



FOCA GM/INFO

Guidance Material / Information

EASA Part-NCO: Changes for Pilots and Aircraft Holders

Non Commercial other than Complex Aircraft Operations



Scope	Non Commercial other than Complex Aircraft Operations in Switzerland
Applies to	Owners and operators of other than complex motor-powered aircraft (aeroplane and helicopter) operating non-commercially
Valid from	01 December 2017
Purpose	Guidance / Information

Process No	-
Document Reference	COO.2207.111.3.3345976
Registration No	033.1-00001/00017/00013/00009
Prepared by	SBFL, SBFF
Released by	SL SBFF 11 August 2016
Distribution	Internal / External

LEFT BLANK

Log of Revision (LoR)

Date	Issue	Revision	Highlight of Revision
12.08.2016	1	0	First Issue
01.12.2017	1	1	MEL, Maintenance for IFR

List of Effective Chapters

CP	ISS 1 / REV 1 / 01.12.2017	Ch. 3.9	ISS 1 / REV 0 / 12.08.2016
LoA	ISS 1 / REV 0 / 12.08.2016	Ch. 3.10	ISS 1 / REV 0 / 12.08.2016
ToC	ISS 1 / REV 0 / 12.08.2016	Ch. 3.11	ISS 1 / REV 1 / 01.12.2017
Ch. 0	ISS 1 / REV 0 / 12.08.2016	Ch. 3.12	ISS 1 / REV 0 / 12.08.2016
Ch. 0.1	ISS 1 / REV 0 / 12.08.2016		
Ch. 0.2	ISS 1 / REV 0 / 12.08.2016		
Ch. 0.3	ISS 1 / REV 0 / 12.08.2016		
Ch. 0.4	ISS 1 / REV 0 / 12.08.2016		
Ch. 1	ISS 1 / REV 0 / 12.08.2016		
Ch. 1.1	ISS 1 / REV 0 / 12.08.2016		
Ch. 1.2	ISS 1 / REV 0 / 12.08.2016		
Ch. 1.2.1	ISS 1 / REV 0 / 12.08.2016		
Ch. 1.2.2	ISS 1 / REV 0 / 12.08.2016		
Ch. 1.2.3	ISS 1 / REV 0 / 12.08.2016		
Ch. 2	ISS 1 / REV 0 / 12.08.2016		
Ch. 2.1	ISS 1 / REV 0 / 12.08.2016		
Ch. 2.1.1	ISS 1 / REV 0 / 12.08.2016		
Ch. 2.1.2	ISS 1 / REV 0 / 12.08.2016		
Ch. 2.1.3	ISS 1 / REV 0 / 12.08.2016		
Ch. 2.1.4	ISS 1 / REV 1 / 01.12.2017		
Ch. 2.2	ISS 1 / REV 0 / 12.08.2016		
Ch. 2.2.1	ISS 1 / REV 0 / 12.08.2016		
Ch. 2.2.2	ISS 1 / REV 0 / 12.08.2016		
Ch. 2.2.3	ISS 1 / REV 0 / 12.08.2016		
Ch. 2.2.4	ISS 1 / REV 0 / 12.08.2016		
Ch. 2.2.5	ISS 1 / REV 0 / 12.08.2016		
Ch. 2.2.6	ISS 1 / REV 0 / 12.08.2016		
Ch. 3	ISS 1 / REV 0 / 12.08.2016		
Ch. 3.1	ISS 1 / REV 1 / 01.12.2017		
Ch. 3.2	ISS 1 / REV 0 / 12.08.2016		
Ch. 3.3	ISS 1 / REV 0 / 12.08.2016		
Ch. 3.3.1	ISS 1 / REV 0 / 12.08.2016		
Ch. 3.3.2	ISS 1 / REV 0 / 12.08.2016		
Ch. 3.4	ISS 1 / REV 1 / 01.12.2017		
Ch. 3.5	ISS 1 / REV 0 / 12.08.2016		
Ch. 3.6	ISS 1 / REV 0 / 12.08.2016		
Ch. 3.7	ISS 1 / REV 0 / 12.08.2016		
Ch. 3.8	ISS 1 / REV 0 / 12.08.2016		

List of Abbreviations

LoA ISS 1 / REV 0 / 12.08.2016

The following abbreviations are within this GM/INFO:

Abbreviation	Definition	Abbreviation	Definition
AFM	Aircraft Flight Manual	PIC	Pilot in Command
AIP	Aeronautical Information Publication	PLB	Personal Locator Beacon
AMC	Acceptable Means of Compliance	PNR	Point of No Return
APCH	Approach	POH	Pilot's Operating Handbook
ARO	Authority Requirements for Air Operations	POL	Aircraft Performance and Operating Limitations
ATC	Air Traffic Control	RNP AR	Required Navigation Performance Approval Required
ATD	Actual Time of Departure	RVSM	Reduced Vertical Separation Minima
ATO	Approved Training Organisation	SERA	Standardised European Rules of the Air
ATS	Air Traffic Service	SPA	Operations requiring specific approvals
AVGAS	Aviation Gasoline	SSR	Secondary Surveillance Radar
BAZL	Bundesamt für Zivilluftfahrt	STC	Supplemental Type Certificate
CAT	Commercial Air Transport	SUST	Schweizerische Unfalluntersuchungsstelle
CDI	Course Deviation Indicator	TCDS	Type Certificate Data Sheet
CDL	Configuration Deviation List	TM	Technische Mitteilung
CFR	Code of Federal Regulations	TMG	Touring Motor Glider
CMPA	Complex Motor Powered Aircraft	VFR	Visual Flight Rules
CoA	Certificate of Airworthiness	VLL	Verordnung des UVEK über die Lufttüchtigkeit von Luftfahrzeugen
CRD	Child Restraint Device	VMC	Visual Meteorological Conditions
CS	Certification Specification	VOR	Very High Frequency Omni-Directional Radio Range
DEF	Definitions	VRV-L	Verordnung des UVEK über die Verkehrsregeln für Luftfahrzeuge
DG	Dangerous Goods	PIC	Pilot in Command
DTO	Declared Training Organisation		
EASA	European Aviation Safety Agency		
EC	European Commission		
ELA1	European Light Aircraft 1		
ELA2	European Light Aircraft 2		
ELT	Emergency Locator Transmitter		
ETA	Estimated Time of Arrival		
EU	European Union		

Table of Contents (ToC)

ToC ISS 1 / REV 0 / 12.08.2016

0	Introduction	1
0.1	Applicability of Part-NCO.....	1
0.2	Structure of Part-NCO	2
0.3	Changes for Sailplanes and Balloons	3
0.4	Terms and Conditions	3
1	Administrative Changes as Consequence to Part-NCO	4
1.1	Declaration.....	4
1.2	Part-SPA «Specific Approvals»	4
1.2.1	SPA.GEN.105 «Application for a specific approval».....	4
1.2.2	SPA.RVSM «Operations in airspace with reduced vertical separation minima»	5
1.2.3	SPA.PBN «PBN operations»	6
2	Operational Changes through Part-NCO	7
2.1	NCO.GEN «General Requirements»	7
2.1.1	NCO.GEN.105 «Pilot-in-command responsibilities and authority».....	7
2.1.2	NCO.GEN.135 «Documents, manuals and information to be carried».....	7
2.1.3	NCO.GEN.140 «Transport of dangerous goods»	8
2.1.4	NCO.GEN.155 «Minimum equipment list»	9
2.2	NCO.OP «Operational procedures»	9
2.2.1	NCO.OP.115 «Departure and approach procedures»	9
2.2.2	NCO.OP.125 «Fuel and oil supply» - Aeroplanes.....	10
2.2.3	NCO.OP.125 «Fuel and oil supply» – Helicopter.....	10
2.2.4	NCO.OP.140 «Destination alternate aerodrome».....	11
2.2.5	NCO.OP.145 «Refueling with passengers embarking, on board or disembarking»	12
2.2.6	NCO.OP.190 «Use of supplemental oxygen».....	12
3	NCO.IDE «Instruments, data and equipment»	13
3.1	NCO.IDE.A.105 «Minimum equipment for flight».....	13
3.2	NCO.IDE.A.115 and NCO.IDE.H.115 «Operating lights»	13
3.3	NCO.IDE.A.120 «Operations under VFR – flight and navigational instruments»	14
3.3.1	VFR by day	14
3.3.2	VFR by night	15
3.4	NCO.IDE.A.125 und NCO.IDE.H.125 «Operations under IFR – flight and navigational instruments».....	15
3.5	NCO.IDE.A.140 and NCO.IDE.H.140 «Seats, seat safety belts, restraint systems, ...»	19
3.6	NCO.IDE.A.150 «Supplemental oxygen – pressurized aeroplanes»	20

3.7	NCO.IDE.A.155 and NCO.IDE.H.155 «Supplemental oxygen – non-pressurized aeroplanes»	20
3.8	NCO.IDE.A.160 «Hand fire extinguishers»	21
3.9	NCO.IDE.A.170 «Emergency locator transmitter (ELT)»	21
3.10	NCO.IDE.A.190/200 and NCO.IDE.H.190/200 «Radio communication equipment»/«Transponder»	22
3.11	NCO.IDE.A.195 and NCO.IDE.H.195 «Navigation equipment»	23
3.12	Specific Approvals.....	24

0 Introduction

Ch. 0 ISS 1 / REV 0 / 12.08.2016

Since 25 August 2016, Part-NCO is in force in all EASA Member States. For Switzerland, this represents a number of changes, as such a regulation did not previously exist. This document touches on the most important changes for pilots and aircraft holders as consequence to Part-NCO.

