



Explanatory Note to Decision 2019/005/R

Loss of control prevention and recovery training

NPA/CRD 2015-13 — OPINION No 06/2017 — RMT.0581

EXECUTIVE SUMMARY

The objective of this Decision is to address a safety and regulatory coordination issue related to aeroplane loss of control in-flight (LOC-I). The following initiatives are linked to this Decision:

- various accident safety recommendations (SRs);
- safety actions deriving from the European Plan for Aviation Safety (EPAS); and
- amended International Civil Aviation Organization (ICAO) Standards and Recommended Practices (SARPs).

The specific objective is to improve the level of safety by ensuring that pilots have the competencies to prevent LOC-I and the resilience to recover from aeroplane upsets.

On 20 December 2018, Commission Regulation (EU) 2018/1974 entered into force. Said Regulation amends Commission Regulation (EU) No 1178/2011 (the Aircrew Regulation) by introducing new requirements for upset prevention and recovery training (UPRT) for pilots in its Annex I (Part-FCL). This Decision contains the related acceptable means of compliance (AMC) and guidance material (GM) as well as revised AMC & GM to Annex VII (Part-ORA) to the Aircrew Regulation regarding the implementation of UPRT in type rating training programmes of approved training organisations (ATOs). Additionally, this Decision amends the AMC & GM to Annex I (Definitions) and Annex III (Part-ORO) to Commission Regulation (EU) No 965/2012 (the Air OPS Regulation) in order to align the existing UPRT provisions for operator-related training with the new UPRT regulatory framework in Part-FCL.

The Annexes to the Decision are the following:

- Annex I: Amendments to the AMC & GM to Part-FCL of the Aircrew Regulation;
- Annex II: Amendments to the AMC & GM to Part-ORA of the Aircrew Regulation;
- Annex III: Amendments to the GM to Annex I (Definitions) to the Air OPS Regulation; and
- Annex IV: Amendments to the AMC & GM to Part-ORO of the Air OPS Regulation.

The amendments will be applicable from 20 December 2019 and are expected to increase safety and ensure alignment with ICAO standards. They outline the detailed content of basic, advanced and type-specific UPRT to be provided at various stages of a professional pilot’s career. The qualification requirements for instructors to provide each type of UPRT are also described.

Passengers will benefit from an improved level of safety and, specifically, from a reduction in the frequency of aeroplane accidents caused by LOC-I.

Action area:	Aircraft upset in flight (LOC-I)		
Affected rules:	AMC & GM to Part-FCL, AMC & GM to Part-ORA, GM to Annex I (Definitions) to the Air OPS Regulation, and AMC & GM to Part-ORO		
Affected stakeholders:	Pilots, instructors, examiners, ATOs, operators, and competent authorities		
Driver:	Safety	Rulemaking group:	Yes
Impact assessment:	Full	Rulemaking Procedure:	Standard

● EASA rulemaking process

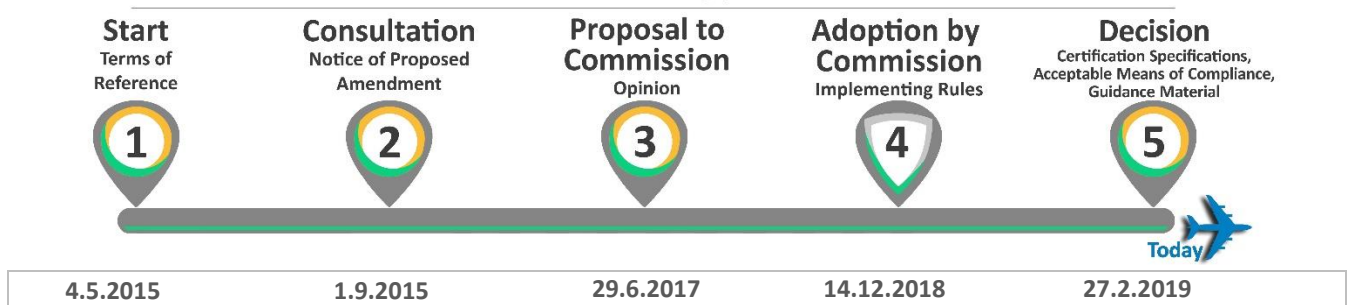


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1. About this Decision

The European Union Aviation Safety Agency (EASA) developed ED Decision 2019/005/R in line with Regulation (EU) 2018/1139¹ and the Rulemaking Procedure².

