2.2 Complete a minimum of 15 hours instrument time under instruction including recommendation for test in accordance with the procedures approved at the ATO, of which 5 hours may be in a FNPT I or 10 hours in a FNPT II or Full Flight Simulator.

1.2.3 Pass the Part-FCL IR(A) Skill Test

1.3 **ICAO IR(H) holder to Part-FCL IR(H)**

1.3.1 Undertake Part-FCL(H) theoretical knowledge instruction as determined by the Head of Training of an approved training provider and pass all Part-FCL theoretical knowledge examinations at IR level. Applicants who wish to attempt the ATPL(H) examinations must undertake the full 650 hour course of approved theoretical knowledge instruction and pass all Part-FCL ATPL(H) examinations.

1.3.2 Complete a minimum of 15 hours instrument time under instruction including recommendation for test in accordance with the procedures approved at the ATO, of which 5 hours may be in a FNTP I or 10 hours in a FNPT II or Full Flight Simulator.

1.3.3 Pass the Part-FCL IR(H) Skill Test.

EASA Ref 2012-00008 – FCL.055 – AMC for being tested in language proficiency in English in the UK

Purpose:

The UK CAA AltMoC provides information which supplements the AMC1 and AMC2 to FCL.055 and advises the acceptable means for being tested in language proficiency in English in the UK. This AltMoC is included in CAP 804 of which the below is the relevant extract.

Date of notification to EASA: 21 September 2012

Appendix 1 - Text of CAP 804

4 Acceptable Means of Compliance and Guidance Material – (AMC and GM) for establishing language proficiency in English

For further information and guidance refer to Part-FCL AMC No.1 to FCL.055 and ICAO Doc 9832, Appendix A Part III and Appendix B.

4.1 Methods of Testing

a) **At the Radiotelephony Test**

During the practical test for the UK FRTOL an Examiner who has Level 6 proficiency in English and is authorised by the CAA as an English Language Assessor, will assess the applicant's proficiency in English. If the examiner assesses the candidate as being Expert Level 6 (the standard of a native speaker of English) he may certify to that effect by submitting a Form SRG1199 to the CAA. If the Examiner considers that the applicant is not at Level 6 the Examiner must not give a proficiency endorsement. The applicant should then seek an expert assessment, such as through a CAA approved language school as under (c) below. A FRTOL will not be issued unless and until the applicant has a valid endorsement of language proficiency at Level 4, 5 or 6.

b) **At a Flight Test**

Type Rating Examiners (TREs), Flight Examiners (FEs) and Class Rating Examiners (CREs), who have themselves been assessed as proficient at Level 6 in English and are authorised by the CAA as English Language Assessors, may include assessment of the language proficiency of existing holders of licences issued by the UK CAA (Part-FCL or national) as part of the licence proficiency check that is conducted for the revalidation or renewal of a rating or certificate. If the examiner assesses the candidate as being Expert Level 6 (the standard of a native speaker of English) he may certify to that effect by submitting a Form SRG1199 to the CAA. If the Examiner considers that the applicant is not at Level 6 the Examiner must not give a proficiency endorsement. The applicant should then seek an expert assessment, such as through a CAA approved language school as under (c) below. A UK FRTOL held by a licence

holder will not be valid unless and until the applicant has a valid endorsement of language proficiency at Level 4, 5 or 6.

c) **Through a Language School**

Applicants choosing to be tested by a language school should verify that the school is approved by or is acceptable to the CAA for the purpose of language assessment. A list of language schools acceptable to the CAA may be found on the CAA website (www.caa.co.uk) under Language Proficiency.

d) **At a Training Organisation**

Many CAA approved ATOs offer language training modules that meet the requirements of Part-FCL.055 as part of an individual's overall training package. Language proficiency may be determined by this means where the school is approved by the CAA for the purpose. A list of training organisation acceptable to the CAA for the determination of language proficiency may be found on the CAA website (www.caa.co.uk) under Language Proficiency.

e) **Other Acceptable Means**

Language proficiency may also be assessed by other means acceptable to the CAA. Such means of assessment may be determined by an operator or organisation to make efficient use of their own resources, but in any case must be approved by the CAA and meet the requirements of Part-FCL.055 before being put into effect.

5 Additional Information

5.1 Transitional arrangements for existing UK licence holders

In order to comply with the ICAO obligations the UK CAA has, since 2008, issued licences that include the statement "Language Proficiency: English". To facilitate this it was accepted by the CAA at that time that any holder of a UK FRTOL would be proficient to at least Level 4. The Level of proficiency is not stated on licences issued by the CAA prior to 17 September 2012, but CAA records for individual pilots will show Level 4 for FRTOL holders (expiring 4 years after the licence was issued), or Level 5 or 6 if acceptable evidence of proficiency to those levels has been submitted to the CAA.

To comply with the EASA Aircrew Regulation, Part-FCL licences issued by the CAA that include a radio licence must show the level of language proficiency. From 17 September 2012 onwards, applicants for new or replacement licences, or for the conversion of national licences, must supply evidence of language proficiency in English – (or have previously been accepted by the CAA as being at a level that has not expired on the date the new licence is issued).

UK licence holders who need to revalidate/renew a language proficiency endorsement previously granted by the UK CAA may do so by:

a) passing a language assessment or test as set out in 4.1 above; or

b) passing a language assessment as set out in FCL.055(b) and AMC1 FCL.055 section (a) to (l) inclusive, with the holder of a UK Examiner Certificate; (see Note 1). If the examiner assesses the candidate as being Expert Level 6 (the standard of a native speaker of English) he may certify to that effect by submitting a Form SRG 1199 to the CAA. If the examiner considers that the applicant is not at Level 6 the examiner must not give a proficiency endorsement, in which case the alternative means of assessment of 4.1 c), d), or e) must be used.

NOTE 1:

For these purposes, a holder of a UK Examiner Certificate is any holder of a valid FE, TRE, CRE, IRE, SFE or FIE certificate issued by the UK CAA.

EASA Ref 2013-00004 – Article 8(2)&(3) – Reduction of training hours for applicants for licences, ratings and certificates if they hold equivalent ICAO qualifications issued by a 3rd country

Purpose:

Reduction of training hours for applicants for licences, ratings and certificates if they hold equivalent ICAO qualifications issued by a 3rd country.

The CAA will publish information in CAP 804 that will advise ATOs that they may assume that a recommendation for minimum training based on the applicants' experience, defined in the material published in CAP804, is determined to be acceptable by the CAA without recommendation or request for agreement.

The full text to be published in CAP 804 for aeroplane and/or helicopter CPL, IR and/or Instructor Rating conversions, as applicable, (and providing the detailed conditions) is attached as Appendix 1

Date of notification to EASA: 14 May 2013

Appendix 1 -Text as published in CAP 804.

1.1 Alternative Means of Compliance

1.1.1 **Conversion of ICAO Licences and Ratings to Part-FCL Licences and Ratings**

In accordance with the provisions of Article 8 (2 & 3) of EU Regulation 1178/2011 applicants for Part- FCL licences already holding an equivalent licence, rating or certificate issued in accordance with Annex I of the Chicago Convention may be given credit towards meeting the requirements of Part-FCL. The credit given to the applicant shall be determined by the Member State on the basis of a recommendation from an Approved Training Organisation. The UK CAA is applying the following policy which may be utilised by an ATO conducting conversion training on ICAO licence holders for

a Part-FCL CPL (A) or (H), IR(A) or (H) and/or Flight Instructor Certificates (A) or (H), to be issued by the UK CAA without seeking prior approval from the Authority for each individual applicant.

These arrangements provide a route to a UK CAA-issued Part-FCL CPL (A) or (H), IR(A) or (H) and/or Flight Instructor Certificates (A) or (H), qualification for the holders of a current and valid ICAO CPL (A) or (H), IR(A) or (H) and/or ICAO Flight Instructor Rating (A) or (H), as applicable, issued in accordance with ICAO Annex 1.

The Aircrew Regulation requires that the holder of an ICAO licence shall attend an Approved Training Organisation and complete an approved modular course of CPL (A) or (H), IR(A) or (H) and/or Flight Instructor (A) or (H) flying training, as applicable. If on the basis of assessment by the ATO the course is to be reduced, but not to less than the minima set out below, the determination of acceptability by the CAA as required by Article 8 may be assumed.

If during the training course the Head of Training of the ATO determines that completion of the reduced course requirements set out in this part is unwarranted, the Head of Training may make a written recommendation for a further reduction, and L&TS will give the recommendation consideration.

Minimum course content without submission of a recommendation to the CAA.

1.2 ICAO CPL (A) holder to Part-FCL CPL(A)

1.2.1 Undertake Part-FCL CPL (A) or ATPL (A) theoretical knowledge instruction as determined by the Head of Training of an approved training provider and pass all Part-FCL theoretical knowledge examinations at CPL or ATPL level. Applicants who wish to attempt the ATPL(A) examinations must undertake the full 650 hour course of approved theoretical knowledge instruction and pass all Part-FCL ATPL(A) examinations.

1.2.2 Complete the minimum flight time under instruction in an Aeroplane as outlined at 1.2.4 below including recommendation for test in accordance with the approved procedures of the ATO.

1.2.3 Pass the Part-FCL CPL(A) Skill Test.

1.2.4 Minimum instruction depending upon total hours as pilot of aeroplanes:

Level 1: Experience 1000 hrs	Min 7 hrs	(18 hrs credit)
Level 2: Experience 500 – 999 hrs	Min 10 hrs	(15 hrs credit)
Level 3: Experience 250 - 499 hrs:	Min 15 hrs	(10 hrs credit)
Level 4: Experience 185 - 249 hrs:	Min 20 hrs	(5 hrs credit)
Level 5: Experience 155 - 184 hrs:	Min 25 hrs	(no credit)

1.3 ICAO CPL(H) holder to Part-FCL CPL(H)

1.3.1 Undertake Part-FCL CPL (H) or ATPL (H) theoretical knowledge instruction as determined by the Head of Training of an approved training provider and pass all Part-FCL theoretical knowledge examinations at CPL or ATPL level. Applicants who wish to attempt the ATPL(H) examinations must undertake the full 650 hour course of approved theoretical knowledge instruction and pass all Part-FCL ATPL(H) examinations.

1.3.2 Complete the minimum flight time under instruction in a Helicopter as outlined at 1.3.4 below including recommendation for test in accordance with the approved procedures of the ATO.

1.3.3 Pass the Part-FCL CPL(H) skill test.

1.3.4 Minimum instruction depending upon total hours as pilot of helicopters:

Level 1: Experience > 1000 hrs:	Min 7 hrs	(23 hrs credit)
Level 2: Experience 500 – 999 hrs:	Min 10 hrs	(20 hrs credit)
Level 3: Experience 250 – 499 hrs:	Min 15 hrs	(15 hrs credit)
Level 4: Experience 185- 249 hrs:	Min 20 hrs	(10 hrs credit)
Level 5: Experience 155 – 184 hrs:	Min 25 hrs	(5 hrs credit)

1.4 ICAO IR(A) holder to Part-FCL IR(A) - (previously published)

1.4.1 Undertake Part-FCL IR(A) theoretical knowledge instruction as determined by the Head of Training of an approved training provider and pass all Part-FCL theoretical knowledge examinations at IR level. Applicants who wish to attempt the ATPL(A) examinations must undertake the full 650 hour course of approved theoretical knowledge instruction and pass all Part-FCL ATPL(A) examinations.

1.4.2 Complete a minimum of 15 hours instrument time under instruction including recommendation for test in accordance with the procedures approved at the ATO, of which 5 hours may be in a FNPT I or 10 hours in a FNPT II or Full Flight Simulator.

1.4.3 Pass the Part-FCL IR(A) Skill Test.

1.5 ICAO IR(H) holder to Part-FCL IR(H) - (previously published)

1.5.1 Undertake Part-FCL IR(H) theoretical knowledge instruction as determined by the Head of Training of an approved training provider and pass all Part-FCL theoretical knowledge examinations at IR level. Applicants who wish to attempt

the ATPL(H) examinations must undertake the full 650 hour course of approved theoretical knowledge instruction and pass all Part-FCL ATPL(H) examinations.

1.5.2 Complete a minimum of 15 hours instrument time under instruction including recommendation for test in accordance with the procedures approved at the ATO, of which 5 hours may be in a FNPT I or 10 hours in a FNPT II or Full Flight Simulator.

1.5.3 Pass the Part-FCL IR(H) Skill Test.

1.6 ICAO Flight Instructor Rating (A) or (H) holder to Part-FCL FI (A) or (H) Certificate

1.6.1 Complete a minimum of 30 hours Ground Instruction under instruction in accordance with the approved flight instructor course of the ATO.

1.6.2 Complete a minimum of 15 hours Flight Instruction under instruction including recommendation for test in accordance with the approved flight instructor course of the ATO.

1.6.3 Pass the Part-FCL FI(A) or (H) Assessment of Competence appropriate to the aircraft category.

1.7 ICAO Flight Instructor Rating (A) or (H) holder to Part-FCL Instructor Certificate restricted to Instruction outside the territory of the Member States

1.7.1 Complete **a minimum of 30 hours Ground Instruction** under instruction in accordance with the approved flight instructor course of the ATO.

1.7.2 Complete a **minimum of 15 hours Flight Instruction** under instruction including recommendation for test in accordance with the approved flight instructor course of the ATO.

1.7.3 Pass the Part-FCL FI(A) or (H) Assessment of Competence appropriate to the aircraft category.

1.8 ICAO Instructor Ratings (A) or (H) holder to Part-FCL Instructor Certificates other than FI Certificates (TRI, CRI, IRI, SFI, MCCI, STI, MI, FTI)

1.8.1 No Alternative Means of Compliance available.

EASA Ref 2013-00008 – FCL.930.TRI – TRI training course for TRI – Aeroplanes

Purpose:

This AltMoC sets out the training course for Type Rating Instructors (Aeroplanes) as an alternative to the existing AMC1 FCL.930.TRI

Date of notification to EASA: 3 June 2013

UK AltMoC FCL.930.TRI TRI — Type Rating Instructor Training course

TRI TRAINING COURSE: AEROPLANES

GENERAL

(a) The aim of the TRI(A) training course set out in FCL.930 is to train aeroplane licence holders to the level of competence defined in FCL.920 and adequate for a TRI(A) and SFI(A) as applicable. The restricted privileges outlined in FCL.910.TRI(a) allow a TRI(A) to instruct in a simulator only (FSTD). This qualification is endorsed in the licence as 'FFS'. Additional training is required before instruction in an aircraft can be undertaken.

(b) The additional training required for a TRI(A) to conduct training in an aircraft will depend on the purpose of that aircraft training. Either:

(1) To conduct line flying under supervision when a TRI(A) is required for ZFTT or Recency (licence endorsed 'And LIFUS instructor); or

(2) To conduct take-offs and landings in the aircraft to complete the training requirement at the end of a Type Rating Course in a simulator as per AMC2 ORA.ATO.125(k)(1) (licence endorsed 'T/os & ldgs only'); or

(3) To conduct full type rating training in an aircraft when a simulator is not available, including abnormal and emergency procedures (i.e. an unrestricted qualification; licence endorsed 'A/c').

(c) For a TRI(A) qualified solely as 'A/c', additional training is required before giving flight instruction in a simulator (FSTD). An unrestricted aircraft qualification when combined with the simulator qualification is endorsed 'A/c & FFS'.

(d) The content of the TRI(A) training programme should cover training exercises applicable to the aeroplane type as set out in the applicable type rating course. The training programme should take into account the training as determined in the operational suitability data established in accordance with Part-21.

(e) For a TRI(A) the amount of practical training will vary depending on the complexity of the aeroplane type. For flight instruction in an aircraft the candidate instructor should be able to teach the air exercises safely and effectively from a pilot seat. Some training should be carried out in an appropriately qualified simulator for this purpose prior to any actual aircraft training.

(f) Course documentation should include a manual for candidate instructor use, giving a full description of the course, with supplementary notes; and a separate Tutor manual explaining the course delivery concepts, the course progression and changing emphasis.

(g) Candidate instructors should be taught the teaching methods used in flying training and regarded as ‘best practice’. These methods require the instructor to work to a syllabus with clearly defined objectives; provide a positive instructional input, which includes demonstration and/or verbal instruction as appropriate prior to student practice; be able to identify errors, and explain how to correct them, in order to teach to proficiency.

(h) The TRI(A) training course should develop safety awareness throughout by teaching the knowledge, skills and attitudes relevant to giving instruction for a type rating, whether the certificate is restricted or not. There should be particular emphasis on the importance of the non-technical skills and the role of CRM, TEM or MCC as appropriate.

(i) A TRI(A) may ‘tutor’ a TRI(A) course and an SFI(A) may ‘tutor’ a SFI(A) course when they have:

(1) Completed at least 50 hours of flight instruction as a TRI or SFI; and

(2) conducted the flight instruction syllabus of the TRI training course according to FCL.930.TRI(a)(3) under the supervision and to the satisfaction of a qualified TRI nominated by the HT of an ATO;

(3) passed a Tutor Assessment of Competence with an examiner approved for the purpose.

(j) Approved training organisations (ATOs) should provide sufficient mentoring to develop the skills required of a TRI or SFI Tutor to deliver the TRI course syllabus, before the Assessment of Competence takes place.

CONTENT

(a) The TRI training course consists of three parts:

(1) Part 1: teaching and learning instruction that should comply with AMC1 FCL.920;

(2) Part 2: technical theoretical knowledge instruction (technical training);

(3) Part 3: flight instruction.

(b) The minimum training required for Parts 1, 2 & 3 specified in Part FCL is deemed sufficient to qualify an Instructor for a 'FFS' qualification or, if the training has been wholly orientated towards aircraft instruction, an 'A/c' qualification. Therefore, the endorsements 'And LIFUS instructor', 'T/o's & ldgs only', or 'A/c' when added to 'FFS' all require upgrade courses of appropriate duration.

(1) Training for 'And LIFUS instructor' should comprise a minimum of half a day classroom, 1 x 2hr simulator session per Instructor, plus line flights with a TRI as specified in Part 3 (j) and (k).

(2) Training for 'T/os & ldgs' should comprise a minimum of half a day classroom, 2 x 2hr simulator sessions, plus training and an AoC in the aircraft.

(3) When full 'A/c' privileges are added to FFS, in addition to classroom topics, the whole aircraft syllabus has to be covered although some exercises may be in abbreviated form. Preferably this training is accomplished in both simulator and aircraft.

Part 1 - Teaching and Learning Instruction Syllabus

(a) The content of the teaching and learning part of the FI training course, as established in AMC1 FCL.930.FI, should be used as guidance to develop the TRI course syllabus. The course is a minimum of 25 hours. A dedicated CRM/TEM module should be included to teach the practical assessment of CRM/TEM using a recognised 'NOTECH' framework.

Part 2 - Technical Theoretical Knowledge Instruction Syllabus

(a) General

(1) The technical theoretical knowledge instruction should comprise not less than 10 hours training to refresh Part 1 theoretical topics as necessary, and aeroplane technical knowledge. It should include the preparation of lesson plans and the development of briefing room instructional skills. A proportion of the allotted 10 hours should be integrated with the practical flight instruction lessons in Part 3, using expanded pre-flight and post flight briefing sessions. Consequently, for practical purposes Part 2 and Part 3 should be considered complimentary to each other.

(b) Note: When a TRI(A) is additionally required to teach the ground technical theoretical syllabus on a type rating course, the candidate instructor should understudy a qualified course ground instructor delivering lectures from the ground school syllabus. Sufficient exposure by observation and mentoring should continue until the new instructor is competent to deliver the whole syllabus in the classroom environment. This training is separate to the Part 2 training described here.