0.1 Applicability of Part-NCO

Ch. 0.1 ISS 1 / REV 0 / 12.08.2016

Non-Commercial Other than complex (NCO) are aircraft which are not operated commercially and which fulfil the following criteria:

Aeroplane:

- with a MTOM of max. 5'700 kg; and,
- certificated for a maximum operational passenger seating configuration of less than 19; and,
- certificated for the operation with not more than one pilot; and,
- without turbojet engine; or,
- with turboprop engine (incl. multi-engine), provided that MTOM is max. 5'700 kg¹

Helicopter:

- with a MTOM of max. 3'175 kg; and,
- certificated for a maximum operational passenger seating configuration of less than 9
- certificated for the operation with not more than one pilot

Aircraft held by private owners as well as those held by an Approved Training Organisation (ATO) and in future by a Declared Training Organisation (DTO), are subject to the rules of Part-NCO.

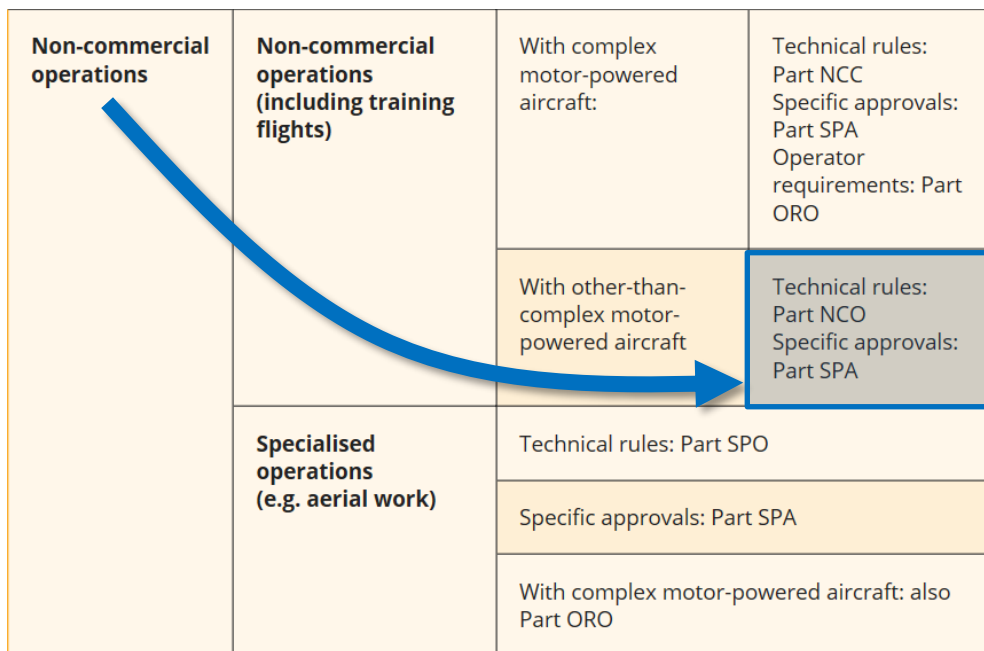


Figure 1: Applicability of Part-NCO

¹ Non-commercial operations with complex motor-powered aircraft (NCC), EASA, available online (15.04.2016): <https://www.easa.europa.eu/easa-and-you/air-operations/non-commercial-operations-ncc-complex-motor-powered-aircraft>

0.2 Structure of Part-NCO

Ch. 0.2 ISS 1 / REV 0 / 12.08.2016

- GEN General Requirements
- OP Operational Procedures
- POL Aircraft Performance and Operating Limitations
- IDE Instruments, Data and Equipment
 - IDE.A Aeroplanes
 - IDE.H Helicopters
 - IDE.S Sailplanes
 - IDE.B Balloons

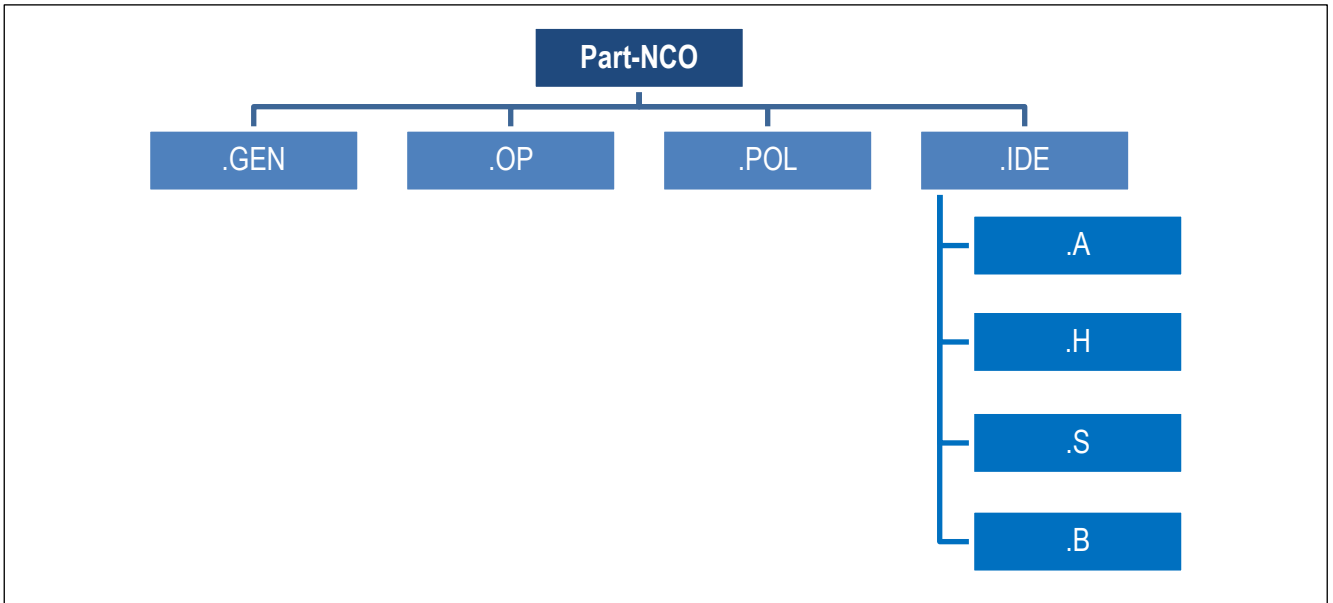


Figure 2: Structure of Part-NCO

Applicability of the annexes according to type of operation

The Annexes (I-VIII), which are relevant for Part-NCO operators, are shown in the table below. Accordingly, Annexes DEF, ARO, SPA and NCO are marked in yellow.

		I: DEF	II: ARO	III: ORO	IV: CAT	V: SPA	VI: NCC	VII: NCO	VIII: SPO
Commercial Operations	CAT	✓	✓	✓	✓	✓			
	Other than CAT	✓	✓	✓		✓			✓
Non-commercial Operations	CMPA	✓	✓	✓		✓	✓		
	Other than CMPA	✓	✓			✓		✓	
	Specialised operations	✓	✓	✓		✓			✓

Figure 3: EU 965/2012 Rules applicability, CMPA = Complex Motor Powered Aircraft

0.3 Changes for Sailplanes and Balloons

Ch. 0.3 ISS 1 / REV 0 / 12.08.2016

EASA is intending to create a separate regulation for balloons² and another one for sailplanes³. Chapters «IDE.S and IDE.B» and all regulations regarding these aircraft types would be removed from Part-NCO and from (EU) No 965/2012. While the new rules are being outlined, EASA is offering their Member States the possibility to request an opt-out. For balloons until April 2018 and for sailplanes until April 2019.