This rulemaking activity is included in the European Plan for Aviation Safety (EPAS)³ under rulemaking task (RMT).0581. The scope and timescales of the task were defined in the related Terms of Reference⁴.

The draft text of this Decision has been developed by EASA based on the input of Rulemaking Group (RMG) RMT.0581. All interested parties were consulted through NPA 2015-13⁵. In total, 405 comments were received from all interested parties, including industry and competent authorities.

EASA reviewed the comments received during the consultation with the support of Review Group (RG) RMT.0581. The comments received and EASA's responses to them were presented in Comment-Response Document (CRD) 2015-13⁶. Based on the comments received, EASA published Opinion No 06/2017 on 29 June 2017 which was addressed to the European Commission. Comments related to the draft AMC & GM have been considered and largely addressed when developing this Decision.

The related Regulation (EU) 2018/1974⁷ was adopted on 14 December 2018.

The final text of this Decision with the AMC & GM has been developed by EASA based on the input of RG RMT.0581 and comments received during the focused consultation workshop held with competent authorities and stakeholders at the EASA premises on 30 October 2018.

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=1536149403076&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 https://www.easa.europa.eu/document-library/general-publications?publication_type%5B%5D=2467

⁴ <https://www.easa.europa.eu/document-library/terms-of-reference-and-group-compositions/tor-rmt0581-and-rmt0582>

⁵ In accordance with Article 115 of Regulation (EU) 2018/1139 and Articles 6(3) and 7 of the Rulemaking Procedure.

⁶ <https://www.easa.europa.eu/document-library/notices-of-proposed-amendment/npa-2015-13>

⁷ Commission Implementing Regulation (EU) 2018/1974 of 14 December 2018 amending Regulation (EU) No 1178/2011 laying down technical requirements and administrative procedures related to civil aviation aircrew pursuant to Regulation (EU) 2018/1139 of the European Parliament and of the Council (OJ L 326, 20.12.2018, p. 1) (<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1547640250610&uri=CELEX:32018R1974>).



2. In summary — why and what

2.1. Why we need to change the AMC & GM

LOC-I is the most frequent risk area for fatal accidents, both in Europe and worldwide. On average, there are 3 fatal accidents per year related to LOC-I worldwide and 1 every second year involving an EASA Member State (MS) operator. A number of safety recommendations have been addressed to EASA in aircraft accident investigation reports. Since 2009, EASA has participated in international working groups to explore solutions including the Loss of Control Avoidance and Recovery Training (LOCART) and the International Committee for Aviation Training in Extended Envelopes (ICATEE). Both working groups have recommended enhanced pilot training programmes for pilots following an integrated approach reinforced throughout a pilot's career. The recommendations of these groups have been shared with the aviation community, notably with ICAO, the FAA and EASA. The recommendations cover initial licensing and operator training requirements.

Based on the recommendations of these working groups, in 2014 ICAO published amendments to its SARPs, in particular Annexes 1 and 6 to the Chicago Convention. Those revised SARPs introduced the concept of UPRT. UPRT is now an ICAO standard for commercial pilot licence (CPL) and multi-crew pilot licence (MPL) training and for initial and recurrent training for pilots working for commercial air transport (CAT) aeroplane operators. Consequently, EASA published ED Decision 2015/012/R of 4 May 2015 to facilitate the implementation of UPRT requirements within CAT aeroplane operators. At a later stage (14 December 2018), Commission Regulation (EU) 2018/1974 was adopted to establish the implementing rules for UPRT during training for the issue of various pilot licences and ratings. With regard to this new UPRT regulatory framework in flight crew licensing (FCL), AMC and GM are needed to assist pilots, training organisations, instructors and examiners to comply with these rules.