(c) Common components for FSTD and AIRCRAFT

Each topic should be tailored to the privileges sought by the candidate instructor

(1) Planning/weather considerations

(2) Airfield selection including alternates

(3) Legal constitution of a crew (MPA and SP HPC(A) operated single-pilot or multi-pilot)

(4) Fuel Planning

(5) Loading

(6) Lesson Plans

(7) Pre- Flight Briefing content

(8) Teaching points specific to each exercise

(9) Methods of handing over and taking control

(10) Use of automatics

(11) Correct Seat position

(12) Fatigue/overload of inexperienced students

(13) Typical student errors

(14) Intervention strategies

(15) Note taking/Tech log times

(d) Additional components for FSTD privileges

The common components plus:

(1) Simulator Safety features

(2) Simulator briefing

(3) Simulator Capabilities

(4) Simulator Limitations

(5) Instructor Station

(6) Emergency Evacuation

(e) Additional components for AIRCRAFT privileges for ZFTT or recency (‘And LIFUS instructor’)

The common components plus:

(1) Use of a Safety Pilot

(2) The duties of the Safety Pilot

(3) Covering the controls at critical times

(4) Handling real emergencies at critical times

(5) Dealing with student errors/omissions during Normal and Actual Abnormal or Emergency operations

(6) Weather, Cloud, Visibility and Surface Wind considerations

(f) Additional components for AIRCRAFT privileges for take-off and landing training ('T/os & ldgs only')

The common components, plus the ZFTT/recency components plus:

(1) Use of a training checklist

(2) Training SOP's, including FMS programming

(3) MEL use on training flights

(4) Ballast requirements

(5) Touch and Go's: Advantages/disadvantages; prescribed method; minimum runway length and how it is derived; V speed consideration

(6) Use of 'Follow Through' technique (if relevant to aircraft type)

(7) ATC liaison

(8) Brake cooling

(9) Crew changes

(10) Fatigue/overload of instructor and students

(g) Additional components for AIRCRAFT unrestricted privileges ('A/c')

The common components, plus the ZFTT/recency components, plus the take-off and landing components, plus:

(1) Appropriate methods and minimum altitudes for simulating failures

(2) Zero Thrust settings

(3) Minimum altitudes for stalling exercises

(4) Airspace utilisation

(5) Additional weather constraints – maximum crosswind for simulated engine out landings

Part 3 - Flight Instruction Syllabus (for FSTD and/or AIRCRAFT privileges)

(a) General

(1) The course should consist of at least 5 hours of flight instruction for single-pilot aircraft operated in single-pilot operations, and 10 hours for multi-pilot aircraft or single-pilot certified aircraft operated in multi-pilot operations per candidate instructor.

(2) The candidate instructor should gain experience in teaching a variety of exercises, covering both normal and abnormal operations, including engine-out handling. Those exercises considered more demanding for converting student pilots should be included.

(3) The course should comprehensively cover the whole range of instructor skills enabling the applicant to plan, brief, train and debrief sessions using all relevant training techniques appropriate to pilot training.

(4) CRM, TEM or MCC, and the appropriate use of behavioural markers should be integrated throughout.

(b) Common components FSTD and AIRCRAFT (FFS, Unrestricted, LIFUS and Take-off and landings)

The candidate instructor should receive instruction in an appropriately qualified FSTD representing the type of aeroplane to a satisfactory level as follows:

(1) Left and right-hand seat familiarisation;

(2) Pre-flight preparation and use of checklists;

(3) Taxiing;

(4) Take-off;

(5) Rejected take-off;

(6) Engine failure during take-off, after V1;

(7) Engine inoperative approach and go-around;

(8) One engine (critical) simulated inoperative landing;

(9) Other abnormal and emergency procedures as necessary;

(10) Methods for giving appropriate commentary;

(11) Intervention strategies

(c) Additional components for FSTD privileges (for ‘FFS’ only)

The common components plus:

The candidate instructor should receive instruction in an appropriately qualified FSTD representing the type of aeroplane to a satisfactory level as follows:

(1) The candidate instructor should be made familiar with the device, limitations and capabilities, and the safety features, including emergency evacuation.

(2) The candidate instructor should be taught how to use the instructor station, and give instruction from that position. The candidate instructor should also be taught how to conduct a flying demonstration from a pilot seat giving appropriate commentary.

(d) Additional components for AIRCRAFT privileges for ZFTT or recency ('And LIFUS instructor');

The common components plus:

The candidate instructor should receive instruction in an appropriately qualified FSTD representing the type of aeroplane to a satisfactory level as follows:

(1) Strategies developed from situations role-played by a TRI course instructor, taken from but not limited to:

(i) Taxiing and turning circles;

(ii) Take-off configuration warning;

(iii) Over controlling;

(iv) High flare: long float;

(v) Long flare;

(vi) Baulked landing;

(vii) Immediate go-around from touchdown;

(viii) Too high on approach: no flare;

(ix) Incorrect configuration;

(x) TAWS Warning;

(xi) Misuse/incorrect use of rudder;

(xii) Over controlling in roll or pitch during flare;

(xiii) Incapacitation;

(xiv) Actual abnormal or emergencies.

(e) Additional components for AIRCRAFT privileges for take-off and landing training ('T/os and ldgs only'):

The common components, plus the ZFTT/recency components, plus:

The candidate instructor should receive instruction in an appropriately qualified FSTD representing the type of aeroplane to a satisfactory level as follows:

(1) Strategies developed from situations role-played by a TRI course instructor, taken from but not limited to:

(i) Particularities of handling the aeroplane in touch and go manoeuvres;

(ii) Dealing with incorrect actions by student during touch and go (e.g. selection of reverse thrust);

(iii) Circuit management and in-flight de-briefing techniques.

(f) Additional components for AIRCRAFT unrestricted privileges including abnormal and emergency procedures ('A/c'):

The common components, plus the ZFTT/recency components, plus the take-off and landing components, plus

The candidate instructor should receive instruction in an appropriately qualified FSTD representing the type of aeroplane to a satisfactory level as follows:

(1) Strategies developed from situations role-played by a TRI course instructor, taken from but not limited to:

(i) Simulating failures;

(ii) Mishandled stalling exercises;

(iii) Failure of a critical engine;

(iv) Approach and full-stop landing with simulated engine-out;

(v) Abnormal and emergencies applicable to the aeroplane type.

(g) Upon successful completion of the training above and where aircraft privileges are sought, the applicant should receive training in an aircraft in-flight under the supervision of a TRI(A) complimentary to the training provided in the simulator.

(h) At the completion of training the applicant instructor should be required to provide flight instruction appropriate to the privilege sought under the supervision and to the satisfaction of a TRI(A) nominated for this purpose by the training organisation.

(i) LINE FLYING UNDER SUPERVISION (ZFTT/Recency - 'And LIFUS Instructor')

(1) The aircraft training at Part 3 (j) and the assessment by a TRI at Part 3 (k) may be conducted on a commercial air transport flight.

(j) TRAINING WHERE NO FSTD EXISTS (Unrestricted Aircraft Privileges – 'A/c' only)

(1) Where no FSTD exists for the type for which the certificate is sought, a course of training should be conducted on the applicable aeroplane type. This includes all elements listed above, the synthetic device elements being replaced with appropriate exercises in the aircraft.

(k) TRAINING FOR ASYMMETRIC POWER FLIGHT ON SP MET AEROPLANES

During this part of the training, special emphasis is to be placed on the:

(1) Content must reflect the aircraft configuration, taking into consideration multi-engine piston propeller driven aeroplanes, multi-engine turbo-prop or multi-engine turbo-jet powered aeroplanes.

(2) circumstances in which actual feathering and un-feathering practice will be done, for example safe altitude; compliance with regulations about minimum altitude or height for feathering practice, weather conditions, distance from nearest available aerodrome.

(3) procedure to use for instructor and student co-operation, for example the correct use of touch drills and the prevention of misunderstandings, especially during feathering and unfeathering practice and when zero thrust is being used for asymmetric circuits. This procedure is to include positive agreement as to which engine is being shut down or re-started or set at zero thrust and identifying each control and naming the engine it is going to affect.

(4) consideration to be given to avoid over-working the operating engine, and the degraded performance when operating the aeroplane during asymmetric flight.

(5) need to use the specific checklist for the aeroplane type.

(l) Recommended Content of Long Briefings for flight with asymmetric power:

(1) General - Flight on asymmetric power

(i) introduction to asymmetric flight;

(ii) feathering the propeller: method of operation;

(iii) effects on aeroplane handling at cruising speed;

(iv) introduction to effects upon aeroplane performance;

(v) note foot load to maintain a constant heading (no rudder trim);

(vi) un-feathering the propeller: regain normal flight;

(vii) finding the zero thrust setting: comparison of foot load when feathered and with zero thrust set.

(viii) effects and recognition of engine failure in level flight;

(ix) the forces and the effects of yaw;

(A) types of failure:

(B) sudden or gradual;

(x) complete or partial.

(xi) yaw, direction and further effects of yaw;

(xii) flight instrument indications;

(xiii) identification of failed engine;

(xiv) the couples and residual out of balance forces: resultant flight attitude;

(xv) use of rudder to counteract yaw;

(xvi) use of aileron: dangers of misuse;

(xvii) use of elevator to maintain level flight;

(xviii) use of power to maintain a safe air speed and altitude;

(xix) supplementary recovery to straight and level flight: simultaneous increase of speed and reduction in power;

(xx) identification of failed engine: = idle engine;

(xxi) use of engine instruments for identification:

(A) fuel pressure or flow;

(B) RPM gauge response effect of CSU action at lower and higher air speed;

(C) engine temperature gauges.

(xxii) confirmation of identification: close the throttle of identified failed engine;

(xxiii) effects and recognition of engine failure in turns;

(xxiv) identification and control;

(xxv) side forces and effects of yaw.

(2) During turning flight:

(i) effect of ‘inside’ engine failure: effect sudden and pronounced;

(ii) effect of ‘outside’ engine failure: effect less sudden and pronounced;

(iii) the possibility of confusion in identification (particularly at low power):

(A) correct use of rudder;

(B) possible need to return to lateral level flight to confirm correct identification;

(iv) visual and flight instrument indications;

(v) effect of varying speed and power;

(vi) speed and thrust relationship;

(vii) at normal cruising speed and cruising power: engine failure clearly recognised;

(viii) at low safe speed and climb power: engine failure most positively recognised;

(ix) high speed descent and low power: possible failure to notice asymmetry (engine failure);

(3) Minimum control speeds:

(i) ASI colour coding: red radial line

Note: this exercise is concerned with the ultimate boundaries of controllability in various conditions that a student can reach in a steady asymmetric power state, approached by a gradual speed reduction. Sudden and complete failure should not be given at the flight manual V_{MCA}. The purpose of the exercise is to continue the gradual introduction of a student to control an aeroplane in asymmetric power flight during extreme or critical situations. It is not a demonstration of V_{MCA}.

(ii) techniques for assessing critical speeds with wings level and recovery – dangers involved when minimum control speed and the stalling speed are very close: use of V_{SSE};

(iii) establish a minimum control speed for each asymmetrically disposed engine: to establish critical engine (if applicable);

(iv) effects on minimum control speeds of:

(A) bank;

(B) zero thrust setting;

(C) take-off configuration:

- landing gear down and take-off flap set;
- landing gear up and take-off flap set.

Note: it is important to appreciate that the use of 5° of bank towards the operating engine produces a lower V_{MCA} and also a better performance than that obtained with the wings held level. It is now normal for manufacturers to use 5° of bank in this manner when determining the V_{MCA} for the specific type. Thus the V_{MCA} quoted in the aeroplane manual will have been obtained using the technique.

(4) Feathering and un-feathering:

(i) minimum heights for practising feathering or un-feathering drills;

(ii) engine handling: precautions (overheating, icing conditions, priming, warm up and method of simulating engine failure: reference to aircraft engine manual and service instructions and bulletins).

(5) Engine failure procedure:

(i) once the maintenance of control has been achieved, the order in which the procedures are carried out will be determined by the phase of operation and the aircraft type;

(ii) flight phase:

(A) in cruising flight;

(B) critical phase such as immediately after take-off or during the approach to landing or during a go-around.

(6) Aircraft type

(i) Variations will inevitably occur in the order of certain drills and checks due to differences between aeroplane types and perhaps between models of the same type. The flight manual or equivalent document (for example owner's manual or pilot's operating handbook) is to be consulted to establish the exact order of these procedures.

(ii) For example, one flight manual or equivalent document (for example owner's manual or pilot's operating handbook) may call for the raising of flaps and landing gear before feathering, whilst another may recommend feathering as a first step. The reason for this latter procedure could be due to the fact that some engines cannot be feathered if the rpm drops below a certain figure.

(iii) Again, in some aeroplanes, the raising of the landing gear may create more drag during retraction due to the transient position of the landing gear doors and as a result of this retraction would best be left until feathering has been accomplished and propeller drag reduced.

(iv) Therefore, the order in which the drills and checks are shown in this syllabus under immediate and subsequent actions are to be used as a general guide only and the exact order of precedence is determined by reference to the flight manual or equivalent document (for example owner's manual or pilot's operating handbook) for the specific aeroplane type being used on the course.

(7) In-flight engine failure in cruise or other flight phase not including take-off or landing:

(i) immediate actions:

(A) recognition of asymmetric condition;

(B) identification and confirmation of failed engine:

- idle leg = idle engine;
- closing of throttle for confirmation.

(C) cause and fire check:

- typical reasons for failure;
- methods of rectification.

(D) feathering decision and procedure:

- reduction of other drag;
- need for speed but not haste;
- use of rudder trim.

(ii) subsequent actions:

(A) live engine:

- temperature, pressures and power;
- remaining services;
- electrical load: assess and reduce as necessary;
- effect on power source for air driven instruments;
- landing gear;
- flaps and other services.

(B) re-plan flight:

- ATC and weather;
- terrain clearance, SE cruise speed;
- decision to divert or continue.

(C) fuel management: best use of remaining fuel;

(D) dangers of re-starting damaged engine;

(E) action if unable to maintain altitude: effect of altitude on power available;

(F) effects on performance;

(G) effects on power available and power required;

(H) effects on various airframe configuration and propeller settings;

(I) use of flight or owner's manual:

- cruising;
- climbing: ASI colour coding (blue line);
- descending;
- turning.

(J) 'live' engine limitations and handling;

(K) take-off and approach: control and performance;

(8) Significant factors:

(i) significance of take-off safety speed:

(A) effect of landing gear, flap, feathering, take-off, trim setting and systems for operating landing gear and flaps;

(B) effect on mass, altitude and temperature (performance).

(ii) significance of best SE climb speed (V_{YSE}):

(A) acceleration to best engine climb speed and establishing a positive climb;

(B) relationship of SE climb speed to normal climb speed;

(C) action if unable to climb.

(iii) significance of asymmetric committal height and speed: action if baulked below asymmetric committal height;

(9) Engine failure during take-off:

(i) below V_{MCA} or unstick speed:

(A) accelerate or stop distance considerations;

(B) prior use of flight manual data if available.

(ii) above V_{MCA} or unstick speed and below safety speed;

(iii) immediate re-landing or use of remaining power to achieve forced landing;

(iv) considerations:

(A) degree of engine failure;

(B) speed at the time;

(C) mass, altitude, temperature (performance);

(D) configuration;

(E) length of runway remaining;

(F) position of any obstacles ahead;

(10) Engine failure after take-off:

(i) simulated at a safe height and at or above take-off safety speed;

(ii) considerations:

(A) need to maintain control;

(B) use of bank towards operating engine;

(C) use of available power achieving best SE climb speed;

(D) mass, altitude, temperature (performance);

(E) effect of prevailing conditions and circumstances.

(iii) Immediate actions:

(A) maintenance of control, including air speed and use of power;

(B) recognition of asymmetric condition;

(C) identification and confirmation of failed engine;

(D) feathering and removal of drag (procedure for type);

(E) establishing best SE climb speed.

(iv) Subsequent actions: whilst carrying out an asymmetric power climb to the downwind position at SE best rate of climb speed:

(A) cause and fire check;

(B) live engine, handling considerations;

(C) remaining services;

(D) ATC liaison;

(E) fuel management.

Note: these procedures are applicable to aeroplane type and flight situation.

(11) Asymmetric committal height:

(i) Asymmetric committal height is the minimum height needed to establish a positive climb whilst maintaining adequate speed for control and removal of drag during an approach to a landing.

Because of the significantly reduced performance of many CS-23 aeroplanes when operating on one engine, consideration is to be given to a minimum height from which it would be safely possible to attempt a go-around procedure, during an approach when the flight path will have to be changed from a descent to a climb with the aeroplane in a high drag configuration.

Due to the height loss which will occur during the time that the operating engine is brought up to full power, landing gear and flap retracted, and the aeroplane established in a climb at V_{YSE} a minimum height (often referred to as 'asymmetric committal height') is to be selected, below which the pilot should not attempt to take the aeroplane round again for another circuit. This height will be compatible with the aeroplane type, all up weight, altitude of the aerodrome being used, air temperature, wind, the height of obstructions along the climb out path, and pilot competence.

(ii) Circuit approach and landing on asymmetric power:

(A) definition and use of asymmetric committal height;

(B) use of standard pattern and normal procedures;

(C) action if unable to maintain circuit height;

(D) speed and power settings required;

(E) decision to land or go-around at asymmetric committal height: factors to be considered;

(iii) Undershooting: importance of maintaining correct air speed, (not below V_{YSE}).

(12) Speed and heading control:

(i) height, speed and power relationship: need for minimum possible drag;

(ii) establishing positive climb at best SE rate of climb speed:

(A) effect of availability of systems, power for flap and landing gear;

(B) operation and rapid clean up.

Note 1: The air speed at which the decision is made to commit the aeroplane to a landing or to go-around should normally be the best SE rate of climb speed and in any case not less than the safety speed.

Note 2: On no account should instrument approach 'decision height' and its associated procedures be confused with the selection of minimum height for initiating a go-around in asymmetric power flight.

(13) Engine failure during an all engines approach or missed approach:

(i) use of asymmetric committal height and speed considerations;

(ii) speed and heading control: decision to attempt a landing, go-around or force land as circumstances dictate.

Note: At least one demonstration and practice of engine failure in this situation should be performed during the course.

(14) Instrument flying on asymmetric power:

(i) considerations relating to aircraft performance during:

(A) straight and level flight;

(B) climbing and descending;

(C) standard rate turns;

(D) level, climbing and descending turns including turns onto pre-selected headings.

(ii) vacuum operated instruments: availability;

(iii) electrical power source.

EASA Ref 2013-00012 – ARA.FCL.300(b) – Redistribution of questions between examination subjects in the Theoretical Knowledge Examinations for ATPL, (MPL), CPL and IR

Purpose

Redistribution of questions between examination subjects in the Theoretical Knowledge Examinations for ATPL, (MPL),CPL and IR to be consistent with the changes to learning objectives arising from NPA 2013-25 (FCL).

Date of notification to EASA: 4 October 2013

UK AltMoC

Attachment 1 - Comparison between EASA AMC and AltMOC for ARA.FCL.300 (b) Examination procedures

For direct comparison, the present AMC question distribution figures are shown in the grey highlighted columns and the AltMOC question distribution figures in the adjacent column to the right. Where the AltMOC question numbers have been increased, they are highlighted in green, and conversely where question numbers have been reduced, they are highlighted in pink. To aid numerical subpart identification, a description of the subpart has been added in the right hand column.