0.4 Terms and Conditions

Ch. 0.4 ISS 1 / REV 0 / 12.08.2016

When used throughout the GM/INFO the following terms shall have the meaning as defined below:

Term	Meaning	Reference
<i>shall, must, will</i>	These terms express an obligation, a positive command.	EC English Style Guide: Ch. 7.19
<i>may</i>	This term expresses a positive permission.	EC English Style Guide: Ch. 7.21
<i>shall not, will not</i>	These terms express an obligation, a negative command.	EC English Style Guide: Ch. 7.20
<i>may not, must not</i>	These terms express a prohibition.	EC English Style Guide: Ch. 7.20
<i>need not</i>	This term expresses a negative permission.	EC English Style Guide: Ch. 7.22
<i>should</i>	This term expresses an obligation when an acceptable means of compliance should be applied .	EASA Acceptable Means of Compliance publications FOCA policies and requirements
<i>could</i>	This term expresses a possibility.	http://oxforddictionaries.com/definition/english/could
<i>ideally</i>	This term expresses a best possible means of compliance and/or best experienced industry practice.	FOCA recommendation

Note: To highlight information or an editorial note a specific note box is used.

- The use of the male gender should be understood to include male and female persons.

² Opinion 01/2016, RMT.0674, EASA

³RMT.0698, EASA

1 Administrative Changes as Consequence to Part-NCO

Ch. 1 ISS 1 / REV 0 / 12.08.2016

1.1 Declaration

Ch. 1.1 ISS 1 / REV 0 / 12.08.2016

Other than for Part-NCC, operators of Part-NCO aircraft **need not declare their activities.**

1.2 Part-SPA «Specific Approvals»

Ch. 1.2 ISS 1 / REV 0 / 12.08.2016

Part-SPA can, as shown in the table below (Table 1), be applied to all aircraft/operation types and likewise for aircraft under Part-NCO. However, in this GM/INFO only the for otCMPA (other than Complex Aircraft) relevant Subparts are given attention to. Previously PBN and RVSM were regulated by TM 02.050-10 (IFR equipment, appendix), which now becomes superseded by NCO.IDE. Table 1 indicates that for everyday operation only the «specific approval» for RVSM and DG for Part-NCO operators come into consideration, even though in theory any SPA would be possible (aircraft limitations).

Part-SPA Specific Approval	Applicability for Part-NCO
Subpart D «RVSM»	RVSM can be used by some aircraft, which fall under Part-NCO (e.g. PC-12, King Air, etc.)
Subpart B «PBN operations»	<p>N/A</p> <ul style="list-style-type: none"> • On the basis of EASA Opinion No 03/2015 (resulting from NPA 2013-25) the daily practice will probably change in 2016: <ul style="list-style-type: none"> ▪ SPA will no longer be requested, except for RNP AR (curved 3D approaches), RNP 0.3 Heli Ops (e.g. LFN en-route), and A-RNP (Advanced RNP) ▪ For approaches like LPV, LP, LNAV/VNAV, and LNAV operators no longer require specific approval (this is based on technical views for the aircraft; irrespective of the pilot being authorised according to Part-FCL to execute such approaches)
Subpart G, «Transport of dangerous goods»	<ul style="list-style-type: none"> • According to NCO.GEN.140 «Transport of dangerous goods» the transport of DG do not appertain to Part-SPA as long as the DG is stored according to «Part 8 of the Technical Instructions» and is transported in an ELA1/2-aeroplane (<2'000 kg). • The DG requirements of Part-SPA must be fulfilled by aeroplanes with a MTOM of $\geq 2'000$ kg <p>Except (according to 2016/1199): Reasonable quantities of articles and substances that would otherwise be classified as dangerous goods and that are used to facilitate flight safety.</p>

Table 1: Applicability of Part-SPA for NCO operator

1.2.1 SPA.GEN.105 «Application for a specific approval»

Ch. 1.2.1 ISS 1 / REV 0 / 12.08.2016

SPA.GEN.105 defines what an application for Part-SPA operations must include. AMC1 to SPA.GEN.105(a) mentions that not in all cases an operations manual is necessary as form of documentation. If not specifically required, a procedures manual, AFM or POH, which describes the operation requested will suffice.

SPA.GEN.105 Application for a specific approval

- (a) The operator applying for the initial issue of a specific approval shall provide to the competent authority the documentation required in the applicable Subpart, together with the following information:
 - (1) the name, address and mailing address of the applicant;
 - (2) a description of the intended operation.
- (b) The operator shall provide the following evidence to the competent authority:
 - (1) compliance with the requirements of the applicable Subpart;
 - (2) that the relevant elements defined in the mandatory part of the operational suitability data established in accordance with Regulation (EU) No 748/2012 are taken into account.
- (c) The operator shall retain records relating to (a) and (b) at least for the duration of the operation requiring a specific approval, or, if applicable, in accordance with Annex III (Part-ORO).

1.2.2 SPA.RVSM «Operations in airspace with reduced vertical separation minima»

Ch. 1.2.2 ISS 1 / REV 0 / 12.08.2016

SPA.RVSM.105 regulates how an RVSM-Approval can be requested. It is FOCA's duty to check the content. In AMC1/AMC2 of this regulation the content is described in more detail.

SPA.RVSM.110 stipulates the minimum equipment. Necessary are two separate altimeter systems, an altitude alerting system, an automatic altitude control system, plus a SSR transponder.

SPA.RVSM.115 «RVSM height-keeping errors» defines under which circumstances an occurrence report (OR) must be sent to FOCA. The OR must be reported within 72h after the occurrence and must include a first analysis, and must also make mention of the measures taken to ensure future avoidance of the occurrence. The operator must, if requested by FOCA, provide follow-up reports.

SPA.RVSM.105 RVSM operational approval

To obtain an RVSM operational approval from the competent authority, the operator shall provide evidence that:

- (a) the RVSM airworthiness approval has been obtained;
- (b) procedures for monitoring and reporting height-keeping errors have been established;
- (c) a training programme for the flight crew members involved in these operations has been established;
- (d) operating procedures have been established specifying:
 - (1) the equipment to be carried, including its operating limitations and appropriate entries in the MEL;
 - (2) flight crew composition and experience requirements;
 - (3) flight planning;
 - (4) pre-flight procedures;
 - (5) procedures prior to RVSM airspace entry;
 - (6) in-flight procedures;
 - (7) post-flight procedures;
 - (8) incident reporting;
 - (9) specific regional operating procedures.

1.2.3 SPA.PBN «PBN operations»

Ch. 1.2.3 ISS 1 / REV 0 / 12.08.2016

Only for RNP AR (curved 3D approaches), RNP 0.3 Heli Ops (e.g. LFN en-route) and Advanced RNP with time of arrival control function a Special Approval is required. Apparent in Image 6 (marked light blue) is that for approaches like LNAV, LNAV/VNAV, LP, LPV, and also for en-route PBN, no SPA needs to be present. For further details see EU No 2016/1199, which contains the new PBN regulation.

Navigation Specification	Flight Phase							
	En route		Arrival	Approach				Departure
	Oceanic/remote	Continental		Initial	Intermediate	Final	Misused	
RNAV 10	10							
RNAV 5		5	5					
RNAV 2		2	2					2
RNAV 1		1	1	1	1		1	1
RNP 4	4							
RNP 2	2	2						
RNP 1			1	1	1		1	1
A-RNP: except time of arrival control function	2	2 or 1	1	1	1	0.3	1	1
RNP APCH (LNAV)				1	1	0.3	1	
RNP APCH (LNAV/VNAV)				1	1	0.3	1	
RNP APCH (LP)				1	1	0.3	1	
RNP APCH (LPV)				1	1		1	
RNP AR APCH				1-0.1	1-0-1	0.3-0.1	1-0.1	
RNP 0.3 helicopter operations								
A-RNP: time of arrival control function								

x numbers specify the accuracy level
 No operational approval required
 Operational approval required

Figure 4: Overview of PBN Approvals according to NPA 2013-25

2 Operational Changes through Part-NCO

Ch. 2 ISS 1 / REV 0 / 12.08.2016

2.1 NCO.GEN «General Requirements»

Ch. 2.1 ISS 1 / REV 0 / 12.08.2016

2.1.1 NCO.GEN.105 «Pilot-in-command responsibilities and authority»

Ch. 2.1.1 ISS 1 / REV 0 / 12.08.2016



Changes for pilots

The PIC is responsible by means of the installed instruments and the Type Certificate Data Sheet (TCDS), to determine which flights are possible with the aircraft (IFR/VFR, day/night). The provisions of the rights and duties of the commander of an aircraft (SR 748.225.1) are being overridden by NCO.GEN.105. Following image only shows paragraph (a) of NCO.GEN.105. Consider also paragraphs (b) to (h) on the EASA webpage.