A separate but associated rulemaking task (RMT.0196 'Update of flight simulation training devices requirements'⁸) has addressed the capabilities and qualifications of training devices needed to support UPRT by updating the certification specifications (CSs) for flight simulation training devices (FSTDs). Those revised CSs for FSTD⁹ were published on 3 May 2018 and will be applicable from 20 December 2019. From this date, in order to satisfy the UPRT FCL and ORO.FC requirements, elements related to UPRT in CS-FSTD(A) Issue 2 are applicable. For existing devices, this update (evaluation of Issue 2 elements) can be done (upon application) either through a special evaluation or at the next recurrent evaluation.

2.2. What we want to achieve — objectives

The overall objectives of the EASA system are defined in Article 1 of Regulation (EU) 2018/1139. This Decision will contribute to the achievement of the overall objectives by addressing the issues outlined in Section 2.1.

The overall objective of this Decision is to ensure that pilot training provides pilots with the knowledge, skills and attitudes to be competent in preventing and, if necessary, recovering from a LOC-I situation.

The specific objectives of the Decision are to:

⁸ <https://www.easa.europa.eu/document-library/terms-of-reference-and-group-compositions/tor-rmt0196>

⁹ <https://www.easa.europa.eu/document-library/certification-specifications/cs-fstda-%E2%80%94-issue-2>



- transpose ICAO SARPs and guidance into European requirements including:
 - basic UPRT as part of the MPL, CPL(A) and ATPL(A) training courses;
 - advanced UPRT in an aeroplane as a prerequisite for specific type ratings and as an integrative part of MPL and ATP integrated courses;
 - type-specific UPRT during type rating training; and
 - requirements for instructors delivering UPRT; and
- develop the detailed training objectives, content and competency standards for UPRT training.

2.3. How we want to achieve it — overview of the amendments

2.3.1. AMC & GM to Part-FCL of the Aircrew Regulation

Amendments to GM to point FCL.010 Definitions

GM1 FCL.010 has been updated to include some additional abbreviations as used in the AMC and GM to Part-FCL. Additionally, some editorial changes and corrections have been made.

The new **GM3 FCL.010** has been introduced to provide definitions of terms related to UPRT that are used in the relevant new AMC and GM. These definitions are aligned with ICAO terminology and with the terms used in the context of UPRT in the Air OPS Regulation (GM15 to Annex I).

The definition of an ‘aeroplane upset’ is adopted from the latest ICAO definition. This definition does not include specific values of pitch or roll. The definition of ‘stall’ also includes a note that draws attention to the fact that, in some conditions, a stall warning device may not be activated. This could be because of ice accretion, unserviceability or design limitation of the stall warning system. (These definitions are also amended in GM15 to Annex I to the Air OPS Regulation).

As the following terms do not appear in GM15 to Annex I to the Air OPS Regulation, they have also been included:

- **Basic UPRT:** The definition of ‘basic UPRT’ is included in order to distinguish the exercises integrated into training courses for the issue of a CPL, an MPL or an airline transport pilot licence (ATPL) and which do not require specific additional instructor qualifications as the case is for the ‘advanced UPRT’ course required by point FCL.745.A (see the new point FCL.915(e)).
- **FSTD validation envelope:** The description of the subdivisions of the FSTD validation envelope are derived from Appendix 3-D to ICAO AUPRTA¹⁰. CS-FSTD Issue 2, published in 2018 as a result of RMT.0196, also includes this description.
- **Type-specific UPRT:** The definition of type-specific UPRT is included in order to distinguish it from the basic and the advanced UPRT.