Subject: 010 – AIR LAW													
Theoretical knowledge examination													
Exam length, total number of questions and distribution of questions													
	ATPL(A)		CPL(A)		ATPL(H)/IR		ATPL(H)		CPL(H)		IR (A)&(H)		Syllabus area
Time (hr)	1:00		0:45		1:00		0:45		0:45		0:45		
Distribution of questions with regard to the topics of the syllabus													
010 01	03	02	02	01	03	02	03	02	02	01	XX	XX	International law: conventions, agreements and organisations
010 02	02	01	02	01	02	01	02	01	02	01	XX	XX	Airworthiness of aircraft
010 03	01	01	01	01	01	01	01	01	01	01	XX	XX	Aircraft nationality
010 04	02	02	02	02	02	02	02	02	02	02	01	01	Personnel licensing
010 05	08	09	08	08	08	09	08	08	08	08	08	08	Rules of the air
010 06	07	07	04	04	07	07	03	03	04	04	07	07	Air Navigation Services – Aircraft operations
010 07	05	08	03	06	05	08	03	06	03	06	05	06	Air Traffic Services and Air Traffic Management
010 08	02	02	02	02	02	02	02	02	02	02	02	02	Aeronautical Information Services
010 09	06	06	04	04	06	06	04	04	04	04	06	05	Aerodromes (Annex 14- Design and Ops)
010 10	02	01	01	01	02	01	01	01	01	01	XX	XX	Facilitation (Annex 9)
010 11	02	01	02	01	02	01	02	01	02	01	XX	XX	Search and Rescue
010 12	02	03	01	01	02	03	01	01	01	01	XX	XX	Security
010 13	02	01	01	01	02	01	01	01	01	01	XX	XX	Aircraft accident and incident investigation
Total questions	44	44	33	33	44	44	33	33	33	33	29	29	

Subject: 021 – AIRCRAFT GENERAL KNOWLEDGE – AIRFRAME/SYSTEMS/POWER PLANT													
Theoretical knowledge examination													
Exam length, total number of questions and distribution of questions													
	ATPL(A)		CPL(A)		ATPL(H)/IR		ATPL(H)		CPL(H)		IR (A)&(H)		Syllabus area
Time (hr)	2:00		1:30		2:00		2:00		1:30		XX		
Distribution of questions with regard to the topics of the syllabus													
021 01	04	02	02	01	04	02	04	02	02	01	XX	XX	Loads/stresses/fatigue/corrosion /maintenance
021 02	04	03	04	03	04	03	04	03	02	02	XX	XX	Airframe construction & materials
021 03	05	05	02	03	04	04	04	04	03	03	XX	XX	Hydraulics
021 04	05	06	06	05	04	03	04	03	02	02	XX	XX	Landing gear, wheels, tyres & brakes
021 05	07	07	04	04	06	05	06	05	03	03	XX	XX	Flight controls
021 06	05	05	04	03	04	02	04	02	02	01	XX	XX	Pressurisation and air cond
021 07	04	03	04	03	02	02	02	02	02	01	XX	XX	Anti and De-icing
021 08	06	05	04	03	04	03	04	03	04	02	XX	XX	Fuel systems
021 09	06	12	06	09	06	12	06	12	04	09	XX	XX	Electrics
021 10	06	06	14	14	06	08	06	08	08	10	XX	XX	Piston engines +props (A)
021 11	20	20	06	09	20	20	20	20	13	13	XX	XX	Turbine engines
021 12	04	03	02	02	02	02	02	02	02	01	XX	XX	Protection & detection Smoke/fire
021 13	04	03	02	01	XX	XX	XX	XX	XX	XX	XX	XX	Oxygen systems
021 14	XX	XX	XX	XX	01	01	01	01	01	01	XX	XX	Helicopter miscellaneous
021 15	XX	XX	XX	XX	04	04	04	04	03	03	XX	XX	Helicopter rotor heads
021 16	XX	XX	XX	XX	06	06	06	06	05	05	XX	XX	Helicopter transmission
021 17	XX	XX	XX	XX	03	03	03	03	04	03	XX	XX	Helicopter blades
Total questions	80	80	60	60	80	80	80	80	60	60	XX	XX	

Subject: 022 – AIRCRAFT GENERAL KNOWLEDGE – INSTRUMENTATION Theoretical knowledge examination													
Exam length, total number of questions and distribution of questions													
	ATPL(A)		CPL(A)		ATPL(H)/IR		ATPL(H)		CPL(H)		IR (A)&(H)		Syllabus area
Time (hr)	1:30		1:00		1:30		1:30		1:00		0:30		
Distribution of questions with regard to the topics of the syllabus													
022 01	08	07	08	07	08	09	08	09	08	08	XX	XX	Sensors /gauges
022 02	08	08	06	07	08	10	08	10	06	08	06	06	Pressure instruments/ AOA /temperature /ADC
022 03	04	03	04	03	04	04	04	04	04	03	04	02	Magnetism/DRMC/ flux valve
022 04	04	05	05	05	06	07	06	07	05	06	04	04	Gyroscopic instruments
022 05	05	03	XX	XX	03	03	03	03	XX	XX	XX	XX	INS & IRS
022 06	08	08	06	06	XX	XX	XX	XX	XX	XX	XX	XX	Auto flight control systems (A)
022 07	XX	XX	XX	XX	14	07	14	07	08	04	XX	XX	Auto flight control systems (H)
022 08	03	03	02	02	XX	XX	XX	XX	XX	XX	XX	XX	Trim/Yaw damper/flight envelope protection
022 09	02	02	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	Autothrottle and automatic thrust control system
022 10	02	02	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	Communication systems
022 11	04	04	XX	XX	04	04	04	04	XX	XX	XX	XX	Flight Management Systems
022 12	06	09	04	05	06	09	06	09	04	06	03	05	Alerting & proximity systems
022 13	04	04	04	04	05	05	05	05	04	04	03	03	Integrated systems/electronic displays
022 14	01	01	XX	XX	01	01	01	01	XX	XX	XX	XX	Maintenance, monitoring and recording systems
022 15	01	01	XX	XX	01	01	01	01	XX	XX	XX	XX	Digital circuits and computers
Total qu	60	60	39	39	60	60	60	60	39	39	20	20	

Subject: 031– FLIGHT PERFORMANCE AND PLANNING - MASS AND BALANCE													
Theoretical knowledge examination													
Exam length, total number of questions and distribution of questions													
	ATPL(A)		CPL(A)		ATPL(H)/IR		ATPL(H)		CPL(H)		IR (A)&(H)		Syllabus area
Time (hr)	1:00		1:00		1:00		1:00		1:00		XX		
Distribution of questions with regard to the topics of the syllabus													
031 01	03	03	03	03	03	03	03	03	03	03	XX	XX	Purpose of Mass and balance
031 02	05	08	05	08	05	09	05	09	05	09	XX	XX	Loading
031 03	05	01	05	01	05	01	05	01	05	01	XX	XX	Fundamentals of CG calculations
031 04	05	04	05	05	05	05	05	05	05	05	XX	XX	Moments/BEM CG/ %MAC
031 05	05	07	05	06	05	05	05	05	05	05	XX	XX	Determination CG/Load &Trim sheets/Effect of shift-add-remove on CG
031 06	02	02	02	02	02	02	02	02	02	02	XX	XX	Cargo handling /area & running load limitations
Total	25	25	25	25	25	25	25	25	25	25	XX	XX	

Subject: 032 – FLIGHT PERFORMANCE AND PLANNING – PERFORMANCE (AEROPLANES)													
Theoretical knowledge examination													
Exam length, total number of questions and distribution of questions													
	ATPL(A)		CPL(A)		ATPL(H)/IR		ATPL(H)		CPL(H)		IR (A)&(H)		Syllabus area
Time (hr)	1:00		0:45		XX		XX		XX		XX		
Distribution of questions with regard to the topics of the syllabus													
032 01	05	09	05	12	XX		XX		XX		XX		General Performance Theory
032 02	10	02	10	05	XX		XX		XX		XX		Class B- Single Engine Aeroplanes
032 03	10	04	10	08	XX		XX		XX		XX		Class B- Multi Engine Aeroplanes
032 04	10	20	XX	XX	XX		XX		XX		XX		Performance Class A
Total	35	35	25	25	XX		XX		XX		XX		

Subject: 033 – FLIGHT PERFORMANCE AND PLANNING – FLIGHT PLANNING AND MONITORING													
Theoretical knowledge examination													
Exam length, total number of questions and distribution of questions													
	ATPL(A)		CPL(A)		ATPL(H)/IR		ATPL(H)		CPL(H)		IR (A)&(H)		Syllabus area
Time (hr)	2:00		1:30		2:00		1:30		1:30		1:30		
Distribution of questions with regard to the topics of the syllabus													
033 01	05	05	05	10	05	09	05	10	05	12	XX	XX	VFR Navigation plan
033 02	10	11	XX	XX	10	11	XX	XX	XX	XX	10	16	IFR Navigation plan
033 03	10	13	10	12	10	09	10	09	10	09	05	05	Fuel planning
033 04	08	04	08	01	08	04	08	04	08	01	08	01	Pre flight planning
033 05	05	05	05	05	05	05	05	05	05	06	05	06	ICAO flight plan
033 06	05	05	05	05	05	05	05	05	05	05	05	05	Flight monitoring and in flight replanning
Total Qu	43	43	33	33	43	43	33	33	33	33	33	33	

Subject: 034 – FLIGHT PERFORMANCE AND PLANNING – PERFORMANCE (HELICOPTERS)													
Theoretical knowledge examination													
Exam length, total number of questions and distribution of questions													
	ATPL(A)		CPL(A)		ATPL(H)/IR		ATPL(H)		CPL(H)		IR (A)&(H)		Syllabus area
Time (hr)	XX		XX		1:00		1:00		0:45		XX		
Distribution of questions with regard to the topics of the syllabus													
034 01	XX	XX	XX	XX	15	15	15	15	15	15	XX	XX	General Performance Theory
034 02	XX	XX	XX	XX	05	05	05	05	05	05	XX	XX	Performance Class 3
034 03	XX	XX	XX	XX	05	05	05	05	XX	XX	XX	XX	Performance Class 2
034 04	XX	XX	XX	XX	10	10	10	10	XX	XX	XX	XX	Performance Class 1
Total questions	XX	XX	XX	XX	35	35	35	35	20	20	XX	XX	

Subject: 040 – HUMAN PERFORMANCE													
Theoretical knowledge examination													
Exam length, total number of questions and distribution of questions													
	ATPL(A)		CPL(A)		ATPL(H)/IR		ATPL(H)		CPL(H)		IR (A)&(H)		Syllabus area
Time (hr)	1:00		0:45		1:00		1:00		0:45		0:45		
Distribution of questions with regard to the topics of the syllabus													
040 01	02	02	01	01	02	02	02	02	01	01	01	01	Basic concepts
040 02	33	28	26	21	33	28	33	28	26	21	26	21	Physiology
040 03	13	18	09	14	13	18	13	18	09	14	09	14	Psychology
Total questions	48	48	36	36	48	48	48	48	36	36	36	36	

Subject: 050 – METEOROLOGY													
Theoretical knowledge examination													
Exam length, total number of questions and distribution of questions													
	ATPL(A)		CPL(A)		ATPL(H)/IR		ATPL(H)		CPL(H)		IR (A)&(H)		Syllabus area
Time (hr)	2:00		1:30		2:00		2:00		1:30		1:30		
Distribution of questions with regard to the topics of the syllabus													
050 01	11	11	09	09	11	11	11	11	09	09	09	09	The atmosphere
050 02	11	10	06	06	11	10	11	10	06	06	06	06	Wind
050 03	04	04	04	04	04	04	04	04	04	04	04	04	Thermodynamics
050 04	07	07	06	06	07	07	07	07	06	06	06	06	Clouds and fog
050 05	03	02	03	02	03	02	03	02	03	02	03	02	Precipitation
050 06	07	07	07	06	07	07	07	07	07	06	07	06	Air masses and fronts
050 07	06	06	02	02	06	06	06	06	02	02	02	02	Pressure systems
050 08	08	08	03	03	08	08	08	08	03	03	03	03	Climatology
050 09	11	13	09	11	11	13	11	13	09	11	09	11	Flight hazards
050 10	16	16	14	14	16	16	16	16	14	14	14	14	Meteorology information
Total questions	84	84	63	63	84	84	84	84	63	63	63	63	

Subject: 061 – GENERAL NAVIGATION													
Theoretical knowledge examination													
Exam length, total number of questions and distribution of questions													
	ATPL(A)		CPL(A)		ATPL(H)/IR		ATPL(H)		CPL(H)		IR (A)&(H)		Syllabus area
Time (hr)	2:00		1:30		2:00		2:00		1:30		XX		
Distribution of questions with regard to the topics of the syllabus													
061 01	12	15	07	10	12	15	12	15	07	10	XX	XX	Basics of navigation
061 02	04	01	04	01	04	01	04	01	04	01	XX	XX	Magnetism and compasses
061 03	14	14	12	12	14	14	14	14	12	12	XX	XX	Charts
061 04	16	16	11	11	16	16	16	16	11	11	XX	XX	Dead reckoning navigation
061 05	14	14	11	11	14	14	14	14	11	11	XX	XX	In flight navigation
Total questions	60	60	45	45	60	60	60	60	45	45	XX	XX	

Subject: 062 – RADIO NAVIGATION													
Theoretical knowledge examination													
Exam length, total number of questions and distribution of questions													
	ATPL(A)		CPL(A)		ATPL(H)/IR		ATPL(H)		CPL(H)		IR (A)&(H)		Syllabus area
Time (hr)	1:30		0:30		1:30		1:00		0:30		1:00		
Distribution of questions with regard to the topics of the syllabus													
062 01	07	07	04	04	07	07	05	05	04	04	02	02	Basic radio propagation theory
062 02	21	21	12	12	21	21	15	15	12	12	23	23	Radio aids
062 03	12	12	02	02	12	12	08	08	02	02	05	05	Radar
062 04	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
062 05	15	15	XX	XX	15	15	XX	XX	XX	XX	10	10	Area Navigation systems
062 06	11	11	04	04	11	11	06	06	04	04	04	04	Global Navigation systems
Total questions	66	66	22	22	66	66	34	34	22	22	44	44	

Subject: 070 – OPERATIONAL PROCEDURES													
Theoretical knowledge examination													
Exam length, total number of questions and distribution of questions													
	ATPL(A)		CPL(A)		ATPL(H)/IR		ATPL(H)		CPL(H)		IR (A)&(H)		Syllabus area
Time (hr)	1:15		0:45		1:00		1:00		0:45		XX		
Distribution of questions with regard to the topics of the syllabus													
071 01	25	25	18	18	18	21	18	21	14	16	XX	XX	General requirements
071 02	20	20	12	12	14	14	14	14	12	12	XX	XX	Special procedures and hazards
071 03	XX	XX	XX	XX	06	03	06	03	04	02	XX	XX	Emergency procedures (helicopters)
Total questions	45	45	30	30	38	38	38	38	30	30	XX	XX	

Subject: 081 – PRINCIPLES OF FLIGHT (AEROPLANES)													
Theoretical knowledge examination													
Exam length, total number of questions and distribution of questions													
	ATPL(A)		CPL(A)		ATPL(H)/IR		ATPL(H)		CPL(H)		IR (A)&(H)		Syllabus area
Time (hr)	1:00		0:45		XX		XX		XX		XX		
Distribution of questions with regard to the topics of the syllabus													
081 01	17	17	14	14	XX	XX	XX	XX	XX	XX	XX	XX	Subsonic aerodynamics
081 02	06	06	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	High speed aerodynamics
081 03	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
081 04	06	05	06	05	XX	XX	XX	XX	XX	XX	XX	XX	Stability
081 05	04	04	03	03	XX	XX	XX	XX	XX	XX	XX	XX	Control
081 06	03	03	03	03	XX	XX	XX	XX	XX	XX	XX	XX	Limitations
081 07	04	04	03	03	XX	XX	XX	XX	XX	XX	XX	XX	Propellers
081 08	04	05	04	05	XX	XX	XX	XX	XX	XX	XX	XX	Flight mechanics
Total questions	44	44	33	33	XX	XX	XX	XX	XX	XX	XX	XX	

Subject: 082 – PRINCIPLES OF FLIGHT (HELICOPTERS)													
Theoretical knowledge examination													
Exam length, total number of questions and distribution of questions													
	ATPL(A)		CPL(A)		ATPL(H)/IR		ATPL(H)		CPL(H)		IR (A)&(H)		Syllabus area
Time (hr)	XX		XX		1:00		1:00		1:00		XX		
Distribution of questions with regard to the topics of the syllabus													
082 01	XX	XX	XX	XX	05	05	05	05	05	05	XX	XX	Subsonic aerodynamics
082 02	XX	XX	XX	XX	03	03	03	03	03	03	XX	XX	Transonic and compressibility effects
082 03	XX	XX	XX	XX	01	01	01	01	01	01	XX	XX	Rotorcraft types
082 04	XX	XX	XX	XX	12	12	12	12	12	12	XX	XX	Main rotor aerodynamics
082 05	XX	XX	XX	XX	10	10	10	10	10	10	XX	XX	Main rotor mechanics
082 06	XX	XX	XX	XX	05	05	05	05	05	05	XX	XX	Tail rotors
082 07	XX	XX	XX	XX	05	05	05	05	05	05	XX	XX	Equilibrium, stability and control
082 08	XX	XX	XX	XX	03	03	03	03	03	03	XX	XX	Helicopter flight mechanics
Total questions	XX	XX	XX	XX	44	44	44	44	44	44	XX	XX	

Subject: 091 – VFR COMMUNICATIONS													
Theoretical knowledge examination													
Exam length, total number of questions and distribution of questions													
	ATPL(A)		CPL(A)		ATPL(H)/IR		ATPL(H)		CPL(H)		IR (A)&(H)		Syllabus area
Time (hr)	0:30		0:30		0:30		0:30		0:30		XX		
Distribution of questions with regard to the topics of the syllabus													
091 01	05	05	05	05	05	05	05	05	05	05	XX	XX	Definitions
091 02	11	12	11	12	11	12	11	12	11	12	XX	XX	General operating procedures
091 03	02	02	02	02	02	02	02	02	02	02	XX	XX	Weather information terms
091 04	02	02	02	02	02	02	02	02	02	02	XX	XX	Action communication failure
091 05	02	02	02	02	02	02	02	02	02	02	XX	XX	Distress and urgency procedures
091 06	02	01	02	01	02	01	02	01	02	01	XX	XX	General principles of propagation and allocation of frequencies
Total questions	24	24	24	24	24	24	24	24	24	24	XX	XX	

Subject: 092 – IFR COMMUNICATIONS													
Theoretical knowledge examination													
Exam length, total number of questions and distribution of questions													
	ATPL(A)		CPL(A)		ATPL(H)/IR		ATPL(H)		CPL(H)		IR (A)&(H)		Syllabus area
Time (hr)	0:30		XX		0:30		XX		XX		0:30		
Distribution of questions with regard to the topics of the syllabus													
092 01	05	05	XX	XX	05	05	XX	XX	XX	XX	05	05	Definitions
092 02	11	11	XX	XX	11	11	XX	XX	XX	XX	11	11	General operating procedures
092 03	02	02	XX	XX	02	02	XX	XX	XX	XX	02	02	Action to be taken in case of communication failure
092 04	02	02	XX	XX	02	02	XX	XX	XX	XX	02	02	Distress and urgency procedures
092 05	02	02	XX	XX	02	02	XX	XX	XX	XX	02	02	Relevant weather information term
092 06	02	02	XX	XX	02	02	XX	XX	XX	XX	02	02	General principles of propagation and allocation of frequencies
092 07	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	Morse code
Total questions	24	24	XX	XX	24	24	XX	XX	XX	XX	24	24	

Attachment 2 -

Background to the Alternate Means Of Complaince for ARA.FCL.300 (b) Examination procedures

NPA-FCL-25 (the revised theoretical knowledge system) updated the learning objectives for the ATPL, CPL and IR examinations. The NPA redistributed some Learning Objectives (LOs) between subjects and added LOs to reflect advances and changes in the industry, technology and operating environment. However, the distribution of examination questions across the syllabi for each subject subpart (as in AMC to ARA.FCL.300(b)) was not updated. Consequently, the distribution of exam questions in the subject subparts does not reflect the intention of the updated NPA 25 LOs.

