

Push to Unload

Are we doing it right?

Cpt. Christof-J. Kemény
01 MAY 2024



wats2024
ORLANDO

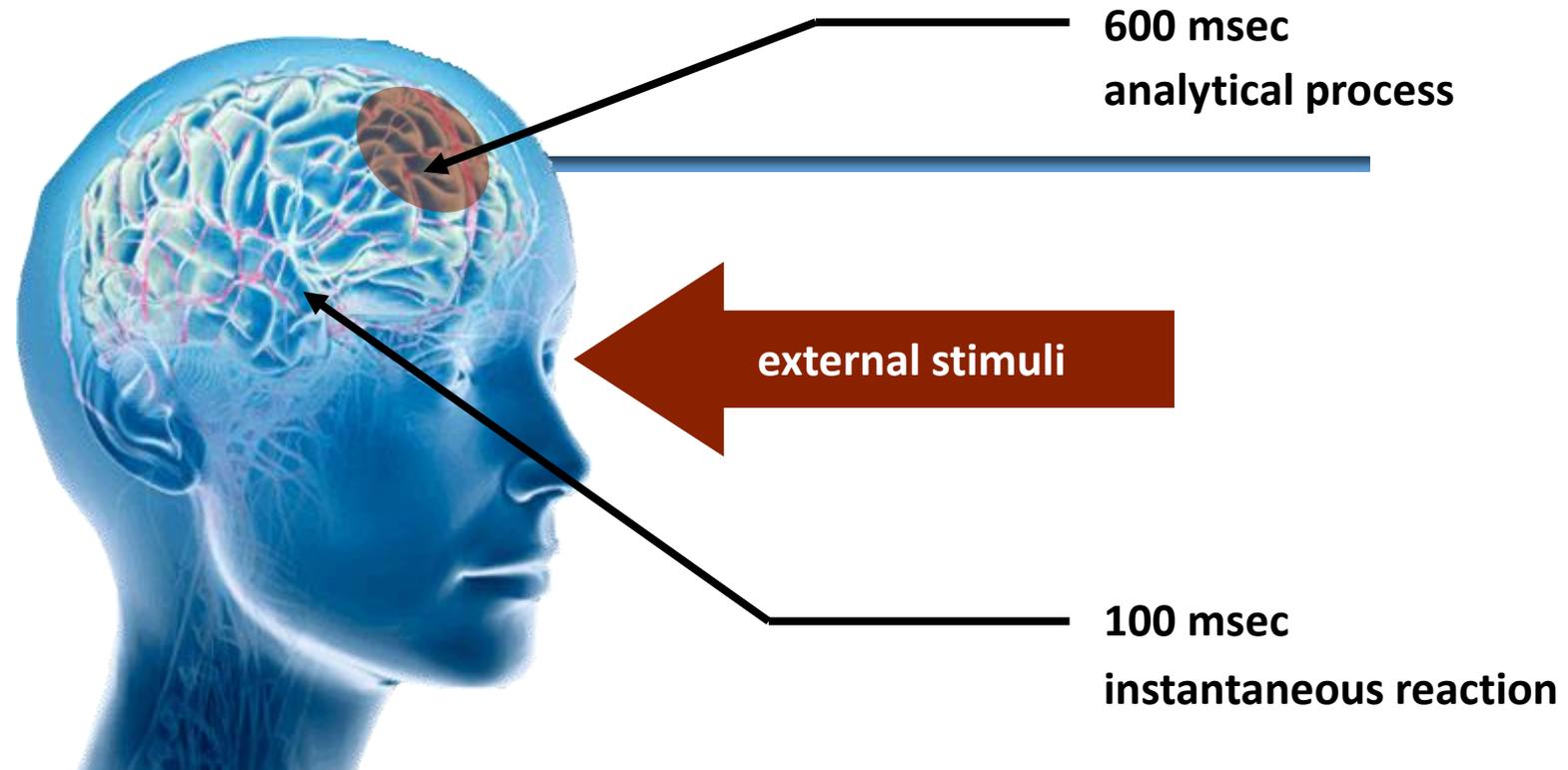




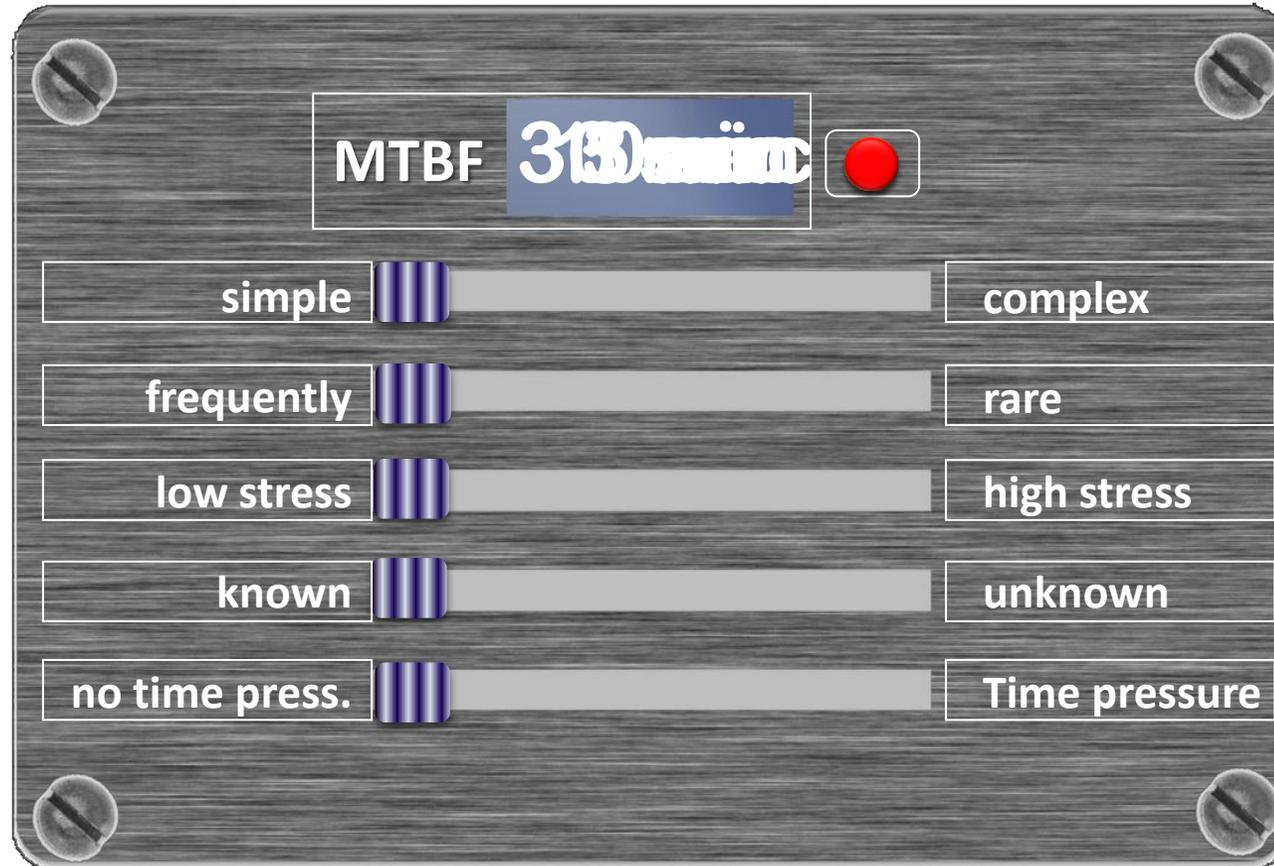
Aerobatic Flying



Human Performance



Human Performance