The new **GM4 FCL.010** has been added to clarify that spin-related terminology used in the context of the training course in accordance with point FCL.745.A is not to be transferred to CAT operations.

¹⁰ [Airplane upset prevention & recovery training aid \(REV 3\) for transport category airplanes.](#)



AMC & GM to point FCL.745.A — advanced UPRT course

Part-FCL, as amended by Regulation (EU) 2018/1974, requires the advanced UPRT to be included in the integrated ATP(A) and MPL training courses. In order to ensure that private pilots and professional pilots following a modular training programme are not excluded, the same training is required before a pilot can commence his or her first type rating for single-pilot high-performance complex aeroplanes, single-pilot aeroplanes in multi-pilot operations and multi-pilot aeroplanes. The course is mandated by point FCL.745.A.

A review of transport category aeroplane major incidents and accidents showed that, in many cases, pilots did not react appropriately to an aeroplane upset. In some cases, the pilot's actions exacerbated an upset condition. For this reason, ICAO has recommended UPRT at licensing level. The basic and advanced UPRT address this recommendation. The advanced UPRT in an aeroplane allows a pilot to be exposed to the physiological and psychological effects of aeroplane upsets that cannot be replicated in an FSTD. On-aeroplane training is an effective means for pilots to develop the resilience to overcome these effects and to be able to apply appropriate recovery strategies in the event of an aeroplane upset.

Point FCL.745.A stipulates the minimum duration of the advanced UPRT course. **AMC1 FCL.745.A** describes the overall course objective as well as the content of the theoretical and practical training. **GM1 FCL.745.A** explains in further detail the different upset recovery training exercises. Taken together, the AMC and GM provide sufficient information for training organisations (ATOs) to develop training programmes and for the competent authorities to establish whether proposed courses can be approved.

The advanced UPRT course will involve exposure to aeroplane attitudes and g-loads that are not experienced in normal operations. This training must not be confused with aerobatic training. The training focuses on applying correct and timely recovery strategies to return the aeroplane to safe flight, whilst building the pilot's resilience against the associated psychological and physiological (human) factors (to better cope with the startle and surprise effect). The training includes exercises to reinforce aerodynamic principles such as the relationship between speed, attitude and angle of attack, the effect of g-load on aeroplane performance and the indications of a stall. In order to develop resilience, the instructor must expose the student pilot to the physiological effects of g-load within the range that might be experienced in an aeroplane upset on a transport category aeroplane. This range is typically from -1g up to 2,5/3g. The student pilot will be taught strategies to mitigate startle and surprise effect and will apply these strategies in flight. The student pilot will practise recoveries from nose-high and nose-low aeroplane upsets as well as stall events. There is no separate skill test. The course will be satisfactorily completed when the student pilot can mitigate the startle and surprise effect, recognise an upset, and apply the correct recovery technique.

The aerodynamic handling characteristics of transport category aircraft are significantly different to the training aircraft that will be used for the advanced UPRT course; this is particularly true for large, swept-wing jet aeroplanes. Teaching specific recovery techniques is not an objective of the advanced UPRT course (these are taught during type-specific UPRT), but there is a significant risk of 'negative transfer of training' if student pilots are taught techniques that are not appropriate to transport category aircraft. The techniques used during the advanced UPRT course must therefore be broadly compatible with techniques suitable for larger aircraft and the instructor must endeavour to highlight



the relevant differences between the aeroplane used during the course and transport category aeroplanes, as appropriate.

AMC & GM to point FCL.915(e) — instructors for advanced UPRT

In order to deliver the advanced UPRT course, an extension of instructor privileges is required. The new point FCL.915(e) in Part-FCL, as amended by Regulation (EU) 2018/1974, specifies the requirements for this extension of privileges. As well as meeting minimum experience requirements, instructors are required to complete a UPRT instructor course at an ATO.

