



Opinion No 02/2021

All-weather operations and review of crew training requirements

RELATED TO NPA/CRD 2018-06 (A), (B), (C) & (D), NPA/CRD 2019-09, NPA/CRD 2020-02 — RMT.0379
RELATED TO NPA/CRD 2019-08 — RMT.0599

EXECUTIVE SUMMARY

The objective of this Opinion is to modernise the European Union (EU) aviation regulatory framework applicable to all-weather operations (AWOs) and flight crew training to ensure the highest level of safety while enabling efficiency gains based on the latest technological advancements.

As regards AWOs, this proposal follows a performance- and risk-based approach. It sets the appropriate balance between performance-based and prescriptive principles depending on the type of air operations. The rules are not technology-dependent and may accommodate future changes.

It addresses all relevant disciplines and proposes to update the AWO-relevant rules in the domains of air operations, aircrew and aerodromes, in a coordinated manner. In this context, the proposal:

- allows for a better integration and use of new, advanced technology as well as new operational procedures to support AWOs;
- ensures the availability of aerodrome infrastructure (including meteorological equipment), information and procedures to support AWOs;
- allows for the use of enhanced flight vision systems (EFVS) to the maximum extent possible (e.g. EFVS to land) and includes ‘light operational credits’ for EFVS 200 operations, not requiring the use of specific low-visibility procedures (LVPs); and
- allows for safe helicopter flights under instrument flight rules (IFR), using of point-in-space (PinS) approaches and departures.

As regards flight crew training, this proposal improves the existing mandatory crew training and checking requirements for air operators. It addresses initial and recurrent training and checking, the conditions for the operation on more than one aircraft type or variant, the acceptance of previous training and checking by non-commercial operators, and multi-pilot operations of single-pilot certified helicopters.

Certain changes to crew training are expected to increase safety in a cost-effective way. The other changes are expected to maintain safety, reduce the regulatory burden, increase cost-effectiveness, improve harmonisation regarding AWOs (e.g. with the Federal Aviation Administration (FAA)), and transpose as much as feasible the Standards and Recommended Practices (SARPs) of the International Civil Aviation Organization (ICAO).

Domain:	New technologies and concepts Competence of personnel		
Related rules:	Annex I (Part-FCL) to the Aircrew Regulation; Annexes I-VIII to the Air OPS Regulation; Annexes I, III and IV to the ADR Regulation		
Affected stakeholders:	Competent authorities, aircraft operators, pilots, flight instructors, flight examiners, training organisations, POA holders, ADR operators, and ATM/ANS		
Driver:	Safety	Rulemaking group:	Yes
Impact assessment:	Yes	Rulemaking Procedure:	Standard

• EASA rulemaking process milestones



RMT.0379	9.12.2015	13.7.2018	27.5.2021	2021/Q4	2022/Q1
		13.9.2019			
RMT.0599	5.2.2016	7.2.2020	27.5.2021	2021/Q4	2022/Q1
		14.6.2019			



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1. About this Opinion

1.1. How this Opinion was developed

The European Union Aviation Safety Agency (EASA) developed this Opinion in line with Regulation (EU) 2018/1139¹ ('Basic Regulation') and the Rulemaking Procedure².

This rulemaking activity is included in the European Plan for Aviation Safety (EPAS) [2021-2025](#) under rulemaking tasks (RMTs).0379 and .0599. The scope and timescales of the tasks were defined in the related [ToR for RMT.0379](#) and [ToR for RMT.0599](#).

The *draft* text of this Opinion has been developed by EASA based on the following:

All interested parties were consulted through the following NPAs³:

- (a) [NPA 2018-06 \(A\)](#) that contained general information on AWOs and the regulatory impact assessment;
- (b) [NPA 2018-06 \(C\)](#)⁴ that contained the draft proposal for AWOs with aeroplanes operated under NCC and CAT;
- (c) [NPA 2018-06 \(D\)](#) that contained the draft proposal related to aerodromes;
- (d) [NPA 2019-09](#) that contained the draft proposal for AWOs under SPO and AWOs with helicopters;
- (e) [NPA 2020-02](#) that contained the draft proposal for AWOs under NCO; and
- (f) [NPA 2019-08](#) that contained the draft proposal for the review of flight crew training and checking requirements.

69 comments to sub-NPA 2018-06 (A), 903 comments to sub-NPA (C), 284 comments to sub-NPA 2018-06 (D), 216 comments to NPA 2019-09, 262 comments to NPA 2020-02 and 624 comments to NPA 2019-08 were received from interested parties, including individual helicopter and aeroplane operators and their associations, air navigation service providers (ANSPs), aircraft manufacturers, national aviation authorities (NAAs), pilot associations and individuals, as well as aerodrome operators and their associations, and air traffic services providers.

The comments received to NPA 2018-06 and NPA 2019-08 were reviewed with the help of a review group.

¹ Regulation (EU) 2018/1139 of the European Parliament and of the Council of 4 July 2018 on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency, and amending Regulations (EC) No 2111/2005, (EC) No 1008/2008, (EU) No 996/2010, (EU) No 376/2014 and Directives 2014/30/EU and 2014/53/EU of the European Parliament and of the Council, and repealing Regulations (EC) No 552/2004 and (EC) No 216/2008 of the European Parliament and of the Council and Council Regulation (EEC) No 3922/91 (OJ L 212, 22.8.2018, p. 1) (<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1535612134845&uri=CELEX:32018R1139>).

² EASA is bound to follow a structured rulemaking process as required by Article 115(1) of Regulation (EU) 2018/1139. Such a process has been adopted by the EASA Management Board (MB) and is referred to as the 'Rulemaking Procedure'. See MB Decision No 18-2015 of 15 December 2015 replacing Decision 01/2012 concerning the procedure to be applied by EASA for the issuing of opinions, certification specifications and guidance material (<http://www.easa.europa.eu/the-agency/management-board/decisions/easa-mb-decision-18-2015-rulemaking-procedure>).

³ In accordance with Article 115 of Regulation (EU) 2018/1139 and Articles 6(3) and 7 of the Rulemaking Procedure.

⁴ The draft proposal related to initial airworthiness (CS-AWO) was included in NPA 2018-06 (B) and will be addressed in the ED Decision on CS-AWO.

For individual responses to the comments received to NPA 2019-08 and more detailed conclusions, please consult Comment-Response Document (CRD) 2019-08 'Update of ORO.FC'

For individual responses to the comments received to NPA 2018-06 and more detailed conclusions, please consult CRD 2018-06 (A) 'All-weather operations — General', CRD 2018-06 (C) 'All-weather operations — air operations and aircrew' and CRD 2018-06(D) 'All-weather operations — aerodromes'. The comments received to NPA 2019-09 and NPA 2020-02 were aggregated into topics which were discussed during a workshop. Several follow-up meetings completed the input of the helicopter and SPO workshop.

Please consult CRD 2019-09 'All-weather operations — Helicopters and specialised operations', which includes the conclusions of the helicopter & SPO AWO operations workshop held on 25-26 November 2019.

The comments received to NPA 2020-02 were reviewed during a workshop. They had been aggregated into a presentation that was played during the workshop. Each slide of the presentation opened a discussion with the audience. No additional workshop or meeting was necessary.

Please consult CRD 2020-02 'All-weather operations — Non-commercial operations with other than complex motor-powered aircraft', which includes the conclusions of the NCO AWO operations workshop held on 1 October 2020.

The above-mentioned CRDs will be published in the near future.

The *final* text of this Opinion and the draft regulations have been developed by EASA based on the input received during the consultation of the NPAs and the work developed to address that input.

The major milestones of this rulemaking activity are presented on the title page.

1.2. The next steps

Regulation (EU) No 965/2012⁵ will be hereinafter referred to as the Air OPS Regulation.

Regulation (EU) No 1178/2011⁶ will be hereinafter referred to as the Aircrew Regulation.

Regulation (EU) No 139/2014⁷ will be hereinafter referred to as the ADR Regulation.

This Opinion contains proposed amendments to the Air OPS Regulation, the Aircrew Regulation and the ADR Regulation and their potential impacts. It is submitted to the European Commission, which will use it as a technical basis to prepare EU regulations. This Opinion proposes a delayed applicability in order to align with the deferred applicability date proposed for the Fuel/energy planning and management Regulation (see related Opinion No 02/2020). The delayed applicability is intended to

⁵ Commission Regulation (EU) No 965/2012 of 5 October 2012 laying down technical requirements and administrative procedures related to air operations pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council (OJ L 296, 25.10.2012, p. 1) (<http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1494235623593&uri=CELEX:32012R0965>).

⁶ Commission Regulation (EU) No 1178/2011 of 3 November 2011 laying down technical requirements and administrative procedures related to civil aviation aircrew pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council (OJ L 311, 25.11.2011, p. 1) (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32011R1178&qid=1609759410055>).

⁷ Commission Regulation (EU) No 139/2014 of 12 February 2014 laying down requirements and administrative procedures related to aerodromes pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council (OJ L 44, 14.2.2014, p. 1) (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32014R0139&qid=1609759592295>).

provide more time to competent authorities and operators to implement the necessary changes in the context of the COVID19 pandemic and its consequences.

An ED Decision that contains the related amendments to CS-AWO, which are also included in the scope of this RMT, will be published by EASA approximately 2 months after the publication of this Opinion.

The decision that contains the related acceptable means of compliance (AMC) and guidance material (GM) will be published by EASA when the related regulations are adopted by the European Commission.

For information, EASA is publishing separately the draft AMC and GM associated with the proposed amendments in this Opinion.



2. All-weather operations (AWOs) — in summary — why and what

This chapter provides the rationale behind the proposed amendments to the AWO-related regulatory material presented in Sections 2.4 to 2.8 of this Opinion.

2.1. AWOs — why we need to amend the rules — issue/rationale

2.1.1. Background

The term all-weather operations (AWOs) comprises any taxi, take-off or approach operations in conditions where visual reference is limited by weather conditions.

Low-visibility operations (LVOs) are a segment of AWOs. LVOs include low-visibility take-offs (LVTOs) with a runway visual range (RVR) below 400 m, as well as approach and landing operations with an RVR below 550 m and/or a decision altitude/height (DA/H) below 200 ft. LVOs are exposed to higher risks and, therefore, necessitate specific mitigating measures, e.g. specific operational procedures or approvals.

AWOs in general and LVOs in particular require strong interdependencies between the main aviation domains: airworthiness, air operations, flight crew training, aerodromes, ATM/ANS. Several stakeholders of different aviation domains are required to provide the necessary assurance to guarantee safe operations (type certificate (TC) and supplemental type certificate (STC) holders, maintenance personnel, air operators, their flight crew members and operations personnel, approved training organisations (ATOs), instructors and examiners, aerodrome operators, as well as ATM/ANS providers and air traffic controller (ATCO) training organisations).

Remarkable technological advancements in new airborne systems, such as enhanced vision systems (EVSs), synthetic vision systems (SVSs), combined vision systems (CVSs), new head-up display (HUD) technologies, and autoland systems have resulted in new operational concepts and several new certification applications from European and non-European manufacturers. These innovative technologies have the potential to increase the level of safety through enhanced situational awareness, thus reducing the risk of loss of control. New operational concepts based on these new vision systems (which are partly linked with ground-based augmentation system (GBAS) and satellite-based augmentation system (SBAS)) have been developed by SESAR and are considered in pilot common projects for new ATM functionalities. These new concepts also offer operational benefits in terms of reduced RVR and/or lower DA/H values and/or compensation of downgraded, failed or not available ground infrastructure. These technologies may also offer significant economic advantages for several stakeholders such as air operators that may be able to operate within lower aerodrome operating minima, as well as aerodrome operators that could continue operations under lower-visibility conditions without major additional investments in ground infrastructure, e.g. airfield ground lighting systems or ground-based navigation aids.

2.1.2. What is the issue — general

The existing rules in the relevant aviation domains regulating AWOs:

- do not sufficiently address technological advancements; and
- do not fully support new operational concepts.



The process for authority approvals in the ‘authority requirements’ needs to be modernised to reflect the above.

In addition, the existing rules in the relevant aviation domains regulating AWOs:

- are in some areas not anymore aligned with the ICAO SARPs — for example, they do not efficiently address the concept of operational credits; or the definitions and terminology needed to be aligned with ICAO.
- are not completely consistent across the different domains, obstructing thus the use of the full potential of certified products and systems as well as reaping the full safety and economic benefits.

Furthermore, the results of the harmonisation efforts with the FAA, especially the results of the All Weather Operations Harmonization Aviation Rulemaking Committee (AWOHARC) work, have not yet been considered in the development of the EU regulatory framework.

Enabling operations with operational credits (such as SA CAT I, or operations using EFVS/CVS) would provide a greater availability of suitable destination and alternate aerodromes during periods of reduced visibility.

This would effectively reduce the number of weather-related delays, cancellations or diversions of flights to CAT II/III aerodromes. It would also permit shorter routings and reduced fuel costs, a faster return to scheduled operations, and fewer passenger inconveniences.

Regarding the following:

- safety recommendation(s) considered during the development of this RMT
- exemptions in accordance with Article 70 ‘Safeguard provisions’ / Article 71 ‘Flexibility provisions’ and/or Article 76 ‘Agency measures’ of the Basic Regulation pertinent to the scope of this RMT
- alternative means of compliance relevant to the content of this Opinion
- ICAO and third-country references relevant to the content of this RMT
- references to the differences (harmonisation) between the content of this RMT and ICAO SARPs, FARs, etc.

no additional material has been addressed since the NPAs have been published.

Please refer to the appropriate NPA.

2.1.3. What is the issue — helicopter operations (Part-CAT, Part-SPA, Part-NCC) and specialised operations (Part-SPO)

- Helicopter flights under VFR in marginal visual meteorological conditions (VMC) are a major contributor to helicopter accidents.
- Marginal VMC are defined as weather conditions not far above the VFR operating minima, and other conditions where the pilot may inadvertently enter instrument meteorological conditions (IMC).
- The problem is more acute with helicopters than with aeroplanes because of the following factors:



- The VFR operating minima are lower for helicopters and can be as low as 800 m. With low visibilities under VFR, pilots will naturally reduce the speed to adjust to the environment. Under the ‘see and avoid’ principle, reduced speeds also ensure that pilots will be able to detect obstacles and initiate evasive manoeuvres within ± 30 seconds. With 800-m visibility, the speed should be reduced to 50 kt.
 - A speed of 50 kt is less than the minimum control speed in IFR (V_{mini}) of most of the current IFR-certified helicopters. V_{mini} reflects the flight characteristics and controllability of the helicopter with sole reference to instruments, by an instrument-rated pilot.
 - In a degraded visual environment where visual cues are missing, the controllability of the helicopter may require an instrument-rated pilot, helicopter certification for instrument flight and a stabilisation system, whereas a helicopter pilot may be confident in the helicopter’s unique capability to fly low and slow.
- The limited visibility, the lack of visual cues and relatively low speeds may very well have contributed to many accidents where loss of control and inadvertent IMC was determined to be a root cause.
- There are real safety benefits in providing helicopter operators with an option to fly some missions under IFR. Flying under IFR also has operational benefits as it increases the reliability of the service.
- Helicopters seldom fly from runway A to runway B because they are outcompeted by aeroplanes on such flights. In order to fly IFR, helicopters usually need an instrument approach in the vicinity of their destination. This approach is likely to be a helicopter point-in-space (PinS) approach⁸. They will then need an instrument departure, which is likely to be a helicopter PinS departure⁹. Most helicopters also need low-level routes (LLRs) because they are unpressurised, and most of the times they are not certified for icing conditions.
- Not many countries in Europe have the helicopter departure, LLR and approach infrastructure to fly IFR with helicopters. The most advanced countries in this regard are Switzerland and Norway, which have benefited from research projects such as SESAR ProuD.
- Even in these countries, the implementation of IFR with helicopters has been difficult due to a number of regulatory obstacles.
- In many operational scenarios, IFR with helicopters is at a disadvantage compared to VFR because of the following:

⁸ A PinS approach is a GNSS-based approach designed specifically for helicopters. PinS approaches fall in two categories: PinS approaches with instructions to ‘proceed visually’: they include a visual segment to the landing location, as a conventional approach to an aerodrome would do.

PinS approaches with instructions to ‘proceed VFR’: are cloud-breaking procedures, after which the pilot needs to decide to either perform a go-around or continue under VFR. Such an approach may serve several destinations, or indeed any destination accessible under VFR.

⁹ A PinS departure is a GNSS-based departure designed specifically for helicopters. PinS departures fall in two categories: PinS departures with instructions to ‘proceed visually’: the visual segment is flown under IFR from the take-off location.

PinS approaches with instructions to ‘proceed VFR’: helicopters that use such departures should fly VFR to the IDF from any take-off location.



- The fuel requirements are higher and sometimes are simply too high due to the additional requirement for alternate fuel, the limited fuel range of helicopters, the requirement for either the destination or the alternate to be equipped with a conventional approach, and the dismantling of the instrument landing systems (ILSs) at non-major aerodromes, all of which often render IFR impossible to helicopters.
- The flight time can be higher, i.e. instrument departures and instrument approaches increase the flight time, especially if the instrument approach and departure are not located next to the helicopter destination. The additional flight time may not be negligible compared to the typically short duration of a helicopter flight.
- IFR operating minima may be equal to, or higher than, VFR operating minima: a growing number of helicopter PinS approaches and departures require the pilot to fly very short segments of the flight under VFR, requiring visibility minima sometimes much higher than the distance to be flown under VFR.

The helicopter proposal is part of Phase 2 of RMT.0379 and addresses regulatory obstacles for the implementation of IFR with helicopters.

- Specialised operations in all-weather conditions under Part-SPO are expected to take place essentially, but not exclusively, with aeroplanes. The issue at stake is the same as defined in Section 2.1.2.

Other useful references relevant to the content of this RMT

The FAA allows helicopters not certified for CAT II to use lower than CAT I operating minima on approaches to aerodromes designed for aeroplanes, under a specific approval. One element of this Opinion proposes to converge towards the [FAA Copter CAT II operating minima](#).

2.1.4. What is the issue — non-commercial non-complex operations with aeroplanes and helicopters (Part-NCO)

General Aviation (GA) is a high priority for EASA. EASA dedicates effort and resources towards creating simpler, lighter, and better rules for GA. Recognising the importance of GA and its contribution to a safe European aviation system, EASA, in partnership with the European Commission (EC) and other stakeholders, has created the GA Roadmap.

One of the enablers for improving safety against loss of control and controlled flight into terrain hazards is 'Easier access of general aviation pilots to instrument flight rules (IFR) flying', the objective of RMT.0677. EPAS 2021-25 identifies Staying in Control (Section 8.1.2), Coping with Weather (8.1.3) and Managing the Flight (8.1.5) as three of the key mitigations of risk in GA which easier access to IFR flying is intended to address. While RMT.0677 focused mainly on instrument ratings, the Concept Paper included in its Terms of Reference identified many other enablers, including, in its Section 2.4, proportionate operational rules.

2.1.5. What is the issue — aerodromes (ADR)

With regard to AWOs, the issues related to aerodromes are the following:

- ICAO has updated its annexes and docs (ICAO Doc 9365, Annex 6, Annex 14, etc.),
- outdated regulatory framework regarding visual and non-visual aids (e.g. MET equipment);



- outdated aeronautical data requirements in the context of AWOs;
- outdated requirements on aerodrome surface control and LVPs in the context of the new types of operations proposed through this Opinion.

To resolve these issues, EASA proposes amendments to Annex I (Definitions), Annex III (Part-ADR.OR) and Annex IV (Part-ADR.OPS) to the ADR Regulation. Amendments to Annex I are necessary in order to ensure alignment with the ICAO definitions and the definitions included in the Air OPS Regulation, while the amendment to Annex III is required in order to ensure the availability of visual and non-visual aids as well as MET equipment to support AWOs. Furthermore, the amendments to Annex IV are mainly focusing on the provision of aeronautical data by the aerodrome operator to enable AWOs, as well as on the rules related to surface movement guidance and control system and LVPs.

2.2. AWOs — what we want to achieve — objectives

2.2.1. General objectives for all domains including CAT operations and non-commercial operations with complex motor-powered aeroplanes

The overall objectives of the EASA system are defined in Article 1 of the Basic Regulation. This proposal will contribute to the achievement of the overall objectives by addressing the issues outlined in Section 2.1.

The overall objectives of this proposal are to ensure that:

- the European regulatory framework in the area of AWOs is safe and efficient, relying on a performance- and risk-based approach; and
- manufacturers, air operators and aerodrome operators are enabled to take full advantage of the safety and economic benefits accrued from new technologies and operational experience.

Actions across all different domains should:

- take into account stakeholders' expectations and operational needs;
- be based on common operational concepts and cross-domain systemic risk assessments;
- result in consistent rules across all domains;
- consider established industry standards;
- be aligned with ICAO SARPs and ICAO documents; and
- be harmonised with rule developments by the FAA and other major regulators, as far as possible.

2.2.2. Helicopter operations (Part-CAT, Part-SPA, Part-NCC) and specialised operations (Part-SPO)

The specific objectives of this proposal related to helicopters and specialised operations are to:

- provide helicopter operators with options to fly more missions under IFR, or, in other words, to identify and address any regulatory issues that put IFR with helicopters at a disadvantage compared to VFR, considering that IFR remains the safer option;
- make best use of helicopter PinS approaches and departures, and helicopter LLRs;
- modernise helicopter offshore approaches and extend their use to non-CAT operators;



- ensure that the helicopter regulatory material is performance-based and compatible with the objectives defined in Section 2.2.1 that impact all aircraft; and
- ensure that, for simplicity purposes, AWO-related requirements in Part-SPO remain aligned with those in Part-NCC.

2.2.3. Non-commercial non-complex operations with aeroplanes and helicopters (Part-NCO)

The specific objective of this proposal is to enhance the safety of modern GA operations by improving access to IFR. To achieve this, it is necessary to:

- improve proportionality in Part-NCO by making it more consistent with the principles of the GA Roadmap, and of the Basic Regulation, as amplified in the sections below;
- ensure that the operational rules in Part-NCO associated with IFR:
 - are tailored for the safety of GA stakeholders, without making assumptions more relevant to CAT operations, and the aerodromes they use;
 - address the main practical risks for GA operations, rather than theoretical hazards;
 - offer pilots a realistic choice to operate under IFR rather than VFR where there is a net safety benefit in doing so; and
 - avoid complexity that is not justified by a regulatory need; and
- achieve consistency with amendments to the other Annexes to the Air OPS Regulation as proposed in Sections 2.2.1., 2.2.2. and 2.3.1. where appropriate. EASA believes that consistency in terminology and wording between the Annexes to the Air OPS Regulation is helpful, unless there is a substantive reason for differences between the Annexes, justified by the principles of Article 4 of the Basic Regulation and the GA Roadmap.

2.2.4. Aerodromes

The specific objective of the changes to the ADR Regulation is to support the implementation of AWOs at aerodromes, by ensuring the availability of the appropriate visual and non-visual aids as well as other aerodrome equipment, the availability of the required information, and the implementation of appropriate procedures. The changes consider the needs of air operators and align with the latest amendments to ICAO Annex 6 and Annex 14.

2.3. AWOs — how we want to achieve it — overview of the proposals

The Opinion proposes updates to the AWO rules in all aviation domains, as regards:

- the possibility of applying safety performance principles in redrafting the current rules with the aim of allowing a better integration of new and future technologies supporting AWOs, such as EFVSs, SVSs, synthetic vision guidance systems (SVGSs), CVSs, and HUDs;
- conventional LVOs such as ILS-based CAT II and CAT III approach operations or LVTOS;
- other than LVOs, such as operations using ILS, ground-based augmented global navigation satellite system (GNSS/GBAS) landing system (GLS), global navigation satellite systems (GNSS), non-directional beacons (NDBs) or very high frequency (VHF) omnidirectional ranges (VORs);



- miscellaneous items such as the improvement of existing rule texts and the transposition of the new ICAO approach classification;
- harmonisation with bilateral partners (e.g. the FAA) to the extent possible;
- introduction of operations with operational credits such as the newly introduced SA CAT I81 not being yet part of the ICAO regulatory system.