NCO.GEN.105 Pilot-in-command responsibilities and authority

- (a) The pilot-in-command shall be responsible for:
- (1) the safety of the aircraft and of all crew members, passengers and cargo on board during aircraft operations as referred to in 1.c of Annex IV to Regulation (EC) No 216/2008;
 - (2) the initiation, continuation, termination or diversion of a flight in the interest of safety;
 - (3) ensuring that all operational procedures and checklists are complied with as referred to in 1.b of Annex IV to Regulation (EC) No 216/2008;
 - (4) only commencing a flight if he/she is satisfied that all operational limitations referred to in 2.a.3 of Annex IV to Regulation (EC) No 216/2008 are complied with, as follows:
 - (i) the aircraft is airworthy;
 - (ii) the aircraft is duly registered;
 - (iii) instruments and equipment required for the execution of that flight are installed in the aircraft and are operative, unless operation with inoperative equipment is permitted by the minimum equipment list (MEL) or equivalent document, if applicable, as provided for in NCO.IDE.A.105, NCO.IDE.H.105, NCO.IDE.S.105 or NCO.IDE.B.105;

2.1.2 NCO.GEN.135 «Documents, manuals and information to be carried»

Ch. 2.1.2 ISS 1 / REV 0 / 12.08.2016

According to NCO.GEN.135 the following documents in original form (if listed as such) or copies are to be carried:

1. Aircraft Flight Manual (AFM) or equivalent document(s);
2. The original of the Certificate Of Registration;
3. The original of the Certificate Of Airworthiness;
4. The Noise Certificate, if applicable;
5. The list of special permits, if applicable;
6. The Radio Operator Licence, if applicable;
7. The Third Party Liability certificate;
8. The Log Book or an equivalent document for the aircraft;
9. Details of the flight plan filed with the Air Traffic Services (ATS flight plan), if applicable;
10. Current and appropriate aeronautical charts for the intended flight route and all routes where it is reasonable to expect that the flight might be deviated to DE L 227/48 Official Journal of the European Union 24.8.2013;

11. Information about procedures and visual signals to be used in case of intercepting and intercepted aircraft;
12. The MEL or CDL, if applicable, and;
13. Other documents appertaining to the flight, such as additional flight plans, Mass and Balance etc. as far as the circumstances make them seem reasonable and appropriate. For simple conditions (short, navigational easy flight, simple loading, circuits) the paper form may be replaced by providing conclusive explanations of the flight preparation performed and deliberations conducted.

On flights, which start from and land at the same location or, which remain in an area determined by FOCA, the registration certificate (point 2) and the log book (point 8) may be kept at the start/land location.

Furthermore, for all flights, the valid licences and the medical certificate must be carried.

Electronic devices (iPad; iPhone; Tablet; GPS; etc.) are generally allowed and are accepted as electronic replacement of the respective documents, as long as it is not a document which must be carried as original. Electronic devices must not compromise the aircraft or equipment and the accessibility and usability of the data must be ensured. As back-up, the carrying of an ICAO chart is recommended.

2.1.3 NCO.GEN.140 «Transport of dangerous goods»

Ch. 2.1.3 ISS 1 / REV 0 / 12.08.2016

The transport of DG does not appertain to Part-SPA «Specific approvals», as long as they are not a component of Part 1 of the «Technical Instructions» or are carried by crew/passengers, respectively stored in their luggage according to «Part 8 of the Technical Instructions» or are being transported by an ELA2 aeroplane (<2'000 kg).

NCO.GEN.140 Transport of dangerous goods

- (a) The transport of dangerous goods by air shall be conducted in accordance with Annex 18 to the Chicago Convention as last amended and amplified by the Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Doc 9284-AN/905), including its supplements and any other addenda or corrigenda.
- (b) Dangerous goods shall only be transported by the operator approved in accordance with Annex V (Part-SPA), Subpart G, to Regulation (EU) No 965/2012 except when:
 - (1) they are not subject to the Technical Instructions in accordance with Part 1 of those Instructions; or
 - (2) they are carried by passengers or the pilot-in-command, or are in baggage, in accordance with Part 8 of the Technical Instructions;
 - (3) they are carried by operators of ELA2 aircraft.
- (c) The pilot-in-command shall take all reasonable measures to prevent dangerous goods from being carried on board inadvertently.
- (d) The pilot-in-command shall, in accordance with the Technical Instructions, report without delay to the competent authority and the appropriate authority of the State of occurrence in the event of any dangerous goods accidents or incidents.
- (e) The pilot-in-command shall ensure that passengers are provided with information about dangerous goods in accordance with the Technical Instructions.

(f) Reasonable quantities of articles and substances that would otherwise be classified as dangerous goods and that are used to facilitate flight safety, where carriage aboard the aircraft is advisable to ensure their timely availability for operational purposes, shall be considered authorised under paragraph 1:2.2.1(a) of the Technical Instructions. This is regardless of whether or not such articles and substances are required to be carried or intended to be used in connection with a particular flight.

2.1.4 NCO.GEN.155 «Minimum equipment list»

Ch. 2.1.4 ISS 1 / REV 1 / 01.12.2017

A MEL can be created if points (1) to (3), as well as their AMC are being observed. A MEL for an aircraft, which has a Master Minimum Equipment List (MMEL) may not be less restrictive than the MMEL. If an aircraft does not have a MMEL, the MEL may not be less restrictive than the respective minimal equipment of the corresponding flight according to NCO.IDE. If no MEL exists, any instrument, items of equipment or functions required for the intended flight must be operative, as defined by NCO.IDE.A.105 (refer to chapter 3.1).



Changes for pilots

The MEL needs no longer to be approved. It just needs to be sent to FOCA.

NCO.GEN.155 Minimum equipment list

- (a) An MEL may be established taking into account the following:
- (1) the document shall provide for the operation of the aircraft, under specified conditions, with particular instruments, items of equipment or functions inoperative at the commencement of the flight;
 - (2) the document shall be prepared for each individual aircraft, taking account of the operator's relevant operational and maintenance conditions; and
 - (3) the MEL shall be based on the relevant Master Minimum Equipment List (MMEL), as defined in the data established in accordance with Commission Regulation (EU) No 748/2012³, and shall not be less restrictive than the MMEL.
- (b) The MEL and any amendment thereto shall be notified to the competent authority.

2.2 NCO.OP «Operational procedures»

Ch. 2.2 ISS 1 / REV 0 / 12.08.2016

2.2.1 NCO.OP.115 «Departure and approach procedures»

Ch. 2.2.1 ISS 1 / REV 0 / 12.08.2016



Changes for pilots

Departure: As the area of most airports is not analysed for instrument departures and therefore obstacle departure procedures⁴ are missing, the responsibility regarding obstacle clearance criteria lies completely with the pilot.

Approach: The responsibility for the obstacle clearance criteria lies completely with the pilot here as well.

NCO.OP.115 Departure and approach procedures — aeroplanes and helicopters

- (a) The pilot-in-command shall use the departure and approach procedures established by the State of the aerodrome, if such procedures have been published for the runway or FATO to be used.
- (b) The pilot-in-command may deviate from a published departure route, arrival route or approach procedure:
- (1) provided obstacle clearance criteria can be observed, full account is taken of the operating conditions and any ATC clearance is adhered to; or
 - (2) when being radar-vectorred by an ATC unit.

⁴ Instrument Procedures Handbook, Seiten 1-14/1-15/1-16 «Departure Procedures», FAA, verfügbar online (19.05.2016): https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/instrument_procedures_handbook/media/Chapter_1.pdf

2.2.2 NCO.OP.125 «Fuel and oil supply» - Aeroplanes

Ch. 2.2.2 ISS 1 / REV 0 / 12.08.2016



Changes for pilots

- Within visual range of the airport there must be fuel available for 10 minutes at cruising altitude
- (a) (1) (i) does not apply to tow sailplanes, display flights, aerobatics flights and competitions (NCO.SPEC.135)

NCO.OP.125 Fuel and oil supply — aeroplanes

- (a) The pilot-in-command shall only commence a flight if the aeroplane carries sufficient fuel and oil for the following:
- (1) for visual flight rules (VFR) flights:
 - (i) by day, taking-off and landing at the same aerodrome/landing site and always remaining in sight of that aerodrome/landing site, to fly the intended route and thereafter for at least 10 minutes at normal cruising altitude;
 - (ii) by day, to fly to the aerodrome of intended landing and thereafter to fly for at least 30 minutes at normal cruising altitude; or
 - (iii) by night, to fly to the aerodrome of intended landing and thereafter to fly for at least 45 minutes at normal cruising altitude;
 - (2) for IFR flights:
 - (i) when no destination alternate is required, to fly to the aerodrome of intended landing and thereafter to fly for at least 45 minutes at normal cruising altitude; or
 - (ii) when a destination alternate is required, to fly to the aerodrome of intended landing, to an alternate aerodrome and thereafter to fly for at least 45 minutes at normal cruising altitude.