AMC1 FCL.915(e) provides the objectives of the course that instructors should undertake to attain the privilege to instruct on the advanced UPRT course, additional prerequisites to undertake the course, the content of the course and the criteria for successful completion.

AMC2 FCL.915(e) provides the detailed content of the theoretical knowledge and practical exercises of the course.

GM1 FCL.915(e) contains further guidance on instructor competence required for spin-related training exercises. In this context, it is recommended that instructors for advanced UPRT either hold an aerobatic rating or have equivalent experience.

In order to maintain the privilege to instruct on the advanced UPRT course, instructors are required to complete, on a yearly basis, refresher training at an ATO. The syllabus of this refresher training is not specified in the rule, as the head of training of the ATO will determine the required training for each individual case. **AMC1 FCL.915(e)(2)** provides further details on this matter.

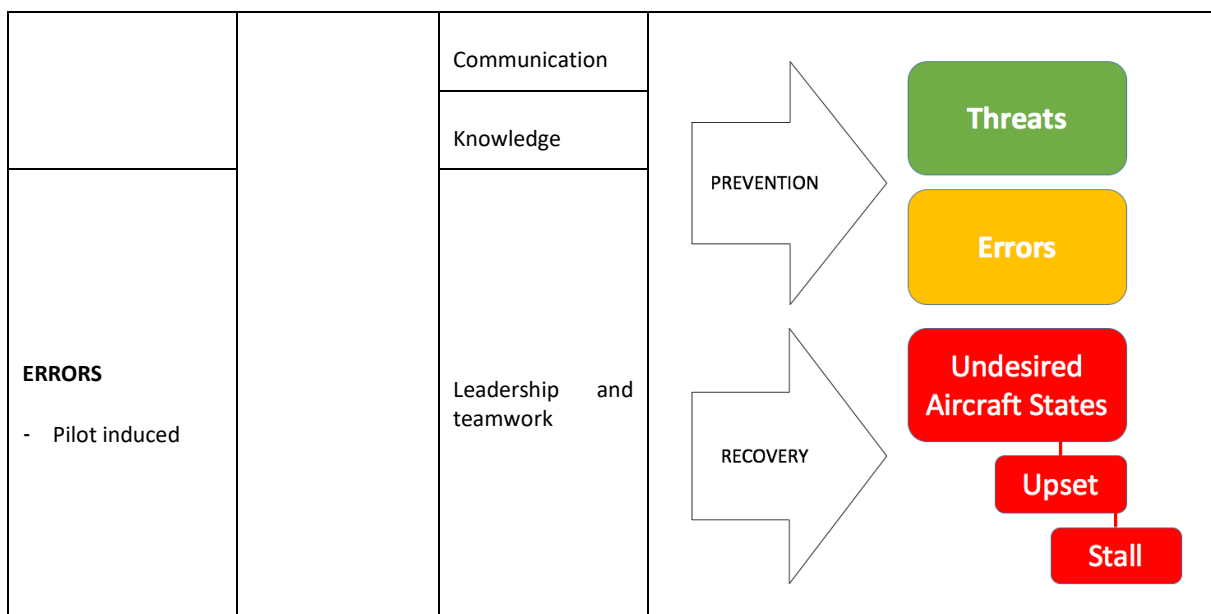
Amendments to AMC1 FCL.920 — instructor competencies and assessment

AMC1 FCL.920, related to ‘instructor competencies and assessment’, has been updated to incorporate the need to operate within the training envelope determined by the ATO (see GM1 ORA.ATO.125 point (f)) and to emphasise the importance of threat and error management (TEM) and crew resource management (CRM) in the avoidance of undesired aircraft states.