Recommendations and consequent follow-up actions to the Weather Information to Pilots Strategy Paper, itself an outcome of RMT.0379, are now being taken forward as a stand-alone project.

2.3.1. Overview for CAT operations and non-commercial operations with complex motor-powered aeroplanes

- The conduct of AWOs involves many different components which interact with one another:
 - hardware (such as aircraft and the equipment installed on the aircraft (airborne equipment) or at aerodromes (ground equipment));
 - software (such as computer codes or operating procedures used by personnel); and
 - liveware (i.e. the people who operate the system, e.g. ATCOs, pilots, maintenance personnel).

For AWOs to be conducted safely, each component of the system must perform as intended and must interact correctly with the other components of the overall system.

- In order to apply a common basis for the development of consistent rules, a classification of standard operations in terms of lowest aerodrome operating minima has been adopted. Having set this basis, the concept of operations with operational credits has been introduced with the purpose of enabling the best use of the available technological solutions (either airborne or ground-based) and/or advanced operational procedures by providing operational flexibility beyond the limits of standard operations. This approach mirrors the ICAO approach for operational credits and performance-based aerodrome operating minima.
- The main reason behind the description of operations with operational credits is the need to specify the required performance for such operations. Consequently, the requirements should be as much as possible technology-independent and performance-based, providing thus the relevant principles and criteria at implementing rule level and the supporting technical details at AMC & GM.
- To satisfy the AWO safety objectives and criteria, the different system components must comply with the relevant requirements which are identified with the support of the common hazard identification and risk assessment methodology.

2.3.2. Principles for CAT operations and non-commercial operations with complex motor-powered aeroplanes

The principles applied by EASA for the development of the proposed draft changes to the AWO rules should ensure that the requirements will allow for the use of newly developed technology and/or evolved procedures in the framework of ICAO classification of approach operations as 'Type A' or 'Type B':



- Operations with operational credits: the main aim of the AWO project is to introduce the appropriate regulatory framework for the concept of operations with operational credits. The introduction of this concept should allow for the best use of new technologies and provide further operational flexibility beyond the limits of standard operations. For approach operations, an operational credit could be applied to the instrument and/or visual segment; the scope of operational credits should not be limited to airborne equipment as operational credits may also be granted on the basis of enhanced ground-based equipment (e.g. airborne radar approach (ARA) operations are current examples of such operational credits).
- Technology-independent required performance for certain types of operations with operational credits: considering a performance- and risk-based development concept, all requirements should be technology-independent as much as feasible; however, the appropriate performance criteria shall be required to be met.
- Demonstration of the required performance: The required performance shall be successfully demonstrated. This demonstration includes active contribution of both, the airborne equipment as well as ground equipment taking into account the relevant weather conditions. The aircraft certification process shall play a very important role.

2.3.3. Application of the principle of proportionality regarding operations with aeroplanes

Taking into account the specific characteristics of various sectors of the civil aviation industry, as captured by the different technical Parts of the air operations rules (Part-CAT, Part-NCC, Part-NCO, and Part-SPO), a different balance between the technical details stipulated at either implementing rule or AMC level has been applied in accordance with the principle of proportionality. In Part-CAT the technical details are at AMC level, whereas in other technical Parts these technical details are at implementing rule level.

The reason for the difference is the intent to allow more flexibility based on the application of the safety management principles in the operational domain regulated by Part-CAT. This approach allows operators to use alternative means of compliance (AltMoC) instead of the AMC for demonstrating compliance with the implementing rules. AltMoC shall be based on safety assessments and, as already required, the operators shall obtain a prior approval from the competent authority.

2.4. AWOs — how we want to achieve it — terminology introduced in the Air OPS Regulation and changes to Part-FCL

2.4.1. New terms in Annex I

The latest edition of ICAO Annex 6 Part I — International Commercial Air Transport — Aeroplanes (Tenth Edition, July 2016) introduced some new definitions. These terms are proposed to be added to Annex I to the Air OPS Regulation. Additional new definitions have also been introduced during the development of the new rules.

The following new definitions are proposed to be incorporated in Annex I:

‘aerodrome operating minima’: the source of this term is ICAO Annex 6. ICAO has modified this term through the work on the new ICAO approach classification. The term has been transposed with one minor difference, in that ‘circling approach’ has been included in that definition.

‘ceiling’: the definition has been transposed from ICAO Annex 6.



‘circling approach operation’: the existing definition of ‘circling’ has been split into one definition of the term ‘circling’ and one definition of the term ‘circling approach operation’. The amendment provides for better consistency and clarity of the rule text.

‘decision altitude (DA) or decision height (DH)’: the definition has been transposed from ICAO Annex 6.

‘enhanced flight vision system (EFVS)’: this definition has been introduced in the European regulatory system in the Air OPS Regulation and in the new CS-AWO, where specific CSs have been developed for EFVS. The definition is aligned with the term used within the FAA regulatory system¹⁰. The certification of the EFVS allows for operations with operational credits. Contrary to the EFVS, the ‘enhanced vision system (EVS)’ does not have specifications in CS-AWO and therefore does not benefit from any operational credits. This is reflected in the definitions proposed through this Opinion.

‘EFVS operation’: this new term has been introduced to describe operations where an EFVS is used for approach or landing with an operational credit (e.g. lower minima), rather than just to improve situational awareness. The EFVS may be used in the future during other phases of flight. The definition is aligned with the one used in recently adopted FAA regulations¹¹.

‘EFVS 200 operation’: this definition has been added because, subject to compliance with certain requirements, operators will be permitted to conduct certain EFVS operations without needing a specific approval (SPA) from the competent authority. Such operations may be conducted only in CAT I or better meteorological conditions (i.e. not LVOs) and down to a height of 200 ft above the runway threshold (the approach may only be continued below 200 ft if the pilots have ‘natural’ visual reference). EFVS 200 operations are a subset of EFVS operations.

‘final approach segment (FAS)’: the definition has been transposed from ICAO Annex 6.

‘go-around’: this definition has been developed in order to promote clarity and ensure consistency in the rules.

‘head-up display landing system (HUDLS)’: this new definition replaces the existing definition of ‘head-up guidance landing system (HUDLS)’. It has been amended in alignment with the one in CS-AWO.

‘instrument approach operation’: the definition has been transposed from ICAO Annex 6. ICAO has modified this term through the work on the new ICAO approach classification. Under the new approach classification, it is important to distinguish between instrument approach *operations* and instrument approach *procedures* (IAPs). Operations are activities performed by pilots, whereas procedures are the predetermined, published series of manoeuvres that are used for those operations. Instrument approach operations may be conducted using different methods, depending on whether vertical guidance is available (2D or 3D), and are classified according to the minimum DA/H as ‘Type A’ or ‘Type B’ (see below). This definition should be complemented by new GM that EASA should publish in an ED Decision after the adoption of these rules which explains the type of guidance that may be used for instrument approach operations and clarifies which operations should be considered 3D operations.

¹⁰ CFR 14 Chapter 1, Part I, 1.1 General definitions.

¹¹ CFR 14 Chapter 1, Part I, 1.1 General definitions.



Further guidance on the classification of an instrument approach operation based on the designed lowest operating minima is contained in Appendix J to ICAO Doc 9365 Manual of All-Weather Operations, Fourth Edition, 2017.

‘instrument approach procedure (IAP)’: the definition is based on revised definitions in ICAO Annex 6 and has been added for clarity.

‘low-visibility operations (LVOs)’: this definition will be included in the regulations for the different domains (air operations, aircrew, aerodromes, etc.) in order to promote a consistent understanding across said domains. This term is currently not defined in ICAO standards; however, there is a comparable definition in ICAO Doc 9365 ‘Manual of All-Weather Operations’. Furthermore, in accordance with Regulation (EU) No 139/2014 (ADR.OPS.B.045 and associated AMC to this aerodrome rule), LVPs are required to be in force at the aerodrome in order to operate below 550 m.

‘minimum descent altitude (MDA) or minimum descent height (MDH)’: the definition has been transposed from ICAO Annex 6.

‘obstacle clearance altitude (OCA) or obstacle clearance height (OCH)’: the definition has been transposed from ICAO Annex 6.

‘operational credits’: ICAO standards (specifically 4.2.8.1.1 in ICAO Annex 6 Part I) allow the State of the operator to approve operational credits for operations with aeroplanes with certain equipment, and describe operational credits as allowing operation to lower aerodrome operating minima, reducing or satisfying visibility requirements or requiring fewer ground facilities. Operations with operational credits are operations using specific aircraft or ground equipment or a combination of aircraft and ground equipment, such that lower-than-standard aerodrome operating minima can be applied for a particular classification of operation, using as a reference the standard aerodrome operating minima as stipulated in ICAO Doc 9365 ‘Manual of All-Weather Operations’, Appendix F. In that vein, SA CAT I allows a DH as low as 150 ft and an RVR as low as 400 m, but it is still a CAT I operation, albeit some additional requirements will apply. This definition of ‘operational credits’ has been developed based on ICAO standards and ICAO Doc 9365 ‘Manual of All-Weather Operations’ and it was considered necessary when developing the rules in order to ensure consistency throughout the rule text. The definition is based on the ICAO definition of operational credit and the SARPs related to operation with operational credits. Operational credits represent a concept approved by ICAO, so these operations will not necessitate any notification of differences with the ICAO standards.

‘Type A instrument approach operation’ and ‘Type B instrument approach operation’: these definitions are derived from standard 4.2.8.3 of ICAO Annex 6. This is a classification of an instrument approach operation based on the designed lowest operating minima below which an approach operation may only be continued with the required visual reference. ICAO has introduced this term as a result of the work on the new ICAO approach classification.

The definition of ‘Type B instrument approach operation’ contains an important difference from the ICAO standard in that CAT III is not subcategorised into CAT IIIA, CAT IIIB and CAT IIIC. EASA is of the opinion that the subcategorisation is not helpful. ICAO also has introduced the process of removal of the subcategories, so it will not be necessary to file differences. The FAA also deleted these subcategories from the FAA regulations with the publication of FAA 2012 0019 on 16 February 2012 (effective from the 16 April 2012). More information can be found in <https://beta.regulations.gov/document/FAA-2012-0019-0001>.



‘visibility’: neither the existing European rules nor ICAO Annex 6 have a definition of visibility. EASA considers that it would be valuable to include a definition of visibility to avoid ambiguity, particularly when specifying aerodrome operating minima.

This term refers to the visibility measured and reported by an observer on the ground and not simply to visibility in general or in-flight visibility; visibility for aeronautical purposes refers to the meteorological visibility; therefore, it is understood as meteorological visibility (ref. ICAO Annex 3 ‘Meteorological service for international air navigation’). The definition from ICAO Annex 3 has been used to ensure that the meaning of ‘visibility’ used by pilots is the same as that used by meteorological services, aerodromes and air traffic services. The term ‘meteorological visibility’ has been replaced with ‘VIS’ in the Air OPS rules, following the ICAO definition. The visibility definition is also identical to the one in ICAO Annex 2, to which Annex 6 refers.

2.4.2. Terms amended in Annex I

‘continuous descent final approach (CDFA)’: the existing text has been amended by adding a reference to circling approach operations. This is in order to clarify that circling approaches are outside the scope of CAT.OP.MPA.115, which requires approval for approaches flown without the CDFA technique.

‘low-visibility take-off (LVTO)’: this term has been amended in order to be aligned with the term ‘LVOs’. The definition of LVTO no longer contains a lower limit of 75 m to allow for operations with lower-visibility minima. References to LVTO I and II have been deleted as they do not appear in ICAO documents.

‘visual approach operation’: the existing definition of ‘visual approach’ has been updated in accordance with the distinction between approach ‘operations’ and approach ‘procedures’ (see ‘instrument approach operation’).

‘enhanced vision system (EVS)’: the definition of EVS is amended to ensure consistency with the FAA.

Minor amendments, mostly editorial, are made to the following definitions:

- ‘visual approach operation’; and
- ‘weather-permissible aerodrome’ – the term ‘weather reports’ has been replaced with ‘meteorological reports’.

2.4.3. Terms deleted from Annex I

‘approach procedure with vertical guidance (APV) operation’: this term is no longer used in the new ICAO approach classification. It has been, therefore, deleted and replaced with the new definitions for Type A and Type B instrument approach operations (the definition of an APV remains within the definition of IAPs).

‘CAT I’, ‘CAT II’, ‘CAT IIIA’, ‘CAT IIIB’ approach operations: in accordance with the new ICAO approach classification, these terms have been replaced with the new definition of Type B instrument approach operations.

‘head-up guidance landing system (HUDLS)’: the definition has been deleted. Its content has been incorporated into the new definition of head-up display landing system (HUDLS) and thus aligned with the one developed within the scope of CS-AWO.



‘lower-than-standard category I’ (LTS CAT I) has been deleted, since this approach classification has been removed from the rules (see SPA.LVO.100).

‘non-precision approach (NPA) operation’: this term is no longer used in the new ICAO approach classification. It has been, therefore, deleted and replaced with the new definitions for instrument approach operations and procedures; however, the definition of NPA remains as part of the definition of IAPs.

2.4.4. Terms transferred to GM level

The following terms are not used anymore in the implementing rules but only in the AMC and GM, and have been therefore moved at GM level: ‘head-up display (HUD)’ (this definition will also include ‘equivalent displays’); and ‘low-visibility procedures (LVP)’.

2.4.5. Amendments to Part-FCL

FCL.605(b) of the Aircrew Regulation currently requires completion of training at an ATO and a check before a pilot is authorised for DHs below 60 m. EASA proposes to transfer this requirement to Part-SPA of the Air OPS Regulation. See Section 2.5.2.

This objective is achieved by moving the checks for LVO approaches (DH of less than 200 ft) out of the Aircrew Regulation and into Subpart LVO of Part-SPA of the Air OPS Regulation.

The current SECTION 6 ‘Additional authorisation on a type rating for instrument approaches down to a DH of less than 60 m (200 ft) (CAT II/III)’, describing the skill test for such operations, has been deleted from Sections B, D and E of Appendix 9 to Part-FCL of the Aircrew Regulation.

The current SECTION 7 ‘Optional equipment’ of the skill test becomes the new Section 6, in Sections D and E of Appendix 9 (more specifically, for airships and powered-lift). Minor editorial changes have been introduced for consistency as follows:

- Subparagraphs (a) and (b) of paragraph 6 are not needed because they duplicate other elements.
- Subparagraph (c) of paragraph 6 is re-numbered as subparagraph (a).

Other amendments to Part-FCL, not directly related to AWOs, are described in Chapter 3.

2.5. AWOs — how we want to achieve it — aeroplanes

2.5.1. Annex IV ‘Commercial air transport operations’ (Part-CAT)

CAT.OP.MPA.101 ‘Altimeter check and settings’

As currently neither the Air OPS Regulation nor Regulation (EU) No 923/2012¹² (the ‘standardised European rules of the air (SERA) Regulation’) covers the requirement to establish procedures for altimeter check and settings which are essential IFR operations, a new requirement, CAT.OP.MPA.101 ‘Altimeter check and settings’, has been introduced for this purpose.

¹² Commission Implementing Regulation (EU) No 923/2012 of 26 September 2012 laying down the common rules of the air and operational provisions regarding services and procedures in air navigation and amending Implementing Regulation (EU) No 1035/2011 and Regulations (EC) No 1265/2007, (EC) No 1794/2006, (EC) No 730/2006, (EC) No 1033/2006 and (EU) No 255/2010 (OJ L 281, 13.10.2012, p. 1) (<http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1494236221362&uri=CELEX:32012R0923>).

CAT.OP.MPA.107 'Adequate aerodrome'

This implementing rule has been slightly amended to replace the term 'weather' with 'meteorological', for more accuracy.

This change has been applied throughout all Annexes to the Air OPS Regulation.

CAT.OP.MPA.110 'Aerodrome operating minima'

The requirements for aerodrome operating minima have been fully deleted and new provisions have been developed. A safety objective has been added to point (a), i.e. 'to ensure separation of the aircraft from terrain and obstacles and to mitigate the risk of loss of visual references during the visual flight segment of instrument operation operations'. The list of items that must be taken into account in determining the aerodrome operating minima has been updated in the new point (b) to ensure closer alignment with ICAO Annex 6 and ICAO Doc 9365 'Manual of All-Weather Operations' (para 6.2.6). The existing point (b), which allows for lower minima based on the use of HUD or EVS, is not kept in the new text, as such credits are now dealt with by means of an operational credit as described in Part-SPA.

The second sentence of the existing point (a), as well as the existing point (b) have been moved to AMC level. The non-exhaustive and descriptive list of items to be considered for the establishment of aerodrome operating minima is now replaced with a more general list of items.

Finally, the content of the existing point (e) has been moved to CAT.OP.MPA.300 'Approach and landing conditions' addressed to the flight crew and also to CAT.OP.MPA.265 'Take-off conditions' (although the existing text only refers to approach operations).

The requirement for a method of determining aerodrome operating minima has been added (new item (c)) to ensure compliance with ICAO standards (4.2.8.1 of Annex 6).

CAT.OP.MPA.115 'Approach flight technique — aeroplanes'

The amendments to point (a) are of an editorial nature; point (b) has been revised and shortened; the amended provision specifies that an approval is required for each particular runway for which the CDFA technique is not used; the penalties on the RVR minima have been removed from the implementing rule based on the performance-based principle that an implementing rule should contain the safety objective, while the means to achieve the safety objective should be put at AMC level. The content removed from the implementing rule represents only the means to achieve the safety objective identified in the implementing rule and is already addressed in the AMC to CAT.OP.MPA.110.

The rule for stabilised approaches and CDFA has been simplified to avert any potential confusion between stabilised approach operations (SAp) and CDFA operations (the definition of the CDFA in Annex I has been also amended).

The use of SAp is considered to be a significant factor in the mitigation of the risks of controlled flight into terrain (CFIT) and runway excursions on landing. All approaches should be flown as SAp according to the definition in Annex I (and the proposed AMC1 CAT.OP.MPA.115). Both circling approach operations and non-CDFAs can be flown as stabilised approaches.



NPA procedures may be flown as either 2D or 3D instrument approach operations depending on whether the avionics provide vertical navigation guidance to the pilot. In either case, the approach should be flown using the CDFA technique.

The existing rule imposes a penalty to the use of non-CDFA technique by requiring the use of different minimum RVR. This has been removed from point (b) and transferred to AMC5 CAT.OP.MPA.110 as the determination of aerodrome operating minima is covered by CAT.OP.MPA.110. Where an operator is unable to apply the CDFA technique for a particular instrument approach operation and has approval for another flight technique, there will be provisions in the future ED Decision related to this task (e.g. AMC3 CAT.OP.MPA.110) where the operator is required to implement procedures to ensure that an aircraft will not operate below the MDA/H without adequate visual reference.

CAT.OP.MPA.265 'Take-off conditions'

The text has been revised to improve readability and consistency. A new point (b) containing the text of the existing point (e) of CAT.OP.MPA.110 has been added. This new point requires the flight crew to verify whether for the selected aerodrome operating minima all necessary components (such as ground equipment, aircraft systems, aircraft performance, and flight crew qualifications) are available and operative. This ensures consistency with the requirement for aerodrome operating minima for approach operations in CAT.OP.MPA.300.

CAT.OP.MPA.300 'Approach and landing conditions'

The rule text has been amended to improve readability, and some editorial amendments have been proposed for consistency; the reference to 'missed approach' has been replaced with the term 'go-around' to also take into account such operations below the DA/H or MDA/H. As mentioned above, a definition of the term 'go-around' has been added to Annex I (Definitions). Moreover, a new point (b) has been added with the rule content of the existing point (e) of CAT.OP.MPA.110. This new point requires the flight crew to be satisfied that all necessary components (such as ground equipment, aircraft systems, aircraft performance, and flight crew qualifications) are available for the selected aerodrome operating minima.

It should be noted that the whole CAT.OP.MPA.300 may be further amended through the ongoing RMT.0296 'Review of aeroplane performance requirements for CAT operations', to introduce the new concept of 'in-flight assessment of landing performance' having regard to the performance information contained in the OM.

CAT.OP.MPA.305 'Commencement and continuation of approach'

The rule has been reworded for clarification. This requirement is also known by the term 'approach ban'. It is considered to be a safety-critical rule to avoid CFIT. This rule complies with a corresponding ICAO Annex 6 standard. The appropriateness of this rule has been in particular discussed from the perspective of operations using EFVS/CVS for operational credits. For such operations, a credit to the RVR minimum is allowed. The reduced RVR minimum can be applied to comply with the approach ban requirement. The reference to landing runway has been added to clarify which RVRs are relevant to the approach ban and account for the case where a pilot commences an approach without the intention of landing; for example, training approaches planned to be followed by a missed approach. This is not directly relevant to CAT operations but has been included here for consistency with Part-NCC (and Part-NCO). The description of which RVR to consider has been moved to an AMC level; the provisions describing what a pilot 'may' do have been moved to GM.



A new point (e) has been added. It ensures that the pilot does not need to convert the visibility in the normal case where $VIS > minima$. It does however ensure that an alleviation to the rule previously in AMC is upgraded at the implementing rule level, in the case where there is no RVR and the reported $VIS < minima$ and $CMV > minima$.

CAT.OP.MPA.310 ‘Operating procedures — threshold crossing height — aeroplanes’

The term ‘precision approaches’ has been replaced with ‘Type B instrument approach operations’.

CAT.OP.MPA.312 ‘EFVS 200 operations’

The new CAT.OP.MPA.312 and NCC.OP.235 have been introduced to address EFVS operations in Part-CAT and in Part-NCC respectively. EASA expects that these requirements will be further complemented with related AMC and GM which will be published in a future ED Decision after the adoption of the regulation. They introduce a new concept into the Air OPS Regulation: the conduct of EFVS operations with operational credits without the need for a specific approval to be granted in accordance with Annex V (Part-SPA).

The concept was initially proposed by representatives of non-commercial operators and aircraft manufacturers, who reported that the existing approval requirements for EFVS operations with operational credits placed an undue burden on the industry which resulted in very few operators being able to apply successfully for the approval of EFVS operations with operational credits and significant safety and operational benefits being therefore denied to the industry.

The proposed requirements are intended to be proportionate, to avoid placing an undue burden on the industry or competent authorities and to provide some of the benefits of EFVS operations without the need for an approval.

The provisions of the new rules are intended to permit EFVS operations in CAT and NCC operations, where the safety risks are well understood and can be mitigated by prescriptive requirements. More complex operations using newer technologies and representing greater potential safety risks will still require a specific approval in accordance with Annex V. For these reasons, the new EFVS rules permit the use of EFVS without natural vision only down to a height of 200 ft above the aerodrome and only in conditions equivalent to an RVR of 550 m or greater (i.e. LVOs are not permitted under this rule).

CAT.OP.MPA.312 and NCC.OP.235 stipulate the requirements that operators that intend to conduct EFVS 200 operations must fulfil (which are further developed in the related AMC and GM): the aircraft is certified for the intended operations, only runways and IAPs suitable for EFVS operations might be used, the flight crew is competent to conduct the intended operation, safety assessments are carried out and performance indicators are established to monitor the level of safety, etc. The requirement for a safety assessment has been transposed from ICAO standards (Attachment 2A Annex 6 Part 2). These are the same as the requirements for operators seeking approval for EFVS operations in accordance with Annex V (SPA.LVO.105), but with the additional requirement that the operating minima take into account the capability of the systems used.

Introducing this new concept will lead to closer alignment with the FAA, which allows EFVS operations without approval for non-commercial operators (‘Part 91’), but would be a departure from ICAO standards, which requires any operation with operational credits to be an ‘approval’ item (ICAO Annex 6 Part II, paragraph 2.2.2.2.1.1).