NCO.SPEC.135 Fuel and oil supply — aeroplanes

NCO.OP.125(a)(1)(i) does not apply to sailplane-towing, flying display, aerobatic flights or competition flights.

2.2.3 NCO.OP.125 «Fuel and oil supply» – Helicopter

Ch. 2.2.3 ISS 1 / REV 0 / 12.08.2016

- a) The responsible pilot may only begin a flight, if the helicopter carries sufficient fuel for the following:
1. for flights according to Visual Flight Rules (VFR) in order to fly to the airport/location of the intended landing and thereafter be able to continue a flight for at least another 20 minutes within the speed of maximum range, and
 2. for flights according to Instrument Flight Rules (IFR):
 - (i) when no alternate airport is required or no alternate airport is available in accordance with the allowed weather conditions, to be able to fly to the airport/location of the intended landing and thereafter for another 30 minutes in horizontal flight position at the speed of holding procedure at an altitude of 450 m (1 500 ft) over the destined airport/location at standard temperature conditions and to be able to perform a landing approach and landing, or
 - (ii) when an alternate airport is required, to be able to fly to the airport/location of the intended landing and to be able to perform a landing approach and a missed approach, and thereafter:
 - A. be able to fly to the specified alternate airport, and
 - B. be able to fly 30 minutes in horizontal flight position at the speed of holding procedure at an altitude of 450 m (1 500 ft) over the destined airport/location at standard temperature conditions and to be able to perform a landing approach and landing.

b) When calculating the required fuel amount, including fuel for unexpected excess consumption, the following needs to be taken into account:

1. The predicted weather conditions;
2. The likely ATC flight routes and flight delays;
3. The procedure for loss of cabin pressure or the failure of an engine en-route, if appropriate, and
4. Other conditions, which can cause a landing delay of the aircraft or increase fuel consumption.

2.2.4 NCO.OP.140 «Destination alternate aerodrome»

Ch. 2.2.4 ISS 1 / REV 0 / 12.08.2016



Changes for pilots

An alternate is not required when one hour before/after the ETA or from the Actual Time of Departure (ATD) until one hour after ETA, the destination is located within VMC. The conditions for VMC depend on the airspace of the aerodromes and are defined in SERA.5001.

NCO.OP.140 Destination alternate aerodromes — aeroplanes

For IFR flights, the pilot-in-command shall specify at least one weather-permissible destination alternate aerodrome in the flight plan, unless:

- (a) the available current meteorological information indicates that, for the period from 1 hour before until 1 hour after the estimated time of arrival, or from the actual time of departure to 1 hour after the estimated time of arrival, whichever is the shorter period, the approach and landing may be made under visual meteorological conditions (VMC); or

NCO.OP.141 Destination alternate aerodromes — helicopters

For IFR flights, the pilot-in-command shall specify at least one weather-permissible destination alternate aerodrome in the flight plan, unless:

- (a) an instrument approach procedure is prescribed for the aerodrome of intended landing and the available current meteorological information indicates that the following meteorological conditions will exist from 2 hours before to 2 hours after the estimated time of arrival, or from the actual time of departure to 2 hours after the estimated time of arrival, whichever is the shorter period:
 - (1) a cloud base of at least 120 m (400 ft) above the minimum associated with the instrument approach procedure; and
 - (2) visibility of at least 1 500 m more than the minimum associated with the procedure; or
- (b) the place of intended landing is isolated and:
 - (1) an instrument approach procedure is prescribed for the aerodrome of intended landing;

- (2) available current meteorological information indicates that the following meteorological conditions will exist from 2 hours before to 2 hours after the estimated time of arrival:
 - (i) the cloud base is at least 120 m (400 ft) above the minimum associated with the instrument approach procedure;
 - (ii) visibility is at least 1 500 m more than the minimum associated with the procedure; and
- (3) a point of no return (PNR) is determined in case of an offshore destination.

2.2.5 NCO.OP.145 «Refueling with passengers embarking, on board or disembarking»

Ch. 2.2.5 ISS 1 / REV 0 / 12.08.2016



Changes for pilots

- Aircraft may only be fuelled with AVGAS as long as no passengers are on board.
- For type of fuels other than AVGAS, passengers may be on board, but the PIC or other qualified personnel must be present.

NCO.OP.145 Refuelling with passengers embarking, on board or disembarking

- The aircraft shall not be refuelled with aviation gasoline (AVGAS) or wide-cut type fuel or a mixture of these types of fuel, when passengers are embarking, on board or disembarking.
- For all other types of fuel, the aircraft shall not be refuelled when passengers are embarking, on board or disembarking, unless it is attended by the pilot-in-command or other qualified personnel ready to initiate and direct an evacuation of the aircraft by the most practical and expeditious means available.

2.2.6 NCO.OP.190 «Use of supplemental oxygen»

Ch. 2.2.6 ISS 1 / REV 0 / 12.08.2016

This regulation is in connection with NCO.IDE.150/155, defining the required equipment, which must be present when oxygen is required on the flight.



Changes for pilots

Previously there were no oxygen rules in Switzerland. **New:** The PIC is responsible to determine if oxygen is required on a flight. If the PIC cannot determine how the lack of oxygen might affect all occupants, oxygen is required after 30 minutes above 10'000 ft and is required continuously above 13'000 ft.

*NCO.OP.190 Use of supplemental oxygen

- The pilot-in-command shall ensure that all flight crew members engaged in performing duties essential to the safe operation of an aircraft in flight use supplemental oxygen continuously whenever he/she determines that at the altitude of the intended flight the lack of oxygen might result in impairment of the faculties of crew members, and shall ensure that supplemental oxygen is available to passengers when lack of oxygen might harmfully affect passengers.
- In any other case when the pilot-in-command cannot determine how the lack of oxygen might affect all occupants on board, he/she shall ensure that:
 - all crew members engaged in performing duties essential to the safe operation of an aircraft in flight use supplemental oxygen for any period in excess of 30 minutes when the pressure altitude in the the passenger compartment will be between 10 000 ft and 13 000 ft; and
 - all occupants use supplemental oxygen for any period that the pressure altitude in the the passenger compartment will be above 13 000 ft.;

3 NCO.IDE «Instruments, data and equipment»

Ch. 3 ISS 1 / REV 0 / 12.08.2016

3.1 NCO.IDE.A.105 «Minimum equipment for flight»

Ch. 3.1 ISS 1 / REV 1 / 01.12.2017

Instruments, items of equipment or functions required for the intended flight must be operative, if no MEL has been established, or a permit to fly has been issued.

The required equipment depends on the intended flight (VFR/IFR). For example, an outside air temperature gauge (OAT) is required for IFR flights, therefore it must be operative in order to operate under IFR, as prescribed by NCO.IDE.A.125. If the intended flight, however, is planned under VFR, NCO.IDE.A.120 does not require an OAT gauge and therefore the pilot in command may undertake the flight under VFR even if the OAT gauge is defective. In such cases of instruments and equipment not required for the intended flight, we suggest repairing or removing the equipment, or to placard it as inoperative.

NCO.IDE.A.105 Minimum equipment for flight

A flight shall not be commenced when any of the aeroplane instruments, items of equipment or functions required for the intended flight are inoperative or missing, unless:

- (a) the aeroplane is operated in accordance with the MEL, if established; or
- (b) the aeroplane is subject to a permit to fly issued in accordance with the applicable airworthiness requirements.

3.2 NCO.IDE.A.115 and NCO.IDE.H.115 «Operating lights»

Ch. 3.2 ISS 1 / REV 0 / 12.08.2016

Operating lights were not nationally regulated, and the respective Annex 4 to VLL was deleted during the revision of the ordinance of VRV-L on 15 June 2015. As a result, only NCO.IDE.A.115 respectively NCO.IDE.H.115 remain valid, and this only for night flights. IFR flights during the day therefore do not need to fulfil NCO.IDE.A.115.