The following table (developed by the International Air Transport Association (IATA)) illustrates the application of the TEM model in the context of UPRT:

TEM model in the context of UPRT			
Causes	Pilot competencies	Prevention and recovery	
THREATS - Environmentally induced - Systems-anomalies induced	Pilots use the competencies (which include the CRM skills) as countermeasures against threats and errors, to prevent and recover from undesired aircraft states	Application of procedures	
		Aircraft flight path management, automation	
		Aircraft flight path management, manual control	





New GM1 FCL.905.TRI(b)

The completion of the advanced UPRT course is a prerequisite for the issue of a type rating for single-pilot high-performance complex aeroplanes, single-pilot aeroplanes in multi-pilot operation and multi-pilot aeroplanes (see point FCL.720.A, as amended). However, many current pilots will not have completed this training and, while it could be beneficial, there is no requirement for pilots already holding a type rating to complete this course.

When delivering UPRT in an FSTD, the instructor (TRI or SFI) has to compensate for these missing physiological/psychological effects that cannot be replicated in an FSTD. In order to do this, the instructor needs to have a comprehensive understanding of the said effects. The experts of RMT.0581 discussed the introduction of the advanced UPRT course as a prerequisite for the issue of an SFI or a TRI certificate, as this could enhance the quality of training. Finally, it was decided not to do so because the cost to industry would be disproportionate and because it could exclude some good candidates who would not be able to undertake the advanced UPRT course.

The new **GM1 FCL.905.TRI(b)** however highlights the benefits of completing the advanced UPRT course for FSTD instructors and suggests that the course could be useful for instructors instructing other candidates for the issue of a TRI or an SFI certificate.

Amendments to AMC1 FCL.930.TRI – TRI training course

Type rating courses for single-pilot high-performance complex aeroplanes, single-pilot non-high-performance complex aeroplanes, single-pilot aeroplanes in multi-pilot operation and multi-pilot aeroplanes include type-specific UPRT. The instructors who deliver this training need to possess the required competence. AMC1 FCL.930.TRI has therefore been amended to include additional items for student instructors. These items are based on the guidance already existing under the Air OPS Regulation for personnel providing FSTD UPRT (GM5 ORO.FC.220&230). The TRI course will include the need for the student instructor to apply the correct upset recovery techniques. An applicant for



an SFI certificate is required to complete the TRI training course, thus holders of both TRI and SFI certificates will be required to complete this training.

For holders of existing TRI certificates, there is no requirement to take such additional training. However, ATOs are responsible for ensuring proper competence of their instructors before assigning particular training responsibilities to them. It is therefore expected that ATOs provide the said additional training for delivering UPRT in an FSTD.

AMC & GM to Appendix 3 to Part-FCL — training courses for the issue of a CPL and an ATPL

The syllabi for the CPL(A) and ATPL(A) trainings have been updated to ensure that basic UPRT is addressed at an early stage of pilot training. **AMC1 to Appendix 3** has been amended to contain references to the new AMC2 to Appendix 3; AMC1 to Appendix 5 (see below) regarding such basic UPRT elements. To ensure a consistent approach between initial (licence) training, type-rating training and recurrent (operator) training, AMC1 to Appendix 3 has been amended to use terminology similar to other UPRT requirements.

The new **AMC2 to Appendix 3; AMC1 to Appendix 5** provides details regarding basic UPRT for all CPL(A), ATPL(A) and MPL courses.