To address this problem, a UK member of the International Association of Aviation Personnel Schools (IAAPS), raised the issue at the IAAPS General Meeting on 11th and 12th June 2013. Following discussion and agreement between the IAAPS members, it was decided that an Alternate MOC to ARA.FCL.300(b) should be drafted. This draft reflected the updated NPA 25 LOs and, where appropriate, placed a greater emphasis on safety critical subject subparts and considered developments in technology and industry practice.

The draft Alternate MOC was prepared and distributed to all IAAPS members inviting comments to be returned to the IAAPS secretary. Following collation of these comments, the UK IAAPS member, on behalf of IAAPS, approached the UK CAA. At a meeting with the CAA on 23rd July 2013 the IAAPS proposals were agreed by the UK CAA who further agreed to prepare an Alternate MOC to ARA.FCL.300(b) to submit to the Agency.

Further notification of the date from which the Part-FCL examination papers will be produced using the Alternate AMC will follow. Please note that the LOs are unaltered, which means that the content of the theoretical knowledge instruction required to be delivered remains the same. It is likely that the first UK examination sitting based on the Alternate MOC will be in Spring 2014.

EASA Ref 2014-00001 – FCL.210, FCL.215 – Removal of the 100 Hours stipulation contained in AMC.FCL.210, FCL.215 in order to make it consistent with AMC1.FCL.115, FCl.120

Purpose:

The subject matter syllabus and examinations for the LAPL(A) and PPL(A) are common. The same is true for the LAPL(H) and PPL(H). The EASA AMC for the PPL states that the course shall comprise of at least 100 hours of instruction, but the AMC for the LAPL does not specify any minimum duration. This is not consistent or logical. This AltMoC addresses that anomaly.

Date of notification to EASA: 7 January 2014

UK AltMoC

United Kingdom Alternative Means of Compliance AltMoC1 FCL.210; FCL.215

SYLLABUS OF THEORETICAL KNOWLEDGE FOR THE PPL (A) AND PPL (H)

The tables set out in the **EASA AMC1 FCL.210; FCL.215** contain the syllabi for the courses of theoretical knowledge, as well as for the theoretical knowledge examinations for the PPL (A) and PPL (H).

The training and examination should cover aspects related to non-technical skills in an integrated manner, taking into account the particular risks associated with the licence and the activity.

The theoretical knowledge instruction provided by the ATO should include a certain element of formal classroom work but may also include other methods of delivery, for example: interactive video, slide or tape presentation, computer-based training and other media distance learning courses.

The training organisation responsible for the training has to check if all the appropriate elements of the training course of theoretical knowledge instruction have been completed to a satisfactory standard before recommending the applicant for the examination.

Refer to the tables set out in **EASA AMC1 FCL.210; FCL.215.** The applicable items for each licence are marked with 'x' in the tables. An 'x' on the main title of a subject means that all the sub-divisions are applicable.

EASA Ref 2014-00008 – FCL.1020 – Qualification of Senior Examiners conducting Assessments of Competence on Type Rating Examiners

Purpose

AMC1 ARA.FCL.205 states that for Authority Inspectors it is sufficient that they are qualified as Inspectors and they need not be qualified on all types. This AltMoC FCL.1020 adopts the same approach to Senior Examiners in Industry that are performing the same role as Authority Inspectors

Date of notification to EASA: 20 June 2014

UK CAA Alternative Means of Compliance

Senior Examiners - FCL.1020

AltMoC FCL.1020

AUTHORISATION OF SENIOR EXAMINERS TO ASSESS THE COMPETENCE. OF TYPE RATING EXAMINERS

Senior Examiners conducting Assessments of Competence for Type Rating Examiners would ideally meet the same requirements as the examiners they assess. However, it is recognised that it is not possible for Senior Examiners to obtain and maintain type ratings for a large variety of aircraft types. Since the role of the Senior Examiner is to observe the quality and application of the Examiner's training and testing, they may conduct assessments of competence for a TRE if they are authorised as Senior Examiners by the Competent Authority and are qualified as Type Rating Examiners on at least one aircraft type of similar configuration and performance to that on which the TRE is to be assessed.

For senior examiners who comply with these criteria the CAA will issue authorisation certificates that allow them to standardise examiners of similar aircraft types without holding the Type Rating,TRI or TRE certificate for the specific aircraft type.

Supporting Rationale

Part-FCL, FCL 1000, states that examiners should have the same qualifications as those pilots for whom they are conducting tests, checks and assessments.

FCL.1000 Examiner certificates

(a) General. Holders of an examiner certificate shall:

(1) hold an equivalent licence, rating or certificate to the ones for which they are authorised to conduct skill tests, proficiency checks or assessments of competence and the privilege to instruct for them;

(2) be qualified to act as PIC on the aircraft during a *skill test, proficiency check or assessment of competence when conducted on the aircraft.*

FCL.1000 does not specifically address "Senior Examiner Certificates"

The need for Senior Examiners appears in FCL.1020

FCL.1020 is the requirement for examiners to be assessed by either, authority inspectors, or senior examiners appointed by the Competent Authority.

FCL.1020 Examiners assessment of competence

Applicants for an examiner certificate shall demonstrate their competence to an inspector from the competent authority or a *senior examiner specifically authorised to do so by the competent authority responsible for the examiner's certificate through the conduct of* a *skill test, proficiency check or assessment of competence in the examiner role for which privileges are sought, including briefing, conduct of the skill test, proficiency check or assessment of competence, and assessment of the person to whom the test, check or assessment is given, debriefing and recording documentation.*

This makes provision for Senior Examiners to be authorised by the Competent Authority, but does not specify their qualifications.

The AMC to Part-ARA recognises that it is not possible for a Competent Authority Inspector to be qualified on numerous aircraft types, and allows the inspector to assess examiners without being qualified on each aircraft type/class

SUBPART FCL - SPECIFIC REQUIREMENTS RELATING TO FLIGHT CREW LICENSING SECTION II- LICENCES, RATINGS AND CERTIFICATES

AMC1 ARA.FCL.205 Monitoring of examiners

QUAL/FICATION OF INSPECTORS

Inspectors of the competent authority supervising examiners should ideally meet the same *requirements as the examiners being supervised. However, it* is *unlikely that they could be* so *qualified on the large variety of types and* tasks *for which they have* a *responsibility and, since they normally only observe training and testing, it* is *acceptable if they are qualified for the role of an inspector.*

The UK CAA has developed an Alternative Means of Compliance so that Senior Examiners carrying out the same task as Authority Inspectors have the same flexibility that is afforded to Competent Authority Inspectors.

EASA Ref 2015-00011 – FCL.115.LAPL, FCL.110.LAPL(A), FCL.210, FCL.210.A.PPL(A) – Revised (LAPL(A) and PPL(A) flight training and theoretical knowledge training syllabi

Purpose

The Alt MOC details a revised LAPL (A) and PPL (A) flight training and theoretical knowledge training syllabi. FCL.115 and FCL.210 both state that *applicants shall complete a training course within an ATO and the course shall include theoretical knowledge and flight instruction appropriate to the privileges given.*

Training organisations can choose to adopt this alternative syllabus knowing that it complies with the IR or use the existing AMC syllabus.

Date of notification to EASA: 26 March 2015

Attachment 1 **United Kingdom Alternative Means of Compliance**

AltMoC 1 FCL.115; FCL.120 – Syllabus of Theoretical Knowledge for the LAPL.

(a) The training and examination should cover aspects related to non-technical skills in an integrated manner, taking into account the particular risks associated with the licence and the activity. The theoretical knowledge instruction provided by the ATO may include elements of classroom work also including other methods of delivery for example interactive video, slide or tape presentation, computer-based training and other media distance learning courses. The training organisation responsible for the training has to check if all the appropriate elements of the training course of theoretical knowledge instruction have been completed to a satisfactory standard before recommending the applicant for the examination.

(b) The following table contains the syllabus for the courses of theoretical knowledge for the LAPL(A).

1	**Air Law** **International Aviation Law** International Civil Aviation Organisation (ICAO) European Aviation Safety Agency (EASA) National Aviation Authorities (NAA) **European Rules of the Air** Applicability and compliance Pilot in command responsibilities Pre flight actions Avoidance of collisions and rights of way Operation in the vicinity of an aerodrome **Aerodromes** Taxiway and runway signs and markings Preventing runway Incursion Other ground signals Marshalling signals Light signals **Visual Meteorological Conditions (VMC) and Visual Flight Rules (VFR)** Visual Meteorological Conditions (VMC) minima Visual Flight Rules (VFR) Minimum heights **Airspace Classifications** Classification of airspace Controlled and notified airspace Uncontrolled airspace Radio Mandatory Zones (RMZ) Transponder Mandatory Zones (TMZ) **Altimeter Setting Procedures** Height, altitude and flight level VFR altimeter setting procedures **Air Traffic Services** Air Traffic Control Service Flight Information Service Alerting Service **Aeronautical Information Service (AIS)** Aeronautical Information Service (AIS**)**

	Aeronautical Information Publication (AIP**)** NOTAMs **Urgency and Distress Procedures** Urgency situation Distress situation Interception of civil aircraft **Pilot Licensing** Medical certificates Private Pilot Licence (PPL) privileges Light Aircraft Pilot Licence (LAPL) privileges Class Rating Type Rating Other Ratings and certificates **National Procedures** National rules and procedures
2	**Human Performance** **Basic Aviation Physiology** Hypoxia Hyperventilation Vision and visual illusions Lookout techniques Hearing and balance Spatial disorientation Sleep and fatigue Common ailments, medication, health Toxic hazards Intoxication **Basic Aviation Psychology** Perception Memory Arousal and performance Stress and stress management Personality types Hazardous attitudes **Principles of Threat and Error Management** Threats Errors Undesired aircraft states Countermeasures Situational awareness Decision making Developing sound judgement
3	**Meteorology** **The Atmosphere** Composition of the atmosphere The troposphere

	Temperature, Pressure and Density Temperature variation in the atmosphere Pressure variation in the atmosphere Density Humidity The International Standard Atmosphere (ISA) **Altimetry** Altimeter and pressure settings Altimeter temperature and pressure effects **Wind** Cause of wind Variation of wind velocity with altitude Local winds **Clouds and Precipitation** Formation of cloud Principle cloud types Precipitation **Visibility** Fog and mist Haze and smoke Visibility in precipitation **Air Masses** Characteristics of air masses **Low Pressure Systems** The warm sector depression The warm front The cold front Occluded fronts Troughs and convergence **High Pressure Systems** Anticyclones Ridges Cols **Hazardous Weather Conditions: Icing** Airframe icing Rain ice Frost Piston engine icing **Hazardous Weather Conditions: Thunderstorms** Formation of thunderstorms Hazards for aircraft **Other Hazardous Weather Conditions:** Mountainous areas Turbulence Wind shear Strong winds

	Meteorological Information Synoptic charts Satellite imagery Ground based weather radar Area and significant weather forecasts TAFs and METARs Sources of meteorological information Forecast and observation parameters and tolerances **National Procedures** National procedures
4	**Communications** **VHF Radio Broadcast** Factors affecting VHF radio range **Transmission Technique** Transmission of letters Transmission of numbers Transmission of time Call signs **VFR Communications Procedures** Test procedures Standard phraseology Items requiring read back Transfer of communications Transponder operating procedures **Weather Information** ATIS & VOLMET broadcasts, Flight Information Service (FIS) **Communications Failure** Actions in the event of communication failure **Distress and Urgency Procedures** Emergency frequencies and facilities Urgency procedures Distress procedures **National Procedures** National rules and procedures
5	**Principles of Flight** **Basic Concepts** Static and dynamic pressure Aerodynamic forces Aerofoils and wings **The Four Forces** Weight Thrust Lift Drag **The Stall**

	Stalling angle of attack Factors affecting stall characteristics Factors affecting stalling speed Stall warning Spin avoidance Spinning characteristics **Stability and Control** Stability and control in yaw Stability and control in roll Stability and control in pitch Trimming controls High lift devices Air brakes and spoilers Other flying controls **Principles of Flight** Straight and level flight Climbing Descending Turning and manoeuvring **Operating Limitations** Airspeed and load limitations The load diagram (manoeuvring envelope) Other operating limitations
6	**Operational Procedures** **Application of Threat and Error Management** Application of Threat and Error Management (TEM) in relation to aircraft operation **Operation of Aircraft** Applicability of EASA regulations Responsibility and authority of Pilot in Command (PIC) Documents to be carried Dangerous goods Fuel and oil, refuelling Instruments and equipment Safety equipment **Avoidance of Hazards** Avoiding hazardous situations Avoidance of wake turbulence **Search and Rescue Procedures** Principles of search and rescue procedures Search and rescue signals **Accidents and Incidents** Accident definitions and investigation Safety reporting Safety publications **Care of Passengers** Passenger briefing and passenger procedures

	National Procedures National rules and procedures
7	**Flight Performance and Planning** **Mass and Balance** Mass limitations Calculation of aircraft mass Centre of gravity limitations Calculation of centre of gravity **Performance - Take-Off and Climb** Factors affecting take-off and climb performance Calculation of take-off and climb performance **Performance - Cruise** Principles of endurance and range Factors affecting cruise performance Calculation of cruise performance **Performance - Descent and Landing** Factors affecting descent and landing performance Calculation of descent and landing performance **VFR Flight Planning** Route selection Communication and radio navigation selection Completion of the navigation plan The Aeronautical Information Publication (AIP) NOTAMs Obtaining meteorological information International flight **Fuel Planning** Fuel required calculation **ICAO (ATS) Flight Plan** Requirement to File ICAO (ATS) Flight plan Submission of the ICAO (ATS) Flight plan **National Procedures** National rules and procedures
8	**Aircraft General Knowledge** **The Airframe** Airframe design and construction Serviceability checks **Flying Controls** Flying control design and construction Serviceability checks **Undercarriage** Undercarriage design and construction Tyres and brakes

	Serviceability checks **Piston Engines** Principles of operation Piston engine design and components Serviceability checks **Piston Engine Systems** Fuel system Induction system Ignition system Oil system Cooling system Other engine systems **The Propeller** Principles of operation Propeller design and components Propeller handling Serviceability checks **Engine Handling** Engine limitations Engine handling **The Electrical System** Principles of operation Electrical system design and components **Instruments and Systems** The pitot static system The altimeter The vertical speed indicator The air speed indicator The suction system Attitude indicator Heading indicator The turn indicator / turn co-ordinator The compass Other instrumentation Integrated electronic displays **Avionics Systems** Communications Equipment SSR ADF VOR DME GNSS Integrated Electronic Displays **Cockpit Equipment and Systems** Doors, windows and exits Seats Seat belts and harnesses Cockpit heating and ventilation systems

	Emergency Equipment First aid kit Fire extinguishers ELT/PLB Lifejackets and life rafts Other survival equipment **Aircraft Airworthiness** Aircraft registration Airworthiness Certificate, Permit to Fly **Aeroplane Flight Manual/Pilot Operating Handbook** Aircraft maintenance and serviceability Maintenance and serviceability documentation **Converting Onto a Different Aircraft** Practical considerations when converting onto a different aircraft and variants **National Procedures** National rules and procedures
9	**Navigation** **Form of the Earth** Latitude and Longitude **Measurement of Direction** True direction Magnetic direction Compass direction **Measurement of Distance** Units of distance Conversion of units **Measurement of Airspeed** Calculation of true airspeed **Triangle of Velocities** Calculating heading and groundspeed **In-flight VFR Navigation: Dead Reckoning and Map Reading** Principles of dead reckoning Time and distance Map reading **In-flight VFR Navigation: Off-track and Diversion** Off track correction ETA revision Diversion Alternate airfields **In-flight VFR Navigation: Vertical Navigation** Safety altitudes Vertical navigation Altimeter settings

	In-flight VFR Navigation: Controlled and Notified Airspace Procedures in the vicinity of controlled and notified airspace Procedures within controlled and notified airspace Airspace infringement **Time** UTC Time Zones Sunrise and sunset information **VFR Radio Navigation** Integrating radio navigation with VFR navigation VDF – Operation and interpretation, limitations and accuracy ATC Radar – Operation and interpretation, limitations and accuracy ADF – Operation and interpretation, limitations and accuracy VOR – Operation and interpretation, limitations and accuracy DME – Operation and interpretation, limitations and accuracy GNSS – operation and interpretation, limitations and accuracy

Attachment 2 **United Kingdom Alternative Means of Compliance**

AltMoC 1 FCL.110.A LAPL(A) - Experience requirements and crediting

FLIGHT INSTRUCTION FOR THE LAPL(A)

(a) Entry to training
Before being accepted for training an applicant should be informed that the appropriate medical certificate must be obtained before solo flying is permitted.

(b) Flight instruction

(1) The LAPL(A) flight instruction syllabus takes into account the principles of threat and error management.

(2) Before authorising the applicant for a LAPL(A) to undertake his/her first solo flight, the FI should ensure that the applicant can operate the required systems and equipment and is proficient in the use of R/T communication.

(3) Use of Basic Instrument Training Devices (BITD) (and higher level simulators):
(a) A BITD may be used for flight training for:
(i) navigation using radio navigation aids;
(b) The use of the BITD should be subject to the following:
(i) the training should be complemented by exercises in an aeroplane;
(ii) the record of the parameters of the BITD flight must be maintained.;
(iii) an FI(A) or STI(A) should provide the instruction.

(c) Syllabus of flight instruction

(1) The numbering of exercises should be used primarily as a reference list and as a broad instructional sequencing guide; therefore the demonstrations and practices need not necessarily be carried out in the order listed. The actual order and content will depend upon the following interrelated factors:

(i) the applicant's progress and ability;
(ii) the weather conditions affecting the flight;
(iii) the flight time available;
(iv) instructional technique considerations;
(v) the local operating environment;
(vi) applicability of the exercises to the aeroplane or TMG type.

(2) The need for the applicant to practise good airmanship and maintain a good look-out, should be emphasised throughout.