Doc 10011
AN/506



MANUAL ON AEROPLANE UPSET PREVENTION AND RECOVERY TRAINING

NOTICE TO USERS

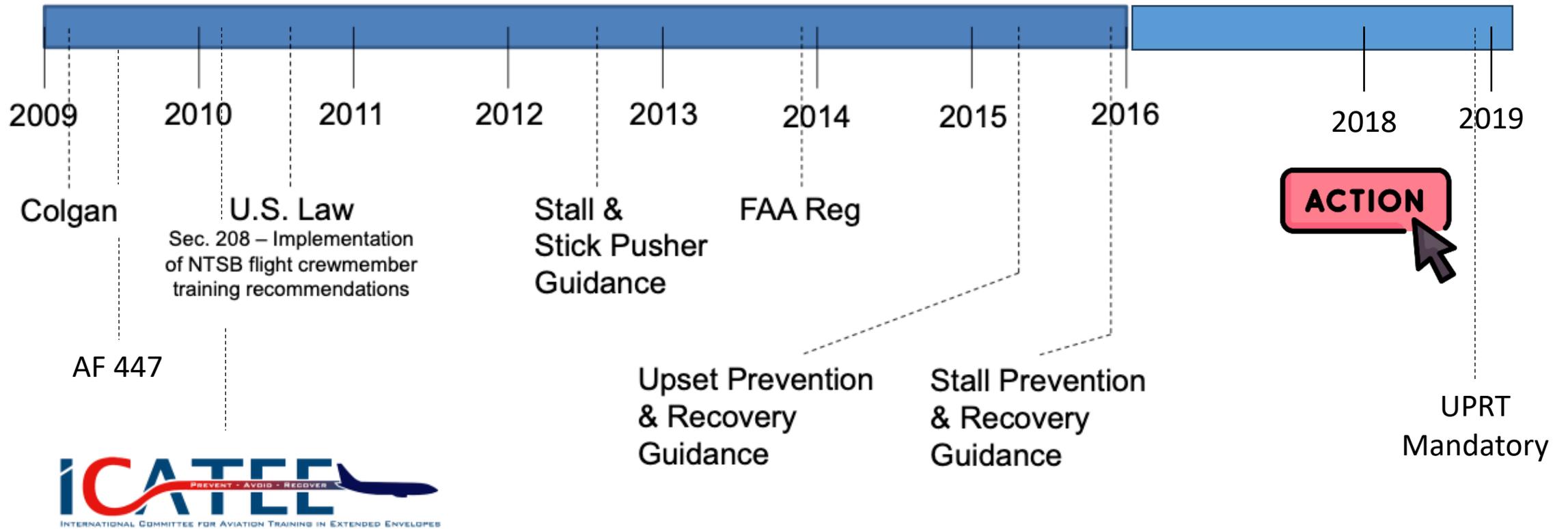
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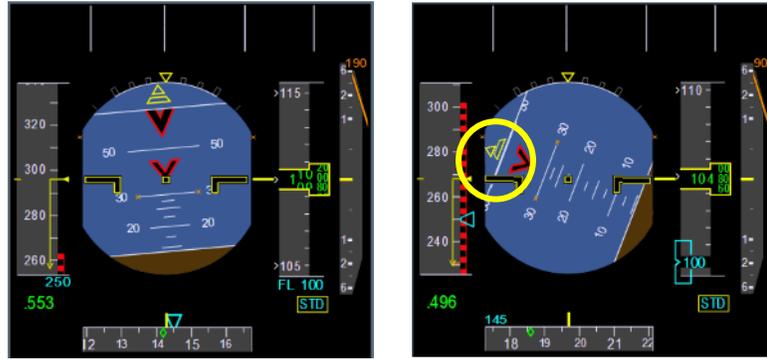
First Edition — 2014