The main benefit of this rule is expected to be felt by operators conducting CAT operations with smaller or non-complex aircraft to secondary airports that do not have sophisticated ground infrastructure in place; for example, airports without an ILS approach or with an ILS approach but with limited approach lighting. The term ‘EFVS 200 operations’ describes this operation in the domain of CAT operations as well as in NCC operations.

Note: The proposal on this type of operations has been discussed at the meeting of ICAO OPS panel; despite introducing a new concept about the principles set in ICAO Annex 6 (especially the requirement for a specific approval), the formal introduction of such a concept has been found feasible not only for the NCC, but also for the CAT operations.

Point (b) is intended to clarify the use of EVS in the context of EFVS 200 operations. The credits allowed to EVS in this point should not be considered as a wider credit for any other operation. Generally, EVS cannot support operational credits.

2.5.2. Annex V ‘Specific approvals’ (Part-SPA)

SPA.LVO.100 ‘Low-visibility operations and operations with operational credits’

In order to develop a performance-based regulation and allow for the introduction of new technologies, the list of specific types of operation has been removed from the IR.

In accordance with ICAO standards, the implementing rule specifies that all take-off operations below 400 m, low-visibility approach operations and operations with operational credits require specific approval.

Therefore, under the revised definitions, any take-off with an RVR of less than 550 m will be classified as LVTO, but only LVTOs with an RVR of less than 400 m will require an approval (as it is the case now).

All approach operations in an RVR of less than 550 m (LVOs) will require prior approval of the competent authority.

The list of operations for which specific approval can be granted has been moved to AMC. For any new types of operations or any new technologies used to meet the performance requirements of already defined operations, only additional AMC or amendments to existing AMC will be necessary.

Lower-than-standard category I (LTS CAT I) operation has not been transposed into the revised implementing rule or AMC. During the rule-development procedure, the use of a hazard identification and risk assessment process revealed a latent safety risk in relation to LTS CAT I. There are inconsistencies across the different aviation domains in the current requirements. The use of an autoland system with an ILS certified to class I/T/1 (as allowed by the current AMC3 SPA.LVO.100) is not anticipated by certification specifications and thus type certificate holders have not demonstrated this during the certification process; similarly, neither aerodrome operators nor aircraft operators are obliged to verify that the pre-threshold terrain of a runway used for LTS CAT I operations is compatible with the autoland system. It appears that few operators regularly use LTS CAT I and thus the level of exposure to this risk has been low. Whereas rules for each aviation domain have previously been made independently and by different organisations (e.g. JAA and EASA), the cross-domain approach adopted through RMT.0379 provides the opportunity to introduce a new operational credit (SA CAT I) that mitigates the risks associated with LTS CAT I and will provide significant operational and safety benefits. Under SA CAT I, the lower RVR required for approach can be paired with a lower DH, meaning



that the probability of a go-around due to inadequate visual reference at or below DH is significantly less than for LTS CAT I.

SPA.LVO.105 ‘Specific approval criteria’

The title of SPA.LVO.105 has been changed from ‘LVO approval’ to ‘Specific approval criteria’. In line with other specific approvals of Part-SPA, this implementing rule specifies the main criteria to obtain a specific approval for LVOs and/or operations with operational credits, which include the components required for safe operations such as:

- aircraft capabilities,
- flight crew competence,
- operating procedures,
- minimum equipment list (MEL),
- continuous airworthiness, and
- safety assessments and continuous monitoring.

The proposed text is aligned with a recently published amendment to ICAO Annex 6.

The current text of the implementing rule has been completely replaced with new text. For information, the old requirements will be moved to a new AMC related to SPA.LVO.100.

SPA.LVO.110 ‘ANS- and aerodrome-related requirements’

In the existing requirements, aerodrome provisions are addressed in SPA.LVO.115. Where appropriate, the existing requirements of SPA.LVO.110 are deleted and EASA proposes these provisions be moved to AMC. The new SPA.LVO.110 states only the safety objective — that only aerodromes and instrument procedures suitable for the intended operations must be used for operations described in SPA.LVO. EASA proposes that the details on how to implement the safety objective stated in the current rule be moved to AMC level.

Since ICAO Annex 14 Standards do not yet address operations with operational credits, it cannot be assumed that aerodrome operators will have to be approved for operations with operational credits. According to the revised rule, the air operator is responsible for establishing whether a particular aerodrome could be used.

For some operations with operational credits (e.g. SA CAT I), an Instrument Approach Procedure (IAP) published in the AIP will be required (at AMC level). However, for the majority of operations, a dedicated published IAP for operations with operational credits will be neither available nor required. These operations will use the published procedure for the standard operation, e.g. an EFVS operation with operational credits may use the CAT I IAP. In such cases, it is the responsibility of the operator to ensure that the IAP used is suitable for the intended operation.

SPA.LVO.115 ‘Aerodrome related requirements’ has been deleted.

SPA.LVO.120 ‘Flight crew competence’

The title of SPA.LVO.120 has been changed from ‘Flight crew training and qualifications’ to ‘Flight crew competence’.



The proposed requirement describes the safety objectives and the responsibilities of the operator in relation to flight crew competence, training and checking, and record-keeping. In this regard, it should be noted that it is planned to move the initial and recurrent training, testing and checking requirements for LVOs from Part-FCL to Part-SPA so that it is clear that the training is the responsibility of the aircraft operator.

The current requirements **SPA.LVO.125** and **SPA.LVO.130** have been deleted. Their content has been incorporated in the revised rules.

2.5.3. Annex II ‘Authority requirements for air operations’ (Part-ARO)

Appendix II — Operations specifications (EASA Form 139)

The template for operations specifications (ref. EASA Form 139) of Appendix II has been redesigned. A new line addressing operational credits in addition to already existing ones addressing take-off and approach and landing has been included in the cell pertaining to LVOs.

Further modifications of the form have been applied:

- For take-off (ref. (11) in the table of Appendix II to Part-ARO), an approved minimum take-off RVR in metres is foreseen (one line per approval).
- For approach and landing (ref. (12) in the table of Appendix II to Part-ARO) for CAT II and CAT III (LTS CAT I, OTS CAT II, CAT IIIA, CAT IIIB and CAT IIIC have been deleted), the minimum RVR in metres and DH in feet have to be inserted (one line per listed approach category).
- For the newly introduced operational credits line (ref. (13) in the table of Appendix II to Part-ARO), an applicable operational credit has to be inserted as SA CAT I, SA CAT II, EFVS, etc.; the minimum RVR in metres and DH in feet have to be specified (one line to be used per listed operational credit).

2.5.4. Annex III ‘Organisation requirements for air operations’ (Part-ORO)

Appendix I to Part-ORO — Declaration

The declaration has been amended to include a line where the operator includes the name of the operations with operational credits conducted. This addition will ensure that the competent authority can take into account the risks presented by operations with operational credits when determining the appropriate oversight programme for declared operators.

2.5.5. Annex VI ‘Non-commercial operations with complex motor-powered aircraft’ (Part-NCC)

NCC.OP.101 ‘Altimeter check and settings’

This new rule has been introduced to ensure consistency with Part-CAT; this issue is not yet covered in the Air OPS Regulation or the SERA Regulation. Proper settings are essential for IFR operations, and they should be properly covered by regulations. In a future ED Decision, EASA will provide further explanation through GM to all applicable Annexes (Part-CAT, Part-NCC, Part-NCO and Part-SPO) that will refer to ICAO Doc 8168 (PANS-OPS), Volume I: 3.2 ‘Pre-flight operational test’; 3.3 ‘Take-off and climb’; 3.5 ‘Approach and landing’.

NCC.OP.110 ‘Aerodrome operating minima — general’

This requirement has been aligned with CAT.OP.MPA.110 in a proportionate manner.



NCC.OP.147

Under NCC, a flight can depart towards its destination with that destination below aerodrome operating minima and a single alternate forecast to be at or just above aerodrome minima. A minor deterioration in the weather could leave the flight with no safe landing options.

EASA proposes to introduce such planning minima to reflect the best practice that increases safety margins. The same proposal is introduced in NCO.OP.143

NCC.OP.195 'Take-off conditions'

This requirement has been aligned with CAT.OP.MPA.265, the only difference being the use of the term 'pilot-in-command' instead of 'commander'.

NCC.OP.225 'Approach and landing conditions'

The content of this rule has been fully changed. The requirement has been redrafted in alignment with CAT.OP.MPA.300, the only difference being the use of the term 'pilot-in-command' instead of 'commander'.

NCC.OP.230 'Commencement and continuation of approach'

This requirement has been aligned with CAT.OP.MPA.305, the only difference being the use of the term 'pilot-in-command' instead of 'commander'.

As in CAT, a new point (e) has been added. It ensures that the pilot does not need to convert the visibility in the normal case where $VIS > minima$. It does however ensure that an alleviation to the rule previously in AMC has been upgraded to be at implementing rule level, in the case where there is no RVR and the reported $VIS < minima$ and $CMV > minima$.

A new point (f) has been added to ensure that there is no approach ban in the case of an approach with no intention to land. This alleviation to the rule was previously an AMC and has been upgraded to be at implementing rule level.

NCC.OP.235 'EFVS 200 operations'

Please see the explanations provided above to CAT.OP.MPA.312 and NCC.OP.235, in Section 2.5.1 Annex IV 'Commercial air transport operations' (Part-CAT).

2.6. AWOs — how we want to achieve it — helicopter operations and specialised operations**2.6.1. Specific objective 1: Enable onshore IFR operations with helicopters and make best use of helicopter PinS approaches, departures, and low-level routes (LLRs)**

As IFR is often not a practical solution due to the disadvantages discussed in Section 2.1.3, the instrument skills of instrument-rated pilots may erode even when they have access to helicopters certified for IFR, to the extent that some pilots may no longer feel confident in flying IFR in marginal VMC.

The resulting situation is that helicopter pilots rarely fly IFR except in the offshore environment. They fly a lot more under VFR in marginal VMC, sometimes in unintended IMC or even intended IMC, with lower safety margins.



The aim is to enable onshore IFR operations with helicopters by addressing the issues discussed in Section 2.1.3 above in order to reduce the number of related accidents. The safety impact is expected to be positive.

The helicopter-specific part of this Opinion proposes the following:

- Options to increase the number of available and accessible destination alternates within the available fuel range:
 - specific approval to reduce minima on a CAT I ILS and on CAT II landing systems;
 - use of a destination and a destination alternate that are served with GNSS-based approaches only.
- Options to reduce the IFR operating minima below the standard VFR minima:
 - specific approval to reduce VFR minima on a mixed IFR/VFR flight.
- Additional options:
 - use of night-vision imaging systems (NVISs) on the visual segment of an IFR flight;
 - deletion of the approach ban¹³, for helicopter operations.

Notes:

The following measures are proposed in other chapters of this Opinion:

- *Chapter 3: reduced IFR experience required to fly CAT operations under IFR, and merger of the single-engine and multi-engine helicopter instrument ratings.*

The following measures are already proposed in [Opinion No 02/2020 'Fuel/energy planning and management'](#) (published in the context of the activities of RMT.0573).

- *The option for CAT operators to use standardised weather information that is not Part-MET-certified at destination, in order to select one destination alternate instead of two (only under CAT is there a requirement to select two destination alternates in such cases).*
- *The option for CAT operators to not select a destination alternate when the destination provides helicopters with two safe landing options (this option already exists under NCC and SPO in the current rules).*
- *The option for CAT operators to use destination alternates with no instrument approach procedures under IFR if the weather conditions permit at the destination alternate and on the way to it (this option already exists under NCC and SPO in the current rules).*

The following measure is already proposed in NPA 2018-04 'Helicopter emergency medical services performance and public interest sites' (RMT.0325 & RMT.0326 (OPS.057(a) & OPS.057(b)))¹⁴:

- *Reduced HEMS VFR minima on a mixed IFR/VFR flight.*

¹³ CAT.OP.MPA.305, NCC.OP.230 and SPO.OP.215 Commencement and continuation of approach — aeroplanes and helicopters

¹⁴ <https://www.easa.europa.eu/document-library/notices-of-proposed-amendment/npa-2018-04>



By making IFR a more attractive solution, the proposal should incentivise the design of helicopter PinS approaches, helicopter instrument departures, and helicopter LLRs, which in turn should ensure that the IFR flight time converges towards the expected VFR flight time in good weather conditions.

Detailed explanations regarding the new Subpart-N of Part SPA — HELICOPTER POINT-IN-SPACE APPROACHES AND DEPARTURES WITH REDUCED VFR MINIMA

Explanatory note to SPA.PINS-VFR.100 (as proposed in NPA 2019-09)

This new specific approval has been introduced to enable reduced minima on mixed IFR/VFR flights.

In some weather conditions, especially at night, the ceiling and visibility allow to see the destination from the MAPt of a PinS approach. The approach design may require the pilot to ‘proceed VFR’ from the MAPt. Yet, the weather conditions may be IMC.

Conversely, in some weather conditions, the ceiling and visibility allow to see an IFR instrument departure fix before take-off. The design of the instrument departure may require the pilot to ‘proceed VFR’ to the initial departure fix (IDF). Yet, the weather conditions may be IMC.

It is proposed to reduce the VFR minima in such cases. The short segment of VFR flight remains VFR, which means that the crew requires specific training and experience. The safety is expected to be increased because:

- the larger part of the flight will take place under IFR, not under marginal VMC;
- decision-making is expected to be simplified:
 - on landing — the decision to continue VFR depends on the availability of the expected visual cues; a go-around is always a safe option;
 - on departure — the decision to take off under VFR can be thought over and also depends on the availability of the expected visual cues.

Amended elements to SPA.PINS-VFR.100 (following the NPA consultation and workshop consultation)

Improved wording and extension to hoist operations. Helicopter external sling load operations (HESLO) with an IFR segment of flight are not foreseen.

Detailed explanations regarding the use of night-vision imaging systems (NVISs) on the visual segment of an IFR flight

Explanatory note to SPA.NVIS.120 (unchanged since NPA 2019-09)

This amendment is intended to allow the use of NVISs on the visual segment of an IFR flight.

The amended regulation maintains the principle that there will be no operational credit for NVIS, but it no longer restricts the use of NVIS to VFR weather minima.

Detailed explanations regarding the deletion of the approach ban for helicopter operations and regarding approach bans for aeroplanes conducting specialised operations (SPO)

Explanatory note to CAT.OP.MPA.305 (as proposed in the NPA)

The initial proposal was presented in NPA 2018-06(C). See Section 2.5.1.

Amended elements regarding approach bans and CMV (following the NPA consultation and workshop consultation)



NPA 2019-09 proposed that helicopter rules on approach bans be aligned with aeroplanes. Approach bans were proposed to be mandated at aerodromes where a VIS or RVR is reported to the pilot, and not outside aerodromes where such VIS or RVR reports are not available. The rule was being the most restrictive in the case where the flight conditions were already the safest.

After further analysis, it was decided to delete the helicopter approach ban, except in the following case where air traffic congestion in CAT II/III weather conditions needs not be compounded by unnecessary attempts to land:

An RVR is reported; AND
it is below the operating minima; AND
it is below 550 m.

As there will be no approach ban for helicopters unless an RVR is reported (see CAT.OP.MPA.305), the use of a CMV is never useful. The concept is aligned with NCO.

Explanatory note to NCC.OP.230

The amendments to NCC.OP.230 have been proposed for consistency with Part-CAT. See above.

Explanatory note to SPO.OP.215

The amendments to SPO.OP.215 have been proposed for consistency with Part-CAT and Part-NCC.

Aeroplanes:

It remains forbidden to continue the approach below 1 000 ft, or to continue into the final segment if the (M)DH is higher than 1 000 ft, if an RVR or VIS is available and below the operating minima.

If no RVR or VIS is available, then it is not forbidden to continue to the (M)DA/H.

Helicopters:

Change since the NPA proposal: The approach ban remains for helicopter operations only if all three conditions are met: An RVR is reported AND it is lower than 550 m AND it is lower than the operating minima.

Explanatory note to NCC.OP.230(f) and SPO.OP.215 (f) (following the NPA consultation)

Approaches with no intention to land might happen in the context of training, but also in the context of specialised operations, outside a training environment. In such case, there should be no approach ban. Most of the AMC proposed in the NPA is upgraded at implementing rule level.

2.6.2. Specific objective 2: Modernise helicopter offshore approaches

This Opinion proposes to modernise offshore ARAs by:

- extending ARAs to NCC and SPO, for harmonisation purposes;
- introducing the option to use OEM-designed offshore approaches instead of the classic ARA under the existing SPA.HOFO approval.

NCC and SPO offshore operators currently have no SPA.HOFO rules for offshore approaches. They may perform such approaches if approved to do so under a SPA.HOFO approval. If approved to do so, it is



expected that they will meet the criteria defined for CAT operators that operate under ORO.FC and SPA.HOFO. This Opinion proposes to fill the regulatory gap for clarification purposes. The impact is negligible.

The use of OEM-designed offshore approaches allows the official use GNSS as the primary navigation means, while the airborne radar remains to be used for confirmation of the navigation and for obstacle clearance. It also enables OEMs to innovate by making best use of the available navigation systems and autoflight modes. Further details on the implementation of these offshore approaches may be included in the form of a new AMC in the related ED Decision.

Detailed explanations regarding airborne radar approaches

Explanatory note to SPA.HOFO.125 (no additional explanations since NPA 2019-09)

The main change in the implementing rule is the extension of the scope of the point to NCC and SPO offshore operations. The amendment also provides a more performance-based and less technology-oriented IR.

Detailed explanations regarding coastal aerodromes, and regarding returning from offshore without a destination alternate

Following the NPA consultation and workshop consultation, the following additional amendments have been introduced:

Explanatory note to SPA.HOFO.120

The implementing rule material has been restructured so that the JAA and Norwegian methods to fly without a destination alternate are both presented. However, the actual technical details will be in AMC that will be published with the related ED Decision.

Only a high-level objective remains in the IR.

2.6.3. Specific objective 3: Ensure that the helicopter regulatory material is performance-based and compatible with the terminology described in Section 2.4

The Opinion proposes to amend the IFR operating minima under CAT, NCC and SPO, in order to achieve the following:

- implementation of the new definitions of Type A, Type B, 2D, and 3D approach operations;
- introduction of minor changes to reflect the operational capabilities of helicopters;
- introduction of helicopter PinS approaches to reflect the recent evolution of ICAO Doc 8168 (PANS-OPS);
- alignment of NCC and SPO and, when relevant, harmonisation with aeroplanes;
- simplification.

The IFR operating minima have been changed only to the margins. The impact is negligible.



Detailed explanations regarding the amended definitions and SPA.LVO.100

Following the NPA consultation and workshop consultation, the following amendments have been introduced:

The decision was made to align the helicopter LVO threshold with the aerodrome regulations and adopt 550 m.

The following has been considered, together with the outcome of the consultation on the different options and consistency issues with the proposed aerodrome regulations.

With a 500-m RVR cut-off, there will be situations where:

- the operating minima are met and the pilot-in-command will expect to land;
- LVPs will not be in force at the aerodrome;
- the pilot-in-command will not be cleared to land.

With a 550-m RVR, these situations will occur only within a specific approval, where additional knowledge and training will address the issue.

Detailed explanations regarding EFVS and EVFS200**Explanatory note to EFVS under CAT and NCC (as proposed in the NPA)**

See Section 2.5.1.

Amended elements to the definition of EFVS 200 operation (following the NPA consultation and workshop consultation)

The definition has been amended to extend the concept to certified heliports providing obstacle protection.

Amended elements to CAT.OP.MPA.312 'EFVS 200 operations' (following the NPA consultation and workshop consultation)

CAT.OP.MPA.312 has been amended to extend the concept to certified heliports providing obstacle protection.

Amended elements to EFVS 200 (following the NPA consultation and workshop consultation)

Extension of the operational credits to helicopters flying to runways

SPA.LVO**Amended elements to EFVS 200 (following the NPA consultation and workshop consultation)**

Restriction of the operational credits to runways

The proposed changes are needed with the current state of technology, considering the amended definitions.

EFVS under NCC

The NCC rules have been amended to mirror the changes proposed under CAT.



EFVS under SPO**Explanatory note to SPO.OP.235 EFVS 200 (unchanged since NPA 2019-09)**

The operational credits available under Part-NCC are proposed to be extended under Part-SPO.

Detailed explanations regarding the new NCC.OP.148, SPO.OP.143 and SPO.OP.144**Explanatory note to NCC.OP.148, SPO.OP.143 and SPO.OP.144**

Under NCO, NCC and SPO, a flight can depart towards its destination with that destination below aerodrome operating minima and a single alternate forecast to be at or just above aerodrome minima. A minor deterioration in the weather could leave the flight with no safe landing options.

EASA proposes to introduce such planning minima to reflect the best practice that increases safety margins. The proposal is extended to NCO.OP.144.

Detailed explanations regarding SPO operating minima**Explanatory note to SPO.OP.101**

The intent is full alignment with Part-NCC.

Explanatory note to SPO.OP.110

The intent is full alignment with Part-NCC.

Explanatory note to the proposed deletion of the existing SPO.OP.111

This point is proposed to be deleted. EASA proposes that its contents be moved to a new AMC5 related to SPO.OP.110(c) (to be published with the related ED Decision) and which will ensure consistency with Part-NCC and Part-CAT.

Explanatory note to SPO.OP.112

The amendment affects aeroplanes only and aligns the wording with that of Part-NCC.

Explanatory note to SPO.OP.180 and SPO.OP.210

The intent is full alignment with Part-NCC.

2.6.4. Discussions that have not led to a proposed amendment**Implementation of unproven technologies and procedures**

The regulatory material developed for aeroplanes with CAT II operating minima, and with operational credit to CAT I operating minima, should only be valid for helicopters in a runway environment for the following reasons:

Technologies that are eligible to operational credits, such as EVSs, SVSs, CVSs but also HUDs and head-mounted displays (HMDs) have been tested in a runway environment. The underlying technology is not yet proven to be able to address the numerous issues related to a flight to a FATO in an uncontrolled obstacle environment.

Certification specifications for helicopter flight tests assume the helicopter is flown visually during the final approach:

All profiles required to be test-flown to derive the performance data are flown under VMC. CAT A procedures, which are required under CAT for IFR, are typically achieved through test flights where a visual approach is established from 500 ft above aerodrome elevation (AAE).

Typical profiles included in the CAT A supplement of the AFMs are:

- clear airfield procedure,
- short field procedure,
- vertical take-off and landing (VTOL) procedure,
- surface level heliport procedure,
- elevated heliport procedure,
- confined area procedure.

Except for the 'clear airfield procedure', a typical TDP/LDP is 100–120 ft with a speed of around 30 kt and a rate of descent at or below 400 ft/min. Such a procedure needs to be considered in the LVO discussion.

Some helicopter types have specific 'confined area procedures' defined in their flight manuals, which are generally the most restrictive. TDP/LDP is typically higher than 200 ft AAE, and such procedures would therefore never qualify for an approval under Part-SPA.LVO, and will therefore not be considered in the LVO discussion.

The majority of helicopters have a V_{mini} that is around 60–70 kt. However, recently some types have been certified with a V_{mini} of 30–40 kt provided that the 4-axis autopilot is used in coupled mode.

IFR certification does not cover Category A procedures:

Furthermore, from test flight practices, as can be read above, CAT A certification is done under VMC. Several helicopters that have been certified recently would allow clear airfield procedures with 'running' landing and 'running' take-off procedures to be flight tested in IMC. Such procedures avoid high pitch changes associated with the acceleration/deceleration typical of the 'conventional' take-off and landing manoeuvres (i.e. a high nose-down attitude to accelerate and a high nose-up to decelerate). As a positive side effect, these 'running' procedures offer more passenger comfort. Such 'running' procedures have the added benefit that the approach to landing can be done completely at the V_{mini} speeds, and would allow an auto-land possibility on runways, similar to aeroplane operations, as the runway length can be used to decelerate.