Exercise 1a Aeroplane or TMG Familiarisation
Aircraft Construction and characteristics
Normal exits
Cockpit layout
Aircraft systems
Use of checklist and Pilot's Operating Handbook/Flight Manual

Exercise 1e Emergency and Abnormal Procedures
Fire on the ground
Cockpit fire in the air
Engine fire in the air
Systems failures
Emergency equipment and drills, emergency exits

Exercise 2 Preparations for Flight & Actions after Flight
Personal preparation
Flying equipment required
Weather forecasts and actual reports
NOTAMs and AIS information
Flight authorisation, aircraft serviceability and acceptance
Booking out procedures
Airfield sense
Refuelling procedures
External checks
Internal checks
Seat, harness and rudder adjustment
Starting
Power and pre take off checks
Local procedures
Closing down checks
Parking, moving, security and tie down

Exercise 3 The Air Experience Flight
The air experience flight

Exercise 4 Effects of Controls
Primary effects of the flying controls
Further effects of the flying controls
Effect of air speed
Effect of propeller slipstream
Effect of power
Effect of trimming controls
Effect of flaps
Effect of other controls (as applicable)
Operation of the carburettor heat control (as applicable)
Operation of the mixture control (as applicable)
Operation of the cockpit heating and ventilation controls (as applicable)
Operation of other controls (as applicable)

Exercise 5a Taxiing
Pre taxi checks
Moving off, speed control and stopping
Engine handling
Control of direction
Parking area procedures, taxiing in confined spaces
Effect of wind and use of the flying controls
Effects of ground surface
Rudder check
Instrument checks
Apron and manoeuvring area markings
Marshalling signals
ATC procedures

Exercise 5e Taxiing Emergency and Abnormal Procedures
Steering failure
Brake failure
Emergency stop

Exercise 6 Straight & Level Flight
Lookout technique
Attaining and maintaining straight and level flight
Demonstration of stability
Straight and level flight at an increased airspeed
Straight and level flight at a decreased airspeed
Maintaining straight and level flight during configuration changes

Exercise 7 Climbing
Entering the climb
Maintaining the climb
Levelling off at a selected level
Climbing with flap extended
The en route (cruise) climb
Maximum angle of climb

Exercise 8 Descending Entering
the descent Maintaining the
descent Levelling off at a
selected level
Descending with flap (or spoilers, airbrakes or speedbrakes, as applicable)
Descending with power
Descending with flap and power
The en route (cruise) descent
Sideslipping
Entering a climb from the descent (go-around)

Exercise 9 Turning Entering
the level turn Maintaining
the level turn Returning to
straight flight The climbing
turn
The descending turn
Turning on to selected headings

Exercise 10a Slow Flight
Safety checks
Introduction to slow flight
Controlled flight slowing to critically slow airspeed
Co-ordinated use of controls at critically slow airspeed
Recovery from a critically slow airspeed

Exercise 10b Stalling
Safety checks
Symptoms and recognition of the stall
The clean stall and recovery without and with power
Stall recovery during a wing drop
The stall and recovery with power and/or flap (or spoilers, airbrakes or speedbrakes, as applicable)
The approach to stall and recovery in the approach configuration
The approach to stall and recovery in the landing configuration
The approach to stall and recovery in the take off configuration
Stall and incipient stall and recovery in different configurations and various manoeuvres

Exercise 11 Spin Avoidance
Safety checks
Recognition of the incipient spin
Recovery from the incipient spin

Exercise 12a Take-Off and Climb
Pre take-off checks
Checks during and after take-off and climb
Standard take off and initial climb
Crosswind take off
Short field and soft field take off
Noise abatement
ATC procedures

Exercise 12e Emergency and Abnormal Procedures
Abandoned take off
Engine failure after take off

Exercise 13a Circuit, Approach and Landing
Joining the circuit
Circuit pattern and procedures
Pre landing checks
Initial approach to land
Normal (performance) landing
Touch and go
Effect of surface wind
Crosswind circuit, approach and landing
Glide approach and landing
Flapless approach and landing
Short field and soft field approach and landing
Missed approach and go around
Bad weather circuit and landing
Noise abatement
ATC procedures

Exercise 13e Emergency and Abnormal Procedures
Engine failure in the circuit
Systems failures
Misjudged landing

Exercise 14 First Solo and Solo Consolidation
First solo

During flights immediately following the solo circuit consolidation, the following should be revised;
Leaving the circuit
Local area procedures, map reading
Cruise checks
Use of the compass
Use of radio navigation aids for homing
Re joining the circuit

Exercise 15 Advanced Turning
Entering the steep (minimum 45° angle of bank) turn
Maintaining the steep turn
Returning to straight and level flight
Steep descending turn
Approach to the stall in the turn
Recognition of and recovery from the spiral dive
Recovery from other unusual attitudes

Exercise 16 Forced Landing without Power
Forced landing procedure
Assessing the surface wind
Assessing the gliding range
Selecting a suitable landing area
Planning the approach path, provision for change of plan
Engine failure checks and restarting procedures
Use of the radio
Committal/pre landing checks and actions
Final approach and landing
Actions after landing

Exercise 17 Precautionary Landing
Situations necessitating a precautionary landing
Precautionary landing procedure
Selection of landing area
Surrounding area and landing site inspection
Approach and landing
Actions after landing

Exercise 18a VFR Navigation - Flight Planning
Route selection
Controlled and regulated (notified) airspace
Chart selection and preparation
Safety altitude/minimum safety altitude (MSA)
Weather forecasts and actual reports
Daylight (sunrise and sunset)
Completion of the flight log, navigation calculations
Fuel planning
Mass and balance calculation
Performance calculations
Alternate airfields
Radio frequencies
NOTAMS and AIS information
Aircraft documentation
Flight notification

Exercise 18a VFR Navigation - Departure and En Route Procedures
Airfield departure procedures
Air Traffic Service and radio procedures
Departing non-controlled aerodromes (as applicable)
Departing controlled aerodromes and controlled (notified) airspace
Altimeter setting procedures
Principles of map reading
Maintaining airspeed, altitude and heading
Maintaining flight log
Assessing weather en route, weather minima
Revision of ETA and heading
Monitoring fuel state and systems
Turning point procedure
Transiting controlled (notified) airspace
Organising cockpit workload

Exercise 18a VFR Navigation - Arrival Procedures
ATC and radio procedures
Arriving at non-controlled aerodromes (as applicable)
Arriving at controlled aerodromes and controlled (notified) airspace
Altimeter setting procedures
Circuit joining procedures
Parking and aircraft security
Refuelling
Notification of arrival, administration procedures

Exercise 18b VFR Navigation at Lower Levels and in Degraded Visual Environment (DVE)
Actions before descending or entering DVE
Appropriate aeroplane configuration
Hazards, obstacles and terrain
Map reading at lower level and in DVE
Visual impressions of flight at minimum level
Visual impressions of flight in DVE
Effect of wind, turbulence and windshear
Vertical situational awareness
Weather considerations and assessing weather
Noise sensitive areas

Exercise 18c VFR Radio Navigation (Basics) Pre
flight radio navigation preparation Integrating
radio navigation into VFR navigation Basic use of
GNSS or VOR/ADF *
Basic use of VDF *
Basic use of ATC radar *
Secondary Surveillance Radar (SSR) – Transponder operation *
* Specific radio navigation aids as applicable depending on aircraft equipment and ATC facilities

Exercise 18e Emergency and Abnormal Procedures
Diversion procedure
Uncertain of position and lost procedures
Loss of sight of the surface
Electrical failure
Radio failure
Instrument failure
Systems failure

Exercise 19 Stopping and restarting the engine (TMG only)
Engine cooling
In-flight engine stopping and restarting procedure

Attachment 3 **United Kingdom Alternative Means of Compliance**

AltMoC 1 FCL.210; FCL.215 – Syllabus of Theoretical Knowledge for the PPL(A).

The following tables contain the syllabus for the course of theoretical knowledge, as well as for the theoretical knowledge examinations for the PPL(A). The training and examination should cover aspects related to non-technical skills in an integrated manner, taking into account the particular risks associated to the licence and activity. This theoretical knowledge instruction provided by the ATO may include elements of classroom work, using such facilities as interactive video, slide or tape presentation, computer based training and other media distance learning courses. The training organisation responsible for the training has to check if all the appropriate elements of the training course of theoretical knowledge instruction have been completed to a satisfactory standard before recommending the applicant for examination.

		Aeroplane	
		PPL	**Bridge course**
1	**Air Law**		
	International Aviation Law International Civil Aviation Organisation (ICAO) European Aviation Safety Agency (EASA) National Aviation Authorities (NAA)	**X**	
	European Rules of the Air Applicability and compliance Pilot in command responsibilities Pre flight actions Avoidance of collisions and rights of way Operation in the vicinity of an aerodrome	**X**	
	Aerodromes Taxiway and runway signs and markings Preventing runway Incursion Other ground signals Marshalling signals Light signals	**X**	
	Visual Meteorological Conditions (VMC) and Visual Flight Rules (VFR) Visual Meteorological Conditions (VMC) minima Visual Flight Rules (VFR) Minimum heights	**X**	
	Airspace Classifications Classification of airspace Controlled and notified airspace Uncontrolled airspace Radio Mandatory Zones (RMZ) Transponder Mandatory Zones (TMZ)	**X**	
	Altimeter Setting Procedures Height, altitude and flight level VFR altimeter setting procedures	**X**	
	Air Traffic Services Air Traffic Control Service Flight Information Service Alerting Service	**X**	

	Aeronautical Information Service (AIS) Aeronautical Information Service (AIS**)** Aeronautical Information Publication (AIP**)** NOTAMs **Urgency and Distress Procedures** Urgency situation Distress situation Interception of civil aircraft **Pilot Licensing** Medical certificates Private Pilot Licence (PPL) privileges Light Aircraft Pilot Licence (LAPL) privileges Class Rating Type Rating Other Ratings and certificates **National Procedures** National rules and procedures	**x** **x** **x** **x**	
2	**Human Performance** **Basic Aviation Physiology** Hypoxia Hyperventilation Vision and visual illusions Lookout techniques Hearing and balance Spatial disorientation Sleep and fatigue Common ailments, medication, health Toxic hazards Intoxication **Basic Aviation Psychology** Perception Memory Arousal and performance Stress and stress management Personality types Hazardous attitudes **Principles of Threat and Error Management** Threats Errors Undesired aircraft states Countermeasures Situational awareness Decision making Developing sound judgement	 **X** **X** **X**	
3	**Meteorology** **The Atmosphere**	 **X**	

	Composition of the atmosphere The troposphere		
	Temperature, Pressure and Density Temperature variation in the atmosphere Pressure variation in the atmosphere Density Humidity The International Standard Atmosphere (ISA)	**X**	
	Altimetry Altimeter and pressure settings Altimeter temperature and pressure effects	**X**	
	Wind Cause of wind Variation of wind velocity with altitude Local winds	**x**	
	Clouds and Precipitation Formation of cloud Principle cloud types Precipitation	**x**	
	Visibility Fog and mist Haze and smoke Visibility in precipitation	**x**	
	Air Masses Characteristics of air masses	**x**	
	Low Pressure Systems The warm sector depression The warm front The cold front Occluded fronts Troughs and convergence	**x**	
	High Pressure Systems Anticyclones Ridges Cols	**X**	
	Hazardous Weather Conditions: Icing Airframe icing Rain ice Frost Piston engine icing	**X**	
	Hazardous Weather Conditions: Thunderstorms Formation of thunderstorms Hazards for aircraft	**x**	
	Other Hazardous Weather Conditions: Mountainous areas Turbulence	**x**	

	Wind shear Strong winds **Meteorological Information** Synoptic charts Satellite imagery Ground based weather radar Area and significant weather forecasts TAFs and METARs Sources of meteorological information Forecast and observation parameters and tolerances **National Procedures** National procedures	 **x** **x**	
4	**Communications** **VHF Radio Broadcast** Factors affecting VHF radio range **Transmission Technique** Transmission of letters Transmission of numbers Transmission of time Call signs **VFR Communications Procedures** Test procedures Standard phraseology Items requiring read back Transfer of communications Transponder operating procedures **Weather Information** ATIS & VOLMET broadcasts, Flight Information Service (FIS) **Communications Failure** Actions in the event of communication failure **Distress and Urgency Procedures** Emergency frequencies and facilities Urgency procedures Distress procedures **National Procedures** National rules and procedures	 **X** **X** **X** **X** **X** **X**	
5	**Principles of Flight** **Basic Concepts** Static and dynamic pressure Aerodynamic forces Aerofoils and wings **The Four Forces** Weight Thrust Lift	 **X** **X**	 **X** **X**

	Drag **The Stall** Stalling angle of attack Factors affecting stall characteristics Factors affecting stalling speed Stall warning Spin avoidance Spinning characteristics **Stability and Control** Stability and control in yaw Stability and control in roll Stability and control in pitch Trimming controls High lift devices Air brakes and spoilers Other flying controls **Principles of Flight** Straight and level flight Climbing Descending Turning and manoeuvring **Operating Limitations** Airspeed and load limitations The load diagram (manoeuvring envelope) Other operating limitations	**X** **X** **X** **x**	**X** **X** **X** **x**
6	**Operational Procedures** **Application of Threat and Error Management** Application of Threat and Error Management (TEM) in relation to aircraft operation **Operation of Aircraft** Applicability of EASA regulations Responsibility and authority of Pilot in Command (PIC) Documents to be carried Dangerous goods Fuel and oil, refuelling Instruments and equipment Safety equipment **Avoidance of Hazards** Avoiding hazardous situations Avoidance of wake turbulence **Search and Rescue Procedures** Principles of search and rescue procedures Search and rescue signals **Accidents and Incidents** Accident definitions and investigation Safety reporting Safety publications	 **X** **X** **X** **X**	 **X** **X** **X** **X**

	Care of Passengers Passenger briefing and passenger procedures	**x**	**x**
	National Procedures National rules and procedures	**x**	**x**
7	**Flight Performance and Planning**		
	Mass and Balance Mass limitations Calculation of aircraft mass Centre of gravity limitations Calculation of centre of gravity	**X**	**X**
	Performance - Take-Off and Climb Factors affecting take-off and climb performance Calculation of take-off and climb performance	**X**	**X**
	Performance - Cruise Principles of endurance and range Factors affecting cruise performance Calculation of cruise performance	**X**	**X**
	Performance - Descent and Landing Factors affecting descent and landing performance Calculation of descent and landing performance	**X**	**X**
	VFR Flight Planning Route selection Communication and radio navigation selection Completion of the navigation plan The Aeronautical Information Publication (AIP) NOTAMs Obtaining meteorological information International flight	**x**	**x**
	Fuel Planning Fuel required calculation	**X**	**X**
	ICAO (ATS) Flight Plan Requirement to File ICAO (ATS) Flight plan Submission of the ICAO (ATS) Flight plan	**X**	**X**
	National Procedures National rules and procedures	**X**	**X**
8	**Aircraft General Knowledge**		
	The Airframe Airframe design and construction Serviceability checks	**X**	**X**
	Flying Controls Flying control design and construction Serviceability checks	**x**	**x**

	Undercarriage Undercarriage design and construction Tyres and brakes Serviceability checks	**x**	**x**
	Piston Engines Principles of operation Piston engine design and components Serviceability checks	**x**	**x**
	Piston Engine Systems Fuel system Induction system Ignition system Oil system Cooling system Other engine systems	**x**	**x**
	The Propeller Principles of operation Propeller design and components Propeller handling Serviceability checks	**X**	**X**
	Engine Handling Engine limitations Engine handling	**X**	**X**
	The Electrical System Principles of operation Electrical system design and components	**x**	**x**
	Instruments and Systems The pitot static system The altimeter The vertical speed indicator The air speed indicator The suction system Attitude indicator Heading indicator The turn indicator / turn co-ordinator The compass Other instrumentation Integrated electronic displays	**x**	**x**
	Avionics Systems Communications Equipment SSR ADF VOR DME GNSS Integrated Electronic Displays	**X**	**X**
	Cockpit Equipment and Systems Doors, windows and exits	**X**	**X**

	Seats Seat belts and harnesses Cockpit heating and ventilation systems		
	Emergency Equipment First aid kit Fire extinguishers ELT/PLB Lifejackets and life rafts Other survival equipment	**X**	**X**
	Aircraft Airworthiness Aircraft registration Airworthiness Certificate, Permit to Fly	**X**	**X**
	Aeroplane Flight Manual/Pilot Operating Handbook Aircraft maintenance and serviceability Maintenance and serviceability documentation	**X**	**X**
	Converting Onto a Different Aircraft Practical considerations when converting onto a different aircraft and variants	**X**	**X**
	National Procedures National rules and procedures	**x**	**x**
9	**Navigation**		
	Form of the Earth Latitude and Longitude	**X**	
	Measurement of Direction True direction Magnetic direction Compass direction	**X**	
	Measurement of Distance Units of distance Conversion of units	**X**	
	Measurement of Airspeed Calculation of true airspeed	**X**	
	Triangle of Velocities Calculating heading and groundspeed	**x**	
	In-flight VFR Navigation: Dead Reckoning and Map Reading Principles of dead reckoning Time and distance Map reading	**x**	
	In-flight VFR Navigation: Off-track and Diversion Off track correction ETA revision Diversion Alternate airfields	**x**	

	In-flight VFR Navigation: Vertical Navigation Safety altitudes Vertical navigation Altimeter settings	**X**	
	In-flight VFR Navigation: Controlled and Notified Airspace Procedures in the vicinity of controlled and notified airspace Procedures within controlled and notified airspace Airspace infringement	**X**	
	Time UTC Time Zones Sunrise and sunset information	**X**	
	VFR Radio Navigation Integrating radio navigation with VFR navigation VDF – Operation and interpretation, limitations and accuracy ATC Radar – Operation and interpretation, limitations and accuracy ADF – Operation and interpretation, limitations and accuracy VOR – Operation and interpretation, limitations and accuracy DME – Operation and interpretation, limitations and accuracy GNSS – operation and interpretation, limitations and accuracy	**x**	

Attachment 4 **United Kingdom Alternative Means of Compliance**

AltMoC1 FCL.210.A PPL(A) - Experience requirements and crediting

FLIGHT INSTRUCTION FOR THE PPL(A)

(a) Entry to training
Before being accepted for training an applicant should be informed that the appropriate medical certificate must be obtained before solo flying is permitted.

(b) Flight instruction

(1) The PPL(A) flight instruction syllabus takes into account the principles of threat and error management.

(2) Before authorising the applicant for a PPL(A) to undertake his/her first solo flight, the FI should ensure that the applicant can operate the required systems and equipment and is proficient in the use of R/T communication.

(3) Use of Basic Instrument Training Devices (BITD) (and higher level simulators) -
(a) A BITD may be used for flight training for:
(i) flight by reference solely to instruments;
(ii) navigation using radio navigation aids;
(iii) basic instrument flight.
(b) The use of the BITD should be subject to the following:
(i) the training should be complemented by exercises in an aeroplane;
(ii) the record of the parameters of the BITD flight must be maintained;
(iii) an FI(A) or STI(A) should provide the instruction.

(c) Syllabus of flight instruction

(1) The numbering of exercises should be used primarily as a reference list and as a broad instructional sequencing guide; therefore the demonstrations and practices need not necessarily be carried out in the order listed. The actual order and content will depend upon the following interrelated factors:

(i) the applicant's progress and ability;
(ii) the weather conditions affecting the flight;
(iii) the flight time available;
(iv) instructional technique considerations;
(v) the local operating environment;
(vi) applicability of the exercises to the aeroplane or TMG type.

(2) The need for the applicant to practise good airmanship and maintain a good look-out, should be emphasised throughout.