INTERNATIONAL CIVIL AVIATION ORGANIZATION

Loss of Control in Flight: UPSET



Training Guidelines



PUSH TO UNLOAD

Thrust and Drag

ROLL

STABILIZE



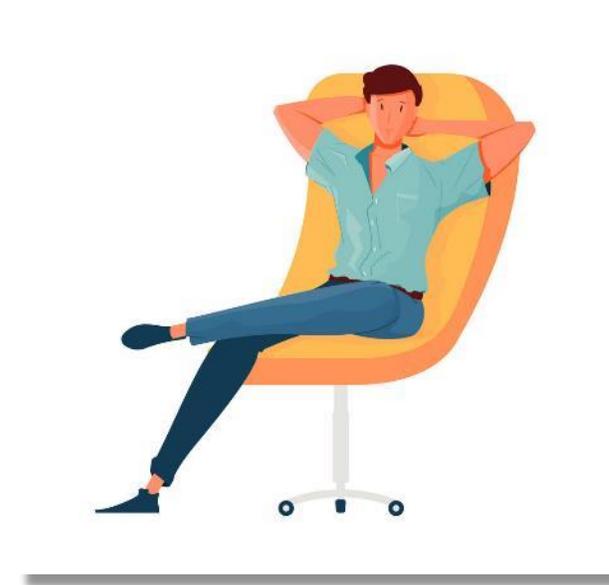