Operations other than to a runway (i.e. hospital rooftops or (offshore) helidecks) would not allow such a 'running' procedure, as the dimensions of the FATO are too small.



The final proposal introduces no specific changes for helicopters. Helicopter operators can request CAT II and CAT I with operational credit approvals under the same conditions as aeroplane operators. These conditions necessarily include the use of a runway.

In case helicopter or avionics manufacturers demonstrate that new technologies can justify operational credits in a non-runway environment in the near future:

- operators may propose AltMoC to implement them under a specific approval;
- EASA may issue new AMC.

It is foreseen that the flexibility provisions in Article 71 of the Basic Regulation will not be needed because the implementing rules will not be required to be amended.

Deletion of the requirement for a specific approval when flying RNP 0.3 with helicopters

The deletion of the approvals has been considered for the following reasons:

- There is no specific AMC for helicopter approvals; RNP 0.3 are standard PBN operations. The ICAO PBN Manual does not describe specific requirements for RNP 0.3. So, there is nothing much to approve.
- The safety-critical final approach segment already does not require an approval under SPA.PBN.100 if flown under RNP 0.3. The other elements of the approach do require an approval although they are less critical in terms of safety, as illustrated in the current GM1 SPA.PBN.100.
- A specific approval requires that the operator demonstrates compliance with SPA.PBN to the authority ahead of implementation. It has been discussed whether this process might be too burdensome and may unnecessarily slow down the adoption of helicopter IFR.

However, the policy for specific PBN approvals remains unchanged: the industry should gain sufficient experience with a given kind of operations under an approval, with additional oversight of the NAAs, before the requirement for the approval is removed. The consulted NAAs are very keen on this approach.

Moreover, the approval process addresses only the way operators and authorities work with each other, and does not affect the AWO regulations or the ability for a helicopter operator to fly RNP 0.3 routes, approaches and departures under IFR.

Therefore, this Opinion does not propose the deletion of the specific approval for RNP 0.3 with helicopters.

In the future, when helicopter RNP 0.3 operational experience is sufficient, the specific approval for RNP 0.3 with helicopters could then be deleted through a 'regular update' of the AIR OPS Regulation.

RNP 0.3 with helicopters under SPA.PBN

RNP 0.3 helicopter LLR networks have a number of specificities that are worth discussing.

- There may be obstacles or control zones on each side of the route.
- The route may be within radar coverage or not.
- The route may be bidirectional, may allow a single altitude or flight level, or both.



- In case the route is not in controlled airspace, nor in a radio mandatory zone, nor in a transponder mandatory zone, or in none of the above, the density of local traffic should be considered.
- Unforeseen weather conditions may be encountered during the flight:
 - helicopters are seldom certified for icing conditions;
 - not all helicopters operated on-shore are equipped with a weather radar.
- Fewer options may be available to change track or altitude on a helicopter LLR, compared to a conventional route.

However, the specificities and associated risks are local and specific to a given route and not all are directly related to the navigation performance. They can only be covered by a risk assessment by the operator or by the designated ATS provider.

Helicopter PinS approaches also have specific risks, but these are also not related to the navigation performance.

- IFR with helicopters is considered much safer than VFR, especially in marginal weather conditions. There is however one element of risk that may appear to be greater under IFR, more specifically on some PinS approaches.
 - A risk of mid-air collision exists when cloud-breaking into VMC, especially when departing out of IMC towards (marginal) VMC at a destination located in Class F-G airspace. This risk should be taken into account as part of the risk assessment of the operator and that of the local ATS provider. Electronic conspicuity devices or a change in the class of airspace may be necessary depending on the density of traffic, especially at places where aircraft tend to converge such as aerodromes or conventional navigation aids. Heliports and operating sites may be affected to a lesser extent, and there is likely to be less VFR traffic when the weather conditions justify flying IFR. Also, if pilots fly VFR in marginal VMC, there is a risk that they will be flying head-down a little too much for the whole duration of the flight and not only during cloud-breaking.
- Overall, the risk of mid-air collision may not be significantly affected by the option to fly under IFR and is worth taking to avoid other greater risks.

Focusing on desirable enhancements to the see-and-avoid principle, the following can be added:

Helicopters operated in on-shore environment typically have no ACAS II installed. The vast majority of electronic devices installed to enhance the see-and-avoid capability of the pilot have been certified under the 'no credit, no hazard' category. They have been demonstrated to create no new risk to the helicopter. They cannot be used to meet operational or airspace requirements.

If operators that most need to improve the see-and-avoid capability already have installed such devices on a voluntary basis, the impact of mandatory installation electronic enhancements might be:

- for the operators that most need them: high cost—low benefit (the benefit would be limited to the greater capability of the new device);



- for the other operators: high cost–low benefit (as these operators do not need an electronic enhancement so much).

This Opinion does not propose to mandate such piece of equipment in the Air OPS Regulation. The costs and benefits are likely to be better assessed under the risk assessments of the operator and the designated ATS provider.

When considering only the navigation performance perspective, RNP 0.3 with helicopters is sufficiently covered by the ICAO PBN Manual, which is already referred to in SPA.PBN. Operator risk assessments are already required under Part-ORO of the Air OPS Regulation.

The Opinion proposes no change to SPA.PBN for helicopters.

Navigation aids at closed aerodromes

Helicopter operators may find it useful to be able to use conventional navigation aids at closed aerodromes for the purpose of planning IFR flights. This could include aerodromes outside their normal opening hours at night and at times when the aerodrome is closed by a notice to airmen (NOTAM) in order to:

- fly a cloud-breaking procedure and continue the flight to another destination under VFR;
- use the aerodrome as an alternate.

Helicopter operators should discuss with the aerodrome operators and ANS providers locally to see whether the services they need can be made available, and to ensure that they receive clear information on what they can and cannot do.

The Opinion proposes no change regarding the use of navigation aids at closed aerodromes.

Airborne radar approaches to the coastline

Airborne radar approaches to the coastline (ARA-L) are worth considering because:

- The airborne weather radar is a proven technology which is certified for its use as an approach aid, and which has supported helicopter offshore operations for decades.
- The extension of its use to fly on-shore overwater operations to a coastline is a good idea provided that all the risks are identified and managed.
- Offshore operators already use radar approaches to cloud-break over the sea and then join a coastal aerodrome under VFR, but they only do so at a sufficient distance from the coastline if VFR minima are met.
- The distance of the MAPt to the coastline can be reduced, and the concept turned into an on-shore IFR concept, if sufficient precautionary measures are taken.
- This concept might be useful if no PinS approaches are available in the vicinity of a coastal destination.

It has been decided not to include the proposal published in NPA 2019-09 into this Opinion, because of the following:

- Search and rescue (SAR), which is likely to be the kind of operations that would benefit the most from the ARA-L, is outside of the scope of the Air OPS regulation.



- The main usage outside SAR is likely to be emergency cloud-breaking procedures in the context of HEMS under IFR. The Air OPS Regulation does not set criteria for emergency procedures.
- The second next usage outside SAR has appeared to be a cloud-breaking procedure at sea followed by a VFR segment of flight to a destination inland. This is possible within the current regulatory framework, provided VFR operating minima are met.
- In order to implement the ARA-L in normal CAT, SPO or NCC operations, the operator would need to put mitigation measures to reduce the risk, which might far exceed the investment necessary to design a PinS approach to coastal destinations.
- For CAT, the operator could request the use of an ARA-L to its authority and to the competent authority of the locations of the approach without an amendment to the rules, under the current CAT.OP.MPA.125(c). SPO and NCC would not require an approval.

EASA finally decided not to include it in the Opinion as a proposed amendment, because of the following:

- The ARA-L has not been demonstrated to an authority or to EASA in a simulator session. There might be risks or hazards that have not yet been identified and that remain to be considered.
- Instead, a single simulator session attempted to demonstrate that it was possible to improvise the design of an ARA-L during an IFR cruise. Not all of the mitigations proposed might be necessary, since the design of the ARA-L shall have to take place as part of the risk assessment prior to the flight (and in CAT, prior to the approval).

The following draft CAT.OP.MPA.125(d) is to be considered, customised and improved as necessary by operators and NAAs wishing to implement the ARA-L concept, whether under a CAT.OP.MPA.125(c) approval or as part of a risk assessment under Part-NCC or Part-SPO:

CAT.OP.MPA.125 Instrument departure and approach procedures

- (d) By way of derogation from (a), the operator may use helicopter departure and approach procedures other than those referred to in (a) provided that the operator meets all of the following conditions:
- (1) The procedure design methodology, aircraft equipment, operating procedures and crew training programmes have been approved by the competent authority, following a risk assessment by the operator.
 - (2) The instrument segments of the procedure take place over water and the procedure is not used for offshore operations.
 - (3) The operator defines its methodology, based on its risk assessment.
 - (4) The operator uses such approach procedures only if procedures established by the State do not meet the operational needs.
 - (5) Before such operations take place in another Member State, the operator shall obtain an endorsement from the competent authority of that State.



AMC1 CAT.OP.MPA.125(d) Instrument departure and approach procedures**AIRBORNE RADAR APPROACH TO THE COASTLINE (ARA-L) — HELICOPTERS**

- (a) An ARA-L should only be flown if the helicopter is equipped with the following:
- (1) a weather radar or other piece of equipment that is capable of providing navigation and real-time obstacle environment information for obstacle clearance;
 - (2) a moving map system that includes a clear and correct image of the coastal terrain. This system or navigation display should be able to depict the desired track inbound the ARA-L landing location and be used for increased situational awareness. The same system should include obstacle information data of the area close to the coastline;
 - (3) separate displays for the weather radar image and the moving map, or a single display capable of showing both superimposed images;
 - (4) for single-pilot operations, a 4-axis autopilot; and for multi-pilot operations, a 3-axis or 4 axis autopilot; and
 - (5) GNSS equipment for tracking guidance and cross-checking of the weather radar display.
- (b) ARA-L design
- (1) The minimum descent height (MDH) should not be lower than the greater of:
 - (i) 100 ft above the elevation of the landing location;
 - (ii) 100 ft above any obstacle between the coastline and the landing location;
 - (iv) 300 ft by day; or
 - (v) 400 ft by night.
 - (2) If a 3-axis autopilot is used, an increment of 100 ft should be applied to the MDH.
 - (3) Minimum descent altitude (MDA) may only be used if the radio altimeter is unserviceable. The MDA should be a minimum of the MDH + 200 ft, and be based on a calibrated barometer at destination or on the lowest forecast barometric pressure adjusted to sea level (QNH) for the region.
 - (4) The decision range should be at least 1 NM from the closest land at a ground speed of maximum 80 kt.
 - (5) The approach track should be chosen to enable the greatest awareness of terrain features and to reduce the tailwind component. For single-pilot operations without a trained technical crew member in the front seat, the coastline should appear on the pilot's side. The approach track should be 30 to 90 degrees to the coastline. The lateral clearance from any obstacle up to the MAPt should be at least 1 NM.
 - (6) The maximum tailwind component in the visual segment should be 10 kt.
 - (7) The MAPt should be defined as the distance from the selected GNSS waypoint or the distance to the closest radar target image of the same waypoint, whichever comes first.
 - (8) The operator should determine an obstacle-free sector using available maps, charts or satellite data. An inbound track leading to the MAPt within the obstacle free sector



should be exclusively over water and should not include fixed obstacles within the navigation performance. The missed approach procedure at the MAPt following any inbound track within the obstacle free sector should meet the criteria defined in (9).

- (9) The missed approach procedure should be exclusively over water and should not include fixed obstacles within the navigation performance. It should include a turn away from land. A bank angle of no more than 15 degrees and a rate of turn no greater than 3 deg/sec should be used to ensure an obstacle separation compatible with the navigation performance of the GNSS, taking into account the maximum acceptable winds.
- (c) Operating procedure — flight preparation
- (1) The available inbound tracks and missed approach procedures should be prepared within the pre-identified obstacle-free sector. The forecast wind at destination should ensure a tailwind component compatible with (c)(6) on the visual segment starting at the MAPt, for at least one available inbound track.
 - (2) Rain should be considered, because heavy rain may clutter the radar image and limit the ability to fly the ARA-L.
 - (3) If a destination alternate is selected, a non-radar-based approach should be available at the alternate.
 - (4) The flight crew should take into account the latest relevant obstacle information including ships and rig moves.
- (d) Operating procedure — approach
- (1) A procedure set-up should be done prior to the start of the procedure. This should include the selection of the destination and MAPt in the FMS/NAV system, using predefined points. Track guidance towards this position should be selected on the navigation display. The airborne radar image should be available.
 - (2) Before the approach, the pilot should assess the wind using available information and should initiate the approach only if the ground speed can be maintained within the defined limits.
 - (3) Display of track information could be either magnetic or true; however, the same track should be displayed on the GNSS display and radar image.
 - (4) During the instrument segments of the ARA-L, the available higher modes of automation should be used.
 - (5) Before commencing the final approach, the commander should ensure that a clear path exists on the radar screen for the final and missed approach segments. The lateral clearance defined in (c) should be maintained during the flight.
 - (6) Prior to continuing visually, the pilot should be in sight of the destination.
- (e) The initial training and checking of the flight crew and any involved technical crew member for ARA-L should be conducted either as part of the operator's conversion course or as a separate equipment and procedure training, and should include all of the following:
- (1) ground training, including:



- (i) knowledge of the structure of the ARA-L;
 - (ii) knowledge of the airborne radar specifications, limitations, modes, and usage;
 - (iii) knowledge of the area navigation system;
- (2) aircraft/FSTD training to proficiency, including all of the following:
- (i) ARA-L to the maximum crosswinds and to the maximum tailwinds envisaged in the operation;
 - (ii) ARA-L to the lowest minima, followed by a go-around and by a landing;
 - (iii) ARA-L in the pilot-monitoring, pilot-flying and single-pilot functions, as relevant to the kind of operations;
- (3) line flying under supervision;
- (4) a line check.
- (f) The recurrent training and checking programme of the flight crew and any involved technical crew member should include at least one ARA-L per 6 months in the pilot-monitoring, pilot-flying, single-pilot and technical crew member functions as relevant to the operations. OSAPs should be part of the annual aircraft/FSTD training, the line check or the operator proficiency check. If OSAPs are trained and not checked, then the flight crew member should be trained to proficiency to fly the OSAPs.
- (g) A pilot should only operate an ARA-L with passengers as commander or co-pilot, when they have carried out in the preceding 90 days at least 3 ARA-L approaches and landings in a helicopter of the same type or a full flight simulator (FFS) representing that type.
- (h) The commander should undergo aerodrome or operating site familiarisation training under ORO.FC.105, prior to ARA-L operations. The training should meet one of the following conditions:
- (1) The trainer should have experience of flying the ARA-L procedure to the aerodrome or operating site;
 - (2) the trainer should be the procedure designer and the trainee should have completed the training defined in (f); or
 - (3) the training takes place in the aircraft /FSTD.
- (i) The commander should not commence a flight based on an ARA-L unless the procedure has been designed in accordance with (b), the flight preparation criteria defined in (c) are met, and the crew meets the training, checking and recent experience requirements defined in (e) to (h) above.
- (j) Operational evaluation phase
- The operator should initially start implementing ARA-L approaches with at least 2-NM decision range until the operator has flown 30 ARA-L approaches.

GM1 CAT.OP.MPA.125(d) Airborne radar approach to location on land (ARA-L)

GENERAL

(a) General

- (1) The helicopter ARA-L procedure may have as many as five separate segments: the arrival, initial, intermediate, final approach, and missed approach segment. The individual approach segments can begin and end at designated fixes. However, the segments of an ARA-L may often begin at specified points where no fixes are available.
- (2) The fixes, or points, are named to coincide with the beginning of the associated segment. For example, the intermediate segment begins at the intermediate fix (IF) and ends at the final approach fix (FAF). Where a fix is not available or not appropriate, the segments begin and end at specified points; for example, at the intermediate point (IP) and final approach point (FAP). The order in which the segments are discussed in this GM is the order in which the pilot would fly them in a complete procedure: that is, from the arrival through the initial and intermediate to the final approach and, if necessary, to the missed approach.
- (3) Only those segments that are required by local conditions prevailing at the time of the approach need to be included in a procedure. In constructing the procedure, the final approach track, which should be oriented so as to be substantially into the wind, should be identified first as it is the least flexible and most critical of all the segments. When the origin and the orientation of the final approach have been determined, the other necessary segments should be integrated with it to produce an orderly manoeuvring pattern that does not generate an unacceptably high workload for the flight crew.
- (4) The GNSS/area navigation system should be used to enhance the safety of the ARA-L. This is achieved by using the GNSS/area navigation system to navigate the helicopter onto, and maintain, the final approach track, and by using the GNSS range and bearing information to navigate to the position of the landing location on the weather radar display.
- (5) Examples of ARA-L procedures, as well as vertical profile and missed approach procedures, are contained in Figures 1 and 2 below.

(b) Obstacle environment

- (1) Each segment of the ARA-L is located in an overwater area that has a flat surface at sea level. However, due to the passage of large vessels which are not required to notify their presence, the exact obstacle environment cannot be determined. As the largest vessels and structures are known to reach elevations that exceed 500 ft above mean sea level (AMSL), the uncontrolled offshore obstacle environment at the arrival, initial and intermediate approach segments can reasonably be assumed to be capable of reaching to at least 500 ft AMSL. Nevertheless, in the case of the final approach and missed approach segments, specific areas are involved within which no radar returns are allowed. In these areas, the height of wave crests, and the possibility that small obstacles may be present that are not visible on the radar, result in an uncontrolled surface environment that extends to an elevation of 50 ft AMSL.



- (2) Information about movable obstacles should be retrieved from a vessel traffic service (VTS)/automatic identification system (AIS). VTS is a marine traffic monitoring system established by harbour or port authorities, similar to air traffic control for aircraft based on satellite. The AIS is an automatic tracking system that uses transponders on ships and is used by VTS.

Under normal circumstances, the relationship between the approach procedure and the obstacle environment is governed by the concept that vertical separation is very easy to apply during the arrival, initial and intermediate segments, while horizontal separation, which is much more difficult to guarantee in an uncontrolled environment, is applied only in the final and missed approach segments.

- (3) As the ARA-L takes place near the coastline, terrain information is useful for increased situational awareness. A moving map, including the moving map of a helicopter terrain awareness and warning system (HTAWS), may be used to provide such increased situational awareness.

(c) Arrival segment

The arrival segment commences at the last en-route navigation fix, where the aircraft leaves the helicopter route, and it ends either at the initial approach fix (IAF) or, if no course reversal or similar manoeuvre is required, it ends at the IF. Standard 1 000-ft en-route obstacle clearance criteria should be applied to the arrival segment.

(d) Initial approach segment

The initial approach segment is only required if the intermediate approach track cannot be joined directly. Most approaches will be flown direct to a point close to the IF, and then on to the final approach track, using GNSS/area navigation guidance. The segment commences at the IAF, and on completion of the manoeuvre, it ends at the IP. The minimum obstacle clearance (MOC) assigned to the initial approach segment is 1 000 ft.

(e) Intermediate approach segment

The intermediate approach segment commences at the IP, or in the case of straight-in approaches, where there is no initial approach segment, it commences at the IF. The segment ends at the FAP and should not be less than 2 NM in length. The purpose of the intermediate segment is to align the helicopter with the final approach track and prepare it for the final approach. During the intermediate segment, the helicopter should be lined up with the final approach track, the speed should be stabilised, the destination should be identified on the radar, and the final approach and missed approach areas should be identified and verified to be clear of radar returns. The MOC assigned to the intermediate segment is 500 ft.

(f) Final approach segment

- (1) The final approach track should be selected with an angle of less than 90° to reduce the closure rate to land. For single-pilot operations, the land should be oriented to the same side as the commander's seat.
- (2) The final approach segment commences at the FAP and ends at the missed approach point (MAPt). The FAP is located 4 NM from the landing location. The final approach area, which should be identified on the radar, takes the form of a corridor between the FAP



and the radar return of the destination. This corridor should not be less than 2-NM wide so that the projected track of the helicopter does not pass closer than 1 NM to the obstacles lying outside the area.

- (3) On passing the FAP, the helicopter will descend below the intermediate approach altitude and follow a descent angle which should not be steeper than 3.7 degrees. At this stage, vertical separation from the offshore obstacle environment will be lost. Descent from 1 000 to 300 ft AMSL at a constant 3.7-degree angle will involve a horizontal distance of 2 NM.
- (4) During the final approach, tracking should be maintained by coupling to the GNSS final approach track, and the compensation for drift is then automatically taken care of. The approach ends at the 1-NM distance to the selected landing location and is identified by either the GNSS distance or the radar image distance, whichever comes first.

(g) Missed approach segment

- (1) The missed approach segment commences at the MAPt at least 1 NM from the coast and ends when the helicopter reaches the minimum en-route altitude. The missed approach manoeuvre is a 'turning missed approach'.
- (2) At MAPt 1NM before waypoint, a turn away out on the reciprocal inbound course will be initiated. Final approach track will be selected at an offset angle, preferably allowing for missed approach away from land on the 'sea side' and into the wind. This geometry will also mean that very early into the turn, distance to land will build up. (In addition, the generous climb gradient — even with engine out — will allow for considerable height gain during turn.)

(i) Radar equipment

During the ARA procedure, colour-mapping radar equipment with a 120° sector scan and a 2.5-NM range scale selected may result in dynamic errors of the following order:

- (1) bearing/tracking error of $\pm 4.5^\circ$ with 95 % accuracy;
- (2) mean ranging error of 250 m; and
- (3) random ranging error of ± 250 m with 95 % accuracy.