NCO.IDE.A.115 Operating lights

Aeroplanes operated at night shall be equipped with:

- (a) an anti-collision light system;
- (b) navigation/position lights;
- (c) a landing light;
- (d) lighting supplied from the aeroplane's electrical system to provide adequate illumination for all instruments and equipment essential to the safe operation of the aeroplane;
- (e) lighting supplied from the aeroplane's electrical system to provide illumination in all passenger compartments;
- (f) an independent portable light for each crew member station; and
- (g) lights to conform with the International Regulations for Preventing Collisions at Sea if the aeroplane is operated as a seaplane.

NCO.IDE.H.115 Operating lights

Helicopters operated at night shall be equipped with:

- (a) an anti-collision light system;
- (b) navigation/position lights;
- (c) a landing light;
- (d) lighting supplied from the helicopter's electrical system to provide adequate illumination for all instruments and equipment essential to the safe operation of the helicopter;
- (e) lighting supplied from the helicopter's electrical system to provide illumination in all passenger compartments;
- (f) an independent portable light for each crew member station; and
- (g) lights to conform with the International Regulations for Preventing Collisions at Sea if the helicopter is amphibious.

3.3 NCO.IDE.A.120 «Operations under VFR – flight and navigational instruments»

Ch. 3.3 ISS 1 / REV 0 / 12.08.2016

According to NCO.GEN.105 (a)(4)(iii) the PIC is responsible that the required instruments for the flight are installed and functional.

3.3.1 VFR by day

Ch. 3.3.1 ISS 1 / REV 0 / 12.08.2016

The equipment for VFR by day was not nationally regulated.

NCO.IDE.A.120 Operations under VFR — flight and navigational instruments and associated equipment

- (a) Aeroplanes operated under VFR by day shall be equipped with a means of measuring and displaying the following:
 - (1) magnetic heading;
 - (2) time, in hours, minutes and seconds;
 - (3) pressure altitude;
 - (4) indicated airspeed; and
 - (5) Mach number, whenever speed limitations are expressed in terms of Mach number.

NCO.IDE.H.120 Operations under VFR — flight and navigational instruments and associated equipment

- (a) Helicopters operated under VFR by day shall be equipped with a means of measuring and displaying the following:
 - (1) magnetic heading;
 - (2) time in hours, minutes and seconds;
 - (3) pressure altitude;
 - (4) indicated airspeed; and
 - (5) slip.

3.3.2 VFR by night

Ch. 3.3.2 ISS 1 / REV 0 / 12.08.2016

The instruments for night flights were specified in FOCA's technical information TM 02.050-40 which will now be superseded by Part-NCO.



Changes for pilots

In order to determine if night flights for a specific aeroplane are allowed, the pilot needs to clarify three points:

- Are there restrictions regarding the type of operation (VFR, IFR, day, night) as per «Type Certificate Data Sheet» (TCDS)?
 - operators can find their TCDS on the following websites:
 - FAA: <http://www.airweb.faa.gov/> (Menu «Databases», «Type Certificate Data Sheets»)
 - EASA: <https://www.easa.europa.eu/document-library/type-certificates>
- Does the aircraft possess the required instruments for VFR by day and by night?
- Do the lights correspond to NCO.IDE.A.115 respectively NCO.IDE.H.115?

(b) Aeroplanes operated under visual meteorological conditions (VMC) at night, or in conditions where the aeroplane cannot be maintained in a desired flight path without reference to one or more additional instruments, shall be, in addition to (a), equipped with:

- (1) a means of measuring and displaying the following:
 - (i) turn and slip;
 - (ii) attitude;
 - (iii) vertical speed; and
 - (iv) stabilised heading;
 and
- (2) a means of indicating when the supply of power to the gyroscopic instruments is not adequate.

(b) Helicopters operated under VMC at night, or when the visibility is less than 1 500 m, or in conditions where the helicopter cannot be maintained in a desired flight path without reference to one or more additional instruments, shall be, in addition to (a), equipped with:

- (1) a means of measuring and displaying the following:
 - (i) attitude;
 - (ii) vertical speed; and
 - (iii) stabilised heading; and
 - (2) a means of indicating when the supply of power to the gyroscopic instruments is not adequate.
- (c) Helicopters operated when the visibility is less than 1 500 m, or in conditions where the helicopter cannot be maintained in a desired flight path without reference to one or more additional instruments, shall be, in addition to (a) and (b), equipped with a means of preventing malfunction of the airspeed indicating system required in (a)(4) due to condensation or icing.

3.4 NCO.IDE.A.125 und NCO.IDE.H.125 «Operations under IFR – flight and navigational instruments»

Ch. 3.4 ISS 1 / REV 1 / 01.12.2017

According to NCO.GEN.105 (a)(4)(iii) the PIC is responsible that the required instruments for the flight are installed and functional. Previously the minimum equipment for IFR was specified in FOCA's technical information TM 02.050-10, which is now superseded by Part-NCO. The navigation and

communication equipment, plus the transponder are independent from the topic IFR/VFR. The equipment is determined by the airspace to be flown in (SERA) and the flight plan.



Changes for pilots

- Flying according to IFR will be possible with many Swiss GA aircraft, which due to the formerly valid TM 02.050-10, respectively because of Annex «Scope of Utilisation», were restricted to VFR;
- During training the subject of minimum equipment must be addressed. The pilot must be aware of the aircraft equipment's limitations. E.g. if a pilot is planning an IFR flight from one VOR to another VOR, this flight can be legally flown with two VOR CDIs as the only means of navigation. This provides for a simple IFR flight (e.g. E-IR), but obviously the flight would require reasonable weather conditions, because the mentioned equipment is limited to VOR-only approaches, of which only few exist in Europe;
- Before an IFR flight, the pilot must verify the following:
 1. TCDS/STC/AFM: The kinds of operation (VFR, IFR, day, night) of some aircraft types are restricted as per the «Type Certificate Data Sheet» (TCDS), «Supplemental type certificate» (STC) or AFM:
 - Operators can find their TCDS on the following websites:
FAA: <http://www.airweb.faa.gov/> (Menu «Databases», «Type Certificate Data Sheets»)
EASA: <https://www.easa.europa.eu/document-library/type-certificates>
 2. Basic instrumentation: The aircraft must be equipped with the required instruments for IFR according to NCO.IDE.A.125, respectively NCO.IDE.H.125.
 3. Navigation and COM equipment:
 - The navigation equipment of the aircraft must enable the aircraft to proceed in accordance with the ATS flight plan, if applicable, and the airspace requirements (NCO.IDE.A.195);
 - Radio and transponder equipment are required depending on the airspace used (NCO.IDE.A.190/200, and refer to Part-SERA);
 - RNAV: The «Airplane Flight Manual Supplement» (AFMS) or POH/AFM must list the system capability for the intended flight. E.g. if an LPV approach is planned, the AFMS must state that the installed system is LPV capable.
 4. Maintenance:
 - A Pitot-static system and transponder test is required within the last 24 months preceding the flight. The IFR pitot-static system test (refer to FAR 91.411 and Appendix E to Part 43) is different from the VFR pitot-static system operational test. Maintenance organisations are requested to state in the «journey log» of the aircraft, if these tests were completed to IFR standards.

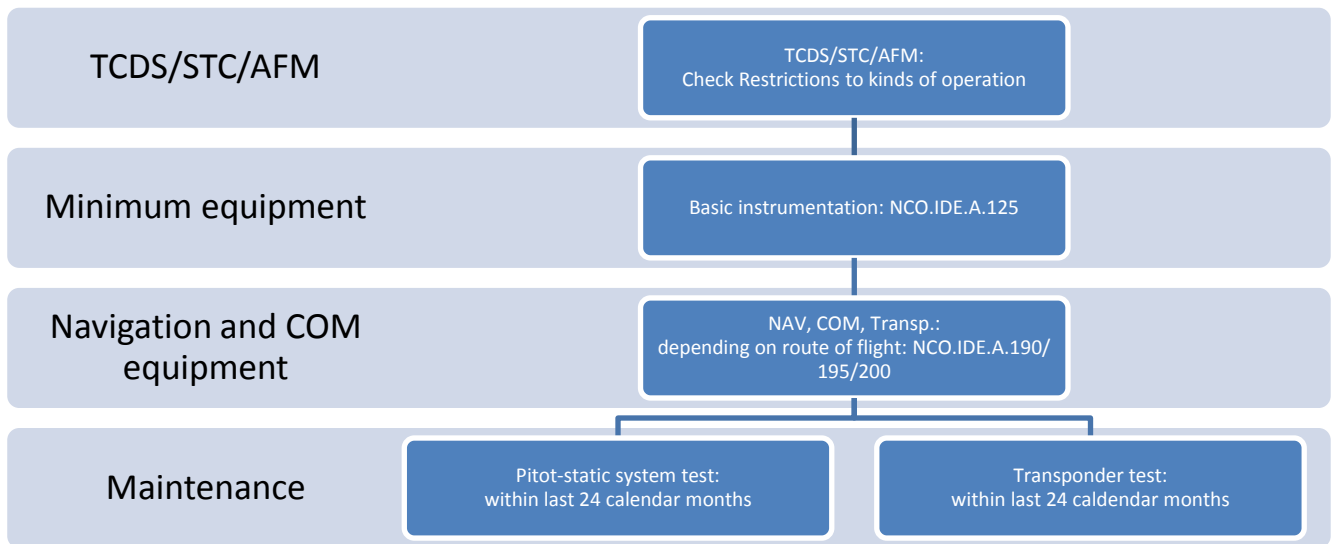


Figure 5: Process for the pilot to verify if an aircraft is IFR capable

NCO.IDE.A.125 Operations under IFR — flight and navigational instruments and associated equipment