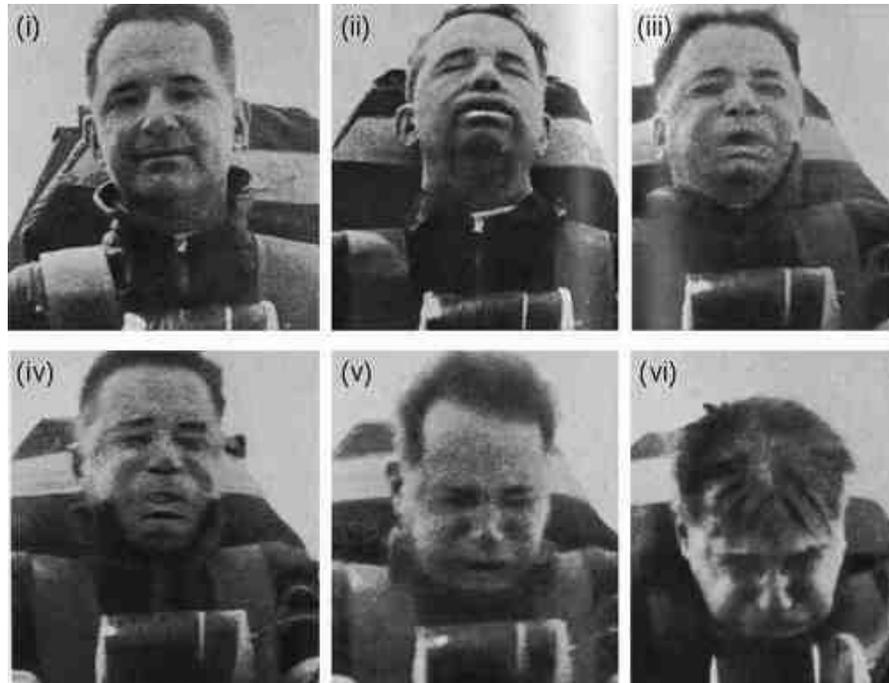
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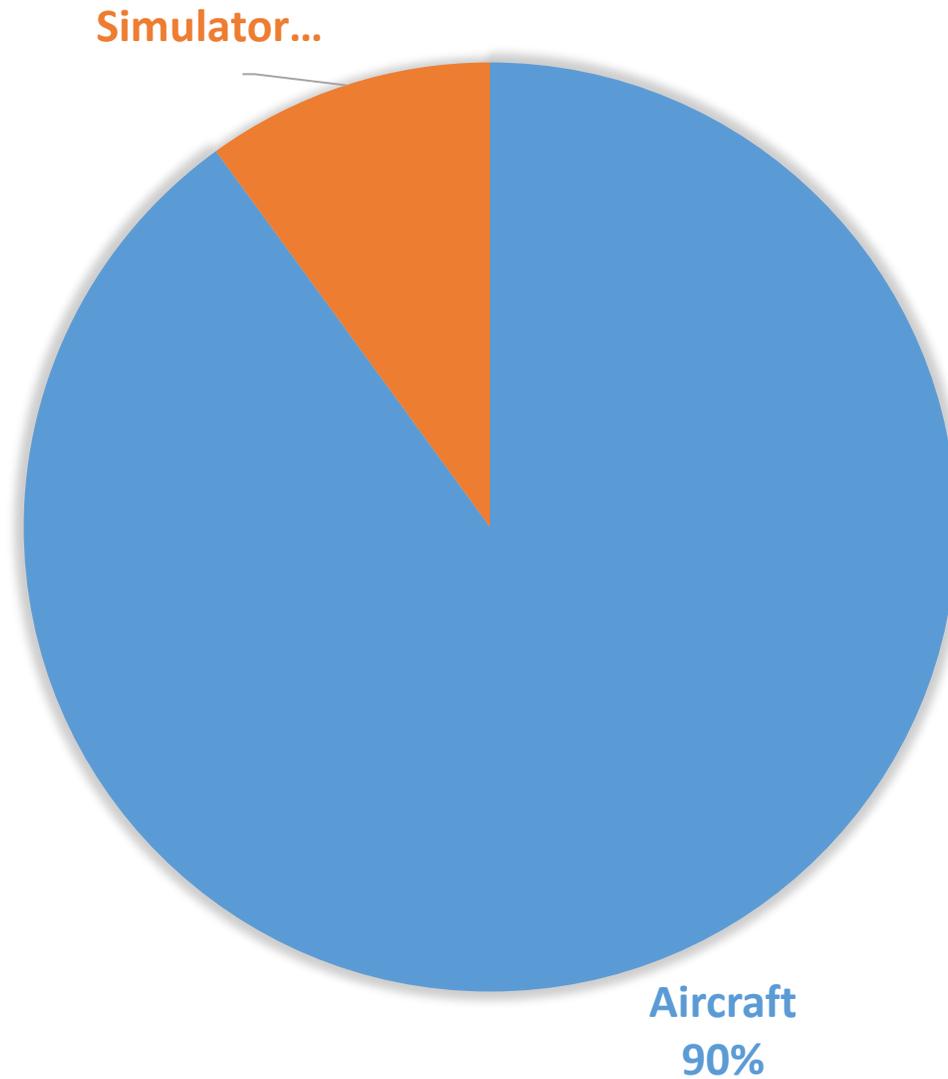
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**OUR #1
PRIORITY ?**