Figure 1: Horizontal profile with a final approach track of 360°

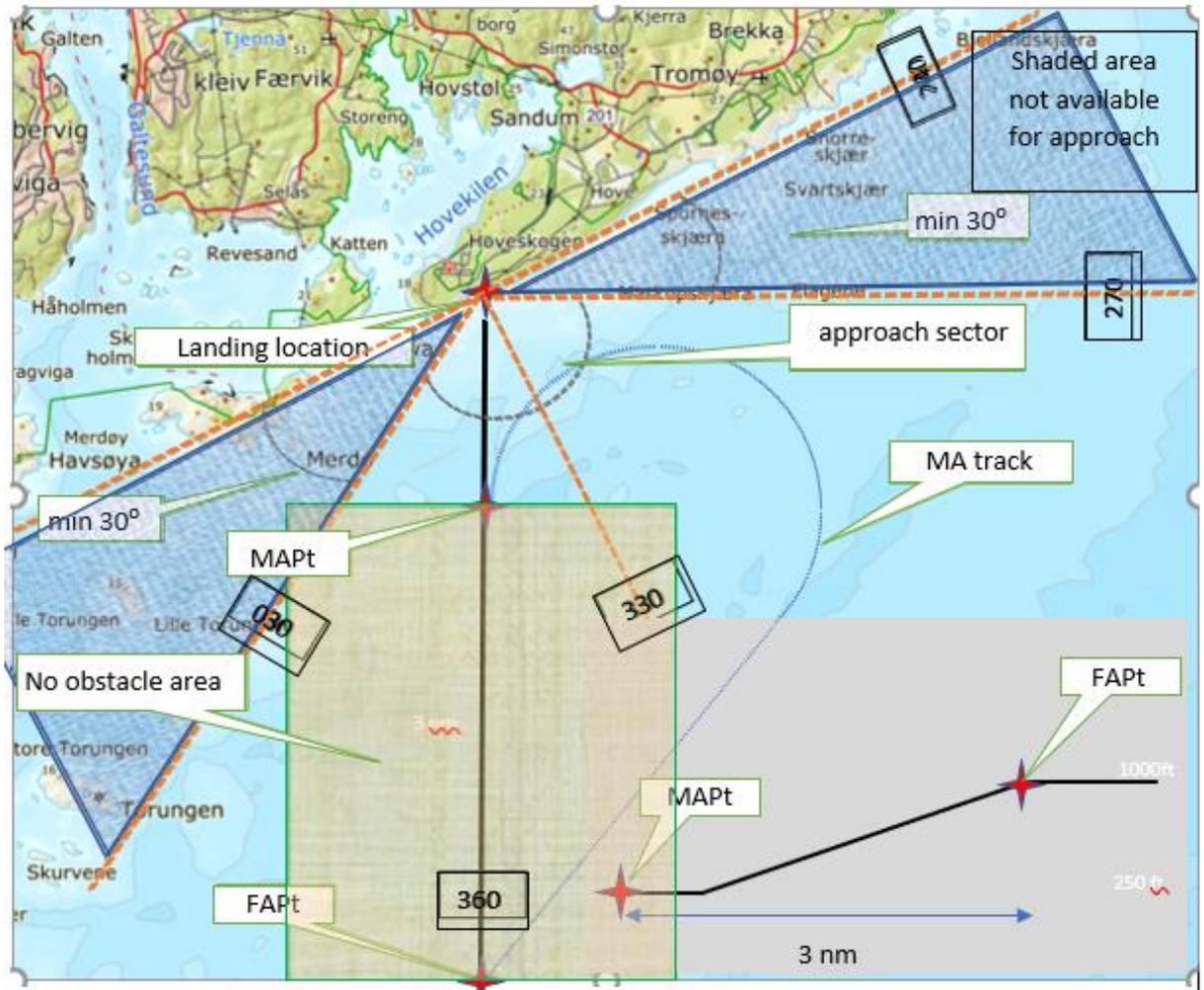


Figure 2: Vertical profile

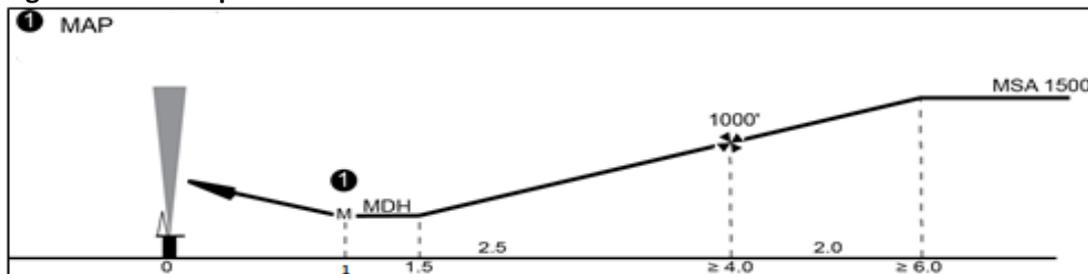


Table 1: Available approach paths — based on examples in Figures 1 and 2

Single-pilot OPS (pilot on right-hand seat)	270° to 330°
Multi-pilot OPS	270° to 010° [010 to 030° not available due to obstacle: Thorungen Island within less than 1 NM]

Table 2: Maximum wind to comply with tailwind limitations — based on examples in Figures 1 and 2 in single-pilot operations — flight preparation purposes

Origin of wind	200°	180°	160°	120°	090°	060°
Relative wind direction	Left 070	Left 090	Left 110	Right 150	Right 120	Right 090
Max strength	n/a	n/a	30 kt	12 kt	20 kt	n/a
Approach strategy	270	270	270	330	330	330

Note: The operator may also use Table 2 to define the maximum wind strength to comply with any crosswind limitations.

2.7. AWOs — how we want to achieve it — non-commercial non-complex operations with aeroplanes and helicopters

Explanatory note to NCO.OP.101 Altimeter check and settings (as proposed in NPA 2020-02)

As currently neither the Air OPS Regulation nor the SERA Regulation covers the requirement to establish procedures for altimeter check and settings, which are essential for IFR operations, a new requirement, NCO.OP.101 'Altimeter check and settings,' has been introduced for this purpose. This rule is similar to the new one proposed for CAT in Section 2.5.1, but it is modified to fit the NCO operating environment.

Explanatory note to the deletion of NCO.OP.105

Although this was not presented in the NPA or at the workshop, the remainder of the changes mean that an 'isolated aerodrome' no longer has significance in Part-NCO, i.e. the fuel requirement is no longer more permissive than for any other aerodrome. See NCO.OP.140.

Explanatory note to NCO.OP.110 Aerodrome operating minima (as proposed in NPA 2020-02)

This rule reflects the proposed equivalent Part-CAT rule, but with some modifications to fit the NCO operating environment.

Explanatory note to NCO.OP.110 Aerodrome operating minima (following the consultation)

The rule reflects the updated Part-CAT rule in this Opinion, with some additional modifications to fit the NCO operating environment.

Explanatory note to NCO.OP.111 (as proposed in NPA 2020-02)

Changes in wording and terminology have been made for consistency with the changes in the other Annexes to the Air OPS Regulation. EASA considered the introduction of a minimum DH/MDH based on the runway type, but considered this to be unnecessarily complex for NCO, particularly since for NCO the DH/MDH is introduced in the implementing rule rather than in AMC.

The table is extended to helicopters because the system minima are not aircraft-category-related. Helicopter PinS approaches are a separate kind of approach in PANS-OPS so they need to be introduced in the list of approach types.

Explanatory note to NCO.OP.111 (following the consultation)

GNSS/SBAS (LP) has been added for consistency with other Parts.

Explanatory note to NCO.OP.112 (unchanged since NPA 2020-02)

The terminology used has been changed to ‘circling approach operation’ throughout the Regulation — the term has been also introduced in Annex I. A minor change has been made to the visibility requirement for CAT B aeroplanes, for consistency with VFR minima in Part-SERA. The term ‘flight visibility’ has been used for consistency with Part-SERA.

Explanatory note to NCO.OP.140 and NCO.OP.141 (as proposed in NPA 2020-02)

The criteria for situations in which a destination alternate is not required have been made more precise. This also allows a convergence with the concept of an isolated aerodrome: the point-of-no-return fuel planning procedure for an isolated aerodrome is overly complicated for Part-NCO, and offers little operational advantage over the no-alternate-required case.

Explanatory note to NCO.OP.140 and NCO.OP.141 (following the consultation)

After careful consideration of comments, EASA has increased the visibility requirement for a no-alternate-required situation to 5 000 m (3 000 m for helicopters), to reduce the probability of a weather deterioration leading to no safe landing options. If a flight is to commence with only one safe landing option, the conditions at the destination should be good enough to make a safe landing there almost certain.

Explanatory note to NCO.OP.142 (as proposed in NPA 2020-02 in GM1 NCO.OP.142)

In the NPA, proposals were made via GM for an alleviation to allow helicopters to select both destination and destination alternates with only GNSS approach procedures at both.

Explanatory note to NCO.OP.142 (following the consultation)

Comments were received suggesting that similar provisions should be made for aeroplanes. EASA therefore proposes a change to the IR, supported by AMC setting out the conditions in which both aeroplanes and helicopters may select both destination and destination alternate with only GNSS approach procedures at both.

Explanatory note to NCO.OP.143 and NCO.OP.144 (as proposed in NPA 2020-02)

Under the current Part-NCO rules (and Part-NCC), a flight can depart towards its destination, where that destination aerodrome is below the aerodrome operating minima and a forecast for a single alternate aerodrome is at or just above the aerodrome operating minima. A minor deterioration in the weather could leave the flight with no safe landing options. While no accidents or incidents appear



to have been caused by applying the permissive rules in Part-NCO, it may simply be that pilots already exercise sensible risk management and add safety margins to their alternate weather planning. EASA proposed introducing planning minima for Part-NCO that provide for a margin between the conditions required by the rules and the conditions needed for the approach to be completed safely.

Explanatory note to NCO.OP.143 and NCO.OP.144 (following the consultation)

In response to many comments, the planning minima have been revised to reflect the facilities available at the destination alternate. The distinction between day and night, which was proposed to match requirements with VFR minima, was considered unhelpful and has been removed from NCC.OP.143. The distinction between day and night, as well as the lower values of visibility, remain for helicopters.

Explanatory note to NCO.OP.175 (unchanged since NPA 2020-02)

Changes have been made for consistency with changes to the other Annexes to the Air OPS Regulation.

Explanatory note to NCO.OP.205 and NCO.OP.206 (unchanged since NPA 2020-02)

Changes have been made for consistency with changes to the other Annexes to the Air OPS Regulation.

Explanatory note to NCO.OP.210 (unchanged since NPA 2020-02)

NCO.OP.110(a) requires that RVR and/or visibility minima for instrument approach operations are established to mitigate the risk and to achieve an acceptable level of safety appropriate to operations under Part-NCO. The methodology is proposed in the AMC related to NCO.OP.110 (which are set in order to make it unlikely that a missed approach from DH/MDH will be required). As per the implementing rule, use of a minimum RVR of less than 550 m requires the operator to hold an approval according to SPA.LVO.110.

2.8. AWOs — how we want to achieve it — aerodromes

The following amendments have been introduced in the ADR Regulation:

- In Annex I:
 - the definition of ‘decision altitude or decision height’ has been added;
 - the definition of ‘instrument runway’ has been revised to merge CAT IIIA, IIIB and III C into CAT III in accordance with the latest amendment of ICAO Annex 14;
 - the definitions of ‘LVOs’ has been added and the definitions of ‘LVPs’ and ‘LVTO’ have been revised in order to align with the Air OPS Regulation;
 - the definitions of ‘lower than Standard CAT I’ and ‘other than Standard CAT II’ have been deleted because they are no longer used in the Regulation;
 - the definition of ‘operation with operational credits’ has been added to ensure consistency with the Air OPS regulation; and
 - the definition of ‘type B approach operation’ has been revised to merge CAT IIIA, IIIB and IIIC into CAT III.

- In Annex III, in point ADR.OR.C.005, the obligation of the aerodrome operator to provide and maintain visual and non-visual aids, MET equipment as well as any other equipment required to support AWO is clarified.
- In Annex IV:
 - in Subpart ADR.OPS.A, the requirement for the aerodrome operator to provide information on the aerodrome lighting system, to ensure the publication of aerodrome charts in the AIP, and to provide information on radio navigation and landing aids as well as information on visual segment surface penetration have been added;
 - in point ADR.OPS.B.030, the requirements on SMGCS have been revised in order to ensure that the operational environment is taken into account, the objectives of the system are clearly defined and that SMGCS procedures are developed in coordination with the air traffic services provider; and
 - point ADR.OPS.B.045 has been revised to define clearly when LVPs are required, to ensure that LVPs are coordinated with the air traffic services provider, to ensure that any changes to aerodrome equipment and infrastructure that they have an impact on LVPs is communicated to the aeronautical information services (AIS) provider and air traffic services (ATS) provider, to ensure that information on LVPs at the aerodrome is published in the AIP and finally to ensure that LVPs and any changes thereto require the prior approval of the competent authority.

2.9. What are the expected benefits and drawbacks of the proposals

Regulatory impact assessment

In regard to the implementing rules, the regulatory impact assessment (RIA) for all types of operations can be found in NPAs 2018-06, 2019-09 and 2020-02. This assessment has been reviewed. It is still valid and up to date

For information, refer to the RIA included in each of the above-mentioned NPAs.

CAT and NCC operations with aeroplanes

See NPA 2018-06.

Helicopter operations (Part-CAT, Part-SPA, Part-NCC) and specialised operations (Part-SPO)

See NPA 2019-09.

Non-commercial non-complex operations with aeroplanes and helicopters (Part-NCO)

See NPA 2020-02.

ANSPs and aerodrome operators

See NPA 2018-06 (A).

2.10. How we monitor and evaluate the rules

Monitoring is a continuous and systematic process of data collection and analysis with regard to the implementation/application of a rule/activity. It generates factual information for future possible



evaluations and impact assessments and helps to identify actual implementation issues. EASA proposes the following monitoring plan:

2.10.1. Air operations

What to monitor	How to monitor	Who should monitor	How often to monitor
Assessment on the level of implementation by operators in EASA MSs of: <ul style="list-style-type: none"> — Operational credits for CAT and NCC aeroplanes (e.g. number of operators approved) — IFR flights that might otherwise have been flown under VFR for Helicopters/SPO — NCO flying IFR that might otherwise have been flown under VFR — The use of appropriate AWOs visual and non-visual aids in ADR operators 	Survey to operators Specific approvals granted by NAAs	EASA/NAAs	3 years after the rules are in place
Number and trend in occurrences in IFR for: <ul style="list-style-type: none"> — CAT and NCC aeroplanes occurrences in LVOs — aerodromes during LVOs (LVPs) — Operational credits for CAT and NCC aeroplanes other than those in LVOs — Helicopters and SPO — NCO 	Reports in ECCAIRS and information collected at Member State level	EASA/NAAs	Every 2 years
Number and trend in occurrences in VFR under VFR in marginal VMC: <ul style="list-style-type: none"> — Helicopters/SPO — NCO 	Reports in ECCAIRS and information collected at Member State level	EASA/NAAs	Every 2 years
Assessment of AWO-related technologies	Survey to operators and/or manufacturers (aircraft or equipment)	EASA	3 years after the rules are in place

2.10.2. ANSPs and aerodrome operators

What to monitor	How to monitor	Who should monitor	How often to monitor
Number of runway incursions at an aerodrome during LVOs	Reports in ECCAIRS and information collected at Member State level	EASA and NAAs	Every 2 years



Number of accidents/serious incidents at an aerodrome during LVOs	Reports in ECCAIRS and information collected at Member State level	EASA and NAAs	Every 2 years
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3. Flight crew training and checking — in summary — why and what

3.1. Flight crew training and checking — why we need to amend the rules — issue/rationale

The complexity of the aviation system is continuously increasing; also, new technologies are emerging rapidly on the aviation market. Therefore, it is of key importance for the aviation personnel to:

- (a) have the right competencies through the adaptation of training methods in order to cope with new challenges. This is one of the most significant systemic issues in EPAS; and
- (b) take advantage of the safety-enhancing opportunities presented by new technologies (see EPAS chapters on human factors and competence of personnel).

Elements of the current mandatory training and checking system are getting out of date and are no longer able to address the issues presented above. Also, they are not compatible with further developments regarding the voluntary application of evidence-based training (EBT) and competency-based training (CBT).

The main implementation issues that justify a full review of the provisions contained in ORO.FC are the following:

- Multi-pilot operations of single-pilot certified helicopters are regulated in such a restrictive way that the safety benefit of a second pilot seldom materialises.
- Operator proficiency checks (OPCs) for CAT operations with helicopters need to be reviewed. The same failure conditions are repeated every 6 months under CAT OPCs, which does not cater for the training and checking needs.
- Training and checking for NCC, SPO and CAT operations starting and ending at the same location with small aircraft need to be defined.
- Operations on more than one type or variant of helicopters: A helicopter pilot involved in CAT is restricted to three helicopter types. This has appeared to be too restrictive in some cases. Since the scope of the Air OPS Regulation was extended to NCC, SPO and NCO, the number of types flown by a CAT helicopter pilot includes the types flown under NCC, SPO and NCO. This was not intended and is also too restrictive.
- The description of the use of operator difference requirements (ODRs) tables needs to be amended.
- Crew resource management (CRM) issues including in-flight CRM assessment: In-flight CRM assessment on an aircraft where no jump seat is available is theoretically limited to the pre-flight and post-flight briefings. This should not be the case.
- Initial training under SPO when joining an operator is barely defined. Initial training for the purpose of learning a new specialised operation also needs to be defined.
- Recurrent SPO checking is too restrictive, by requiring one OPC per type or variant, per specialised operation, per year, per pilot.
- Regulatory material is needed to implement the Basic Regulation requirement (Annex V 'Essential requirements for air operations') that 'the aircraft operator must use only suitably



qualified and trained personnel and implement and maintain training and checking programmes for the crew members and other relevant personnel that are necessary to ensure the currency of their certificates, ratings and qualifications’.

The issue is restricted to the flight crew training and checking requirements of Part-ORO (except for the recent amendments introducing EBT) and to the related requirements of Part-FCL. It impacts all operators except those operating under NCO and those that will fully implement EBT.

3.1.1. Safety recommendations (SRs) — outcome of the EASA safety assessment

A number of SRs, amongst others, were pertinent to the broader review of ORO.FC, as set out in the Terms of Reference for RMT.0599¹⁵. The SRs were considered and for some of them EASA took the decision to take NO regulatory action. The list of SRs that have been considered can be found in NPA 2019-08.

3.1.2. Exemptions¹⁶ in accordance with Article 70 ‘Safeguard provisions’/Article 71 ‘Flexibility provisions’ and/or Article 76 ‘Agency measures’ of the Basic Regulation

A number of exemptions in accordance with Article 71 ‘Flexibility provisions’ of the Basic Regulation are pertinent to the scope of this RMT. The list of exemptions that have been considered can be found in NPA 2019-08.

3.2. Flight crew training and checking — what we want to achieve — objectives

The overall objectives of the EASA system are defined in Article 1 of the Basic Regulation. This proposal will contribute to the achievement of the overall objectives by addressing the issues outlined in Section 3.1.

The general objective of this RMT is to review the flight crew training requirements while taking into account the following high-level objectives:

- (a) maintain the high aviation safety level by:
 - (1) ensuring that the recurrent training and checking programmes are adequate to provide pilots with the necessary knowledge, skills and attitude to be competent in their job; and
 - (2) addressing the relevant SRs as defined Section 3.1.1; and
- (b) contribute to the development of efficient regulations to ensure that the level of safety can only be positively affected by:
 - (1) introducing performance-based regulation principles;

¹⁵ <https://www.easa.europa.eu/sites/default/files/dfu/ToR%20%26%20Concept%20Paper%20RMT.0599%20Issue%201.pdf>

¹⁶ Exemptions having an impact on the development of this RMT content and referring to:

- Article 70(1): Measures taken as an immediate reaction to a safety problem
- Article 71(1): Limited in scope and duration exemptions from substantive requirements laid down in the Basic Regulation and its implementing rules in the event of urgent unforeseeable affecting persons or urgent operational needs of those persons
- Article 71(3): Derogation from the rule(s) implementing the Basic Regulation where an equivalent level of protection to that attained by the application of the said rules can be achieved by other means
- Article 76(7): Individual flight time specifications schemes deviating from the applicable certification specifications which ensure compliance with essential requirements and, as appropriate, the related implementing rules

- (2) ensuring consistency of training-related requirements across the applicable parts of Annex III (Part-ORO) to the Air OPS Regulation and Annex I (Part-FCL) to the Aircrew Regulation; and
- (3) ensuring the correct balance between implementing rules and AMC & GM on the subject issue.

The specific objectives of the flight crew training part of this Opinion are the following:

- (a) Reduce the obstacles to multi-pilot operations of single-pilot certified helicopters.
- (b) Increase the safety of multi-pilot operations of single-pilot certified helicopters.
- (c) Increase safety by improving the efficiency of initial and recurrent training and checking schemes.
- (d) Increase safety and efficiency by improving the training and checking of flight crew members operating on more than one helicopter type or variant.
- (e) Increase safety by defining in-depth initial training and checking for specialised operations.
- (f) Increase efficiency, without compromising safety, as regards the amount of recurrent checking for specialised operations.
- (g) Increase safety and efficiency by improving harmonisation in NCC training and checking.
- (h) Increase safety and efficiency by streamlining the access to instrument ratings and instrument flight with helicopters.

3.3. Flight crew training and checking— how we want to achieve it — overview of the proposals

3.3.1. Update of the recency requirements for CAT operations referred to in FCL.060 and ORO.FC.100

3.3.2. CAT operations with a new aircraft type or under a new AOC

Explanatory note to ORO.FC.220 (as proposed in NPA 2019-08)

Domains affected: CAT A, CAT H

EASA has identified that national authorities were managing the new AOC or aircraft types through Article 14 of Regulation (EC) No 216/2008 with a validity period of less than 2 months or after the adoption of Regulation (EU) 2018/1139 with a validity period of less than 8 months. However, the implementation of such regulation was different from Member State to Member State. In order to provide a level playing field, EASA proposes a new provision based on the principle of new AOC or aircraft type and for a limited number of pilots. This provision could be supplemented with an AMC or GM.

Amended elements to ORO.FC.220 (following the NPA consultation)

Minor editorials have been introduced.



Explanatory note to ORO.FC.220(b) (following the NPA consultation)**Domains affected: CAT H**

The proposed changes extend the alleviations accessible to performance class B aeroplane to single-engined helicopters of the same group of type. The groups of types are as defined for the operator proficiency check, licence proficiency checks and for the maximum number of types that a pilot can fly. See 'Helicopter CAT and SPO operator proficiency check'.

A flight crew member should be able to fly on a helicopter type on which they are already trained and checked, and be trained on another helicopter of the same group of types.

3.3.3. Updates to 'provision of training and checking' including 'personnel providing training, checking and assessment' and 'use of FSTDs'**General**

Several implementation issues brought to the attention of EASA are addressed with this update.

Point ORO.FC.145 has been split in two parts following the publication of Commission Implementing Regulation (EU) 2020/2036¹⁷. The elements regarding personnel providing training, checking and assessments have been transferred to the new ORO.FC.146.

Provision of training and checking**Use of FSTDs****ORO.FC.145 (c) and (d) (as proposed in NPA 2019-08)****Domains affected: CAT A, CAT H, NCC A, NCC H, SPO A, SPO H**

The amendments to point (c) introduce a generic term 'training means'. This allows the authority to approve not only the FSTD but also other training means that help to deliver the training and checking programme such as computer-based training or future training means such as virtual reality, augmented reality, etc. The amendment also ensures alignment with the Aircrew Regulation in the use of 'other training devices (OTD)'.

"FCL.010 Definitions

'Other training devices' (OTD) means training aids other than flight simulators, flight training devices or flight and navigation procedures trainers which provide means for training where a complete flight deck environment is not necessary."

The amendment to point (d) has addressed the lack of clear requirements to accept/reject FSTDs used for the operator's training and checking programmes. This requirement is clear in the Aircrew Regulation with a set of rules to accept and qualify FSTDs. Therefore, the amendment provides the link between the Air OPS Regulation and the Aircrew Regulation.

¹⁷ Commission Implementing Regulation (EU) 2020/2036 of 9 December 2020 amending Regulation (EU) No 965/2012 as regards the requirements for flight crew competence and training methods and postponing dates of application of certain measures in the context of the COVID-19 pandemic (OJ L 416, 11.12.2020, p. 24) (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32020R2036&qid=1615289539901>).

Additional changes to ORO.FC.145 (c) and (d) (following the NPA consultation)

Minor editorial changes have been introduced. The wording ‘other training devices and tools’ is now used to align the terminology with Part-FCL.

The following is clarified: In the case of CAT operations, the use of ‘other training devices and tools’ shall be approved by the competent authority together with the training and checking programmes and syllabi; however, only FSTDs are required to be ‘qualified’ in accordance with CS-FSTD.

ORO.FC.145 (f) and (g)

These two new points have been added to clarify a standardisation issue that was especially relevant during the COVID19 pandemic. Some operators were not monitoring the validity periods of the pilots, and some of them were rostering pilots with expired validity periods. Furthermore, EASA decided to clarify the point in time from which the validity periods for all training, checking, and recency shall be counted. This requirement was spread out throughout the regulatory framework and with no coherence on the regulatory level used.

Qualification of personnel

The following questions were posed in the NPA:

Domain affected: CAT H**Question 3:**

Do we need to introduce a minimum pilot experience for the commander in charge of conducting line training under supervision?

If so: How much would be the minimum experience?

Total flight time in hours?

Flight time as PIC/commander in hours?

Number of OPCs performed at the operator?

For multi-pilot operations, flight time in multi-pilot operations?

For HEMS, night-vision imaging systems (NVIS) and offshore, flight time in the relevant kind of operations?

For helicopter hoist operations (HHO), number of lifting cycles? (human external cargo (HEC)/helicopter external sling load operations (HESLO) cycles included / not included)?