- Table 1 describes the elements and components of UPRT that should be integrated into flight training to ensure that pilots develop the competence to prevent aeroplane upsets. These elements and components are aligned with the content of AMC1 ORO.GEN.220&230. However, some items taken from the table in AMC1 ORO.GEN.220&230 have been amended or omitted to take account of the different characteristics of an aeroplane used for CPL/ATPL training. For example, Mach effects and fly-by-wire control systems are unlikely to be relevant to this stage of training. Table 1 does not include an element for ‘manual handling’ because the UPRT exercises are described in a separate table (Table 2, see below). The AMC is not prescriptive about when the elements and components should be delivered within a training programme. Each ATO will need to review and amend their approved training courses to ensure that all components are included at the most appropriate phase of training.
- Table 2 lists the practical exercises for basic UPRT (manoeuvre-based UPRT exercises) which are common to the CPL and ATPL trainings. The basic UPRT exercises are intended to develop the competence to recover from aeroplane upsets. Basic UPRT exercises are included in Phase 1 of the CPL integrated course, the CPL/IR integrated course and the ATPL integrated course. They are also repeated in Phase 3 of each of these courses. Basic UPRT exercises replace flight at critically low airspeeds, unusual attitudes and spin avoidance that were previously required. For integrated courses including instrument rating, the exercises are again repeated in Phase 4. Where exercises are conducted in simulated instrument meteorological conditions, then the pitch, roll, speed and g-load deviations used should be less than those for the same exercises conducted with visual reference (GM1 to Appendix 3; Appendix 5 point (b)).
- Table 3 describes TEM elements as well as items on pilot competencies and human factors that should be integrated into the training course to develop the student-pilots competence to prevent aeroplane upsets.

The new **GM1 to Appendix 3; Appendix 5** contains further information and guidance on basic UPRT and stall training and clarifies that flight instructors are not required to hold any additional



qualifications to conduct this training. However, ATOs are responsible for ensuring proper competence and standardisation of their instructors before assigning particular training responsibilities to them. It is therefore expected that ATOs provide additional training necessary for delivering basic UPRT to a good standard. Additionally, the recommended recovery strategies to be used during basic UPRT and stall event training are described (tables with templates). The recommended recovery strategies are derived from the AUPRTA. These recommended recovery strategies are suitable for most aeroplane types and use of these strategies will minimise the risk of negative transfer of training for students who go on to operate different aircraft types. It remains the responsibility of the ATO to ensure that the strategies used during basic UPRT are appropriate and to verify that they are compatible with any procedures published by the manufacturers of the training aircraft used. Basic UPRT and stall event training may involve operation across a wider range of airspeeds, g-loads and aircraft attitudes than other parts of the training course. This needs to be considered by the ATO when defining the training envelope for a particular training course (see ORA.ATO.125 point (f)).

The new **GM1 Appendix 3** refers to GM3 FCL.735.A regarding a grading system for practical flight training during the ATP, CPL and MPL training courses.

Amendments to GM1 Appendix 5 — integrated MPL training course

GM1 Appendix 5 has been updated to reflect the new UPRT requirements. The possible reduction from 12 to 6 landings in Phase 4 (see Part-FCL Appendix 5 as amended by Regulation (EU) 2018/1065¹¹) has been considered. In order to be consistent with the amendments to AMC2 ORA.ATO.125 point (k)(1) (see Section 2.3.2), a one go-around exercise (go-around with all engines operating) has been added.

GM to Appendix 9 — training, skill test and proficiency check for MPL, ATPL, type and class ratings, and proficiency check for IRs

The new GM1 to Appendix 9 provides guidance on the conduct of upset recovery training. This is aligned with guidance available for UPRT in the Air OPS Regulation (GM3 ORO.FC.220&230). This new GM encompasses templates for recovery strategies as well guidance on go-around training.

2.3.2. AMC & GM to Part-ORA of the Aircrew Regulation

AMC2 ORA.ATO.125 describes the content of type rating courses for aeroplanes. This AMC has been updated as follows:

- Point (k)(1) has been revised and rearranged to require the landing training to contain at least one full-stop landing and one go-around with all engines operating. This additional go-around exercise addresses the related safety recommendations FRAN-2013-023 and SPAN-2004-030.
- In points (k)(2) and (k)(3), the text is rearranged to correct editorial errors.
- A new point (k)(3) refers to the training envelope referred to in GM1 ORA.ATO.125 point (f).

