

UPRT FLIGHT INSTRUCTORS TRAINING

ITALIAN CIVIL AVIATION AUTHORITY PROPOSAL



Cpt . Banchetti Giancarlo



UPRT-ENAC

Dear colleagues, I wish to share with you our proposals in how to manage the implementation of FCL.745.A.

As you know, from the 20th December 2019 the UPRT will be mandatory and it will be necessary to train our F.I.s for this task.



UPRT-ENAC

First of all:

What are the differences between UPRT and Aerobatic Rating?



UPRT-ENAC

DEFINITION OF AIRCRAFT UPSET

(Ref. ICAO Doc. 10011 1.1.1,1.1.2)

- Upset is an in-flight condition by which unintentionally an aeroplane exceeds the parameters normally experienced in normal line operations or training. An upset is generally recognized as a condition of flight during which the pitch of the aeroplane unintentionally exceeds either 25 degrees nose up or 10 degrees nose down; or a bank angle exceeding 45 degrees; or flight within the aforementioned parameters but at inappropriate airspeeds.



UPRT-ENAC

The aircraft upset is an unintentional situation where the aeroplane is not doing what it was intended to do by the flight crew and is approaching unsafe parameters



UPRT-ENAC

RELATIONSHIP BETWEEN STALL AND UPSET

(Ref. ICAO Doc. 10011 1.1.3)

- It is important to understand that not all aeroplane upset occurrences involve an aerodynamic stall.
- The stall is an unintentional upset that can be occurred also whether the upset parameters are not be reached. When an aeroplane upset involving a stall, the aeroplane must first be recovered from the stall condition before any other upset recovery action can become effective.



UPRT-ENAC

RELATIONSHIP BETWEEN AEROBATIC TRAINING AND UPSET AND RECOVERY TRAINING

(Ref. ICAO Doc. 10011 3.3.1.3)

It is important to make the distinction that UPRT is not synonymous with aerobatic flight training. **While aerobatic training does improve manual handling skills** and increased awareness of the results of flight path deviations, **its primary objective is to achieve proficiency in precision maneuvering.** The primary objective of UPRT is effective aeroplane upset prevention and recovery.



UPRT-ENAC

The Aerobatic definition in accordance with CS 23 is:

The aerobatic category is without restrictions, other than those shown to be necessary as a result of required flight tests.



UPRT-ENAC

- It means that UPRT and Aerobatic are two completely separate matters!!
- What the 2 subjects are related on?
- By the demand that to show UPRT I need an Instructor with Aerobatic skill or with a huge capacity to avoid g-loads.
- Why?:
- Because As AMC1 FCL.745.A states:
- The objective of the course is for the pilot under training:



UPRT-ENAC

- to understand how to cope with the physiological and psychological aspects of dynamic upsets in aeroplanes; and
 - to develop the necessary competence and resilience to be able to apply appropriate recovery techniques during upsets.
-
- In order to meet the objective as specified above, the course should:
 - emphasise physiological and psychological effects of an upset and develop strategies to mitigate those effects;



UPRT-ENAC

- be delivered in a suitable training aircraft in order to expose trainees to conditions that cannot be replicated in an FSTD; and
- employ recovery techniques that are suitable for the aircraft used for training in order to support the training objectives. In order to minimize the risk associated with potential negative transfer of training, the recovery techniques used during the course should be compatible with techniques typically used for transport category aeroplanes.



UPRT-ENAC

AND TO DEMONSTRATE:



UPRT-ENAC

- the relationship between speed, attitude and AoA;
- (ii) the effect of g-load on aeroplane performance, including stall events at different attitudes and airspeeds;
- (iii) aerodynamic indications of a stall including buffeting, loss of control authority and inability to arrest a descent;
- (iv) the physiological effects of different g-loads between -1 and +2.5G; and
- (v) surprise and the startle effect;



UPRT-ENAC

- We see that point (iv) plans to demonstrate the physiological effects of different g-loads between -1 and +2.5G and if we exceed -1.52 (maximum limit for normal category) we could have some structural problem!!



UPRT-ENAC

Because...

In accordance with Part 21 these are the limits for g-load:

- **CS VLA :+ 3.8. -1.52**
- **CS 23 Normal + 3.8 -1.52**
- **CS 23 Utility +4.4 – 1.76**
- **Aerobatic +6.0 -3.0**



UPRT-ENAC

AIRCRAFT CAPABILITY

(Ref. ICAO Doc. 10011 3.3.1.3)

The UPRT skills can be acquired using non-aerobatic aeroplanes, but the range of possible manoeuvres is appreciably smaller than for more capable aeroplanes. An aerobatic aircraft permits to maintain adequate margins of safety during recovery from manoeuvres and a wide range of possible scenario. An aerobatic aeroplane permits also to mitigate the risk connected to this particular training.