Question 4:

Do we need to introduce a minimum pilot experience for the commander in charge of conducting line checks?

If so: How much would be the minimum experience?

Total flight time in hours?

Flight time as PIC/commander in hours?

Number of OPCs performed at the operator?

For multi-pilot operations, flight time in multi-pilot operations?

For HEMS, NVIS and offshore, flight time in the relevant kind of operations?

For HHO, number of lifting cycles? (HEC/HESLO cycles included / not included)?

The input provided led to ‘no change’ regarding the experience requirements proposed in the NPA. The input collected was insufficient to induce changes regarding operations under specific approvals.

Explanatory note to ORO.FC.146 (proposed as ORO.FC.145 (a)(2) in NPA 2019-08)

Domains affected: CAT A*, CAT H*, SPO A, SPO H (* Only CAT A to A operations with small aircraft as defined in ORO.FC.005)

The ORO.FC.230(b)(5) alleviation not to require an examiner for OPCs is proposed to be extended to SPO and CAT A to A operations, because of the following:

- The former Annex III to Council Regulation (EEC) No 3922/1991 (EU OPS) Appendix 1 to OPS 1.005 already included the same alleviation for CAT A to A operations; and
- For proportionality reasons, it makes sense that an alleviation accessible to CAT operators is also accessible to others.
- For helicopter operations under CAT A to A, an instructor is required as in other helicopter CAT operations, as explained in ‘Operators’ proficiency checks for helicopter CAT operations’ below.
- For helicopter operations under SPO, several abnormal and emergency manoeuvres that require an instructor are already covered by the licence proficiency check. Depending on the specialised operations that the operator is involved in, additional sensitive emergency manoeuvre training and checking may take place on the aircraft every year, once in a 3-year cycle, or only during licence proficiency checks and training towards licence proficiency checks. It is expected that an instructor will always be needed for at least parts of the recurrent flight training. The minimum qualification of the PIC is therefore described in the AMC.
- The need to inform the authority of persons nominated has been extended to line checks in order to ensure compliance with the ICAO requirement for authorities to check all persons in charge of flight examinations.

Explanatory note to ORO.FC.146 (following the NPA consultation)

Domains affected: CAT A, CAT H, NCC A, NCC H, SPO A, SPO H

Elements related to ‘appropriately qualified personnel’ have been moved from ORO.FC.145 (a)(2) to the new ORO.FC.146, except for points (a)(2)(iv) and (v) as proposed in the NPA, which have been moved to the AMC to the new ORO.FC.146.

A sentence has been added to ensure that, in order to train and check specialised operations, a minimum experience of such operations is required even if the person is an instructor and examiner qualified under Part-FCL.

Operators’ proficiency checks for helicopter CAT operations

Domain affected: CAT H

Currently, the OPC is conducted by a suitably qualified commander trained in the assessment of CRM skills. Considering the contents of the helicopter OPC, the relative lack of simulator availability for helicopter training and checking, and for safety reasons, it is proposed that the person that conducts the OPC should be at least an instructor.

As the person that conducts the OPC is trained in the assessment of CRM skills, EASA proposes that a CRM assessment should take place during the OPC.

It appears that the crew composition, together with the single-pilot or multi-pilot environment, had not been defined for helicopter OPCs. It is proposed to fill in this gap.



The OPC currently consists in a long list of emergency manoeuvres to be repeated every 6 months. In the current prescriptive format, the OPC does not allow the introduction of many variations in the checks, making them too repetitive. Considering this situation, the need for all the items in the current list to be checked on a 6-month basis has been then reviewed. It appeared that many of the items that are currently checked during every OPC on a 6-month basis could instead be checked on a yearly basis as part of the LPC, or every 3 years.

It has been also considered that it was detrimental not to check major failures that did not appear on the list, including helicopter type-specific failures. A 3-year cycle was deemed necessary for the recurrent checking of such failures. Abnormal failures were considered to be too many and often not training-critical. They should therefore not be required to be checked.

The proposal keeps the initial OPC as it is and introduces a 3-year cycle for the checking of all major failures during recurrent OPCs.

Regarding the combination of OPCs with aircraft/FSTD training, it has happened that some operators have misunderstood the word ‘combined’. While there is value in allowing some training to take place during the OPC session, a single task or manoeuvre cannot be used for training and checking purposes at the same time. The proposed amendments clarify this.

ORO.FC.230(b) is therefore proposed to be amended to create a new helicopter OPC scheme.

Explanatory note to Annex I Definitions (following the NPA consultation)

Domain affected: CAT H, SPO H

The definition of ‘training to proficiency’ has been amended.

The word ‘approved’ has been deleted from the definition.

The definition was previously used only for EBT with aeroplanes. The concept is extended to CAT and SPO. The requirement for ‘approved training’ is already included in ORO.FC.145 for EBT and CAT. The amendment allows for the use of ‘training to proficiency’ in declared activities and more specifically for SPO.

3.3.4. Multi-pilot operations of single-pilot certified helicopters

Domains affected: CAT H, NCC H and SPO H

The following problems have appeared with the implementation of the current regulations:

The definitions of multi-pilot helicopters and single-pilot helicopters are unclear.

Most helicopters are certified for single-pilot operations. They qualify as single-pilot helicopters according to the current definition.

All helicopters except single-seaters can be operated with two pilots. If the operations manual says so, then they are multi-pilot helicopters according to the current definition. Therefore, almost all helicopters can be both single-pilot helicopters and multi-pilot helicopters at the same time.

As a result of these definitions, there are different interpretations of the single-pilot and multi-pilot helicopter definitions across the Member States. The different interpretations result in different implementation of the rules as detailed in the section titled ‘MCC is needed but not required’ below. The proposal clarifies these definitions.



The privileges of type ratings are not harmonised.

Helicopter type ratings should be restricted to single-pilot or multi-pilot operations, depending on the training received and the crew composition during the proficiency check. However, the definitions of single-pilot helicopters and multi-pilot helicopters are unclear. In addition, the current type ratings list does not refer to single-pilot and multi-pilot helicopters or the relevant restrictions on type ratings. As a result, single-pilot and multi-pilot privileges are granted in a disharmonised way across the Member States.

Under JAR FCL2, it was not possible to log multi-pilot hours in single-engined helicopters. The restriction was not transposed in Part-FCL with not many NAAs noticing.

The granting of single-pilot and multi-pilot privileges should be harmonised through better definitions, a better type ratings list, and more standardisation. The proposal changes the definitions of multi-pilot and single-pilot helicopters accordingly.

MCC is needed but not required.

Every time a CAT, NCC or SPO operator wants to conduct a multi-pilot operation on a voluntary basis, it has to declare it in the operations manual in accordance with ORO.MLR.100(a) and paragraph 8.2 of Annex V to the Basic Regulation. Taking into account the current definition of a multi-pilot helicopter and considering the operations manual as a document equivalent to the air operator certificate and the flight manual, the helicopter then becomes a multi-pilot helicopter.

MCC training has been expected to be required for the first multi-pilot type ratings since 1999 under FCL.720.H and under the equivalent Joint Aviation Rules (JARs). This requirement was expected to lead all pilots involved in multi-pilot crews to undergo MCC training.

Unfortunately, the definition of a multi-pilot helicopter was subject to the interpretation of Joint Aviation Authorities (JAA) Member States until the Aircrew Regulation came into force, and not all Member States used to interpret this definition the way it is interpreted today. More often than not, the interpretation of the 'equivalent document', referred to in the definition of a multi-pilot helicopter below, did not include the operations manual. Indeed, the different documents are not directly related and do not serve the same purpose.

'Multi-pilot aircraft':

for helicopters, airships and powered-lift aircraft, it means the type of aircraft which is required to be operated with a co-pilot as specified in the flight manual or by the air operator certificate or equivalent document.

As a result, many pilots were granted type ratings with unrestricted privileges, and have been flying multi-pilot operations without MCC training. This might also have happened on single-engine helicopter types since Part-FCL entered into force.

Also, many Member States did not require AOCs or operations manuals or equivalent documents from NCC and SPO operators, until the opt-out periods of Part-NCC and Part-SPO expired on 24 August 2016 and 21 April 2017 respectively.

As a result, a single-pilot certified helicopter operated with two pilots was often not considered a multi-pilot helicopter. This results in a significant number of pilots without MCC training holding the multi-pilot privilege on single-pilot certified helicopters.



The provisions of FCL 720.H are not sufficient to ensure that all pilots involved in multi-crew operations in CAT, NCC and SPO do receive the adequate training, because:

- (a) some pilots hold the multi-pilot privilege on their currently held type ratings without MCC training;
- (b) MCC training is required only for the first Part-FCL multi-pilot type rating. As a result, some of the above-mentioned pilots manage to extend their multi-pilot privilege to new Part-FCL type ratings, even though it was not the intent of the rule to enable them to do so;
- (c) FCL 720.H applies only to applicants for new type ratings. It does not apply to licence holders who already hold valid type ratings. NCC, SPO and CAT operators will ensure that the privilege of the type rating is not restricted to single-pilot operations, which is often not the case;
- (d) It is not obvious that small single-engined helicopters can be operated in multi-pilot operations, and few Member States restrict such helicopter type ratings to single-pilot operations on the licence. Indeed, such restrictions were not needed in the JAA times. As a result, the first single-engine helicopter type rating of a helicopter pilot may well include the multi-pilot privilege. In this case, the pilot is then exempt from MCC training for the rest of their lives;
- (e) the helicopter type ratings list does not mention single-pilot or multi-pilot restrictions for any helicopter type rating, which does not help authorities conduct the transition in the right way.

Recent high-profile accidents show that some pilots fly single-pilot certified helicopters in multi-pilot operations without adequate training. In one of these accidents, the investigators did not identify non-compliances with the rules but stated that ‘the pilots had not been formally trained or tested operating as a crew of two. It is probable that a formal division of tasks and responsibilities, with pre-planned means of identifying and communicating normal or abnormal progress, could have assisted in achieving and maintaining better situational awareness, and preventing the progressive change in the flight path to the point at which the accident was inevitable.’

Pilots need MCC training as soon as they start flying in a multi-crew environment, not when they eventually acquire their first Part-FCL multi-pilot type rating.

EASA proposes to require MCC training, or a significant experience in MCC, for multi-pilot helicopter operations in CAT, NCC and SPO. This will require NCC, SPO and CAT pilots flying in a multi-pilot environment to undergo MCC training if they have failed to do so in the past.

Multi-pilot operations on a voluntary basis are unnecessarily hindered by the current rules.

Every time a CAT, NCC or SPO operator wants to carry out multi-pilot operations on a voluntary basis, it has to declare it in the operations manual in accordance with ORO.MLR.100(a). Taking into account the current definition of a multi-pilot helicopter, the helicopter then becomes a multi-pilot helicopter.

The certificate of completion of the ATPL(H) theoretical examination immediately becomes required for all pilots involved, in order to extend their type rating to the multi-pilot privilege or to obtain a new type rating. In addition, in CAT the commander is required to hold an ATPL(H). As not many pilots hold a CPL(H) with a certificate of completion of the ATPL(H) theoretical examination, and the ATPL(H) is so difficult to obtain, multi-pilot operations cannot take place and single-pilot operations usually continue instead.

The issue is further developed in the following sections:



- The certificate of completion of the ATPL(H) theoretical examination is required when not needed.
- Not enough experienced pilots hold a certificate of completion of the ATPL(H) theoretical examination.
- Multi-pilot operations in CAT are restricted by the number of pilots holding an ATPL(H).

EASA proposes to change the definition of a multi-pilot helicopter to address this issue.

The certificate of completion of the ATPL(H) theoretical examination is required when not needed.

The certificate of completion of the ATPL(H) theoretical examination is deemed useful background knowledge when flying large complex helicopters in IFR.

The VFR ATPL(H) theoretical examination has been created to give access to the ATPL to VFR pilots since 1999, specifically for Member States where an ATPL did not exist.

An analysis of the gap between the VFR ATPL(H) and the CPL(H) theoretical examinations shows that the gap is covered by type ratings and MCC training. Therefore, a pilot holding a CPL(H) and an MCC training should not need a certificate of completion of the VFR ATPL(H) theoretical examination.

Regardless, the certificate of completion of the ATPL(H) theoretical examination is required in addition to the CPL(H) licence in the following cases:

- (a) two-pilot VFR operations in NCC, SPO, and for the co-pilot in CAT: Required when pilots are type-rated on a new helicopter type.
- (b) two-pilot VFR operations for the commander in CAT: required as part of the ATPL(H).

The requirements should be simplified.

The proposal achieves this goal for all helicopters certified with a minimum crew of one pilot for VFR operations, through changes in the definition of the multi-pilot helicopter.

Not enough experienced pilots hold a certificate of completion of the ATPL(H) theoretical examination.

A certificate of completion of the ATPL(H) theoretical examination was expected to be required for the first multi-pilot type ratings under FCL.720.H. This requirement was expected to lead all pilots involved in multi-pilot crews to pass their ATPL(H) theoretical examinations and was also a strong incentive for trainees to take the ATPL(H) theoretical examinations before applying for a CPL(H) licence. The current rules ensure that there will be no shortage of pilots holding the certificate of completion of the ATPL(H) theoretical examination in the distant future, but they create unexpected problems in the short term.

In the JAA times, many Member States interpreted the definition of a multi-pilot helicopter as only including the following:

- (a) Multi-pilot certified helicopters: only the biggest helicopters are certified with a minimum crew of two pilots for VFR operations. Most of them are operated under IFR in an offshore environment.



- (b) Helicopters required to be operated in a multi-pilot environment by the operational rule: Helicopters with a seating capability of 10 or more operated in commercial air transport under IFR.

As a result, the ATPL/VFR was barely needed. Most pilots underwent the CPL(H) theoretical examination, whilst the others passed the full ATPL/IR theoretical examination.

The lack of experienced pilots with a certificate of completion of the ATPL(H) theoretical examination is not easily bridged because:

- (a) a CPL(H) holder requires a 300-hour bridge training, then success in all 13 modules of the (VFR) ATPL(H) theoretical examination;
- (b) an experienced CPL(H) holder with MCC training and a type rating on a modern single-pilot helicopter will learn little more from the theoretical training than how to pass exams; and
- (c) many experienced CPL(H) holders will not undergo the ATPL(H) theoretical examination because of the costs and because of the perceived waste of time.

In those Member States where FCL.720.H is fully applied, the current requirement for the ATPL(H) theoretical examination prevents experienced VFR pilots with MCC training from flying with a co-pilot, or from getting a new type rating. This is detrimental to safety and also prevents inexperienced helicopter pilots from entering the job market.

There are still NAAs where the harmonised definition of the multi-pilot helicopter is not implemented. These Member States may continue to issue type ratings with the multi-pilot privilege to pilots who do not hold a certificate of completion of the ATPL(H) theoretical examination. This situation does not encourage a transition towards more pilots holding this certificate.

SPO operations conducted in a multi-crew environment under VFR are often conducted by experienced instructors and examiners with MCC training, who have not passed the ATPL theoretical examination. When the operator changes the helicopter fleet, they are the ones who should be training the less experienced pilots. Instead, their type rating is being restricted to single-pilot operations due to the lack of a certificate of completion of the ATPL(H) theoretical examination. This situation is detrimental to safety.

The proposed changes in the definitions of single-pilot helicopter and multi-pilot helicopter should ensure that the certificate of completion of the ATPL(H) theoretical examination is required only when the following conditions are met:

- (a) In NCC and SPO, when the helicopter is certified with a minimum crew of two pilots (which is seldom the case for VFR operations).
- (b) In CAT, when the helicopter is certified with a minimum crew of two pilots or when the CAT rules require two pilots.

A review of the bridge training and theoretical examination, covering the differences between the CPL(H) theoretical examination and the ATPL(H) theoretical examination, and a review of the learning objectives of the CPL(H) and ATPL(H) theoretical examination could be undertaken as part of a future rulemaking task.



Multi-pilot operations in CAT are restricted by the number of pilots holding an ATPL(H).

It would be desirable if ATPL(H) holders could bring their experience and help safely develop multi-pilot operations that would increasingly take place on a voluntary basis. Unfortunately, there are not enough ATPL(H) holders for such a transition to take place in this manner.

The small number of experienced pilots with a certificate of completion of the ATPL(H) theoretical examination is one of the reasons for the insufficient number of ATPL(H) holders, as explained above.

Another reason for the insufficient number of ATPL(H) holders is the difficulty experienced by pilots to obtain the required multi-pilot experience, as well as night flight and IFR experience.

ATPL(H) holders are found mainly in offshore operations where two-pilot operations in CAT are mandatory with a maximum operational passenger seating configuration (MOPSC) of 10 or more passengers. Until recently, it was impossible to obtain the 350 multi-pilot hours of experience needed for the ATPL(H) without flying these hours as a co-pilot. The best way to obtain this experience was to fly as an offshore co-pilot in CAT, because this is where almost all commanders that hold an ATPL(H) fly.

With the NCC and SPO requirements now in place, it is likely that the 350 multi-pilot hours of experience required for the ATPL(H) can be more easily gathered by flying NCC or SPO, because the pilot-in-command is not required to hold an ATPL(H). Neither of the two pilots may have been trained for MCC training for an NCC or SPO flight in a multi-pilot environment because their type ratings may have been granted under a national interpretation of the definition of a multi-pilot helicopter. It was not intended that the multi-pilot experience could be gathered in such a way. This kind of multi-pilot experience may, or may not, be different to single-pilot experience. In some cases, such experience could be detrimental to the crew.

The current situation is that ATPL(H) holders are not available for multi-crew operations to take place on a voluntary basis. Many operations that could be conducted with two pilots, including HEMS operations, are conducted with one pilot instead. This situation is detrimental to safety. In the distant future, there may be more ATPL(H) holders, but if their multi-pilot experience was gathered under NCC or SPO without MCC training and without the supervision of a commander that holds an ATPL, it may not be very different to single-pilot experience. The situation will also be detrimental to safety.

The proposed changes in the definition of multi-pilot operations and the changes in the prerequisites for the ATPL(H) should ensure that the relevant multi-pilot experience can be gathered whenever a flight takes place in a multi-pilot environment, with MCC training. Having all pilots trained for MCC should ensure that multi-crew-oriented SOPs will be implemented at operational level. The experience gained in multi-pilot operations will then be valid for the ATPL(H). The proposed changes also ensure that the ATPL(H) is not needed when operating in a multi-crew environment on a voluntary basis.

A multi-pilot environment with a commander that holds an ATPL(H) may not always be required when needed.

For CAT operations, a large complex helicopter is expected to be operated with a minimum crew of two pilots in IFR, with a commander that holds an ATPL(H).

However, the current rules allow the same helicopter to be flown in IFR by one pilot with a CPL(H), if certified for single-pilot IFR operations and if the MOPSC is reduced to 9 or less.



The NPA contemplated the option to always require a minimum crew of two pilots for CAT IFR operations of helicopters above a certain maximum take-off mass (MTOM) and had asked the following question:

Which single-pilot certified helicopters should be required to be flown with two pilots in CAT IFR?

Option 1: Helicopters with an MOPSC of 10 or more (no change)?

Option 2: Helicopters with an MOPSC of 10 or more or an MTOM of more than 5 700 kg?

Option 3: Helicopters with an MOPSC of 10 or more or an MTOM of more than 3 175 kg?

Option 4: Use another mass threshold? Use only a mass threshold and no MOPSC threshold?

Other?

Following the NPA consultation, it appeared that there is no perfect threshold between the privileges of the ATPL(H) and CPL(H), and that Option 1 (no change) would be the most relevant option.

Conclusion

The proposal is to amend FCL.010, FCL.510.H, FCL.605 (b)(2), FCL.725, FCL.720.H, FCL.905.TRI, FCL.910.TRI, FCL.915.TRI, FCL.905.SFI, FCL.915.SFI, FCL.915.MCCI, FCL.1010.TRE, FCL.1010.SFE, Appendices 8 and 9 to Annex I (Part-FCL), ORO.FC.100, ORO.FC.200 in order to achieve the following results:

- (a) A helicopter can no longer be defined as a single-pilot helicopter and a multi-pilot helicopter during the same flight.
- (b) A helicopter operated in multi-pilot operations remains a single-pilot helicopter if the second pilot is not required by certification or by the operational rules.
- (c) Pilots are required to have completed an MCC training in order to fly in a multi-pilot environment in CAT, NCC and SPO.
- (d) The intent is to provide grandfather rights to pilots who have multi-pilot experience, and to account for flying experience gained in military operations and non-European operations. 500 hours of experience in multi-pilot operations remains an alternative option to the MCC training, except for the ATPL.
- (e) The hours flown in a multi-pilot environment with MCC training and SOPs relevant to a multi-pilot environment, can be used for the purpose of reaching the multi-pilot experience required for the ATPL(H). These include multi-pilot operations on a voluntary basis in CAT, NCC and SPO.
- (f) Pilots of a helicopter operated in multi-pilot operations on a voluntary basis will require neither a multi-pilot type rating, nor completion of the ATPL(H) theoretical knowledge examination, nor an ATPL(H).
- (g) The certificate of completion of the ATPL(H) theoretical examination is no longer required in VFR in CAT, NCC and NCO, unless the helicopter is certified with a minimum crew of two pilots.
- (h) The ATPL(H) is no longer required in CAT VFR operations, unless the helicopter is certified with a minimum crew of two pilots.



- (i) Instructors and examiners in charge of multi-pilot operation training and checking have relevant experience of multi-pilot operations.

Transitional measures are proposed in the proposed draft cover regulations amending the Aircrew and Air OPS Regulations, to smooth the above changes.

Explanatory note to Article 3 of the draft regulation amending the Air OPS Regulation and to the proposed Article 4e of the Aircrew Regulation (following the NPA consultation)

Domains affected: CAT H, NCC H, SPO H

The following rules, associated with multi-pilot operations of single-pilot helicopters, will enter into force 1 year after the applicability date of the regulations amending the Air OPS and Aircrew Regulations to enable NAAs to adapt their licensing databases, software tools and licensing officers' training to the amendments introduced.

- (a) FCL.010;
- (b) FCL.605;
- (b) FCL.725;
- (c) Appendix 8 to Part-FCL;
- (d) Appendix 9 to Part-FCL, Chapters A and C;
- (e) Article 4e of the Aircrew Regulation
- (f) ORO.FC.200

All of the above will be impacted by the changes in endorsements on pilots' licences related to helicopter type ratings, and by the new privilege to fly a single-pilot helicopter type in multi-pilot operations.

Training and checking towards multi-pilot operations will require both experience in the underlying activity and experience in multi-pilot operations. It is expected that for the first 2 years of implementation such trainers and checkers may not be available. Article 4e of the Aircrew Regulation is proposed to allow Member States to alleviate experience requirements on an individual basis.

The other amendments of Part-FCL do not require transitional provisions because points FCL.905.TRI, FCL.910.TRI, FCL.915.TRI, FCL.915.SFI, FCL.915.MCCI, FCL.1010.TRE and FCL.1010.SFE are also related to the changes regarding multi-pilot operations of single-pilot certified helicopters but do not require transition measures. There is one single TRI/TRE/SFI/SFE/MCCI rating. There should be no extensions or restrictions endorsed on the licence, with regard to an instructor/examiner rating and the associated privilege to instruct/examine 'multi-pilot helicopter' or 'single-pilot helicopter' or 'multi-pilot operations' or 'single-pilot operations'.

Detailed explanations for multi-pilot operations

Explanatory note to FCL.010 Definitions (as proposed in NPA 2019-08)

Domains affected: CAT H, NCC H, SPO H

Multi-pilot operations are used only to define the relevant experience needed as a prerequisite for the ATPL, and to define the experience needed before MCC training becomes a requirement. The



definition is amended to ensure that the relevant experience in multi-pilot operations can be obtained by flying single-pilot certified helicopters.

