EASA
European Union Aviation Safety Agency

UPRT Implementation

APATS 2019

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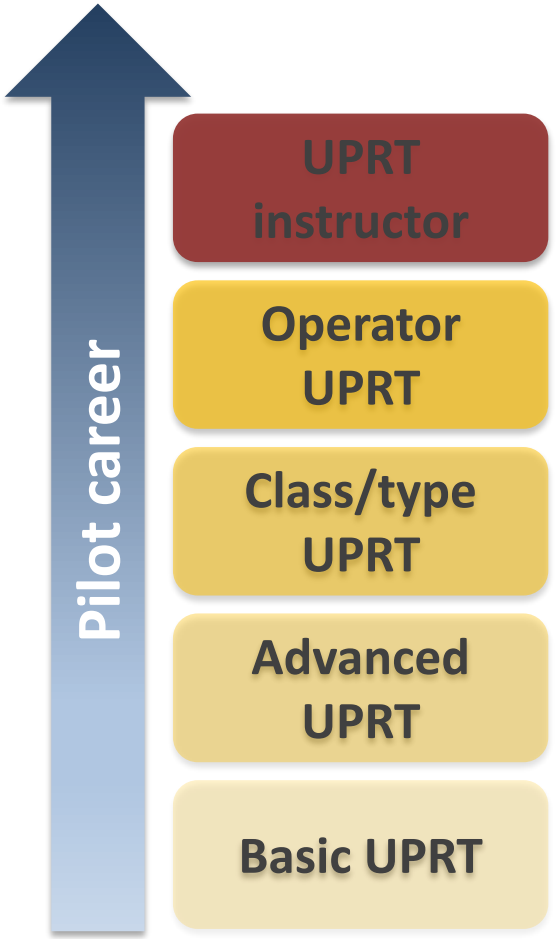
1. Where is Europe with UPRT?
2. What training platforms are used to achieve the UPRT objectives?
3. What must training providers delivering UPRT demonstrate?

Where is Europe with UPRT?

- → Applicable May 2016, UPRT in CAT operators recurrent training
- → Applicable December 2019;
  - → UPRT for initial licensing, class and type rating training
  - → CS-FSTD Issue 2 (elements) for FSTDs used for;
    - →UPRT in class and type ratings
    - →UPRT in CAT operators recurrent training



Pilot career

- UPRT instructor
- Operator UPRT
- Class/type UPRT
- Advanced UPRT
- **Basic UPRT**

Basic UPRT

→ MPL, CPL and ATPL courses

→ Theory (briefing) and flight exercises

- → Critically low airspeeds
- → Unusual attitudes
- → Spin avoidance

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Pilot career

- UPRT instructor
- Operator UPRT
- Class/type UPRT
- **Advanced UPRT**
- Basic UPRT

Advanced UPRT course

→ Additional theory & flight training in an aeroplane

→ Objective: expose students to dynamic upsets, build pilot psychological, physiological resilience

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Pilot career

- UPRT instructor
- Operator UPRT
- Class/type UPRT
- **Advanced UPRT**
- Basic UPRT

Advanced UPRT course

→ Part of MPL and ATPL integrated course

→ **Prerequisite** for:

- → SP aeroplanes in MPO
- → SP HP complex aeroplanes
- → MP aeroplanes

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Pilot career

- UPRT instructor
- Operator UPRT
- **Class/type UPRT**
- Advanced UPRT
- Basic UPRT

Class- /type - specific UPRT

- → UPRT related to **class/type specificities**
- → Mandatory for:
  - → SP certified complex aeroplanes
  - → MP certified aeroplanes

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Pilot career

- UPRT instructor
- **CAT Operator UPRT**
- Class/type UPRT
- Advanced UPRT
- Basic UPRT