G – Load Effects



Body Sensations



Additional Flight Crew Training



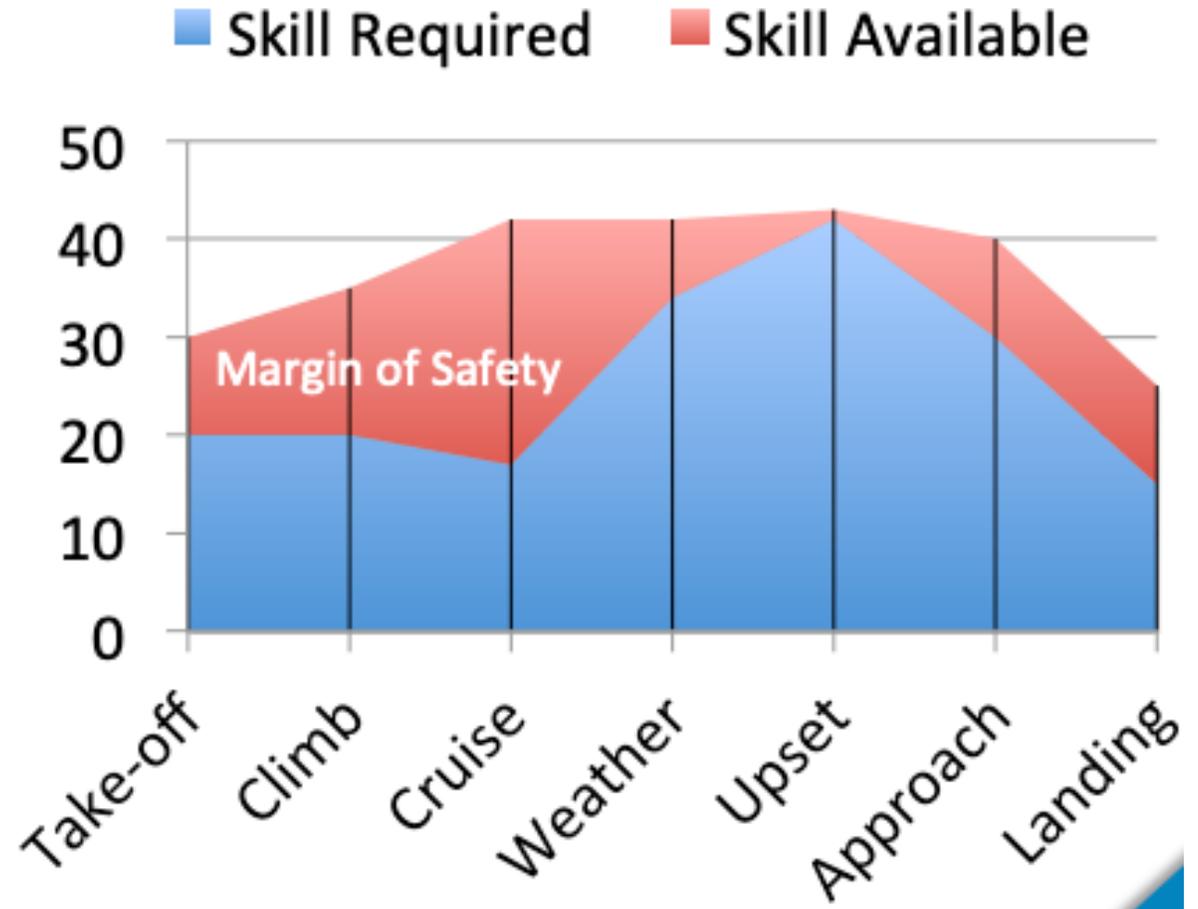
Additional Flight Crew Training



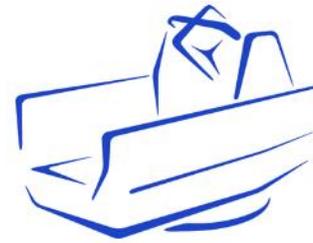
Instructor Margins