The amended definitions of multi-pilot helicopter and single-pilot helicopter ensure that a helicopter can no longer belong to both categories at the same time, and thus have consequences on the privileges of the CPL(H) and the requirement for multi-pilot type ratings.

Additional changes to FCL.010 Definitions (following the NPA consultation)

Editorial changes have been introduced to the definition of ‘multi-pilot aircraft’ with no changes in the meaning.

The reference to the minimum crew composition in the flight manual is not needed in the definition because:

- in CAT, SPO and NCC, ORO.FC.100 applies and provides this reference;
- in NCO, only non-complex aircraft can be operated. Such aircraft have a minimum crew of one pilot.

Explanatory note to FCL.510.H (as proposed in NPA 2019-08)

Domain affected: CAT H

FCL.510.H is proposed to be amended in order to achieve the needed changes in multi-pilot operations of single-pilot certified helicopters, as described above.

The ATPL(H) is required only for CAT operations of multi-pilot helicopter types, but the relevant multi-pilot experience may now be gathered by flying single-pilot helicopters in multi-pilot operations. By deleting the prerequisite for a multi-pilot helicopter type rating, it becomes possible to take the ATPL(H) skill test jointly with a multi-pilot type rating examination.

This also aligns helicopter rules with the aeroplane ATPL(A) prerequisites which do not require the applicant to hold a multi-pilot type rating (see below) and do allow to take the ATPL(A) skill test jointly with a multi-pilot type rating (see Appendix 9 and see below).

FCL.510.A ATPL(A) – Prerequisites, experience and crediting

(a) Prerequisites. Applicants for an ATPL(A) shall hold:

- (1) an MPL; or
- (2) a CPL(A) and a multi-engine IR for aeroplanes. In this case, the applicant shall also have received instruction in MCC.

(b) Experience.

(...)

Explanatory note to FCL.510.H (following the NPA consultation)

Domain affected: CAT H

EASA has decided to further amend the text to provide a standard solution to the following problem:



The usual way of obtaining the ATPL(H) is to be an experienced CPL(H) holder. In addition, the helicopter pilot undergoes full MCC training on helicopters, followed by 350 hours of multi-pilot operations on helicopters.

There are other paths:

If the pilot has flown for the military, or outside of EASA countries, or has a Part-FCL MCC training in another aircraft category before converting to helicopters, then the pilot may have 500 hours of experience in multi-pilot operations. MCC on helicopters will not be required for additional type ratings under Part-FCL. This pilot can log helicopter time in multi-pilot operations and reach all the prerequisites for the ATPL(H). In most cases, this pilot will not have an MCC training and will have little to learn from it.

Before such a pilot reaches the ATPL skill test, it is proposed that this pilot undergoes training at an ATO, equivalent to MCC training. This training needs not comply with FCL.735.H but the pilot competencies at the end of the training should be the same. The head of training of the ATO will decide on the amount of training needed based on the assessment of the pilot's skills and experience.

Explanatory note to FCL.605 (following the NPA consultation)

Domains affected: CAT H, NCC H, SPO H

EASA has decided to amend this rule, considering the extension of multi-pilot operations to single-pilot helicopters.

Explanatory note to FCL.720.H (as proposed in NPA 2019-08)

Domains affected: CAT H, NCC H, SPO H

MCC skills are deemed to require either formal MCC training under Part-FCL or 500 hours of experience in MCC regardless of the aircraft type or number of engines.

Additional changes to FCL.720.H (following the NPA consultation)

EASA has decided to maintain the requirement for the MCC to take place on helicopters as MCC on another aircraft category may not be relevant to a helicopter pilot. However, the 500 hours of experience in MCC are considered to be a valid experience regardless of the aircraft category.

Explanatory note to FCL.725 (following the NPA consultation)

Domains affected: CAT H, NCC H, SPO H

EASA has decided to amend this rule as well as Appendix 9 to ensure:

- there are no changes for aeroplanes;
- there are no changes for large helicopters that remain multi-pilot helicopters;
- simplification of endorsements on the licence for single-pilot operations and multi-pilot operations of single-pilot helicopters, as follows:

There is only one type rating covering both single-pilot operations and multi-pilot operations.

If the skill test is completed in either single-pilot operations or multi-pilot operations, the privilege for the form of operation demonstrated in the skill test is activated.



The privilege for the other form of operation can only be used under CAT, NCC or SPO, if the relevant training and checking, including an OPC is completed in multi-pilot operations at the operator. MCC is always required for multi-pilot operations.

This could be the case if a pilot takes an LPC in one form of operation, and a few months later joins an operator that conducts the other form of operation.

This could also be the case if an operator does not conduct the OPC together with the LPC.

There is no need for restrictions to single-pilot operations/multi-pilot operations to be entered in the licence.

If the skill test is completed in multi-pilot operations and additional manoeuvres and procedures are completed in single-pilot operations, then both privileges are activated and there is no need for restrictions to single-pilot operations/multi-pilot operations to be entered in the licence.

Only in the case where the skill test is completed in multi-pilot operations only and the type rating is non-complex: There is a need for a restriction to multi-pilot operations to avoid that the pilot uses the single-pilot operations privilege of the type rating under NCO, where no operator training is required and the operations are single-pilot ones.

FCL.725(d) ensures that such a restriction is entered in the licence in this case, and only in this case.

For the larger helicopter types that may be operated in CAT under IFR with more than 9 passenger seats: Most skill tests are likely to take place in multi-pilot operations only. For these aircraft, it makes sense to maintain a multi-pilot type rating and a single-pilot type rating. All such helicopters are complex so there will never be a restriction to multi-pilot operations on a single-pilot type rating. The endorsements on the licence are unchanged for the larger helicopter types.

For the smaller helicopters that can only be single-pilot helicopters and can be operated multi-pilot on a voluntary basis: Most skill tests are likely to be completed in one or both forms of operations. In most cases, the type rating will be 'unrestricted' and will mention neither multi-pilot operations nor single-pilot operations.

This should result in simplification of the endorsements entered on the licence.

If the skill test takes place in multi-pilot operations with additional manoeuvres in single-pilot operations: The additional manoeuvres and procedures required to activate both privileges are limited to the ones that will efficiently demonstrate the ability to conduct single-pilot operations. An IFR approach of Section 5 is included in such a way that the single-pilot operations privilege can be either revalidated or renewed with recent experience under the provisions of Appendix 8, or with the skill test.

Explanatory note on trainers and checkers for multi-pilot operations

Explanatory note to FCL.905.TRI TRI (as proposed in NPA 2019-08)

Domains affected: CAT H, NCC H, SPO H

With the new definitions of single-pilot helicopters, multi-pilot helicopters, and multi-pilot operations, multi-pilot operations will take place on single-pilot helicopters on a voluntary basis. The experience gained in such multi-pilot operations shall be credited towards the prerequisites for the ATPL. It makes



sense that for a TRI this experience can be also credited towards obtaining the privilege of providing instruction for MCC.

Additional changes to FCL.905.TRI TRI (following the NPA consultation)

The deletion of (a)(5)(iii) is related to the merger of the SE.IR(H) and the ME.IR(H) into a single IR(H).

Explanatory note to FCL.910.TRI (unchanged since NPA 2019-08)

Domains affected: CAT H, NCC H, SPO H

Point (c)(2) is proposed to be changed because helicopters certified for IFR with a maximum certified passenger capacity of 10 or more will continue to exist in single-pilot (SP) and multi-pilot (MP) versions with the new definitions.

In order for a TRI(H)SP on such a helicopter type to become TRI(H)MP on the same type, 350 hours in multi-pilot operations on any type is more relevant than 100 hours on the given type. For consistency, 1 000 hours experience as a pilot on helicopters should be required for a TRI(H) MP, whether the MP privilege is obtained by extending a TRI(H)SP to MP under FCL 910.TRI or the candidate applies for a TRI(H)MP under FCL 915.TRI

Point (c)(3) is introduced because a TRI is no longer required to hold a MP type rating or a TRI(H) MP to provide instruction for MCC. Moreover, MCC training can now take place with SP helicopters and no longer requires a TRI(H) MP. 350 hours in multi-pilot operations is a more relevant value for an MCC trainer.

The new requirements under (c)(2) and (c) (3) apply only to TRI(H) SP who currently do not hold a TRI(H) MP. Existing TRI(H) MP are not affected.

Explanatory note to FCL.915.TRI (unchanged since NPA 2019-08)

Domains affected: CAT H, NCC H, SPO H

Point (d)(3)(i) has been deleted in line with the new definitions. Experience on multi-pilot helicopters under the previous definitions is the same as experience in multi-pilot operations under the new definitions.

Point (d)(3)(ii) has been deleted because holders of a TRI(H) SP who wish to become TRI(H) MP do not reapply for a TRI. Instead, they shall meet the criteria to lift the restriction under FCL 910.TRI.

Point (d)(4) no longer exists. Its content has been amended and moved to the new (d)(1)(ii) and (d)(2)(ii). The changes are justified because an FI with no experience on multi-engined (ME) helicopters should not exercise TRI privilege on ME helicopters until the experience criteria under (d)(2) are met.

The proposed changes apply only to new applicants and do not restrict the privileges of existing TRIs.

Explanatory note to FCL.905.SFI (following the NPA consultation)

Domains affected: CAT H, NCC H, SPO H

Point (d)(2) has been amended to align the conditions for MCC training with those for the other instructors.



Explanatory note to FCL.915.SFI (following the NPA consultation)

Domains affected: CAT H, NCC H, SPO H

Point (e) has been amended to align the prerequisites for teaching multi-pilot operations with those for the other instructors.

Explanatory note to FCL.915.MCCI (as proposed in NPA 2019-08)

Domains affected: CAT H, NCC H, SPO H

The multi-pilot experience has been increased to 1 500 hours in order to align the requirements for helicopters with those for other aircraft categories.

The experience gathered in single-pilot operations with a technical crew member is considered not relevant to multi-pilot operations where the allocation of duties is deemed to be different.

MCC is an attitude. Pilots with sufficient multi-pilot experience to become an MCCI can teach it on any aircraft. However, it was also argued that point (a) did not provide sufficient experience in the aircraft category, and that 350 hours was a minimum to understand the kind of operations and better reach out to the trainee on a given aircraft category.

The new requirements apply only to new applicants and therefore have no consequences on the privileges of existing MCCIs.

Explanatory note to FCL.915.MCCI (following the NPA consultation)

EASA has decided that 1 000 hours in multi-pilot operations was more than enough to become an MCCI for helicopters and that the disalignment with the aeroplanes was a valid option in that case.

Explanatory note to FCL.1010.TRE (following the NPA consultation)

Domains affected: CAT H, NCC H, SPO H

Point (b)(6) has been amended to align the prerequisites for checking multi-pilot operations.

Explanatory note to FCL.1010.SFE (following the NPA consultation)

Domains affected: CAT H, NCC H, SPO H

Points (b)(3) and (b)(4) have been amended to align the prerequisites for checking multi-pilot operations. In this case, the 350 hours of experience in multi-pilot operations on helicopters are already included in 'hold or have held an ATPL(H)', and the 1 000 hours of flight time on multi-pilot helicopters are not necessary for multi-pilot operations in single-pilot helicopters.

A new point (b)(5) has been added for consistency between helicopter SFE and aeroplane SFE requirements.

Explanatory note to Appendix 8, Section B — Helicopters (following the NPA consultation)

Domains affected: CAT H, NCC H, SPO H

It appeared that Appendix 8 was no longer adapted to the amended definitions of ‘multi-pilot helicopter’ and ‘single-pilot helicopter’. Moreover, the table referred to SP ME helicopter type ratings in multi-pilot operations, which does not exist with the current definitions. The table of Appendix 8 Section B and its footnote are proposed to be adapted to the new definitions. The introduction of the table has been amended in relation to the merger of the SE.IR(H) and ME.IR(H) into a single IR(H).

Explanatory note to Appendix 9, Section A — General (following the NPA consultation)

Domains affected: CAT H, NCC H, SPO H

Appendix 9 Section, A has been amended to reflect the amended definitions of ‘multi-pilot helicopter’ and ‘single-pilot helicopter’.

Explanatory note to Appendix 9, Section C — Specific requirements for the helicopter category (following the NPA consultation)

Domains affected: CAT H, NCC H, SPO H

Appendix 9, Section C has been amended to be in line with:

- the changes regarding the privilege to fly multi-pilot operations introduced in FCL.725(d) — see above;
- the changes to the OPC that will be introduced in AMC1 ORO.FC.230 in the related ED Decision that will be published after the adoption of the regulation proposed in this Opinion.

Explanatory note to ORO.FC.100 (as proposed in NPA 2019-08)

Domains affected: CAT H, NCC H, SPO H

ORO.FC.100 requires that multi-pilot operations of single-pilot certified helicopters under CAT, NCC or SPO can only be conducted if both pilots have formal MCC training or equivalent experience.

Additional changes to ORO.FC.100 (following the NPA consultation)

EASA has decided to require MCC training on helicopters. ORO.FC.100 has been further amended accordingly.

Explanatory note to ORO.FC.200 (unchanged since NPA 2019-08)

Domain affected: CAT H

ORO.FC.200 defines when operations are required to be conducted with two pilots and therefore impacts the definition of ‘multi-pilot helicopter’ and ‘single-pilot helicopter’.

The existing point (d)(1)(ii) has been deleted because it is now fully covered under the privileges of the CPL and ATPL and instrument rating, as defined under Part-FCL.

The existing point (d)(2) has been deleted because it duplicated ORO.FC.202 with no added value.

3.3.5. Operations on more than one type or variant for helicopter CAT operations, and combined helicopter and aeroplane operations

General

Explanatory note to CAT.GEN.MPA.100 (unchanged since NPA 2019-08)

Domains affected: CAT A, CAT H

If pilots fly under CAT and fly for more than one operator, all CAT operators should know on which aircraft types they fly. The same conclusions apply to aeroplanes, so the proposed amendment has not been restricted to helicopters.

Initial training including differences training, familiarisation, equipment and procedure training

Explanatory note to ORO.FC.125 and ORO.FC.126 (as proposed in NPA 2019-08)

Domains affected: All

ORO.FC.125 is proposed to be amended and ORO.FC.126 is proposed to be introduced in order to:

- align the definitions of differences training and familiarisation with those in Part-FCL;
- introduce the concept of equipment and procedure training in order to cover training previously included in the OPS definition of differences training and familiarisation.

ORO.FC.130 (a) and ORO.FC.230 (a) are amended in order to neutralise any impact on ORO.FC.130 of the new ORO.FC.125 differences training and familiarisation, considering its effect on the meaning of a 'variant'.

Additional changes to ORO.FC.125 and ORO.FC.126 (following the NPA consultation)

Minor editorial changes have been introduced. The two points of the implementing rule have been merged into ORO.FC.125; however, point (a) of the merged rule remains aligned with Part-FCL and point (b) introduces the operational elements.

Explanatory note to ORO.FC.220(b) (following the NPA consultation)

Domains affected: CAT H

The proposed changes extend the alleviations accessible to performance class B aeroplane to single-engined helicopters of the same group of type. The groups of types are as defined for the operator proficiency check, licence proficiency check and for the maximum number of types that a pilot can fly. See 'Helicopter CAT and SPO operator proficiency check' below.

Helicopter CAT and SPO operator proficiency check

Domains affected: CAT H, SPO H

When transposing JAA material into EU regulations, the grouping of type ratings used for recent experience in FCL.060 and AMC1 FCL.060 was meant to be used for the grouping of type ratings for the purpose of the OPC. Instead, the current regulation mistakenly allowed an OPC on a single-engined helicopter to be valid for twin-engined helicopters in VFR by day. This should not be the case.

Therefore, the grouping of type ratings for the purpose of the OPC had to be reviewed, taking into consideration the following options:

- (a) The grouping of type ratings in accordance with OSD
- (b) The same grouping of type ratings as used for recent experience as in AMC1 FCL.060
- (c) The same grouping of type ratings as used for LPCs as in FCL.740.H

The grouping of single-engine helicopter type ratings was deemed necessary for day VFR, because it is a current practice for helicopter pilots to fly several single-engine helicopter types, and the current regulations have proven to be safe in that respect.

- (a) Grouping helicopter types in accordance with OSD was rejected because there is no data available across helicopter types
- (b) Grouping helicopter types as per AMC1 FCL.060 was also rejected because the grouping was restricted to:
 - (1) helicopters that are soon to be phased out of operations (SE 313/318, SA 341/342, and SA 315/316/319);
 - (2) the grouping of Bell 206 and 407 helicopter types; and
 - (3) the grouping of piston-engined helicopters.
- (c) The grouping of helicopter types used for LPCs was considered, and was found satisfactory. Moreover, it made sense to align the conditions for LPCs and OPCs. Keeping the conditions for the grouping of single-engined turbine-powered helicopters for the purpose of the LPC also made sense, in order to avoid disrupting SPO and NCO operations for the purpose of improving the CAT OPC requirements.

This Opinion therefore proposes to use the same grouping of type ratings for OPCs as the one currently in place for LPCs.

Explanatory note to ORO.FC.140(b) (as proposed in NPA 2019-08)

Domains affected: CAT H, SPO H

A new point (b) is proposed to be introduced, based on a transposition of the previous ORO.FC.230(b)(4), with additional changes in order to achieve the above-mentioned objectives.

Explanatory note to ORO.FC.140(b) (following the NPA consultation)

EASA has decided to review the impact of single-engined helicopters recently certified for IFR. The impact on this rule is that an OPC on a single-engined VFR helicopter type cannot be credited towards a single-engined helicopter type that is operated under IFR.

Helicopter line checks

Domain affected: CAT H

The current ORO.FC.140 (a), ORO.FC.230 (a) and ORO.FC.230 (c)(1) require one line check per type or variant per year, unless the authority would consider the line check on one variant to be relevant for other variants.

It is recognised that a number of type-specific issues will be checked during the line check on a highly-automated helicopter with digital flight displays operated in IFR. However, for the majority of helicopter operations in day VFR, the line check will be operations-oriented and not type-specific. This Opinion therefore proposes to allow an operator to consider the grouping of line checks across helicopter types.

Explanatory note to ORO.FC.140(d) (unchanged since NPA 2019-08)

Domain affected: CAT H

Point (d) is proposed for helicopter line checks in order to achieve the changes proposed immediately above.

Operations on aeroplanes and helicopters

Domains affected: CAT A*, CAT H*

*** NCC and SPO are only affected if pilots also fly CAT.**

Operations on aeroplanes and helicopters were found out to be the most restricted, and the least likely to involve confusion between aircraft types. They are also the only ones to be restricted in the implementing rules instead of an AMC. The provisions are moved to AMC and made more performance-based.

Explanatory note to ORO.FC.240 (unchanged since NPA 2019-08)

Domains affected: CAT A, CAT H (NCC and SPO are only affected if pilots also fly CAT.)

The material that is proposed to be deleted from ORO.FC.240 has been transferred to point (c) of AMC1 ORO.FC.240.

Additional changes

ORO.FC.230(b)(4) and ORO.FC.230(c) have been deleted and moved to ORO.FC.145 (b) and (c).

3.3.6. Simplification of access to IFR for helicopters**Required experience under IFR, in addition to the instrument rating****Explanatory note to ORO.FC.H.250 (following the NPA consultation)**

Domain affected: CAT H

EASA has introduced an amendment to ORO.FC.H.250 based on the following:

- Need to clarify the meaning of ‘these hours’.
- It is well accepted that pilots need to gather experience after the instrument rating, before they can act as a single-pilot commander and operate under IFR.
- Helicopter pilots have little opportunity to build up instrument time until they can fly single-pilot CAT under IFR. Ferry flights before or after a VFR mission, or dedicated flights for the purpose of accumulating experience, are often used. In many cases, the conditions are VMC and the experience gathered is not the one that was intended in the existing rule. Multi-pilot IFR is only an option in the offshore environment until multi-pilot operations develop with the help of the amended rules as proposed through this Opinion.

- Crediting helicopter simulator hours on a helicopter FTD 3 or a helicopter FFS level B or better can help gather the needed instrument time experience. It should be noted that the IR(H) training can be obtained with 20 hours of FNPT(A) and 20 hours of FNPT(H) and 10 hours of flight time and does not require such simulators.

Merger of the SE.IR(H) and ME.IR(H) into a single IR(H)

Following the NPA consultation, the IR.SE(H) and the IR.ME(H) have been merged.

Domains affected: CAT H, SPO H, NCC H, NCO H

Single-engined helicopters have recently been certified for IFR. This technological change has appeared since the NPAs were published, and it makes sense to address it in this Opinion covering both crew training and all-weather operations. This requires an amendment to FCL.

The use of single-engined helicopters is an opportunity to provide cheaper access to an instrument rating with helicopters.

The current helicopter rules for instrument ratings are a duplicate of aeroplane rules. Still, they fail to consider that there is no asymmetric thrust in case of an engine failure on a helicopter. For single- and multi-engined helicopters, as for single-engined and multi-engined centreline thrust aeroplanes, there should be only one instrument rating.

Two options were considered:

Option 1: Add one point in FCL.620 to ensure that helicopters and other aircraft where an engine failure creates no asymmetric thrust shall be considered to be single-engined aircraft.

Option 2: Amend and simplify all points of FCL referring to multi-engine IR (H) and single-engine IR(H), in order for helicopters to have only one merged IR(H).

Option 2 was selected because the current practice is to train helicopter IRs on multi-engined helicopters, and it does not make sense to reduce the number of hours of flight/FSTD training.

Option 2 also ensures consistency and allows for greater simplification of FCL.

Option 2 avoids discussing other technologies such as airships.

This merger of the SE.IR(H) and ME.IR(H) into a single IR(H):

- is introduced by the transitional measures in Article 4a of the Aircrew Regulation. The transitional measures ensure that holders of a SE.IR(H) or ME.IR(H) are deemed to hold the merged IR(H). Single-engined helicopters have been certified only recently and are not expected to be on the European market yet;
- amends FCL.620 IR – Skill test;
- creates the new FCL.620.A IR(A) – Skill test;
- creates the new FCL.620.As IR(As) – Skill test;
- deletes the current FCL.630.H IR(H) – Extension of privileges from single-engined to multi-engined helicopters;



- introduces a new FCL.630.H IR(H) — Extension of the privileges of an IR(H) to further helicopter types, in order to upgrade a sentence from AMC2 FCL.725(a) at implementing rule level. The sentence includes the following:
 - 2 hours of training on a FFS or FTD when extending the IR(H) to further types;
 - OSD credit can be applied to reduce the 2 hours;
 - the FFS or FTD level;
- amends FCL.905.TRI TRI — Privileges and conditions;
- amends FCL.915.IRI IRI – Prerequisites;
- amends FCL.1005.TRE TRE – Privileges and conditions;
- amends Appendix 3 Section I, Appendix 6 Section B and Appendix 8 Section B; and
- introduces transitional measures in Article 4d of the Aircrew Regulation.

3.3.7. Initial training and checking for specialised operations

Domains affected: SPO A, SPO H

Initial training for a given specialised operation should take place either under ORO.FC.120 ‘Operator’s conversion training’ or under ORO.FC.125 ‘Differences training, familiarisation, equipment and procedure training’.

This is not well understood under the current provisions because an operator’s conversion course training is not required when changing specialised operations, and because familiarisation and differences training were used only under CAT and NCC until 21 April 2017 and were commonly identified as covering only differences between type and variants.

Familiarisation and differences training under ORO.FC.125 also cover differences between SOPs with regard to different specialised operations, but the lack of AMC and GM does not make it obvious to the reader.

It was decided to not only split ORO.FC.125 in order to better highlight the training needs in cases of changes in procedures, but also to provide AMC and GM.

Training requirements may vary from one operator to another because each operator has developed their own SOPs. No flight crew operating manual (FCOM) standardises the operating procedures for SPO, and no ATO standardises the training.

For the above-mentioned reasons, it is considered necessary to introduce OPCs immediately after the SPO initial training. The burden associated with this new requirement is more than offset by the reduction in the provisions for recurrent checking.