CAT Operator UPRT

→ UPRT during CAT operator recurrent training

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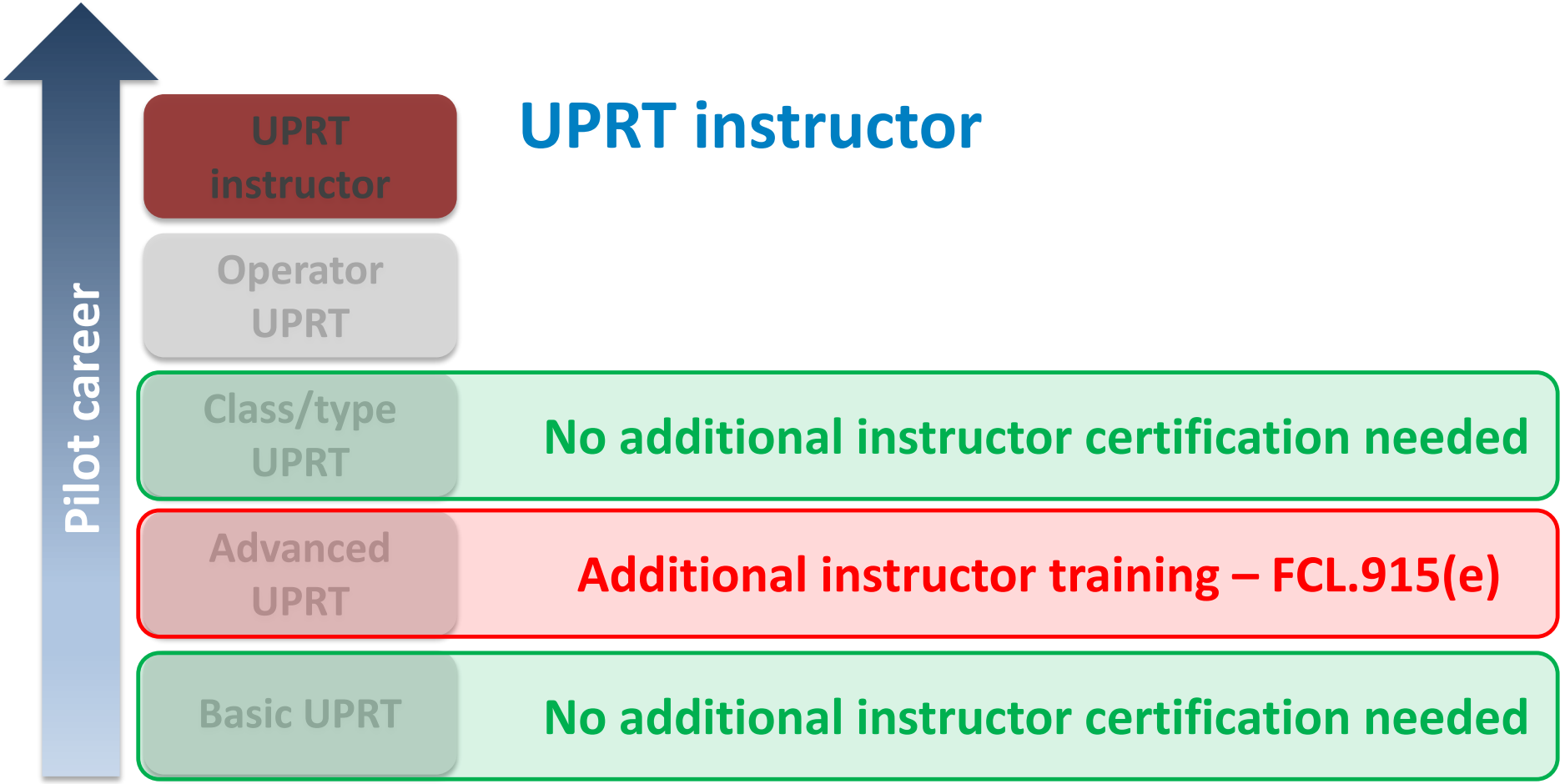
UPRT instructor



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Pilot career

- UPRT instructor
- Operator UPRT
- Class/type UPRT
- Advanced UPRT
- Basic UPRT

Advanced UPRT instructor

→ UPRT instructor training course
  → Prerequisite: 500 h total / 200 h as FI(A)
  → Continuous assessment
  → Course completion certificate + logbook entry

→ Recency: 1 refresher training / year

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What Training Platforms are used for achieving the UPRT Objectives?

UPRT FSTD Qualification

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UPRT FSTD Qualification – Applicability

- From 20 December 2019, only devices qualified in accordance with (elements of) CS-FSTD (A) issue 2 will meet the requirements of Regulations (EU) No 1178/2011 and 965/2012 for UPRT training.

- CS-FSTD (A) issue 2 becomes applicable from this date.