- Skills & Experience MUST Exceed the Curriculum
- Currency & Fitness

Flight Crew Margins



Advanced UPRT Instructor Qualification



DESDEMONA

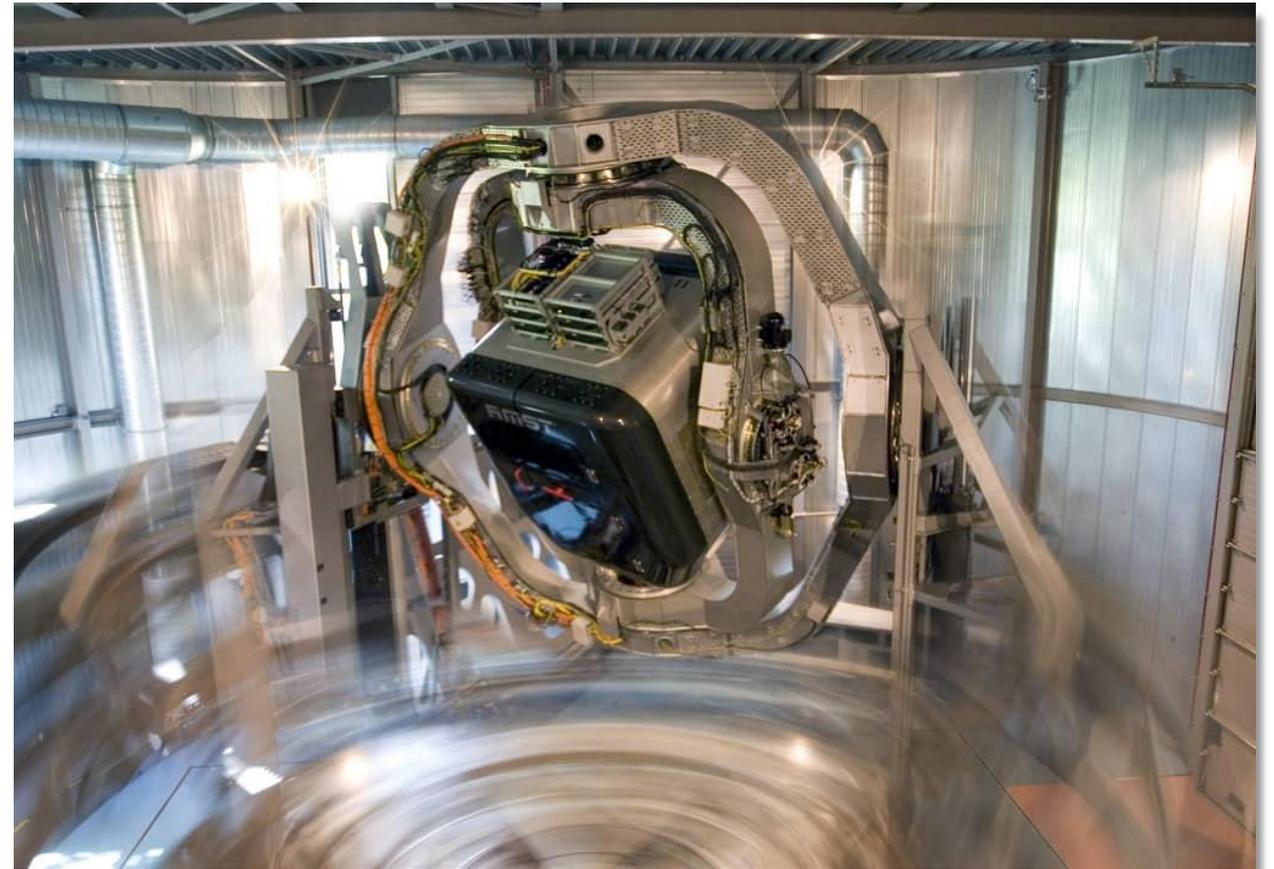
motion simulation for your proficiency



UPRT
UPSET PREVENTION &