Explanatory note to ORO.FC.320 and ORO.FC.325 (as proposed in NPA 2019-08 — ORO.FC.325 was proposed as ORO.FC.326 in the NPA)

Domains affected: CAT A*, CAT H*, SPO A, SPO H (* Only for operations starting and ending at the same location, with small aircraft, as defined in point (b)(2) of ORO.FC.005 (CAT A to A))

Initial OPCs are required at completion of the conversion course and at completion of a differences training for specialised operations.



An operator that introduces minor changes to its SOPs may require only ground training, in which case familiarisation is required but a differences training is not. In this case, OPCs are not required.

There may also be cases where a pilot needs initial training for a specialised activity that is either closely related to other specialised activities where he or she has experience, or that is not specialised compared to other specialised operations he or she is experienced in. If this is the case, and if the pilot does not change operators, then an initial OPC may not be needed. The new specialised activity may be considered to be covered under the previous OPCs that are relevant to the other equivalent or superior specialised operations for which the pilot is already qualified.

An OPC is always needed at the end of an operator's conversion course if the pilot changes operators. This provision ensures that the operator remains responsible for the competency of the flight crew to implement the operator's SOPs. This should be valid for all commercial operations and is proposed to be also required for CAT A to A operations.

Explanatory note to ORO.FC.320 and ORO.FC.325 (following the NPA consultation)

EASA has modified the drafting of ORO.FC.325 to reflect the explanatory note of the NPA and the initial intent.

The intent was to require an OPC after initial training for a new specialised operation.

The amended rule ensures that:

- a change in equipment does not require an OPC;
- a minor change in SOPs that require only additional knowledge does not require an OPC; and
- a major change in SOPs requiring the acquisition of additional flying skills, such as learning a new specialised operation, requires an OPC.

3.3.8. Recurrent training and checking for specialised operations

Domains affected: SPO A, SPO H

The combination of ORO.FC.130, ORO.FC.145 (a) and ORO.FC.330 currently requires the OPCs to cover normal, abnormal and emergency procedures for each specialised operation every year, for every type.

This adds up to an unreasonable amount of checking and should be changed.

In most cases, SOPs will not vary too much with the helicopter type within a given operator. The alleviation accessible to CAT operators, according to which the CAT OPC is valid for a group of type ratings, should also be accessible to SPO.

In addition, more specifically to SPO, it happens that most pilots are involved in more than one kind of specialised operations. The amount of experience and recent experience, the similarities between different kinds of specialised operations, and the compared complexity of the various specialised operations a pilot is involved in, are factors to take into account when defining recurrent training and checking programmes.

Finally, it has been considered that the person conducting SPO-specific training and checking should be better defined, and should not be required to be an examiner, taking into account that training and checking for SPO is not the same as training and checking for type ratings.

Explanatory note to point (b) of ORO.FC.140 (unchanged since NPA 2019-08)

Domains affected: CAT H, SPO H

The alleviation based on the previous ORO.FC.230(b)(4) and on the current FCL.740.H is proposed to be extended to SPO and CAT operations starting and ending at the same location, with small aircraft.

Explanatory note to point (c) ORO.FC.140 (unchanged since NPA 2019-08)

Domain affected: SPO H

Point (c) is proposed to be introduced specifically for SPO. It is proposed to extend the alleviation further because many elements of training and checking conducted under SPO are related to the specialised operations, and not directly to the aircraft type. It is therefore proposed to allow elements of a SPO OPC to be valid across the aircraft types, if an operator's risk assessment determines that this is possible. Point (c) introduces the SPO equivalent of the CAT helicopter alleviation for line checks that is proposed in point (d).

Explanatory note to ORO.FC.330 (following the NPA consultation)

Domains affected: CAT A*, CAT H*, SPO A, SPO H (* Only CAT A to A operations with small aircraft, as defined in ORO.FC.005)

Point (a) has been amended for clarity. The definition of the OPC in ORO.FC.330 is the same as in ORO.FC.230 and has been therefore moved to 'Annex I Definitions'.

3.3.9. Training and checking for CAT operations starting and ending at the same location, with small aircraft (CAT A to A)

Domains affected: CAT A, CAT H (only for operations starting and ending at the same location, with small aircraft, as defined in ORO.FC.005 point (b)(2) (CAT A to A))

The precise scope of the changes is presented in ORO.FC.005(b)(2), which defines the applicability of ORO.FC Section 3 to CAT operators. CAT operations meeting the criteria of ORO.FC.005(b)(2) are further referred to as 'CAT A to A' operations.

EASA proposes that alleviations to ORO.FC.145 available to other CAT operations should be also applicable to CAT A to A. These alleviations introduce the flexibility to conduct OPCs without an examiner, and the flexibility to revalidate OPCs on several types or variants at the same time.

Recurrent training and checking for CAT operations starting and ending at the same location, with small aircraft (CAT A to A)

Explanatory note to ORO.FC.140(b) (unchanged since NPA 2019-08)

Domains affected: CAT A, CAT H (only for operations starting and ending at the same location, with small aircraft, as defined in ORO.FC.005 point (b)(2) (CAT A to A))

The alleviation based of the previous ORO.FC.230(b)(4) and on the current FCL.740.H is proposed to be extended to SPO and CAT A to A.

Explanatory note to ORO.FC.320 and ORO.FC.325 (as proposed in NPA 2019-08 — ORO.FC.325 was proposed as ORO.FC.326 in the NPA)

Domains affected: CAT A, CAT H (only for operations starting and ending at the same location, with small aircraft, as defined in ORO.FC.005 point (b)(2) (CAT A to A))

An OPC is always needed at the end of an operator's conversion course if the pilot changes operators. This provision ensures that the operator remains responsible for the competency of the flight crew to implement the operator's SOPs.

An operator that introduces minor changes to its SOPs may require only ground training, in which case familiarisation is required but a differences training is not. In this case, OPCs are not required.

Explanatory note to ORO.FC.320 and ORO.FC.325 (following the NPA consultation)

Minor editorial changes have been introduced.

Explanatory note to ORO.FC.330 (following the NPA consultation)

Domains affected: CAT A, CAT H (only for operations starting and ending at the same location, with small aircraft, as defined in ORO.FC.005 point (b)(2) (CAT A to A))

Point (a) has been amended for clarity. The definitions of the OPC in ORO.FC.330 and ORO.FC.230 are the same and have been therefore moved to 'Annex I Definitions'.

3.3.10. Consequences on CAT of changes to other kinds of operations**Explanatory note to ORO.FC.230 (as proposed in NPA 2019-08)**

Domains affected: CAT A, CAT H

The deleted elements of ORO.FC.230 (b) and (c) are moved to ORO.FC.140 and ORO.FC.145 respectively. Alleviations to OPCs are extended to non-CAT operations as well as CAT A to A operations. Elements regarding the line checks are transferred without changes.

Explanatory note to ORO.FC.230 (following the NPA consultation)

EASA has decided the following:

- The validity period is better defined at AMC level. Duplication should be avoided: Ground training and aircraft/FSTD validity periods are defined in both implementing rule and AMC. The validity period of emergency and safety equipment training is better defined in AMC because some elements have a validity of 3 years, and others 1 year.
- The validity period of the recurrent CRM training is better defined in an AMC and should be moved to AMC1 ORO.FC.115 which already defines the 3-year period.
- Moving such elements to AMC level is extended to other training/checking elements.

3.3.11. Other helicopter training and checking issues

Qualification to operate in either pilot's seat

Domain affected: CAT H

It was found out that this qualification was required only for commanders, whereas helicopter co-pilots may also fly in both seats. EASA proposes to require this qualification for pilots involved, not only for commanders.

The requirement is also proposed to be clarified, to ensure that no additional checking is required if OPCs alternate between left and right seats.

The proposal clarifies that the validity period is 12 calendar months.

Explanatory note to ORO.FC.235 and ORO.FC.236 (following the NPA consultation)

Domain affected: CAT H

A new ORO.FC.236 is created for helicopters, so that aeroplane operations where the left-hand seat is the commander's seat are not impacted. ORO.FC.235 is restricted to aeroplanes.

A high-level objective is introduced in ORO.FC.236.

The detailed description of the training and checking options to meet the objective has been moved to AMC.

Although the AMC allows pilots to complete OPCs alternatively on the left and right seats to meet the requirements, pilots who have recent experience as instructors on both seats of a helicopter type are exempt from the requirements.

This decision is consistent with the different options proposed by the NPA to meet the safety objectives. It is also consistent with the balance between implementing rules and AMC found in other points of ORO.FC.

Emphasis is put on training and checking towards the procedures relevant to the allocated tasks and roles.

3.3.12. Other aeroplane training and checking issues

Qualification to operate in either pilot's seat

Explanatory note to ORO.FC.235 (following the NPA consultation)

Domain affected: CAT A

All helicopter elements have been deleted and moved to ORO.FC.236 and AMC1 ORO.FC.236.

Aeroplane elements have been amended to clarify that the validity period is 12 calendar months.

Advanced training qualification programme (ATQP)

Explanatory note to ORO.FC.A.245 (following the NPA consultation)

Domain affected: CAT A

EASA is aware of implementation issues with ATQP brought up by Member States and EASA standardisation.

Point (a) has been replaced to add the references to the rules in order to ensure legal clarity. There is no change to the content.

Point (b) has been amended to ensure legal certainty in the completion of the LOE.

Point (e) has been replaced to avoid duplication with the provisions in ORO.FC.145. There is no change to the content.

Point (f) has been replaced for, amongst other reasons, consistency across the Air OPS Regulation in regard to CRM.

Additionally, for ATQP and EBT, there needs to be a consistent baseline across both programmes. The new point (f) ensures level playing field between the two programmes, and an equivalent level of prescription between both of them. The actual wording of the text has been transposed from the EBT regulation with the appropriate amendments to ensure consistency in ATQP.

Other clarifications and simplifications

Several implementing rules in ORO.FC have been identified as unclear, or as duplicating other implementing rules. The proposal introduces the necessary clarifications and simplifications as follows:

- (a) amends ORO.FC.140(b) to clarify the meaning of ‘and/or’ in the Regulation. (*Domains affected: CAT A, CAT H, NCC A, NCC H, SPO A, SPO H*);
- (b) deletes ORO.FC.200(d)(2) because it duplicates ORO.FC.202 requirements. (*Domains affected: CAT A, CAT H*);
- (c) deletes the last part of the sentence in ORO.FC.235(c) and does not transfer it to the new ORO.FC.236 because it contradicts Appendix 9 to Part-FCL which allows the applicant to choose their seat, and because ‘normally occupied seat’ is unclear. (*Domain affected: CAT H*); and
- (d) amends ORO.FC.202 to eliminate duplications as follows: The former point (b) has been deleted because it was already duplicated in AMC for helicopters, and is moved to AMC for aeroplanes, also for consistency. Following the NPA consultation, it appeared that the part of sentence ‘as foreseen in ORO.FC.200(c)(2) and (d)(2)’ could be also deleted, because ORO.FC.200 (d)(2) has been deleted and the rest of the sentence is a duplication of ORO.FC.200.

In addition, the text of the NPA is amended considering the EBT Regulation (Regulation (EU) 2020/2036¹⁸ published in December 2020.

3.4. Flight crew training and checking— what are the stakeholders’ views — outcome of the consultation

EASA received a total of 624 comments to NPA 2019-08, from 49 commentators ranging from NAAs to commercial and private operators, airline associations, helicopter associations, pilot associations, aerodrome associations, ANSPs, aircraft manufacturers, original equipment manufacturers, and private individuals.

¹⁸ Commission Implementing Regulation (EU) 2020/2036 of 9 December 2020 amending Regulation (EU) No 965/2012 as regards the requirements for flight crew competence and training methods and postponing dates of application of certain measures in the context of the COVID-19 pandemic (OJ L 416, 11.12.2020, p. 24) (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32020R2036&qid=1616426498929>).

Detailed responses to the comments received as well as an analysis of the comments are provided in the related CRD 2019-08.

3.5. Flight crew training and checking— what are the expected benefits and drawbacks of the proposals

In regard to the implementing rules:

- the regulatory impact assessment (RIA) can be found in NPA 2019-08;
- the RIA included in the NPA is not affected by the comments received;
- the impact of the Opinion is the same as assessed in the NPA.

3.6. Flight crew training and checking — how we monitor and evaluate the rules

Monitoring is a continuous and systematic process of data collection and analysis with regard to the implementation/application of a rule/activity. It generates factual information for future possible evaluations and impact assessments and helps to identify actual implementation issues. EASA proposes the following monitoring plan:

What to monitor	How to monitor	Who should monitor	How often to monitor
Number of occurrences related to inadequate crew performance (e.g. loss of control, collision with obstacle(s) during take-off and landing, CFIT, low altitude operations and unintended flight in IMC)	Reports in ECCAIRS and information collected at Member State level	EASA/NAA	Every 2 years

Cologne, 27 May 2021

Patrick KY
Executive Director



4. ICAO harmonisation

- This Opinion addresses at implementing rule level some of the differences between the current Air OPS rules and ICAO Annex 6. The remaining differences included in the scope of the activities of RMT.0379 will be addressed through a future ED Decision.
- The non-exhaustive list below presents some of the most important differences compared to Annex 6 Part I, Amendment 44:
 - **Definitions — aerodrome minima:** after the adoption of the proposed rules, there will be NO differences.
 - **Definitions — combined vision system:** the difference will be addressed with a new definition included in a future ED Decision related to AWOs.
 - **Definitions — synthetic vision system:** the difference will be addressed with a new definition included in a future ED Decision related to AWOs.
 - **SARP 4.2.8.1.1 — approval of operational credits:** the difference will be partially addressed with the adoption of the proposed rules. The remaining part will be addressed with a new definition included in a future ED Decision related to AWOs.
 - **SARP 4.2.9 — threshold crossing height for 3D instrument approach operations:** the difference will be addressed with a new definition included in a future ED Decision related to AWOs.
 - **SARP 6.24.1 — aeroplanes equipped with LS, HUD, EVS, SVS, CVS:** the difference will be addressed with a new definition included in a future ED Decision related to AWOs.
 - **SARP 6.24.2 — aeroplanes equipped with LS, HUD, EVS, SVS, CVS:** the difference will be addressed with a new definition included in a future ED Decision related to AWOs.
- Regarding Annex 6 Part II, Amendment 37, the same approach as for Part I will be followed, where existing differences will be partially addressed with the adoption of the proposed rules contained in this Opinion. The remaining part will be addressed in a future ED Decision related to AWOs.
- Regarding Annex 6 Part III (Helicopters), Amendment 23:
 - The differences will be partially addressed with the adoption of the proposed rules. The remaining part will be addressed in a future ED Decision related to AWOs.
 - Note to Section 3 SARP 2.6.2.1: this SARP was addressed in the context of the activities of RMT.0573 'Fuel/energy planning and management'. The SARP will change from 'less protective' to 'difference in character' in order to align with aeroplanes.

Flight crew training: Addressing training-related requirements in ICAO Annex 6 is not within the scope of this Opinion. In addition, this Opinion is not creating any new differences with ICAO.



5. References

5.1. Related regulations

- Commission Regulation (EU) No 1178/2011 of 3 November 2011 laying down technical requirements and administrative procedures related to civil aviation aircrew pursuant to Regulation (EU) No 216/2008 of the European Parliament and of the Council (OJ L 311, 25.11.2011, p. 1)
- Commission Regulation (EU) No 965/2012 of 5 October 2012 laying down technical requirements and administrative procedures related to air operations pursuant to Regulation (EU) No 216/2008 of the European Parliament and of the Council (OJ L 296, 25.10.2012, p. 1)
- Commission Regulation (EU) No 139/2014 of 12 February 2014 laying down requirements and administrative procedures related to aerodromes pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council (OJ L 44, 14.2.2014, p. 1)

5.2. Related decisions

- Decision No 2011/016/R of the Executive Director of the European Aviation Safety Agency of 15 December 2011 on Acceptable Means of Compliance and Guidance Material to Commission Regulation (EU) No 1178/2011 of 3 November 2011 laying down technical requirements and administrative procedures related to civil aviation aircrew pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council 'Acceptable Means of Compliance and Guidance Material to Part-FCL'
- Decision N° 2012/015/Directorate R of the Executive Director of the Agency of 24th October 2012 on Acceptable Means of Compliance and Guidance Material to Commission Regulation (EU) No 965/2012 of 5 October 2012 laying down technical requirements and administrative procedures related to air operations pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council 'Guidance Material to Annex I — Definitions'
- Decision 2014/025/R of the Executive Director of the Agency of 28 July 2014 adopting Acceptable Means of Compliance and Guidance Material to Part-ARO of Regulation (EU) No 965/2012 and repealing Decision 2014/014/R of the Executive Director of the Agency of 24 April 2014 'AMC and GM to Part-ARO — Issue 3'
- Decision 2014/017/R of the Executive Director of the Agency of 24 April 2014 adopting Acceptable Means of Compliance and Guidance Material to Part-ORO of Regulation (EU) No 965/2012 and repealing Decision 2012/017/R of the Executive Director of the Agency of 24 October 2012 'AMC and GM to Part-ORO — Issue 2'
- Decision 2014/015/R of the Executive Director of the Agency of 24 April 2014 adopting Acceptable Means of Compliance and Guidance Material to Part-CAT of Regulation (EU) No 965/2012 and repealing Decision 2012/018/R of the Executive Director of the Agency of 24 October 2012 'AMC and GM to Part-CAT — Issue 2'
- Decision N° 2012/019/Directorate R of the Executive Director of the Agency of 24th October 2012 on Acceptable Means of Compliance and Guidance Material to Commission Regulation (EU) No 965/2012 of 5 October 2012 laying down technical requirements and



administrative procedures related to air operations pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council 'Acceptable Means of Compliance and Guidance Material to Part-SPA'

- Decision N° 2013/021/Directorate R of the Executive Director of the Agency of 23 August 2013 on adopting Acceptable Means of Compliance and Guidance Material for Non-commercial operations with complex motor-powered aircraft ('Part-NCC')
- Decision 2014/016/R of the Executive Director of the Agency of 24 April 2014 adopting Acceptable Means of Compliance and Guidance Material to Part-NCO of Regulation (EU) No 965/2012 and repealing Decision 2013/022/R of the Executive Director of the Agency of 23 August 2013 'AMC and GM to Part-NCO — Issue 2'
- Decision 2014/018/R of the Executive Director of the Agency of 24 April 2014 adopting Acceptable Means of Compliance and Guidance Material to Part-SPO of Regulation (EU) No 965/2012 'AMC and GM to Part-SPO'
- Decision 2014/012/R of the Executive Director of the Agency of 27 February 2014 adopting Acceptable Means of Compliance and Guidance Material to Regulation (EU) No 139/2014 'AMC/GM for Aerodromes – Initial Issue'

5.3. Other reference documents

- JAR-OPS1
- EU-OPS Regulation (EC) No 1899/2006
- RMT OPS 001 – Comment and respond document (CRD) 2009 02.c Organisation Requirements
- ICAO Annex 1 to the Convention on International Civil Aviation 'Personnel Licensing', 11th Edition, July 2011
- ICAO Annex 6 to the Convention on International Civil Aviation 'Operation of Aircraft', 10th Edition, July 2016
- ICAO Doc 9868 'Procedures for air navigation services Training', Second Edition, 2016
- EASA SIBs
- Safety Recommendations
- Helicopter type ratings list
- CS-AWO Issue 2 (to be published approximately 2 months after the publication of this Opinion)
- SESAR project — AAL EFVS operation with operational credit: impact on ATM-Aerodrome

5.4. ICAO references relevant to the AWO-related content of the Opinion

ICAO Annex 3 — Meteorological service for international air navigation: the definition of 'visibility' has been proposed for ensuring that the meaning of 'visibility' used by pilots is the same as that used by meteorological services, aerodromes and air traffic services.

ICAO Annex 6 — Operation of Aircraft (Part I — International Commercial Air Transport — Aeroplanes: the relevant new definitions have been taken into account (e.g. aerodrome operating minima (Annex 6, 4.2.8.1) in case of 2D and 3D instrument approach operations, as well as certain principles such as



operational credit(s) (for operations with aeroplanes equipped with automatic landing systems (ALSs), head-up displays (HUDs) or equivalent displays, an EFVS, synthetic vision systems (SVSs) or combined vision systems (CVSs)); the new classification of the instrument approach operations (as Type A and Type B from ICAO Annex 6, 4.2.8.3.) has been also included; finally, the definitions of ‘decision altitude (DA) or decision height (DH)’ as well as that of ‘final approach segment (FAS)’ have been transposed.

ICAO Doc 9365 — Manual of All-Weather Operations: the criteria such as aerodrome operating minima, provision of facilities and services at aerodromes, basic requirements for the aeroplane and flight crew (operating procedures), surface movement guidance and control of aeroplanes and vehicles, minima for approach and landing operations, and the example of visibility credit for enhanced vision systems have been considered.

Other ICAO documents considered during this rulemaking task:

ICAO Doc 4444 — Procedures For Air Navigation Services — Air Traffic Management, 6th Edition, 2016

ICAO Annex 14 — Aerodromes (Volume I — Aerodrome Design and Operations), 7th Edition, 2016

ICAO Annex 14 — Aerodromes (Volume II— Heliports), 4th Edition, 2013

ICAO Doc 9830 — Advanced Surface Movement Guidance and Control Systems (A-SMGCS) Manual, 1st Edition, 2004

ICAO Doc 8168 — Procedures For Air Navigation Services — Aircraft Operations (Volume I — Flight Procedures), Fifth edition, 2006: the definition of circling approach and a straight-in approach has been also transposed, 5th Edition, 2006

ICAO Doc 8168 — Procedures For Air Navigation Services — Aircraft Operations (Volume II — Construction of Visual and Instrument Flight Procedures), 6th Edition, 2014

ICAO EUR Doc 013 — European Guidance Material On Aerodrome Operations Under Limited Visibility Conditions, 5th Edition, 2016

ICAO Expert Group — Flight Operations Panel (FLTOPSP) / All Weather Operations Sub Group (AWO-SG). The paper provides the concept of operations for performance-based aerodrome operating minima (PBAOM). The higher performance capabilities of new and improved avionics could mitigate some of the performance requirements of the ground-based navigation equipment. The underlying principle is that the minima will be predicated upon the combined capabilities of the ground and airborne facilities. This ICAO paper addresses also operational credits, which are already described in ICAO Annex 6, paragraph 4.2.8.1.1. As stipulated in the paper, operational credits can refer to lowering of the aerodrome operating minima (RVR and/or DH) for the purposes of an approach ban, reducing the visibility requirements, or requiring less demanding ground facilities as the overall performance can be achieved by enhanced airborne capabilities (one application of operational credits may be represented by the use of an EFVS). It is important to understand that when using the concept of PBAOM, a distinction should be made between a ‘basic aircraft’ (an aircraft with the minimum equipment required for the type and/or category of approach and landing operation intended) and an ‘advanced aircraft’ (an aircraft with equipment in addition to that required for the ‘basic aircraft’, as e.g. auto-flight systems capable of coupled approaches and/or autoland, HUD or equivalent displays, EFVS, CVS, and SVS).

ICAO Annex 10 — Aeronautical Telecommunications (Volume I — Radio Navigation Aids): SARPs for the global navigation satellite system (GNSS).



ICAO Paper GNSSP-WP-8, Validation of GBAS CAT I Accuracy: A GLS Model and Autoland Simulations for Boeing Airplanes, presented at the ICAO Global Navigation Satellite Systems Panel, Working Group B Meeting, Seattle, WA, May 29 - June 9, 2000.



6. Related documents

6.1. All weather operations

- CRD 2018-06 (A)
- CRD 2018-06 (B)
- CRD 2018-06 (C)
- CRD 2018-06 (D)
- CRD 2019-09
- CRD 2020-02

6.2. Flight crew training and checking

- CRD 2019-08