Exercise 1a Aeroplane or TMG Familiarisation
Aircraft construction and characteristics
Normal exits
Cockpit layout
Aircraft systems
Use of the checklist and Pilot Operating Handbook/ Aircraft Flight Manual

Exercise 1e Emergency and Abnormal Procedures
Fire on the ground
Cockpit fire in the air
Engine fire in the air
Systems failures
Emergency equipment and drills, emergency exits

Exercise 2 Preparations for flight and actions after flight
Personal preparation
Flying equipment required
Weather forecasts and actual reports
NOTAMs and AIS information
Flight authorisation, aircraft serviceability and acceptance
Booking-out procedures
Airfield sense
Refuelling procedures
External checks
Internal checks
Seat, harness and rudder adjustment
Starting
Power and pre take off checks
Local procedures
Closing down checks
Parking, moving, security and tie down

Exercise 3 The Air Experience Flight
The air experience flight

Exercise 4 Effects of Controls
Primary effects of the flying controls
Further effects of the flying controls
Effect of air speed
Effect of propeller slipstream
Effect of power
Effect of trimming controls
Effect of flaps
Effect of other controls (as applicable)
Operation of the carburettor heat control (as applicable)
Operation of the mixture control (as applicable)
Operation of the cockpit heating and ventilation controls (as applicable)
Operation of other controls (as applicable)

Exercise 5a Taxiing
Pre taxi checks
Moving off, speed control and stopping
Engine handling
Control of direction
Parking area procedures, taxiing in confined spaces
Effect of wind and use of the flying controls
Effects of ground surface
Rudder check
Instrument checks
Apron and manoeuvring area markings
Marshalling signals
ATC procedures

Exercise 5e Taxiing Emergency and Abnormal procedures
Steering failure
Brake failure
Emergency stop

Exercise 6 Straight and level flight
Lookout technique
Attaining and maintaining straight and level flight
Demonstration of stability
Straight and level flight at an increased airspeed
Straight and level flight at a decreased airspeed
Maintaining straight and level flight during configuration changes

Exercise 7 Climbing
Entering the climb
Maintaining the climb
Levelling off at a selected level
Climbing with flap extended
The en route (cruise) climb
Maximum angle of climb

Exercise 8 Descending Entering the descent Maintaining the descent Levelling off at a selected level
Descending with flap (or spoilers, airbrakes or speedbrakes, as applicable)
Descending with power
Descending with flap and power
The en route (cruise) descent
Sideslipping
Entering a climb from the descent (go-around)

Exercise 9 Turning Entering the level turn Maintaining the level turn Returning to straight flight The climbing turn
The descending turn
Turning onto selected headings

Exercise 10a Slow flight
Safety checks
Introduction to slow flight
Controlled flight slowing to critically slow airspeed
Coordinated use of controls at critically slow airspeed
Recovery from a critically slow airspeed

Exercise 10b Stalling
Safety checks
Symptoms and recognition of the stall
The clean stall and recovery without and with power
Stall recovery during a wing drop
The stall and recovery with power and/or flap (or spoilers, airbrakes or speedbrakes, as applicable)
The approach to stall and recovery in the approach configuration
The approach to stall and recovery in the landing configuration
The approach to stall and recovery in the take-off configuration
Stall and incipient stall and recovery in different configurations and various manoeuvres

Exercise 11 Spin avoidance
Safety checks
Recognition of the incipient spin
Recovery from the incipient spin

Exercise 12a Take-Off and Climb
Pre take-off checks
Checks during and after take-off and climb
Standard take off and initial climb
Crosswind take-off
Short field and soft field take off
Noise abatement
ATC procedures

Exercise 12e Emergency and Abnormal procedures
Abandoned take off
Engine failure after take-off

Exercise 13a Circuit, Approach and landing
Joining the circuit
Circuit pattern and procedures
Pre landing checks
Initial approach to land
Normal (performance) landing
Touch and go
Effect of surface wind
Crosswind circuit, approach and landing
Glide approach and landing
Flapless approach and landing
Short field and soft field approach and landing
Missed approach and go around
Bad weather circuit and landing
Noise abatement
ATC procedures

Exercise 13e Emergency and Abnormal Procedures
Engine failure in the circuit
Systems failures
Misjudged landing

Exercise 14 First Solo and solo consolidation
First solo

During flights immediately following the solo circuit consolidation the following should be revised;
Leaving the circuit
Local area procedures, map reading
Cruise checks
Use of the compass
Use of radio navigation aids for homing
Re joining the circuit

Exercise 15 Advanced turning
Entering the steep (minimum 45°angle of bank) turn
Maintaining the steep turn
Returning to straight and level flight
Steep descending turn
Approach to the stall in the turn
Recognition of and recovery from the spiral dive
Recovery from other unusual attitudes

Exercise 16 Forced Landing without power
Forced landing procedure
Assessing the surface wind
Assessing the gliding range
Selecting a suitable landing area
Planning the approach path, provision for change of plan
Cause of engine failure checks
Use of the radio
Commital / pre landing checks and actions
Final approach and landing
Actions after landing
In-flight engine stopping procedure (TMG only)
In-flight engine restarting procedure (TMG only)

Exercise 17 Precautionary Landing
Situations necessitating a precautionary landing
Precautionary landing procedure
Selection of landing area
Surrounding area and landing site inspection
Approach and landing
Actions after landing

Exercise 18a VFR Navigation - Flight Planning
Route selection
Controlled and regulated (notified) airspace
Chart selection and preparation
Safety altitude/minimum safety altitude (MSA)
Weather forecasts and actual reports
Daylight (sunrise and sunset)
Completion of the flight log, navigation calculations
Fuel planning
Mass and balance calculation
Performance calculations
Alternate airfields
Radio frequencies
NOTAMS and AIS information
Aircraft documentation
Flight notification

Exercise 18a VFR Navigation - Departure and En Route procedures
Airfield departure procedures
Air Traffic Service and radio procedures
Departing non controlled aerodromes (as applicable)
Departing controlled aerodromes and controlled (notified) airspace
Altimeter setting procedures
Principles of map reading
Maintaining airspeed, altitude and heading
Maintaining flight log
Assessing weather en route, weather minima
Revision of ETA and heading
Monitoring fuel state and systems
Turning point procedure
Transiting controlled (notified) airspace
Organising cockpit workload

Exercise 18a VFR Navigation - arrival procedures
ATC and radio procedures
Arriving at non controlled aerodromes (as applicable)
Arriving at controlled aerodromes and controlled (notified) airspace
Altimeter setting procedures
Circuit joining procedures
Parking and aircraft security
Refuelling
Notification of arrival, administration procedures

Exercise 18b VFR Navigation at lower levels and in Degraded Visual Environment (DVE)
Actions before descending or entering DVE
Appropriate aeroplane configuration
Hazards, obstacles and terrain
Map reading at lower level and in DVE
Visual impressions of flight at minimum level
Visual impressions of flight in DVE
Effect of wind, turbulence and windshear
Vertical situational awareness
Weather considerations and assessing weather
Noise sensitive areas

Exercise 18c VFR Radio Navigation
Pre flight radio navigation preparation
Integrating radio navigation into VFR navigation
Use of the Relative Bearing Indicator (RBI)*
Use of the Radio Magnetic Indicator (RMI)*
Use of the Course Deviation Indicator (CDI)*
Use of the Horizontal Situation Indicator (HSI)*
Use of the moving map display*
VDF - Air Traffic Control and radio procedures*
ATC Radar - ATC and radio procedures*
Secondary Surveillance Radar (SSR) – Transponder operation*
VOR - Selection and identification, interpretation, intercepting and maintaining a radial, position fixing*
DME - Selection and identification, interpretation, modes of operation, position fixing*
ADF - Selection and identification, interpretation, orientation, homing to an NDB*
GNSS – Selection of waypoints, interpretation, orientation, error messages*

* Specific radio navigation aids as applicable depending on aircraft equipment and ATC facilities

Exercise 18e Emergency and Abnormal Procedures
Diversion procedure
Uncertain of position and lost procedures
Loss of sight of the surface
Electrical failure
Radio failure
Instrument failure
Systems failure

Exercise 19 Basic Instrument Flight
Instrument appreciation, physiological sensations
Instrument interpretation - the attitude indicator and instrument scan
Straight and level flight
The climb
The cruise descent
The turn
Recoveries from unusual attitudes

EASA Ref 2015-00014 – AltMoC to AMC1 FCL.210.(H) PPL(H) – Experience requirements Radio Navigation GNSS may be permissible as an alternative to VOR/NDB

Purpose:

The AltMoC allows that the GNSS may be permissible as an alternative to VOR/ NDB at Exercise 25c as in the LAPL syllabus at Exercise 22c Radio Navigation (basics), which states:

(A) Use of GNSS or VOR/NDB

Date of notification to EASA: 29 May 2015

UK AltMoC FCL.210.H PPL (H)- Experience requirements and crediting

FLIGHT INSTRUCTION FOR THE PPL (H)

(C) Flight instruction

(xxxii) Exercise 25c: Radio Navigation

(A) Use of GNSS or VOR/ NDB

EASA Ref 2015-00028 – FCL.115, FCL.120 – Syllabus of Theoretical Knowledge for the LAPL

Purpose:

The Alt MOC details revised LAPL(H) and PPL(H) theoretical knowledge training syllabi. FCL.115 and FCL.210 both state that applicants shall complete a training course within an ATO and the course shall include theoretical knowledge and flight instruction appropriate to the privileges given.

Training organisations can choose to adopt this alternative syllabus knowing that it complies with the Implementing Rules or use the existing AMC syllabus.

Date of notification to EASA: 28 September 2015

Appendix 1 United Kingdom Alternative Means of Compliance

AltMoC 1 FCL.115; FCL.120 – Syllabus of Theoretical Knowledge for the LAPL.

(a) The training and examination should cover aspects related to non-technical skills in an integrated manner, taking into account the particular risks associated with the licence and the activity. The theoretical knowledge instruction provided by the ATO may include elements of classroom work also including other methods of delivery for

example interactive video, slide or tape presentation, computer-based training and other media distance learning courses. The training organisation responsible for the training has to check if all the appropriate elements of the training course of theoretical knowledge instruction have been completed to a satisfactory standard before recommending the applicant for the examination.

(b) The following table contains the syllabus for the courses of theoretical knowledge for the LAPL(H).

1	**<u>Air Law</u>** **International Aviation Law** International Civil Aviation Organisation (ICAO) European Aviation Safety Agency (EASA) National Aviation Authorities (NAA) **European Rules of the Air** Applicability and compliance Pilot in command responsibilities Pre-flight actions Avoidance of collisions and rights of way Operation in the vicinity of an aerodrome **Aerodromes** Taxiway and runway signs and markings Preventing runway Incursion Other ground signals Marshalling signals Light signals

	Visual Meteorological Conditions (VMC) and Visual Flight Rules (VFR) Visual Meteorological Conditions (VMC) minima Visual Flight Rules (VFR) Minimum heights **Airspace Classifications** Classification of airspace Controlled and notified airspace Uncontrolled airspace Radio Mandatory Zones (RMZ) Transponder Mandatory Zones (TMZ) **Altimeter Setting Procedures** Height, altitude and flight level VFR altimeter setting procedures **Air Traffic Services** Air Traffic Control Service Flight Information Service Alerting Service **Aeronautical Information Service (AIS)** Aeronautical Information Service (AIS) Aeronautical Information Publication (AIP) NOTAMs **Urgency and Distress Procedures**

	Urgency situation Distress situation Interception of civil aircraft **Pilot Licensing** Medical certificates Private Pilot Licence (PPL) privileges Light Aircraft Pilot Licence (LAPL) privileges Class Rating Type Rating Other Ratings and certificates **National Procedures** National rules and procedures
2	**<u>Human Performance</u>** **Basic Aviation Physiology** Hypoxia Hyperventilation Vision and visual illusions Lookout techniques Hearing and balance Spatial disorientation Sleep and fatigue Common ailments, medication, health Toxic hazards Intoxication

	Basic Aviation Psychology Perception Memory Arousal and performance Stress and stress management Personality types Hazardous attitudes **Principles of Threat and Error Management** Threats Errors Undesired aircraft states Countermeasures Situational awareness Decision making Developing sound judgement
3	**<u>Meteorology</u>** **The Atmosphere** Composition of the atmosphere The troposphere **Temperature, Pressure and Density** Temperature variation in the atmosphere Pressure variation in the atmosphere Density Humidity

	The International Standard Atmosphere (ISA) **Altimetry** Altimeter and pressure settings Altimeter temperature and pressure effects **Wind** Cause of wind Variation of wind velocity with altitude Local winds **Clouds and Precipitation** Formation of cloud Principle cloud types Precipitation **Visibility** Fog and mist Haze and smoke Visibility in precipitation **Air Masses** Characteristics of air masses **Low Pressure Systems** The warm sector depression The warm front The cold front

	Occluded fronts Troughs and convergence **High Pressure Systems** Anticyclones Ridges Cols **Hazardous Weather Conditions: Icing** Airframe icing Rain ice Frost Piston engine icing **Hazardous Weather Conditions: Thunderstorms** Formation of thunderstorms Hazards for aircraft **Other Hazardous Weather Conditions:** Mountainous areas Turbulence Wind shear Strong winds **Meteorological Information** Synoptic charts Satellite imagery Ground based weather radar

	Area and significant weather forecasts TAFs and METARs Sources of meteorological information Forecast and observation parameters and tolerances **National Procedures** National procedures
4	**<u>Communications</u>** **VHF Radio Broadcast** Factors affecting VHF radio range **Transmission Technique** Transmission of letters Transmission of numbers Transmission of time Call signs **VFR Communications Procedures** Test procedures Standard phraseology Items requiring read back Transfer of communications Transponder operating procedures **Weather Information** ATIS & VOLMET broadcasts, Flight Information Service (FIS)

	Communications Failure Actions in the event of communication failure **Distress and Urgency Procedures** Emergency frequencies and facilities Urgency procedures Distress procedures **National Procedures** National rules and procedures
5	**<u>Principles of Flight</u>** **Basic Concepts** Static and dynamic pressure Aerodynamic forces Static and dynamic stability **The Four Forces** Weight Thrust Lift Drag Lift formulae **Aerodynamics of the Rotor** Blade pitching, flapping and dragging

	Blade coning Phase lag Dissymmetry of lift Disc Loading and flare effect **Overpitching** Vector diagram depicting forces on the rotor blade including: (a) Rotors shaft axis & axis of rotation (b) Plane of rotation and tip path plane (c) Induced, rotational and relative airflow (d) Rotor thrust and rotor drag (e) Total reaction **Helicopter Flight Aerodynamics** Ground Effect Tail Rotor Drift and Roll Recirculation Translational Lift Flap back Inflow Roll Autorotation Vortex Ring **Operating Limitations** Power required curve for straight and level flight to include: (a) Best RoC, AoC, manoeuvring speeds, V max/min (b) Endurance and range speeds (c) Limited power operations

	Factors affecting the limits to high speed flight to include (a) Structural/engine limitations (b) Compressibility (c) Airflow reversal (d) Retreating blade stall
6	**<u>Operational Procedures</u>** **Application of Threat and Error Management (TEM)** Application of Threat and Error Management (TEM) in relation to aircraft operation **Operation of Aircraft** Applicability of EASA regulations Responsibility and authority of Pilot in Command (PIC) Documents to be carried Dangerous goods Fuel and oil, refuelling Instruments and equipment Safety equipment **Hazards** Avoiding hazardous situations Avoidance of wake turbulence Effects of Rotor Downwash Avoidance of FOD/'white out'/'brown out' Effects of strong winds/turbulence Mountain/hilly environments

	Flights over inhospitable terrain Deteriorating Visual Environment (DVE) Rotor RPM decay, low rotor RPM blade stall and overpitching, rotor energy management Low G hazards including mast bumping/tail striking Ground resonance Loss of Tail Rotor Effectiveness (LTE) Dynamic/Static rollover Overspeed of engine/rotors Vortex Ring **Emergency Procedures** Forced/Precautionary landing definitions POH/FM Emergency procedures Actions after landing and aircraft evacuation **Search and Rescue Procedures** Principles of search and rescue procedures Search and rescue signals **Accidents and Incidents** Accident definitions and investigation Safety reporting Safety publications **Care of Passengers** Passenger briefing and passenger procedures

	National Procedures National rules and procedures
7	**<u>Flight Performance and Planning</u>** **Mass and Balance** Mass limitations Calculation of aircraft mass Centre of gravity limitations Calculation of centre of gravity **Performance - Take-Off and Climb** Factors affecting take-off & climb performance Calculation of power available and techniques to be used for take-off, hover and climb Height Velocity Diagram (Avoid Curve) **Performance – Cruise** Principles of endurance and range Factors affecting cruise performance Calculation of cruise performance **Performance - Landing** Factors affecting landing performance Calculation of power available and techniques to be used for approach, hover and landing **VFR Flight Planning**

	Route selection Chart/map selection Communication and radio navigation selection Completion of the navigation plan The Aeronautical Information Publication (AIP) NOTAMs Obtaining meteorological information International flight **Fuel Planning** Fuel required calculation **ICAO (ATS) Flight Plan** Requirement to File ICAO (ATS) Flight Plan Submission of the ICAO (ATS) Flight Plan **National Procedures** National rules and procedures
8	**<u>Aircraft General Knowledge</u>** **Airframe** Airframe design and construction Serviceability checks **Flying Controls** Flying control design and construction

	Serviceability checks **Landing Gear** Landing gear design and construction Serviceability checks **Main and Tail Rotor Systems** Main rotor head and blade, design and construction Tail rotor hub and blade, design and construction Serviceability checks Transmission System Transmission design and construction Serviceability checks **Fuel System** Airframe fuels system design and construction Serviceability checks **Electrical System** Principles of operation Electrical system design and components **Hydraulic System** Principles of operation Hydraulic system design and components **Piston Engines** Principles of operation

	Piston engine design and components Serviceability checks **Turbine Engines** Principles of operation Turbine engine design and components Serviceability checks **Engine Systems** Fuel system Induction system Ignition system Oil system Cooling system Carburettor heating/Anti-ice system Other engine systems **Instruments and Systems** The pitot static system The altimeter The vertical speed indicator The air speed indicator Attitude indicator Heading indicator The compass Other instrumentation Integrated electronic displays

	Avionics Systems Communications equipment SSR ADF VOR DME GNSS Integrated electronic displays **Cockpit Equipment and Systems** Doors, windows and exits Seats Seat belts and harnesses Cockpit heating and ventilation systems **Aircraft Handling** Aircraft/systems limitations Aircraft/systems handling **Emergency Equipment** First aid kit Fire extinguishers ELT/PLB Lifejackets and life rafts Other survival equipment **Aircraft Airworthiness** Aircraft registration

	Airworthiness Certificate, Permit to Fly Aeroplane Flight Manual/Pilot Operating Handbook Aircraft maintenance and serviceability Maintenance and serviceability documentation **Converting onto a Different Helicopter Type/Variant** EASA regulations for converting onto a different helicopter type/variant **National Procedures** National rules and procedures
9	**<u>Navigation</u>** **Form of the Earth** Latitude and Longitude **Measurement of Direction** True direction Magnetic direction Compass direction **Measurement of Distance** Units of distance Conversion of units **Measurement of Airspeed** Calculation of true airspeed

	Triangle of Velocities Calculating heading and groundspeed **In-flight VFR Navigation: Dead Reckoning and Map Reading** Principles of dead reckoning Time and distance Map reading **In-flight VFR Navigation: Off-track and Diversion** Off track correction ETA revision Diversion Alternate airfields **In-flight VFR Navigation: Vertical Navigation** Safety altitudes Vertical navigation Altimeter settings **In-flight VFR Navigation: Controlled and Notified Airspace** Procedures in the vicinity of controlled and notified airspace Procedures within controlled and notified airspace Airspace infringement **Time** UTC Time Zones Sunrise and sunset information

	VFR Radio Navigation Integrating radio navigation with VFR navigation VDF – Operation and interpretation, limitations and accuracy ATC Radar – Operation and interpretation, limitations and accuracy ADF – Operation and interpretation, limitations and accuracy VOR – Operation and interpretation, limitations and accuracy DME – Operation and interpretation, limitations and accuracy GNSS – operation and interpretation, limitations and accuracy

Appendix 2 United Kingdom Alternative Means of Compliance

AltMoC 1 FCL.210; FCL.215 – Syllabus of Theoretical Knowledge for the PPL(H).

The following tables contain the syllabus for the course of theoretical knowledge, as well as for the theoretical knowledge examinations for the PPL(H). The training and examination should cover aspects related to non-technical skills in an integrated manner, taking into account the particular risks associated to the licence and activity. This theoretical knowledge instruction provided by the ATO may include elements of classroom work, using such facilities as interactive video, slide or tape presentation, computer based training and other media distance learning courses. The training organisation responsible for the training has to check if all the appropriate elements of the training course of theoretical knowledge instruction have been completed to a satisfactory standard before recommending the applicant for examination.

The following table contains the syllabus for the courses of theoretical knowledge for the PPL(H).