RECOVERY TRAINING

UPRT instructor qualification course

Capt. Christof Kemeny

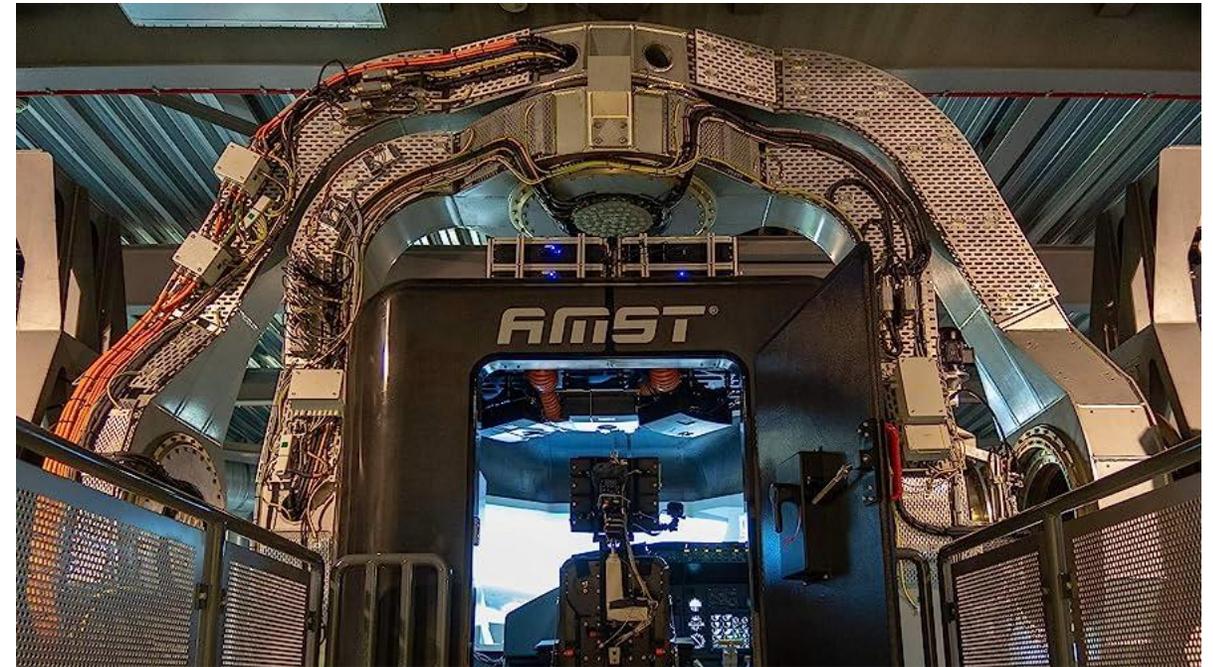


High g-load Simulation

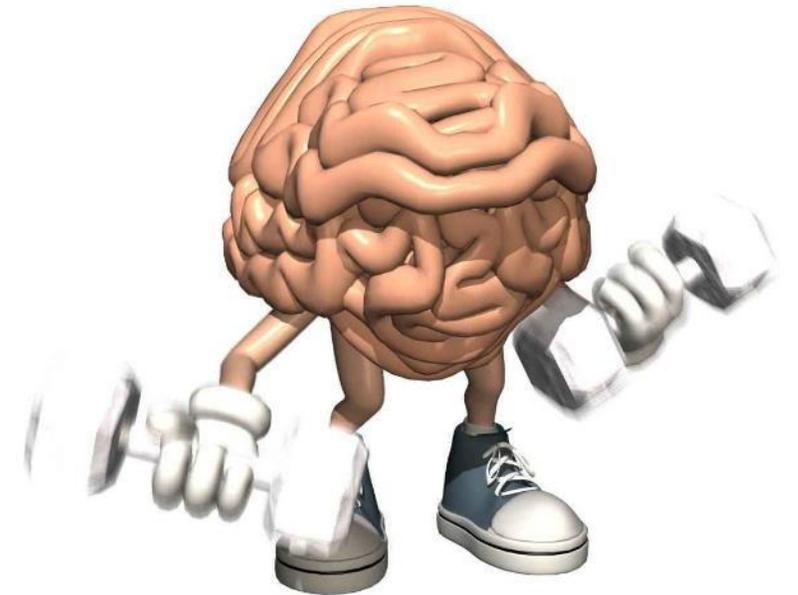
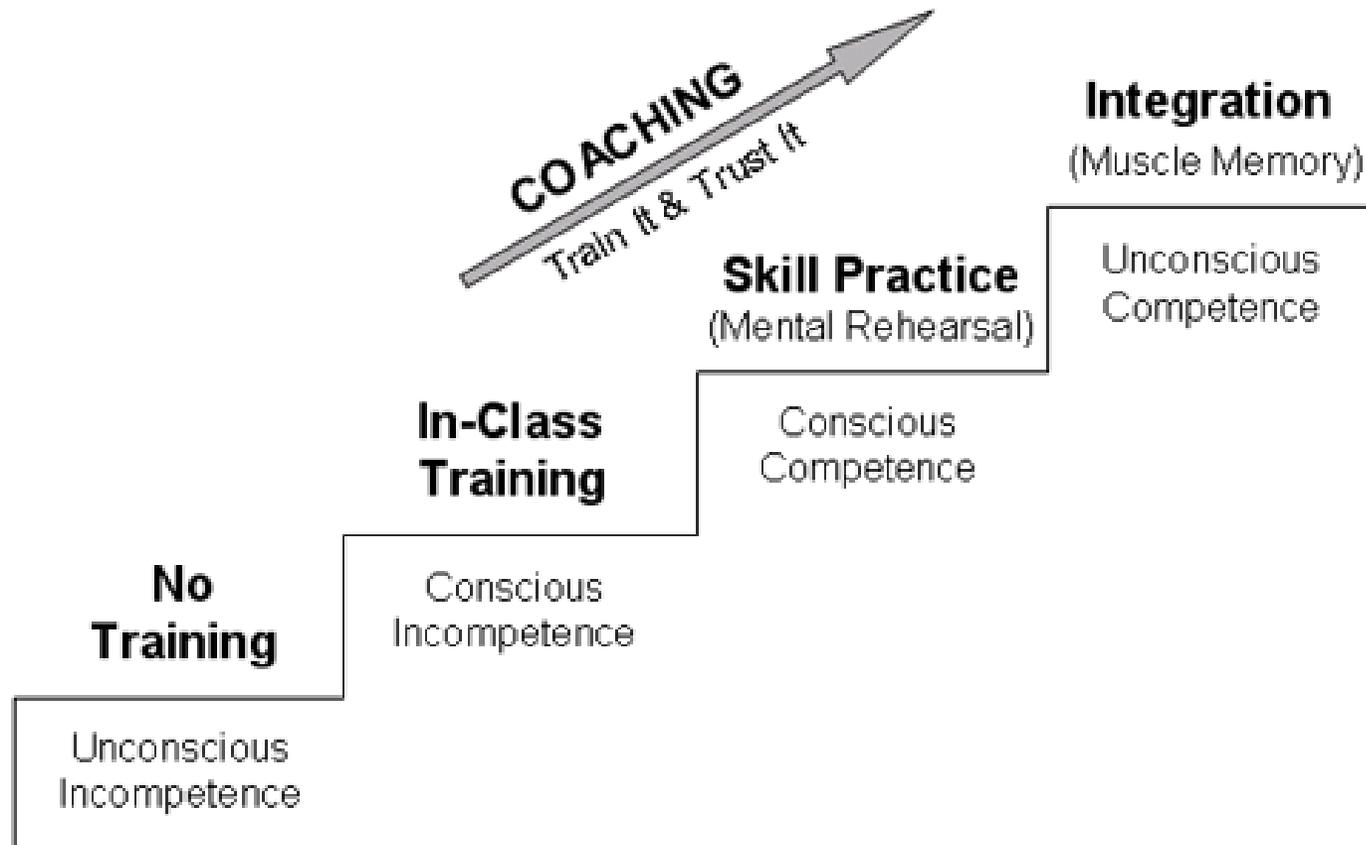