Aeroplanes operated under IFR shall be equipped with:

- (a) a means of measuring and displaying the following:
 - (1) magnetic heading;
 - (2) time in hours, minutes and seconds;
 - (3) pressure altitude;
 - (4) indicated airspeed;
 - (5) vertical speed;
 - (6) turn and slip;
 - (7) attitude;
 - (8) stabilised heading;
 - (9) outside air temperature; and
 - (10) Mach number, whenever speed limitations are expressed in terms of Mach number;
- (b) a means of indicating when the supply of power to the gyroscopic instruments is not adequate; and
- (c) a means of preventing malfunction of the airspeed indicating system required in (a)(4) due to condensation or icing.

NCO.IDE.H.125 Operations under IFR — flight and navigational instruments and associated equipment

Helicopters operated under IFR shall be equipped with:

- (a) a means of measuring and displaying the following:
 - (1) magnetic heading;
 - (2) time in hours, minutes and seconds;
 - (3) pressure altitude;
 - (4) indicated airspeed;
 - (5) vertical speed;
 - (6) slip;
 - (7) attitude;
 - (8) stabilised heading; and
 - (9) outside air temperature;
- (b) a means of indicating when the supply of power to the gyroscopic instruments is not adequate;
- (c) a means of preventing malfunction of the airspeed indicating system required by (a)(4) due to condensation or icing; and
- (d) an additional means of measuring and displaying attitude as a standby instrument.

Certificate of Airworthiness

If an aircraft may be used according to VFR, IFR or during day/night, depends on the Type Certificate Data Sheet (TCDS) and the installed equipment on the particular flight (see 3.4). **It is the responsibility of the pilot to identify if an aircraft can be used for IFR or VFR by night.** The previously issued Appendix to the Certificate of Airworthiness with the restrictions on the types of operation (Scope of utilisation) becomes redundant.

21.B.326 Certificate of airworthiness

The competent authority of the Member State of registry shall issue a certificate of airworthiness for:

- (a) new aircraft:
 - 1. upon presentation of the documentation required by point 21.A.174(b)(2);
 - 2. when the competent authority of the Member State of registry is satisfied that the aircraft conforms to an approved design and is in a condition for safe operation. This may include inspections by the competent authority of the Member State of registry;
- (b) used aircraft:
 - 1. upon presentation of the documentation required by point 21.A.174(b)(3) demonstrating that:
 - (i) the aircraft conforms to a type design approved under a **type-certificate** and any supplemental type-certificate, change or repair approved in accordance with this Annex I (Part 21); and
 - (ii) the applicable **airworthiness directives** have been complied with; and
 - (iii) the **aircraft has been inspected** in accordance with the applicable provisions of Annex I (Part M) of [Regulation (EC) No 2042/2003];
 - 2. when the competent authority of the Member State of registry is satisfied that the aircraft conforms to an approved design and is in a condition for safe operation. This may include inspections by the competent authority of the Member State of registry.

Certificate of Airworthiness — EASA Form 25		
		Competent authority LOGO
CERTIFICATE OF AIRWORTHINESS		
(1)	[Member State of registry] [COMPETENT AUTHORITY OF THE MEMBER STATE]	(2)
1. Nationality and registration marks	2. Manufacturer and manufacturer's designation of aircraft	3. Aircraft serial number
4. Categories		
<p>5. This Certificate of Airworthiness is issued pursuant to the Convention on International Civil Aviation dated 7 December 1944 and Regulation (EC) No 216/2008, Article 5(2)(c) in respect of the abovementioned aircraft which is considered to be airworthy when maintained and operated in accordance with the foregoing and the pertinent operating limitations.</p> <p>Limitations/Remark:</p> <p>(3)</p> <p>Date of issue: _____ Signature: _____</p>		
<p>6. This Certificate of Airworthiness is valid unless revoked by the competent authority of the Member State of registry. A current Airworthiness Review Certificate shall be attached to this certificate.</p>		

Figure 6: Certificate of Airworthiness according to EASA Form 25, (EU) 748/2012 Appendix VI

3.5 NCO.IDE.A.140 and NCO.IDE.H.140 «Seats, seat safety belts, restraint systems, ...»

Ch. 3.5 ISS 1 / REV 0 / 12.08.2016

For aircraft built before August 25th 2016 there are no changes introduced by this regulation. It is, however, important to point out that the formerly published version on the EASA webpage has already been revised. This, because point (a)(4) requires an upper torso restraint system, a shoulder strap, for the crew. For older aircraft types a retrofitting is either not possible, or would generate high costs because of a STC. Therefore, EASA has decided to adapt point (a)(4), so that this point is only affecting new aircraft.

See below the correct regulation with the amended point (a)(4):

<p>NCO.IDE.A.140 Seats, seat safety belts, restraint systems and child restraint devices</p>
<p>(a) Aeroplanes shall be equipped with:</p> <ul style="list-style-type: none"> (1) a seat or berth for each person on board who is aged 24 months or more; (2) a seat belt on each passenger seat and restraining belts for each berth; (3) a child restraint device (CRD) for each person on board younger than 24 months; and
<p>(4) a seat belt with upper torso restraint system on each flight crew seat, having a single point release for aeroplanes having a CofA first issued on or after 25 August 2016.;</p>

3.6 NCO.IDE.A.150 «Supplemental oxygen – pressurized aeroplanes»

Ch. 3.6 ISS 1 / REV 0 / 12.08.2016



Changes for pilots

The minimum equipment for aeroplanes with pressurised cabins was previously not nationally regulated.

NCO.IDE.A.150 Supplemental oxygen — pressurised aeroplanes

- (a) Pressurised aeroplanes operated at flight altitudes for which the oxygen supply is required in accordance with (b) shall be equipped with oxygen storage and dispensing apparatus capable of storing and dispensing the required oxygen supplies.
- (b) Pressurised aeroplanes operated above flight altitudes at which the pressure altitude in the passenger compartments is above 10 000 ft shall carry enough breathing oxygen to supply:
 - (1) all crew members and:
 - (i) 100 % of the passengers for any period when the cabin pressure altitude exceeds 15 000 ft, but in no case less than 10 minutes' supply;
 - (ii) at least 30 % of the passengers, for any period when, in the event of loss of pressurisation and taking into account the circumstances of the flight, the pressure altitude in the passenger compartment will be between 14 000 ft and 15 000 ft; and
 - (iii) at least 10 % of the passengers for any period in excess of 30 minutes when the pressure altitude in the passenger compartment will be between 10 000 ft and 14 000 ft;
 - and
 - (2) all the occupants of the passenger compartment for no less than 10 minutes, in the case of aeroplanes operated at pressure altitudes above 25 000 ft, or operated below that altitude but under conditions that will not allow them to descend safely to a pressure altitude of 13 000 ft within 4 minutes.
- (c) Pressurised aeroplanes operated at flight altitudes above 25 000 ft shall, in addition, be equipped with a device to provide a warning indication to the flight crew of any loss of pressurisation.

3.7 NCO.IDE.A.155 and NCO.IDE.H.155 «Supplemental oxygen – non-pressurized aeroplanes»

Ch. 3.7 ISS 1 / REV 0 / 12.08.2016



Changes for pilots

The aircraft must be equipped accordingly, when oxygen according to NCO.OP.190 is required:

NCO.IDE.A.155 Supplemental oxygen — non-pressurised aeroplanes

Non-pressurised aeroplanes operated when an oxygen supply is required in accordance with NCO.OP.190 shall be equipped with oxygen storage and dispensing apparatus capable of storing and dispensing the required oxygen supplies.;

NCO.IDE.H.155 Supplemental oxygen — non-pressurised helicopters

Non-pressurised helicopters operated when an oxygen supply is required in accordance with NCO.OP.190 shall be equipped with oxygen storage and dispensing apparatus capable of storing and dispensing the required oxygen supplies.;

3.8 NCO.IDE.A.160 «Hand fire extinguishers»

Ch. 3.8 ISS 1 / REV 0 / 12.08.2016

Aeroplanes must be equipped with a hand fire extinguisher. ELA1 aeroplanes and TMG are exempt from this. Helicopters, except ELA1 and ELA2, must also be equipped with one.