		Helicopter	
		PPL	**Bridge course**
1	**<u>Air Law</u>**		
	International Aviation Law	X	
	International Civil Aviation Organisation (ICAO)		
	European Aviation Safety Agency (EASA)		
	National Aviation Authorities (NAA)		
	European Rules of the Air	X	
	Applicability and compliance		
	Pilot in command responsibilities		
	Pre-flight actions		
	Avoidance of collisions and rights of way		
	Operation in the vicinity of an aerodrome		
	Aerodromes	X	
	Taxiway and runway signs and markings		
	Preventing runway Incursion		
	Other ground signals		
	Marshalling signals		
	Light signals		
	Visual Meteorological Conditions (VMC) and Visual Flight Rules (VFR)	X	
	Visual Meteorological Conditions (VMC) minima		
	Visual Flight Rules (VFR)		
	Minimum heights		

		Helicopter	
		PPL	**Bridge course**
	Airspace Classifications	X	
	Classification of airspace		
	Controlled and notified airspace		
	Uncontrolled airspace		
	Radio Mandatory Zones (RMZ)		
	Transponder Mandatory Zones (TMZ)		
	Altimeter Setting Procedures	X	
	Height, altitude and flight level		
	VFR altimeter setting procedures		
	Air Traffic Services	X	
	Air Traffic Control Service		
	Flight Information Service		
	Alerting Service		
	Aeronautical Information Service (AIS)	X	
	Aeronautical Information Service (AIS)		
	Aeronautical Information Publication (AIP)		
	NOTAMs		
	Urgency and Distress Procedures	X	
	Urgency situation		
	Distress situation		
	Interception of civil aircraft		

		Helicopter	
		PPL	**Bridge course**
	Pilot Licensing	X	
	Medical certificates		
	Private Pilot Licence (PPL) privileges		
	Light Aircraft Pilot Licence (LAPL) privileges		
	Class Rating		
	Type Rating		
	Other Ratings and certificates		
	National Procedures	X	
	National rules and procedures		

2	**<u>Human Performance</u>**		
	Basic Aviation Physiology	X	
	Hypoxia		
	Hyperventilation		
	Vision and visual illusions		
	Lookout techniques		
	Hearing and balance		
	Spatial disorientation		
	Sleep and fatigue		
	Common ailments, medication, health		
	Toxic hazards		

	Intoxication		
	Basic Aviation Psychology	X	
	Perception		
	Memory		
	Arousal and performance		
	Stress and stress management		
	Personality types		
	Hazardous attitudes		
	Principles of Threat and Error Management	X	
	Threats		
	Errors		
	Undesired aircraft states		
	Countermeasures		
	Situational awareness		
	Decision making		
	Developing sound judgement		

3	**<u>Meteorology</u>**		
	The Atmosphere	X	
	Composition of the atmosphere		
	The troposphere		
	Temperature, Pressure and Density	X	
	Temperature variation in the atmosphere		

	Pressure variation in the atmosphere Density Humidity The International Standard Atmosphere (ISA)		
	Altimetry Altimeter and pressure settings Altimeter temperature and pressure effects	X	
	Wind Cause of wind Variation of wind velocity with altitude Local winds	X	
	Clouds and Precipitation Formation of cloud Principle cloud types Precipitation	X	
	Visibility Fog and mist Haze and smoke Visibility in precipitation	X	
	Air Masses Characteristics of air masses	X	
	Low Pressure Systems	X	

	The warm sector depression The warm front The cold front Occluded fronts Troughs and convergence		
	High Pressure Systems Anticyclones Ridges Cols	X	
	Hazardous Weather Conditions: Icing Airframe icing Rain ice Frost Piston engine icing	X	
	Hazardous Weather Conditions: Thunderstorms Formation of thunderstorms Hazards for aircraft	X	
	Other Hazardous Weather Conditions: Mountainous areas Turbulence Wind shear Strong winds	X	

	Meteorological Information Synoptic charts Satellite imagery Ground based weather radar Area and significant weather forecasts TAFs and METARs Sources of meteorological information Forecast and observation parameters and tolerances **National Procedures** National procedures	X X	

4	**<u>Communications</u>** **VHF Radio Broadcast** Factors affecting VHF radio range **Transmission Technique** Transmission of letters Transmission of numbers Transmission of time Call signs **VFR Communications Procedures** Test procedures Standard phraseology	 X X X 	

	Items requiring read back Transfer of communications Transponder operating procedures		
	Weather Information ATIS & VOLMET broadcasts, Flight Information Service (FIS)	X	
	Communications Failure Actions in the event of communication failure	X	
	Distress and Urgency Procedures Emergency frequencies and facilities Urgency procedures Distress procedures	X	
	National Procedures National rules and procedures	X	

5	**<u>Principles of Flight</u>**		
	Basic Concepts Static and dynamic pressure Aerodynamic forces Static and dynamic stability	X	X
	The Four Forces	X	X

	Weight Thrust Lift Drag Lift formulae		
	Aerodynamics of the Rotor Blade pitching, flapping and dragging Blade coning Phase lag Dissymmetry of lift Disc Loading and flare effect	X	X
	Overpitching Vector diagram depicting forces on the rotor blade including: (a) Rotors shaft axis & axis of rotation (b) Plane of rotation and tip path plane (c) Induced, rotational and relative airflow (d) Rotor thrust and rotor drag (e) Total reaction	X	X
	Helicopter Flight Aerodynamics Ground Effect Tail Rotor Drift and Roll Recirculation Translational Lift Flap back	X	X

	Inflow Roll Autorotation Vortex Ring		
	Operating Limitations Power required curve for straight and level flight to include: (a) Best RoC, AoC, manoeuvring speeds, V max/min (b) Endurance and range speeds (c) Limited power operations Factors affecting the limits to high speed flight to include (a) Structural/engine limitations (b) Compressibility (c) Airflow reversal (d) Retreating blade stall	X	X

6	**<u>Operational Procedures</u>**		
	Application of Threat and Error Management (TEM) Application of Threat and Error Management (TEM) in relation to aircraft operation	X	X
	Operation of Aircraft Applicability of EASA regulations Responsibility and authority of Pilot in Command (PIC)	X	X

	Documents to be carried Dangerous goods Fuel and oil, refuelling Instruments and equipment Safety equipment		
	Hazards Avoiding hazardous situations Avoidance of wake turbulence Effects of Rotor Downwash Avoidance of FOD/'white out'/'brown out' Effects of strong winds/turbulence Mountain/hilly environments Flights over inhospitable terrain Deteriorating Visual Environment (DVE) Rotor RPM decay, low rotor RPM blade stall and overpitching, rotor energy management Low G hazards including mast bumping/tail striking Ground resonance Loss of Tail Rotor Effectiveness (LTE) Dynamic/Static rollover Overspeed of engine/rotors Vortex Ring	X	X
	Emergency Procedures Forced/Precautionary landing definitions POH/FM Emergency procedures Actions after landing and aircraft evacuation	X	X

	Search and Rescue Procedures Principles of search and rescue procedures Search and rescue signals	X	X
	Accidents and Incidents Accident definitions and investigation Safety reporting Safety publications	X	X
	Care of Passengers Passenger briefing and passenger procedures	X	X
	National Procedures National rules and procedures	X	X

7	**<u>Flight Performance and Planning</u>**		
	Mass and Balance Mass limitations Calculation of aircraft mass Centre of gravity limitations Calculation of centre of gravity	X	X
	Performance - Take-Off and Climb Factors affecting take-off & climb performance	X	X

	Calculation of power available and techniques to be used for take-off, hover and climb Height Velocity Diagram (Avoid Curve)		
	Performance – Cruise Principles of endurance and range Factors affecting cruise performance Calculation of cruise performance	X	X
	Performance - Landing Factors affecting landing performance Calculation of power available and techniques to be used for approach, hover and landing	X	X
	VFR Flight Planning Route selection Chart/map selection Communication and radio navigation selection Completion of the navigation plan The Aeronautical Information Publication (AIP) NOTAMs Obtaining meteorological information International flight	X	X
	Fuel Planning Fuel required calculation	X	X
	ICAO (ATS) Flight Plan Requirement to File ICAO (ATS) Flight Plan	X	X

	Submission of the ICAO (ATS) Flight Plan		
	National Procedures	X	X
	National rules and procedures		

8	**<u>Aircraft General Knowledge</u>**		
	Airframe	X	X
	Airframe design and construction		
	Serviceability checks		
	Flying Controls	X	X
	Flying control design and construction		
	Serviceability checks		
	Landing Gear	X	X
	Landing gear design and construction		
	Serviceability checks		
	Main and Tail Rotor Systems	X	X
	Main rotor head and blade, design and construction		
	Tail rotor hub and blade, design and construction		
	Serviceability checks		
	Transmission System		
	Transmission design and construction		

	Serviceability checks		
	Fuel System Airframe fuels system design and construction Serviceability checks	X	X
	Electrical System Principles of operation Electrical system design and components	X	X
	Hydraulic System Principles of operation Electrical system design and components	X	X
	Piston Engines Principles of operation Piston engine design and components Serviceability checks	X	X
	Turbine Engines Principles of operation Turbine engine design and components Serviceability checks	X	X
	Engine Systems Fuel system Induction system	X	X

	Ignition system Oil system Cooling system Carburettor heating/Anti-ice system Other engine systems		
	Instruments and Systems The pitot static system The altimeter The vertical speed indicator The air speed indicator Attitude indicator Heading indicator The compass Other instrumentation Integrated electronic displays	X	X
	Avionics Systems Communications equipment SSR ADF VOR DME GNSS Integrated electronic displays	X	X
	Cockpit Equipment and Systems	X	X

	Doors, windows and exits Seats Seat belts and harnesses Cockpit heating and ventilation systems		
	Aircraft Handling Aircraft/systems limitations Aircraft/systems handling	X	X
	Emergency Equipment First aid kit Fire extinguishers ELT/PLB Lifejackets and life rafts Other survival equipment	X	X
	Aircraft Airworthiness Aircraft registration Airworthiness Certificate, Permit to Fly Aeroplane Flight Manual/Pilot Operating Handbook Aircraft maintenance and serviceability Maintenance and serviceability documentation	X	X
	Converting onto a Different Helicopter Type/Variant EASA regulations for converting onto a different helicopter type/variant	X	X

	National Procedures National rules and procedures	X	X

9	**<u>Navigation</u>**		
	Form of the Earth Latitude and Longitude	X	X
	Measurement of Direction True direction Magnetic direction Compass direction	X	X
	Measurement of Distance Units of distance Conversion of units	X	X
	Measurement of Airspeed Calculation of true airspeed	X	X
	Triangle of Velocities Calculating heading and groundspeed	X	X
	In-flight VFR Navigation: Dead Reckoning and Map Reading Principles of dead reckoning Time and distance	X	X

	Map reading		
	In-flight VFR Navigation: Off-track and Diversion Off track correction ETA revision Diversion Alternate airfields	X	X
	In-flight VFR Navigation: Vertical Navigation Safety altitudes Vertical navigation Altimeter settings	X	X
	In-flight VFR Navigation: Controlled and Notified Airspace Procedures in the vicinity of controlled and notified airspace Procedures within controlled and notified airspace Airspace infringement	X	X
	Time UTC Time Zones Sunrise and sunset information	X	X
	VFR Radio Navigation Integrating radio navigation with VFR navigation	X	X

	VDF – Operation and interpretation, limitations and accuracy ATC Radar – Operation and interpretation, limitations and accuracy ADF – Operation and interpretation, limitations and accuracy VOR – Operation and interpretation, limitations and accuracy DME – Operation and interpretation, limitations and accuracy GNSS – operation and interpretation, limitations and accuracy		

Chapter 2

Air Operations Commission Regulation (EU) No 965/2012

EASA Ref 2015-00024 – ORO.FC.230(b)(1)(ii) – Flight checking OPC amended multi-pilot helicopters

Purpose:

The purpose of the AltMOC is to provide certain operators with the required flexibility to meet the safety intent of ORO.FC.230(b) in the OPC. This will make best use of the simulator time available and ensure that crews are checked in those areas identified by the operator as critical to flight safety.

It also establishes a foundation for the future development of training and checking regimes such as ATQP and EBT for those operators who have comprehensive, well established and mature training organisations and established FDM programmes.

Date of notification to EASA: 29 September 2015

UK CAA AltMOC

AltMOC ORO.FC.230(b)(1)(ii) Operator Proficiency Checks –

Multi-Pilot Helicopters

(a) Operator proficiency checks carried out by operators of multi-pilot helicopters under IFR and in the multi-crew role who have established a comprehensive recurrent training and checking programme that fully embodies the principals of multi-crew operations, CRM, and threat and error management, should:

- Make full use of Full Flight Simulators for all recurrent checks and training;
- Have an established flight data monitoring programme which provides feedback to the Operator's training department;
- Establish pre-prepared, scripted and well defined checking profiles that are followed in sequence;
- Establish a checking programme covering normal, abnormal and emergency procedures over a three-year cycle comprising up to 6 OPCs;
- Utilise instructors and examiners that have relevant operational and type experience;
- Be conducted by both day and by night in a variety of weather scenarios.

(b) Pilots should be assessed for proficiency in multi-crew cooperation when carrying out normal, abnormal and emergency procedures as established in the checking programme which may include:

- Take-off and landing procedures;
- In flight and en-route procedures;
- Instrument procedures flown procedurally, and under radar control;
- Non precision approaches based on GNSS, ARA, NDB and VOR procedures;
- Holding procedures.

(c) Where applicable, the following manoeuvres should be flown as pilot flying:

- Take-off with simulated engine failure shortly before reaching TDP or DPATO;
- Take-off with simulated engine failure shortly after reaching TDP or DPATO;
- 3D approach to minima;
- 2D approach to minima;
- Go-around on instruments from minima with, in the case of multiengine helicopters, a simulated failure of one engine;
- If utilised in operations, at least one of the 3D or 2D approach operations should be an RNP APCH or RNP AR APCH operation;
- In the case of multi-engined helicopters, a simulated failure of one engine to be included in either the 3D or 2D approach operation to minima;
- Landing with a simulated failure of one or more engines.

(d) Abnormal and emergency drills that may be introduced to any element of the check may include:

- System failures, paying particular focus on complex failures that affect a number of systems, such as:
  - FADEC / DEC malfunctions;
  - Hydraulic systems: loss of fluid, leakage, pump failures, loss of system functionality;
  - Electrical supply systems, loss of AC generation, DC generation, battery power and reversionary modes, loss of other systems;

- Autopilot system failures, with particular emphasis on revisionary modes, partial system degradations, mixed mode flying and effects of overriding coupled modes;
- Avionics and navigational system failures;
- Control system failures;
- Mechanical system failures, including transmission failures;
- Tail rotor control or drive failures;
- Fuel system failures;
- Anti-ice and de-ice systems failures;
- Undercarriage malfunctions;

- Fire drills, smoke drills, including engine fires, gearbox and fuselage fires, cabin and baggage bay fires;
- Autorotations;
- Engine relighting drills;
- Unusual attitudes / upset recoveries;
- Pilot incapacitation drills.

GM1 AltMOC ORO.FC.230(b)(1)(ii) Operator proficiency checks – Multi-Pilot Helicopters

ADMINISTRATION

The operator should consider the following elements in the administration of OPCs:

(a) The OPC should focus on known areas of crew weakness, operational concern and aircraft complexity.

(b) Recurrent Checking programmes may be aligned to the recurrent training requirements of AMC 1 ORO.FC.230(a)(4).

(c) The operator may assess and record pilots completing the Company OPC as competent in operationally limited roles; for example as Co-Pilot only, or Day only.

(d) The OPC may be structured to comprise a VFR section and an IFR section and both pilots should be assessed as pilot flying and pilot monitoring. Exercises that require a high degree of manual handling skill by the pilot flying should be assessed for each individual pilot, for example rejected take offs, unusual attitude recoveries and instrument procedures flown without any assistance from the flight control systems. Exercises that involve full crew participation should be examined as such.

The visual section may comprise of a series of mini LOFT exercises or discrete

checks, utilising the simulator repositioning function as required to make full and best use of valuable simulator time. A variety of take-off and landing profiles may be assessed over the 3-year period as determined by the operator.

The IFR elements are recommended to be flown as a LOFT exercise. Where approach procedures are flown fully coupled it is recognised that the pilot flying is organising the aircraft flight path through the flight control system. In these circumstances the pilot monitoring will be fulfilling a variety of other duties and as such both pilots may be credited with the successful completion or indeed the failure of an event. Allowing the aircraft to follow an incorrect flight path, or exceed acceptable limits must be seen as a failure by the crew as a whole, and not an individual pilot.

(e) The scripted profile should be followed as closely as possible, however an examiner has the flexibility needed to accommodate crew responses and explore alternative solutions and avenues during the check. Straying from a scripted profile by introducing other drills should be discouraged.

Version: 05 December 2016

EASA Ref 2015-00034 – CAT.POL.H.305(b) – Implementation of the set of conditions for reciprocating engines for operators conducting operations without an assured safe force landing capability

Purpose

AMC2 CAT.POL.H.305(b) addresses the requirements to be met by operators of turbine engined helicopters seeking an approval to operate without an assured safe forced landing capability under CAT.POL.H.305(a).

This AltMOC supplements AMC2 CAT.POL.H.305(b) and provides for appropriate parameters for reciprocating (piston) engines instead of turbine engines. This includes items to be monitored under a Usage Monitoring System as part of the engine reliability programme necessary for approvals to be granted.

Date of notification to EASA: 4 December 2015

AltMOC CAT.POL.H.305(b)

IMPLEMENTATION OF THE SET OF CONDITIONS FOR RECIPROCATING ENGINES

To obtain an approval under CAT.POL.H.305(a), the operator conducting operations without an assured safe forced landing capability should implement the following:

(a) Attain and then maintain the helicopter/engine modification standard defined by the manufacturer that has been designated to enhance reliability during the take-off and landing phases.

(b) Conduct the preventive maintenance actions recommended by the helicopter or engine manufacturer as follows:

(1) engine oil spectrometric and debris analysis — as appropriate;

(2) cylinder and induction/exhaust valve borescope inspections as appropriate;

(3) engine trend monitoring based on cylinder compression checks; and

(4) oil consumption monitoring.

(c) The usage monitoring system should fulfil at least the following:

(1) Recording of the following data:

(i) date and time of recording, or a reliable means of establishing these parameters;

(ii) amount of flight hours recorded during the day plus total flight time;

(iii) cylinder head temperature exceedance: value, duration;

(iv) oil temperature exceedance: value, duration;

(v) manifold absolute pressure (MAP) exceedance (if appropriate to engine configuration): value, duration;

(vi) crankshaft RPM exceedance: value, duration.

(2) Data storage of the above parameters, if applicable, covering the maximum flight time in a day, and not less than 5 flight hours, with an appropriate sampling interval for each parameter.

(3) The system should include a comprehensive self-test function with a malfunction indicator and a detection of power-off or sensor input disconnection.

(4) A means should be available for downloading and analysis of the recorded parameters. Frequency of downloading should be sufficient to ensure data are not lost through overwriting.

(5) The analysis of parameters gathered by the usage monitoring system, the frequency of such analysis and subsequent maintenance actions should be described in the maintenance documentation.

(6) The data should be stored in an acceptable form and accessible to the competent authority for at least 24 months.

(d) The training for flight crew should include the discussion, demonstration, use and practice of the techniques necessary to minimise the risks.

(e) Report to the manufacturer any loss of power control, engine shutdown (precautionary or otherwise) or engine failure for any cause (excluding simulation of engine failure during training). The content of each report should provide:

(1) date and time;

(2) operator (and maintenance organisations where relevant);

(3) type of helicopter and description of operations;

(4) registration and serial number of airframe;

(5) engine type and serial number;

(6) power unit modification standard where relevant to failure;

(7) engine position;

(8) symptoms leading up to the event;

(9) circumstances of engine failure including phase of flight or ground operation;

(10) consequences of the event;

(11) weather/environmental conditions;

(12) reason for engine failure — if known;

(13) in case of an in-flight shutdown (IFSD), nature of the IFSD (demanded/un-demanded);

(14) procedure applied and any comment regarding engine restart potential;

(15) engine hours and cycles (from new and last overhaul);

(16) airframe flight hours;

(17) rectification actions applied including, if any, component changes with part number and serial number of the removed equipment; and

(18) any other relevant information.

EASA Ref 2016-00005 – ORO.FTL.215 – Flight Time Limitations – Self-Positioning

Purpose:

This AltMoc was developed specifically with regard to self positioning between the notified home base location and another place where the operator requires the crew member to conduct a duty or FDP.