Advanced UPRT Instructor Qualification

- Sustained up to 3 g
- Extended Envelope
- Deep Stall Training
- Spatial Disorientation
- Psychological & Physiological Human Factors Experience
- General strategies or techniques - not aircraft specific



Unconscious Reaction



Advanced Spatial Disorientation Training



Fixed and rotary wing

Flight models for
trainer & fighter aircraft (similar PC-7/F-16) |
light helicopter (similar AS 350)

Demonstrates and familiarises pilots with the potentially
disastrous effects of Spatial Disorientation

Pitch-up sensations after take-off (somatogravic –
vestibular)

Human factors research and development tool

v-n Diagram



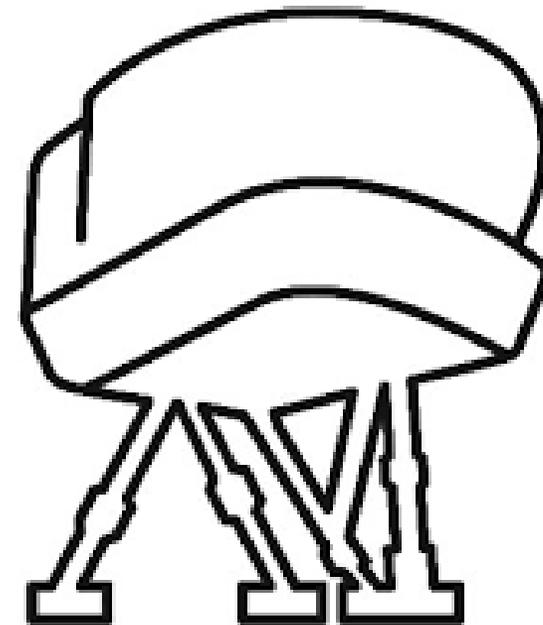


UPRT for Airline Pilots

Austrian 

FH | JOANNEUM
University of Applied Sciences

UPRT Instructor Qualification



Instructors think they can **pass on the experience** gained during on-aircraft UPRT to trainees in the FFS and judge on-aircraft UPRT as important for airline pilots

Feel of G-forces: Instructors highlighted the importance of experiencing realistic G-forces during different maneuvers.

Envelope expansion: On-aircraft training allows pilots to experience real high pitch and bank values, expanding their operational envelope.

Limited applicability for recovery technique training: On-aircraft UPRT is seen more as a tool to teach human limitations rather than to train specific recovery techniques.

FFS are rated medium suitable for UPRT

Instructors don't see a benefit in g-load indication (out of view) , but they see a high benefit in an **AoA-indication**

Structured recovery procedures: Simulators provide structured training for recovering from UPRT events and stalls.

Instructor qualifications: The quality and standardization of instructors are deemed crucial for the success of UPRT

Theoretical knowledge of flight crews concerning principles of flight, AoA, v-n, limitations of FFS as well as protection systems of their aircraft is rated medium

Standardized PM Duties: Standardized callouts from PM and active role in recovery are required

V-n- Diagram



In pilot's field of view

Speed Tape Indications



V-n Diagramm







TeamWork

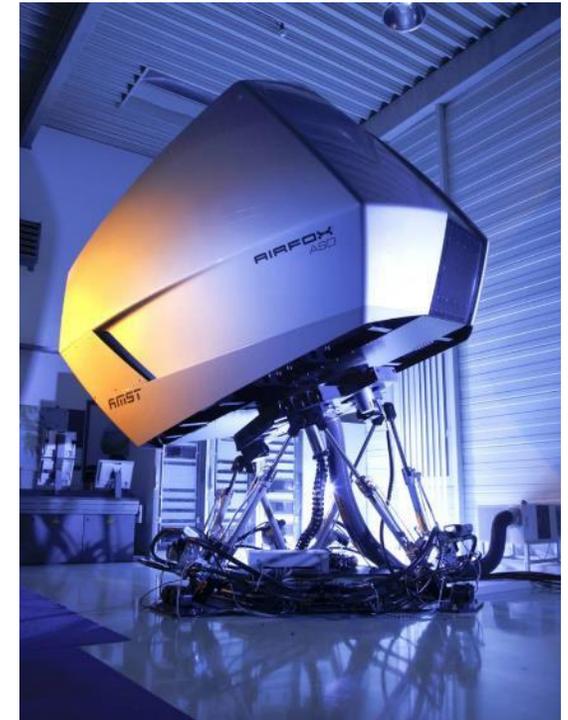
Hybrid Instructor Qualification



DESDEMONA



Aircraft



Advanced Spatial Disorientation



Christof Kemeny



„ You don´ t rise to the
occasion,

you sink to the level of
your training”

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