UPRT-ENAC

For this task we need an aerobatic and an utility certified airplane because pitch attitudes, bank angles, AOA/airspeeds, sideslip and g-loads, aren't normally experienced during routine operations or normal training.

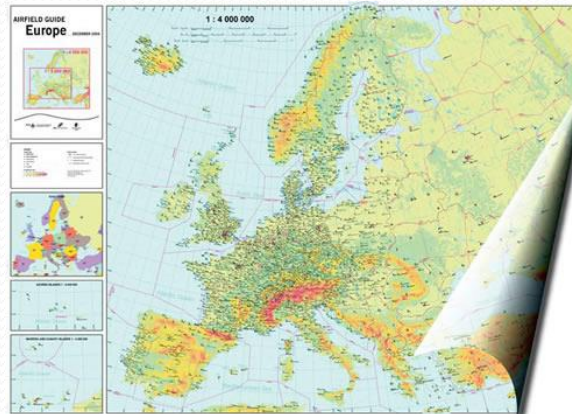


UPRT-ENAC

ENVIROMENTAL CAPABILITY

(Ref. ICAO Doc. 10011 3.3.1.5)

- During UPRT course development , a particularly emphasis is addressed to the risk connected with the appropriate training airspace areas and adherence to minimum safe altitudes.
- To mitigate the high level of risk connected , the existing aerobatic area must be used.

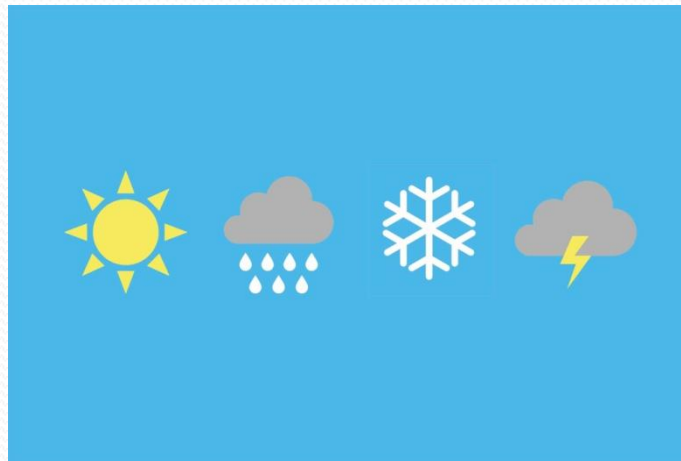


UPRT-ENAC

WEATHER CONSTRAINT

(Ref. ICAO Doc. 10011 3.3.1.5)

Visual meteorological condition must be obtain before flight training. The aerobatic training area is positioned in a controlled airspace, so special VFR is approved for the UPRT activity.



UPRT-ENAC

For these reasons we started from the idea that our aerobatic FI (f) wich have the privileges to train for aerobatic rating (FCL 810), **can train** a FI, who has got, in accordance with FCL 915(e) (1)(i) 500 hours as pilot 200 of which as Flight Instructor (the privilege to train in a CPL course)



UPRT-ENAC

- The overall objective of the course is to train an instructor to develop a comprehensive understanding of the entire UPRT operating environment, as well as the aeroplane's limitations and capabilities. The course permits the instructor to acquire and maintain the required UPRT knowledge levels and skill sets.
- At the end of academic and on-airplane training, the progress tests must be performed and successfully completed to obtain the “certificate of UPRT course”.



UPRT-ENAC

The “New Instructor”, now is eligible to train a candidate for the issue, in accordance with Article 4b of:

- Atp Integrated course
- Cpl Course
- Mpl Course (provided he has the ...)



UPRT-ENAC

- Type Rating:
- single-pilot aeroplanes operated in multi-pilot operations;
- (b) single-pilot non-high-performance complex aeroplanes;
- (c) single-pilot high-performance complex aeroplanes; or
- (d) multi-pilot aeroplanes; in accordance with Annex I (Part-FCL).



UPRT-ENAC

The instructor, after completing 25 hours of flight instruction of training according to FCL. 745.A, passed an AOC with a FIE and received refresher training at an ATO during which the competence required to instruct on a UPRT course is assessed to the satisfaction of the HT, can exercise the privilege as instructors for a course FCL.745 provided he/she has the privileges of FI (i).



UPRT-ENAC

The training of a course FCL. 745.A should be performed in an Utility aircraft certified because the Normal category is not enough to assure a safety (correct) training.



UPRT-ENAC

- ENAC oversight activity, could start before the 20 th December 2019.
- Within 6 months preceding the start of the course, the instructor should have completed a pre-course assessment with an instructor holding the privilege in accordance with FCL.915(e)(1) to assess their ability to undertake the course.



UPRT-ENAC

The privileges shall only be exercised if instructors have, during the last year, received refresher training at an ATO during which the competence required to instruct on a course in accordance with point FCL.745.A is assessed to the satisfaction of the HT.



UPRT-ENAC

Thanks for your attention