- FSTDs can be evaluated and qualified in accordance with issue 2 from its date of entry into force (May 2018).

UPRT FSTD Qualification – New vs 'Older' Devices

- All FSTDs initially qualified from 20 December 2019 will be in accordance with CS-FSTD (A) issue 2.

- Previously qualified FSTDs will have to be updated in accordance with the elements of CS-FSTD (A) issue 2 for UPRT training.

- If not updated, an FSTD will not meet the requirements of Regulations (EU) No 1178/2011 and 965/2012 for UPRT training and can therefore no longer be used for UPRT training.

UPRT FSTD Qualification – CS-FSTD(A) Issue 2

EASA has aimed, where possible, to align the technical specifications of CS-FSTD(A) with those of FAA 14 CFR Part 60, Change 2.

The main changes are;

- determine if the FSTDs' capability is appropriate to facilitate UPRT
- create a definition of 'FSTD validation envelope '
- increase the fidelity of the simulation of the engine and airframe icing effects
- addressing aerodynamic modelling for high angle of attack
- objective testing provisions which validate the cruising configuration, as well as the approach and landing configurations
- provide guidance on instructor operating station (IOS) feedback tools

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What Training Platforms are used for achieving the UPRT Objectives?

UPRT on Aeroplanes

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UPRT on Aeroplanes – Qualified for Training Task

→ Regulation 1178 FCL.745.A

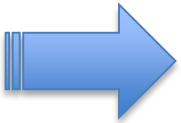
→ **(a) The advanced UPRT course shall be completed at an ATO and shall comprise at least:**

→ **…**

→ **(3) 3 hours of dual flight instruction with a flight instructor for aeroplanes FI(A) qualified in accordance with point FCL.915 (e) and consisting of advanced UPRT in an aeroplane qualified for the training task.**

UPRT on Aeroplanes - ~~Certified~~ Training Aircraft

- → The type of aircaft used for UPRT is depending on the intended training,
  Glider, Balloon, Piston, Jet, Amphibian, …
- → The capability of an aircraft used for UPRT is depending on the intended training, and
  Utility, Aerobatic, Spin, …
- → Also the equipment necessary for UPRT is depending on the intended training
  VFR, IFR, Parachute, …



EASA does not and cannot certify a “Training Aircraft”

- → However, it is possible to design aircraft tailored to training needs

UPRT on Aeroplanes - Typical Training Aeroplane

- → At least 2 – Seater (very often 3 or 4 Seats)
- → Utility Category (+4.4 g / - 1.76 g) or equivalent
- → (Approved for Spin)
- → Good and forgiving Flying Characteristics
- → AoA Indicator, g-meter as additional equipment
- → Higher amount of circuit patterns considered for fatigue

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What must training providers delivering UPRT demonstrate?

Training providers delivering UPRT

- Training providers must mitigate negative training, negative transfer of training, and safety risks
- Training within controlled environment – ATO/AOC holder
- Training provider to;
  - Focus on the training objectives/needs;
  - Apply Instructional Design Methodology (ISD);
  - Determine the training platform(s) – aircraft/FSTD
  - Determine the 'normal training envelope' for the training platform(s) used
  - Determine additional training needs instructors and ensure their standardisation
  - Perform risk assessments / ensure SMS integration
  - Demonstrate to their authority the training course/program is robust and risks are properly mitigated

‘Normal’ Training Envelope

- Normal training envelope is the envelope within which all training exercises will be carried out.
- It should be specified by the training provider in terms of the range of attitudes, speed and g-loads that can be used for training, taking into account:
  - the training environment, capabilities of the instructors;
  - when training in FSTDs, the limitations of the FSTD; and
  - when training in aeroplanes, the capabilities and certification of the aeroplane, consider a margin of safety in order to ensure that unintentional deviations from the normal training envelope will not exceed aircraft limitations.
- Different ‘normal training envelopes’ may be specified for different aeroplane types even within a single training course/program.

Take home…..

- Europe has in place the full UPRT regulatory framework to mitigate LOC-I
- UPRT comes with challenges and safety risks. EASA expects UPRT providers to:
  - Ensure use of appropriate training platforms
  - Carefully evaluate the training envelopes
  - Ensure instructors are competent
  - Offer a controlled training environment

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Questions

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