NCO.IDE.A.160 Hand fire extinguishers

- (a) Aeroplanes, except touring motor gliders (TMG) and ELA1 aeroplanes, shall be equipped with at least one hand fire extinguisher:
- (1) in the flight crew compartment; and
 - (2) in each passenger compartment that is separate from the flight crew compartment, except if the compartment is readily accessible to the flight crew.
- (b) The type and quantity of extinguishing agent for the required fire extinguishers shall be suitable for the type of fire likely to occur in the compartment where the extinguisher is intended to be used and to minimise the hazard of toxic gas concentration in compartments occupied by persons.

NCO.IDE.H.160 Hand fire extinguishers

- (a) Helicopters, except ELA2 helicopters, shall be equipped with at least one hand fire extinguisher:
- (1) in the flight crew compartment; and
 - (2) in each passenger compartment that is separate from the flight crew compartment, except if the compartment is readily accessible to the flight crew.
- (b) The type and quantity of extinguishing agent for the required fire extinguishers shall be suitable for the type of fire likely to occur in the compartment where the extinguisher is intended to be used and to minimise the hazard of toxic gas concentration in compartments occupied by persons.

3.9 NCO.IDE.A.170 «Emergency locator transmitter (ELT)»

Ch. 3.9 ISS 1 / REV 0 / 12.08.2016



Changes for pilots

- Aircraft with a maximum of six seats can satisfy the requirement of the ELT with a Personal Locator Beacon (PLB). The device must be able to broadcast simultaneously on 121,5 Mhz and on 406 MHz.
- It is the responsibility of a pilot to consider if the use of an ELT, PLB or even both may be wise. A disadvantage of the PLB is that it has to be triggered manually, while a correctly installed and operated ELT would automatically be activated in case of an impact.
- FOCA, as well as STSB (SUST), recommend the fitting of an automatic ELT with GPS.

NCO.IDE.A.170 Emergency locator transmitter (ELT)

- (a) Aeroplanes shall be equipped with:
- (1) an ELT of any type, when first issued with an individual CofA on or before 1 July 2008;
 - (2) an automatic ELT, when first issued with an individual CofA after 1 July 2008; or
 - (3) a survival ELT (ELT(S)) or a personal locator beacon (PLB), carried by a crew member or a passenger, when certified for a maximum passenger seating configuration of six or less.
- (b) ELTs of any type and PLBs shall be capable of transmitting simultaneously on 121,5 MHz and 406 MHz.

NCO.IDE.H.170 Emergency locator transmitter (ELT)

- (a) Helicopters certified for a maximum passenger seating configuration above six shall be equipped with:
 - (1) an automatic ELT; and
 - (2) one survival ELT (ELT(S)) in a life-raft or life-jacket when the helicopter is operated at a distance from land corresponding to more than 3 minutes flying time at normal cruising speed.
- (b) Helicopters certified for a maximum passenger seating configuration of six or less shall be equipped with an ELT(S) or a personal locator beacon (PLB), carried by a crew member or a passenger.
- (c) ELTs of any type and PLBs shall be capable of transmitting simultaneously on 121,5 MHz and 406 MHz.

3.10 NCO.IDE.A.190/200 and NCO.IDE.H.190/200 «Radio communication equipment»/«Transponder»

Ch. 3.10 ISS 1 / REV 0 / 12.08.2016

**Changes for pilots**

The radio equipment and the transponder must be installed dependent on the airspace (SERA).

NCO.IDE.A.190 Radio communication equipment

- (a) Where required by the airspace being flown aeroplanes shall be equipped with radio communication equipment capable of conducting two-way communication with those aeronautical stations and on those frequencies to meet airspace requirements.
- (b) Radio communication equipment, if required by (a), shall provide for communication on the aeronautical emergency frequency 121,5 MHz.
- (c) When more than one communication equipment unit is required, each shall be independent of the other or others to the extent that a failure in any one will not result in failure of any other.

NCO.IDE.H.190 Radio communication equipment

- (a) Where required by the airspace being flown helicopters shall be equipped with radio communication equipment capable of conducting two-way communication with those aeronautical stations and on those frequencies to meet airspace requirements.
- (b) Radio communication equipment, if required by (a), shall provide for communication on the aeronautical emergency frequency 121,5 MHz.
- (c) When more than one communications equipment unit is required, each shall be independent of the other or others to the extent that a failure in any one will not result in failure of any other.
- (d) When a radio communication system is required, and in addition to the flight crew interphone system required in NCO.IDE.H.135, helicopters shall be equipped with a transmit button on the flight controls for each required pilot and/or crew member at his/her working station.

NCO.IDE.A.200 Transponder

Where required by the airspace being flown, aeroplanes shall be equipped with a secondary surveillance radar (SSR) transponder with all the required capabilities.

NCO.IDE.H.200 Transponder

Where required by the airspace being flown, helicopters shall be equipped with a secondary surveillance radar (SSR) transponder with all the required capabilities.

3.11 NCO.IDE.A.195 and NCO.IDE.H.195 «Navigation equipment»

Ch. 3.11 ISS 1 / REV 1 / 01.12.2017



Changes for pilots

- The costs for the upgrading of an aircraft for IFR are vastly decreasing. Flights with en-route IR for example, are now possible with two VOR indicators, whereas the superseded TM 02.050-10 was more restrictive. The required navigation equipment depends on the flight plan and if applicable, on the airspace. Previously, this was an approval criteria for IFR, and now becomes redundant.
- During training, the minimum equipment must be addressed. The pilot must be aware of the limitations.
- PBN operations: The «Airplane Flight Manual Supplement (AFMS)», or POH/AFM must list the system capability for the intended flight. E.g. if an LPV approach is planned, the POH/AFM or AFMS must state that the installed system is LPV capable.

NCO.IDE.A.195 Navigation equipment

- (a) Aeroplanes operated over routes that cannot be navigated by reference to visual landmarks shall be equipped with any navigation equipment necessary to enable them to proceed in accordance with:
- (1) the ATS flight plan; if applicable; and
 - (2) the applicable airspace requirements.
- (b) Aeroplanes shall have sufficient navigation equipment to ensure that, in the event of the failure of one item of equipment at any stage of the flight, the remaining equipment shall allow safe navigation in accordance with (a), or an appropriate contingency action, to be completed safely.
- (c) Aeroplanes operated on flights in which it is intended to land in IMC shall be equipped with suitable equipment capable of providing guidance to a point from which a visual landing can be performed. This equipment shall be capable of providing such guidance for each aerodrome at which it is intended to land in IMC and for any designated alternate aerodromes.

'(d) For PBN operations the aircraft shall meet the airworthiness certification requirements for the appropriate navigation specification.';

NCO.IDE.H.195 Navigation equipment

- (a) Helicopters operated over routes that cannot be navigated by reference to visual landmarks shall be equipped with navigation equipment that will enable them to proceed in accordance with:
- (1) the ATS flight plan, if applicable; and
 - (2) the applicable airspace requirements.
- (b) Helicopters shall have sufficient navigation equipment to ensure that, in the event of the failure of one item of equipment at any stage of the flight, the remaining equipment shall allow safe navigation in accordance with (a), or an appropriate contingency action, to be completed safely.
- (c) Helicopters operated on flights in which it is intended to land in IMC shall be equipped with navigation equipment capable of providing guidance to a point from which a visual landing can be performed. This equipment shall be capable of providing such guidance for each aerodrome at which is intended to land in IMC and for any designated alternate aerodromes.

3.12 Specific Approvals

Ch. 3.12 ISS 1 / REV 0 / 12.08.2016

Reduced Vertical Separation Minima (RVSM):

As before, RVSM approvals are issued by FOCA. This does, however, no longer take place according to the legal provisions (JAA) of TM 02.050-10 (IFR equipment, Annex), but according to the regulations in Part-SPA; SPA.RVSM.

Performance Based Navigation (PBN):

For approaches, such as LNAV, LNAV/VNAV, LP and LPV, as well as for en-route PBN, specific approvals are no longer requested. This, except for en-route RNP 0.3, such as applied for LFN, and also for most recent approaches (curved 3D approach), such as RNP AR and Advanced RNP with time of arrival control function. Specific approvals concerning PBN will therefore no longer be necessary for standard operation with other-than-complex aircraft.