Date of notification to EASA: 07 February 2016

AltMOC (AMC1) ORO.FTL.215 Positioning

Where an operator permits, or requires, a crew member to self position by the means of personally arranged transport directly to another location without initially reporting to home base, this may be permitted as part of a procedure within their approved flight time specification scheme that includes the following conditions:

(a) The notional positioning duty times between home base and alternative reporting location(s) are listed in the operations manual, demonstrating realistic journey times which take account of traffic conditions;

(b) Facilities are provided to enable the crew to report at the alternative reporting location

(c) All notional time is recorded in full as duty and used to calculate the rest period;

(d) The FDP is deemed to have commenced at the report time of the notional positioning duty;

(e) Where self positioning is followed by a rest period prior to an FDP the operator should have a method to demonstrate that the crew member rests in the suitable accommodation provided by the operator at the alternative location in accordance with ORO.FTL.235;

(f) The process for assessing suitable combinations of home bases and alternative locations should demonstrate consideration of the known fatiguing effect of long periods of driving or other forms of positioning transportation on the Flight Duty Period.

GM AltMOC (AMC1) ORO.FTL.215 Positioning

Suitable training and guidance material should be provided by the operator with regard to driving while on duty. This should consider the following:

(a) The importance of taking breaks and / or naps and set a maximum length of driving period without a break, both pre and post an FDP;

(b) Consideration of the fatiguing impact of factors, such as heavy traffic, train delays or using multiple forms of transportation, etc.

GM AltMOC (AMC) ORO.FTL.215(a)

Operators could consider limiting the time spent driving to a maximum of 2 hours and count the positioning duty as a sector when calculating the FDP.

GM AltMOC (AMC) ORO.FTL.215(b)

Supporting facilities to enable crew to report directly to another location could be: multi-access airport ID; car parking facilities; crew reporting facilities comparable to home base.

Chapter 3

ATCO Licensing Commission Regulation (EU) 2015/340

EASA Ref 2018-00010 – ATCO.AR.F.020 – Application form for an EU Class 3 medical certificate

Purpose:

The UK CAA is using amended templates for Class 3 application forms for a medical certificate for compliance with national law. The wording of the consent under the 31 Declaration is more robust to comply with the UK Civil Aviation Act Section 23.

Date of notification to EASA: 28 March 2018

Link to UK CAA Medical webpage for Application form for an EU Class 3 Medical Certificate

EASA Ref 2018-00011 – ATCO.AR.F.020 – Consent Change for EU Class 3 medical certificate

Purpose:

The UK CAA will use amended templates for Class 3 application forms for a medical certificate for compliance with national law. The wording of the Consent under the 31 Declaration is more robust to comply with the UK Civil Aviation Act Section 23.

Date of notification to EASA: 28 March 2018

Link to UK CAA Medical webpage for Consent change for EU Class 3 Medical Certificate

EASA Ref 2018-00012 – ATCO.AR.F.020 – Examination form for an EU Class 3 medical certificate

Purpose:

The UK CAA is using amended templates for Class 3 examination forms. It is only the format that has been amended; the content is consistent with ATCO regulation AMC1 ATCO.AR.F.020 Aero-medical forms examination for a medical certificate.

Date of notification to EASA: 28 March 2018

Link to UK CAA Medical webpage for EU Class 3 Examination Form

EASA Ref 2020-00028 - ATCO.D.055(b) - ATCO Unit Training Plans (Experience requirements for Surveillance Radar Approach Rating Endorsements)

Purpose:

This AltMoC allows usage of STDs (Synthetic Training Devices) in combination with live approaches as part of ATCO Unit Training to achieve the required 25 Surveillance Radar Approaches (SRAs) in order for first issue of an ATCO SRA Rating endorsement.

SRA Approaches continue to be utilised at several UK Air Traffic Control approach units. However, SRA usage particularly at the busier units is becoming increasingly uncommon, due to the availability of more sophisticated ATM Systems that facilitate considerably greater arrival rates. Consequently, the availability of 'opportunity traffic' willing to participate in an ATCO training to achieve the required 25 'live' approaches for initial issue of an SRA Rating Endorsement is challenging. The increased use of high-fidelity Synthetic Training Devices (STDs or simulators) is such that a sufficiently accurate representation of the live environment is now routinely available for training and the maintenance of competence. Therefore this AltMoC is established to allow approval of a proportion of the total 25 SRA approaches to be conducted using STDs within an ANSP's UTP. The proportion of STD approaches contained in each UTP would be determined on an individual basis in consultation with the relevant CAA inspector and formal approval once the justification of using an STD as part of SRA training for initial endorsement has been agreed.

The CAA will closely monitor through the oversight programme how this is being used by ANSPs.

Date of notification to EASA: 2 November 2020

UK AltMoC ATCO.D.055(b) Unit Training Plan, (and ICAO Annex1 Para 4.5.2.2.1(c))

UTP requirements for SRA Rating Endorsement training for initial issue.

In accordance with, EU 2015/340 Annex 1 Section 3 AMC1 ATCO.D.055(b)(6) Unit Training Plan, and; ICAO Annex 1 Chapter 4 Paragraph 4.5.2.2.1(c) the requirement for the initial issue of an SRA Rating Endorsement:

'shall include not less than 25 plan position indicator approaches on the surveillance equipment of the type in use at the unit for which the rating is sought and under the supervision of an appropriately rated controller. ***However, where adequate justification is presented by ANSPs to the CAA, a proportion of 25 SRA approaches may be conducted through the use of an approved STD (Synthetic Training Device) within an approved UTP (Unit Training Plan).'***

Chapter 4

Continuing Airworthiness Commission Regulation (EU) No 1321/2014

EASA Ref 2020-00026 - Point (e) of AMC1 CAMO.A.305(c) - Requirements for Safety Managers

Purpose:

AMC1 CAMO.A.305(c) specifies requirements for Safety Managers in relation to knowledge, qualification and experience with an emphasis on a relevant engineering degree or an aircraft maintenance technician qualification with additional education that is acceptable to the competent authority in paragraph (e).

Many existing Safety Managers approved under Regulation (EU) No 965/2012 for air operations may not fully meet this requirement.

This AltMoC offers conditions the satisfactory completion of which would ensure an acceptable level of required knowledge to comply with the rule. This AltMoC only applies to existing Safety Managers already approved under the Regulation (EU) No 965/2012 for air operations who are currently in post

Date of notification to EASA: 22 September 2020

AltMoC Point (e) of AMC1 CAMO.A.305(c), Personnel Requirements

As an existing Safety Manager already approved by the CAA under the Regulation (EU) No 965/2012 for air operations and assisted by additional safety personnel in accordance with GM1 CAMO.A.305(a)(5), in order to meet the requirement of Part CAMO, the person should demonstrate they have successfully completed the following:

i. A recognised course covering all aspects of Annex I of Regulation (EU) No 1321/2014, as amended (Part M);

ii. Training within a CAMO department for a minimum of two weeks gaining comprehensive knowledge of the following:

   1) Development of Aircraft Maintenance Programme (AMP),

   2) Aircraft Reliability Programmes,

   3) Maintenance Steering Group methodology,

   4) Maintenance Review Board process,Continuing airworthiness tasks and general principles,

5) Continued airworthiness concepts and principles,

6) Maintenance standards;

iii. Thorough knowledge of:

1) Organisation's CAME,

2) Maintenance methods,

3) Applicable regulations;

iv. A relevant aviation qualification that demonstrates the applicant's adequate understanding/knowledge of engineering principles, e.g. ATPL.

The relationship between the Safety Manager and the additional safety personnel shall be clearly defined in the exposition with a clear outline of the delegated responsibilities. The Safety Manager remains the unique focal point.

Chapter 5 **ANY CHANGE TO THE PERSONNEL STRUCTURE APPLIED UNDER THIS ALTERNATIVE MEANS OF COMPLIANCE SHALL BE NOTIFIED TO THE AUTHORITY IN LINE WITH CAMO.A.130(A)(2).**

Rules and Procedures for the Operation of Unmanned Aircraft (EU) No 2019/947

EASA Ref 2019-00031 – EU 2019-947 Article 11 – Rules for conducting an operational risk assessment

Purpose

This Alt MOC provides an alternative method of demonstrating compliance with Article 11 – Rules for conducting an operational risk assessment of Regulation EU 2019/947

CAP 722A, Unmanned Aircraft System Operations in UK Airspace - Operating Safety Cases assists those involved in the production of an Operating Safety Case (OSC) which is used as supporting evidence to an application to the UK CAA for operation of an Unmanned Aircraft System (UAS). The OSC ensures that the required operational safety requirements have been met and best practice is adopted by all UAS operators before a UAS is authorised to operate in the UK.

A successful OSC presents sufficient evidence that all relevant hazards and resultant safety risks have been identified within an operation and that these safety risks have been reduced to be Tolerable and As Low As Reasonably Practicable (ALARP).

Date of notification to EASA: 7 November 2019

UK Alt MOC EU Regulation 2019/947 Article 11 Rules for conducting an operational risk assessment – UK CAA Operating Safety Case

Link to CAP 722A, Unmanned Aircraft System Operations in UK Airspace – Operating Safety Case

Chapter 6

Alternative Means of Compliance Approved by the UK Civil Aviation Authority

AERODROMES Commission Regulation (EU) No 139/2014

ALT MOC REF	REGULATION	ORIGINATOR	SUBJECT	APPROVED
2018-00058	ADR.OPS.B.010(a)(2)	Heathrow Airport Ltd	Rescue and Firefighting Service – Fire Extinguishing Agent	12/11/2018
2019-00037	ADR.OPS.B.010(a)(2)	Highlands and Islands Airports Ltd (HIAL)	Rescue and Firefighting Service – Fire Extinguishing Agent	13/12/2019

AIRCREW Commission Regulation (EU) No 1178/2011

ALT MOC REF	REGULATION	ORIGINATOR	SUBJECT	APPROVED
2018-00046	FCL.725(a)(d)	Babcock International Group	Requirements for the issue of class and type ratings, additional types	12/09/2018
2019-00028	ORA.AeMC.215	National Air Traffic Services (NATS)	Facility Requirements, Medical Technical Facilities	01/09/2017
2019-00034	ORA.AeMC.215	Heathrow Medical Services	Facility Requirements, Medical Technical Facilities	21/10/2019
2019-00035	FCL.025(a)(2) and ORA.ATO.230(a)	Bristol Groundschool	Area 100 KSA, theoretical knowledge	25/11/2019
2020-00008	ORA.AeMC.215	Birmingham Medical Centre	Facility Requirements, Medical Technical Facilities	03/02/2020
UK CAA 2024-001	ORA.ATO.125(j)	Jet2	Increased use FTD within the Muti-Pilot Aeroplane Type Rating Course	26/03/2024

UK CAA 2024-010	ORA.ATO.125	Jet2.com&Jet2holidays	Reduction in hours on Full Flight Simulator, but the use of a Flight Training Device	03/10/2024

AIR OPERATIONS Commission Regulation (EU) No 965/2012

ALT MOC REF	REGULATION	ORIGINATOR	SUBJECT	APPROVED
2014-00009	CAT.POL.MAB.105 (c)	British Airways Plc & British Airways(BA) Ltd	Electronic signature or equivalent for mass & balance documentation	17/06/2014
2014-00020	ORO.CC.135	Virgin Atlantic Airways	Aircraft Familiarisation	17/09/2014
2014-00021	CAT.IDE.A.225	Monarch	Emergency Medical Kit	28/10/2014
2014-00022	CAT.IDE.A.225	TUI Airways Ltd	Emergency Medical Kit	19/09/2014
2014-00023	CAT.IDE.A.225	British Airways	Emergency Medical Kit	28/10/2014
2014-00024	CAT.IDE.A.220 CAT.IDE.A.225	Virgin Atlantic Airways	Emergency Medical Kit	28/03/2014
2015-00013	ORO.FTL.110(a)	easyJet UK Ltd	Operator Responsibilities – Publication of duty roster	15/06/2015
2015-00017	CAT.OP.MPA.160	Zenith Aviation Limited	Carriage of live animals in passenger cabin	23/03/2015
2015-00018	SPA.RVSM.105(d)	TUI Airways Ltd	RVSM operational approval	21/05/2015
2015-00035	ORO.FTL.110(a)	British Airways	Operator Responsibilities – Publication of duty roster	11/12/2015
2016-00014	CAT.OP.MPA.160	Sovereign Business Jets Ltd	Carriage of live animals in passenger cabin	22/03/2016
2016-00017	CAT.OP.MPA.160	Arena Aviation Ltd	Carriage of live animals in passenger cabin	23/03/2016
2016-00036	CAT.POL.MAB100(e)	Acropolis Aviation	Use of standard mass values for checked baggage	10/02/2016
2016-00037	CAT.OP.MPA.160	Bookajet	Carriage of live animals in passenger cabin	16/09/2016

2018-00016	CAP.OP.MPA.160	Skybus	Carriage of live animals in passenger cabin	06/04/2018
2018-00017	ORO.CC.135	easyJet UK Ltd	Aircraft familiarisation	25/04/2018
UK0002	ORO.FTL.110	easyJet UK Ltd	Publication of Rosters	27/05/2020
2018-00038	AMC3 ORO.MLR.100	Thomas Cook	Operations Manual Structure	28/03/2018
2019-00015	ORO.CC.100	easyJet UK Ltd	Number and composition of cabin crew	26/06/2019
UK CAA 2021-00001	ORO.FC.220 & 230	British Airways	Operator recurrent training and checking	31/03/2021
UK CAA 2022-00002	CAT.OP.MPA.160	Gama Aviation	Carriage of Live Animals	26/10/2022
UK CAA 2023-00001	CAT.MAB.105(c)	BA EuroFlyer Ltd	Signature of Equivalence	12/01/2023
UK CAA 2023-00002	SPA.LVO.105	BA EuroFlyer Ltd	LVO Approval	13/01/2023
UK CAA 2023-00009	CAT.IDE.A.190	DHL Air Ltd	Flight Data Recorders	24/04/2023 Limited validity to 30/09/2025
UK CAA 2023-00018	ORO.CC.135	British Airways	Cabin Crew Familiarisation	30/06/2023
UK CAA 2023-00020	CAT.POL.MAB.100(e)	One Air	Use of Standard Baggage Masses (Limited to 747-400 aircraft only)	04/07/2023
UK CAA 2023-00022	SPA.LVO.105	ASL Airlines UK Ltd	Credit for Operator, Aircraft and Crew LVO Capability and Experience	29/08/2023
UK CAA 2023-00023	CAT.OP.MPA.160	Alto Aerospace	Carriage of Live Animals Over 8kg in Cabin	12/09/2023

UK CAA 2024-002	CAT.POL.MAB 105	BA CityFlyer	Signature or equivalence	04/04/2024
UK CAA 2024-005	ORO.FC.115 & ORO.FC.230	Bristow Helicopters LTD	Recurrent CRM Training	01/08/2024
UK CAA 2024-006	CAT.OP.MPA.160	Easyjet Uk Ltd	Stowage of baggage and cargo	02/08/2024
UK CAA 2024-007	CAT.OP.MPA.160	London Executive Aviation (dba Luxaviation UK)	Stowage of baggage and cargo	02/08/2024
UK CAA 2024-009	ORO.AOC.135	Gama Aviation (UK) Ltd	Personnel requirements	27/08/2024
UK CAA 2024-011	ORO.FC.230(a)(2)	Yorkshire Air Ambulance	Emergency Exit Jettison 3 Yearly Practical Training	24/10/2024
UK CAA 2024-012	CAT.OP.MPA.110	British Airways plc	Continuity of approach operations during Newcastle Runway Rehabilitation	20/12/2024
UK CAA 2025-001	CAT.IDE.H.190	CHC Scotia Ltd	Flight Data Recorder	20/12/2024
UK CAA 2025-002	SPA.LVO.105	Maersk Air Ltd	Transitional Periods for Operators with No Previous CAT II or CAT III Experience	03/04/2025
UK CAA 2025-003	ORO.CC.100	Wizz Air Ltd	Number and composition of cabin crew	03/04/2025
UK CAA 2025-004	CAT.IDE.A.225	Virgin Atlantic Airways	Emergency medical kit	28/04/2025
UK CAA 2025-005	CAT.IDE.A.225	Virgin Atlantic Airways	Emergency medical kit	28/04/2025
UK CAA 2025-006	ORO.AOC.135	Gama Aviation (UK) Ltd	Personnel requirements	13/05/2025

UK CAA 2025-007	ORO.FC.230	Babcock Mission Critical Services Onshore Limited	Recurrent training and checking	02/06/2025

ATCO UK Regulation (EU) 2015/340

ALT MOC REF	REGULATION	ORIGINATOR	SUBJECT	APPROVED
UK-CAA 2023-00004	ATCO.D.60	NATS Belfast City	Adapted Unit Endorsement on Aerodrome ADI and ADS	27/01/2023

CONTINUING AIRWORTHINESS UK Regulation (EU) No 1321/2014

ALT MOC REF	REGULATION	ORIGINATOR	SUBJECT	APPROVED
2022-00001	CAMO.A.305(c)	Raytheon Systems	Requirements for Safety Managers	02/09/2022
UK-CAA 2023-00006	CAMO.A.305(c)	Aurigny Air Services	Requirements for Safety Managers	06/03/2023
UK-CAA 2023-00007	CAMO.A.305(c)	Northumbria Helicopters Ltd	Requirements for Safety Managers	29/03/2023
UK-CAA 2023-00008	CAMO.A.305(c)	Ryanair UK Ltd	Requirements for Safety Managers	30/03/2023
UK-CAA 2023-00010	CAMO.A.305(c)	Kingmoor Aviation Ltd	Compliance Monitoring and Safety Manager	12/06/2023
UK-CAA 2023-00011	CAMO.A.305(c)	West Atlantic UK Ltd	Requirements for Safety Managers	14/06/2023
UK-CAA 2023-00012	CAMO.A.305(c)	London Air Ambulance Ltd	Requirements for Safety Manager	15/06/2023
UK-CAA 2023-00013	CAMO.A.305(c)	Heliflight AOC Ltd	Requirements for Compliance Monitoring Manager	20/06/2023
UK-CAA 2023-00014	CAMO.A.305(c)	Heliflight AOC Ltd	Requirements for Safety Manager	20/06/2023
UK-CAA 2023-00015	CAMO.A.305(c)	Heli Services Ltd	Requirements for Safety Manager	23/06/2023
UK-CAA 2023-00016	CAMO.A.305(c)	Helicentre Aviation Ltd	Requirements for Continuing Airworthiness Manager	23/06/2023

UK CAA 2023-00017	CAMO.A.305 (c)	Helicentre Aviation Ltd	Requirements For Compliance Monitoring Manager	23/06/2023
UK CAA 2023-00024	CAMO.A.305(C)	European Skybus Ltd	Safety Manager	15/12/2023
UK CAA 2023-00025	CAMO.A.305(C)	Ryanair UK Ltd	Safety Manager	15/12/2023
UK CAA 2024-004	CAMO.A.305(c)	Specialist Aviation Services Ltd (Gama Aviation Ltd)	Safety manager	12/07/2024

Chapter 7

Alternative Means of Compliance Revoked by the UK Civil Aviation Authority

ALT MOC REF	REGULATION	ORIGINATOR	SUBJECT	REVOKED BY	DATE
2015-00033	CAT.IDE.A.285(a)	CAA	Access to Life Jackets	ORS9 Decision 15	07/11/2022
2020-00031	CAT.OP.MPA.140	CAA	Maximum distance from an adequate aerodrome for two-engined aeroplanes without an ETOPS approval	ORS9 Decision 15	07/11/2022
UK0001	ORO.FC.230(c)	CAA	CAT Line Checks	ORS9 Decision 34	18/10/2023
UK0003	ORO.FC.230(d)	CAA	Emergency and Safety Equipment Training and Checking	ORS9 Decision 34	18/10/2023
2012-00001	MED.B.075	CAA		ORS9 Decision 44	19/12/2024
2012-00002	MED.B.095				
2012-00004	ARA.MED.135				
2012-00005	ARA.MED.135				
2012-00006	ARA.MED.135				
2013-00001	ARA.MED.150				
2014-00018	ARA.MED.135(a)				
2016-00001	MED.C.025				
2018-00013	ARA.MED.135(a)				
2018-00064	MED.B.075				
2020-0008	ORA.AeMC.215				
2020-00033	MED.B.040(b)				