¹¹ <https://eur-lex.europa.eu/legal-content/GA/TXT/?uri=CELEX:32018R1065>



- A new point (la) is inserted to include UPRT in both theoretical and practical (aeroplane/FSTD) training. The table of elements and components in item have been transposed from UPRT arrangements under the Air OPS Regulation (AMC1 ORO.FC.220&230).
- A new point (lb) is inserted to reflect the content of EASA SIB 2015-17R1¹².

The new **GM1 ORA.ATO.125** provides guidance on the objectives of UPRT during type rating training, the relevance of human factors and sources of additional information. The content of this GM has been transposed from guidance for UPRT under the Air OPS Regulation (GM1 ORO.FC.220&230). Additionally, in point (f), further guidance is provided regarding defining the training envelope for particular training courses and training tasks, in relation to the training aircraft or device used. The training envelope is understood to be the range of attitudes, speed and g-loads that can be used for training and is to be specified by the ATO for all training exercises. Specifying the training envelope for FSTD training will allow the ATO to minimise the risk of negative transfer of training by preventing operation in areas where the FSTD may not reliably replicate the performance or handling characteristics of the aeroplane. For on-aeroplane training, the additional benefit will be to increase safety by providing a margin from the operating limitations of the aircraft and ensuring that instructors do not operate close to any regime where they might not have the competence to recover from an aeroplane upset. Having a specified training envelope will also improve the consistency of the training exercises delivered by different instructors as there should be a clear understanding of the limits within which the aircraft or FSTD may be operated. In determining the training envelope, ATOs are required to take into account the capabilities and certification of the aircraft, the training environment and the capabilities of the instructors. Different training envelopes could be specified for different training exercises. ATOs might apply a more restrictive training envelope for solo flights or might have a less restrictive envelope for basic UPRT exercises. If an ATO uses different aeroplane types for different training exercises, then it may be reasonable to have different training envelopes for each aeroplane type.

2.3.3. AMC & GM to the Air OPS Regulation

GM to Annex I (Definitions)

In GM15 to Annex I (Definitions), the definitions for ‘aeroplane upset prevention and recovery training’ and ‘aeroplane upset’ are updated, and a definition for ‘FSTD training envelope’ has been added, in order to be consistent with the new definitions introduced in point FCL.010 and GM3 FCL.010.

AMC & GM to Part-ORO

A new **AMC1 ORO.FC.120&130** is added to reflect the content of EASA SIB 2015-17R1.

In **AMC1 ORO.FC.220&230**, editorial errors are corrected and, as regards go-around training, a reference to GM1 to Appendix 9 to Part-FCL is inserted.

In **GM1 ORO.FC.220&230**, explanations on the training envelope are provided. The text is aligned with GM1 to Appendix 9 to Part-FCL.

In **GM3 ORO.FC.220&230**, references to external documents (AUPRTA) are provided.

¹² <https://ad.easa.europa.eu/ad/2015-17R1>



GM4 ORO.FC.220&230 is deleted. With the publication of CS-FSTD Issue 2, there is no longer a need for this GM. From 20 December 2019, in order to satisfy the UPRT ORO.FC requirements, elements related to UPRT in CS-FSTD(A) Issue 2 are applicable. For existing devices, including those FFS level B which had previously being qualified for additional specific level C features following GM4 ORO.FC.220&230, any update in accordance with the UPRT-related parts of CS-FSTD Issue 2 has to be evaluated (upon application) by either a special evaluation or at the next recurrent evaluation. Non-updated devices will show corresponding restrictions/limitations on the qualification certificate. In **GM5 ORO.FC.220&230**, a reference to the FSTD training envelope is inserted.



3. References

3.1. 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 (EC) 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 (EC) No 216/2008 of the European Parliament and of the Council (OJ L 296, 25.10.2012, p.1.)

3.2. Affected 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 No 2012/007/R of the Executive Director of the Agency of 19th April 2012 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-ORA')
- Decision No 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 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 No 2014/017/R of the Executive Director of the Agency of 24 April 2014 on 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')

3.3. Other reference documents

- 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)



4. Appendix

N/A

