McKechnie AVIATION
MANAGEMENT SYSTEMS FOR AVIATION

Implementation of UPRT for CAT operators

Andrew McKechnie

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Upset Prevention and Recovery Training

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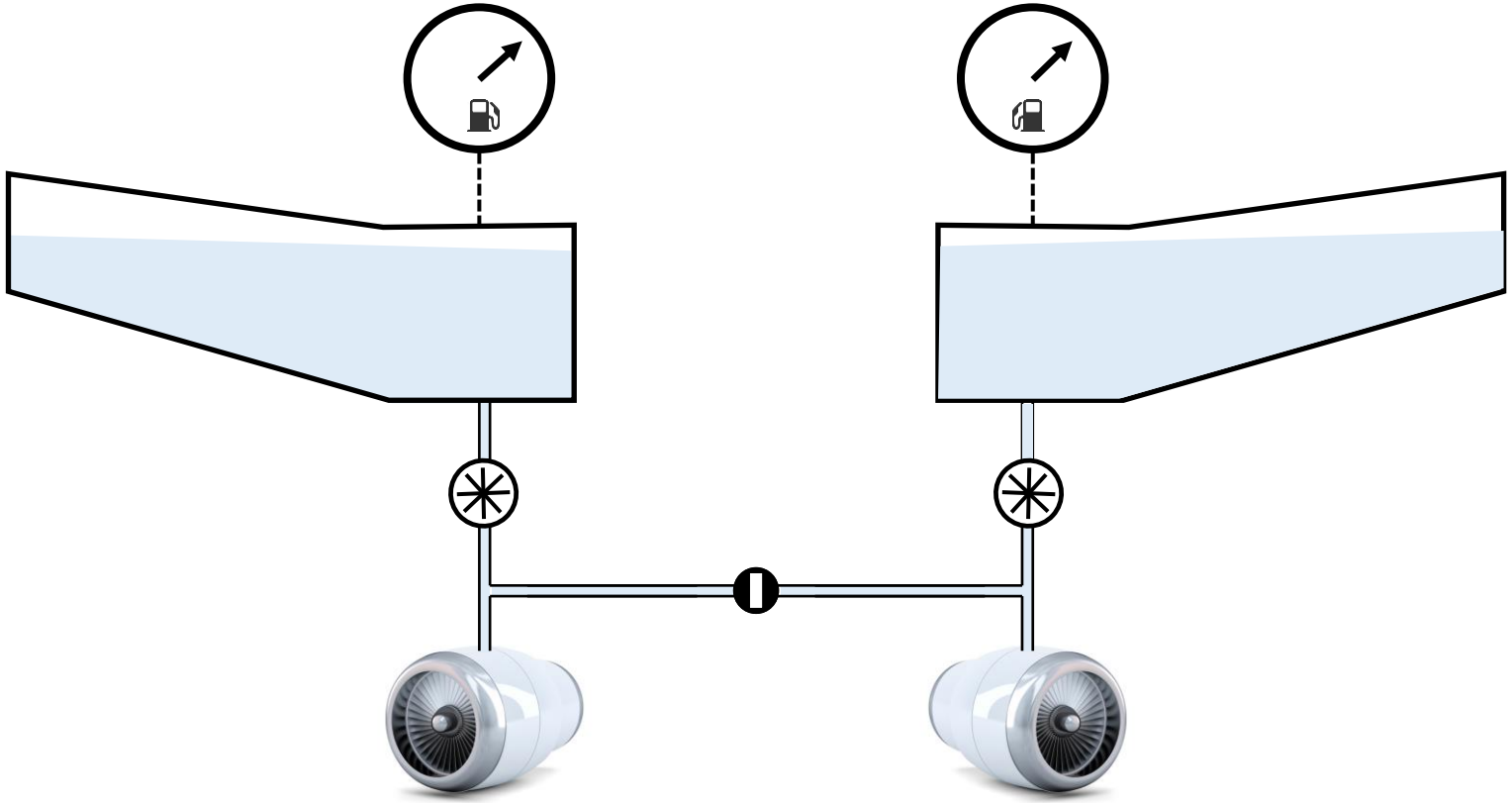

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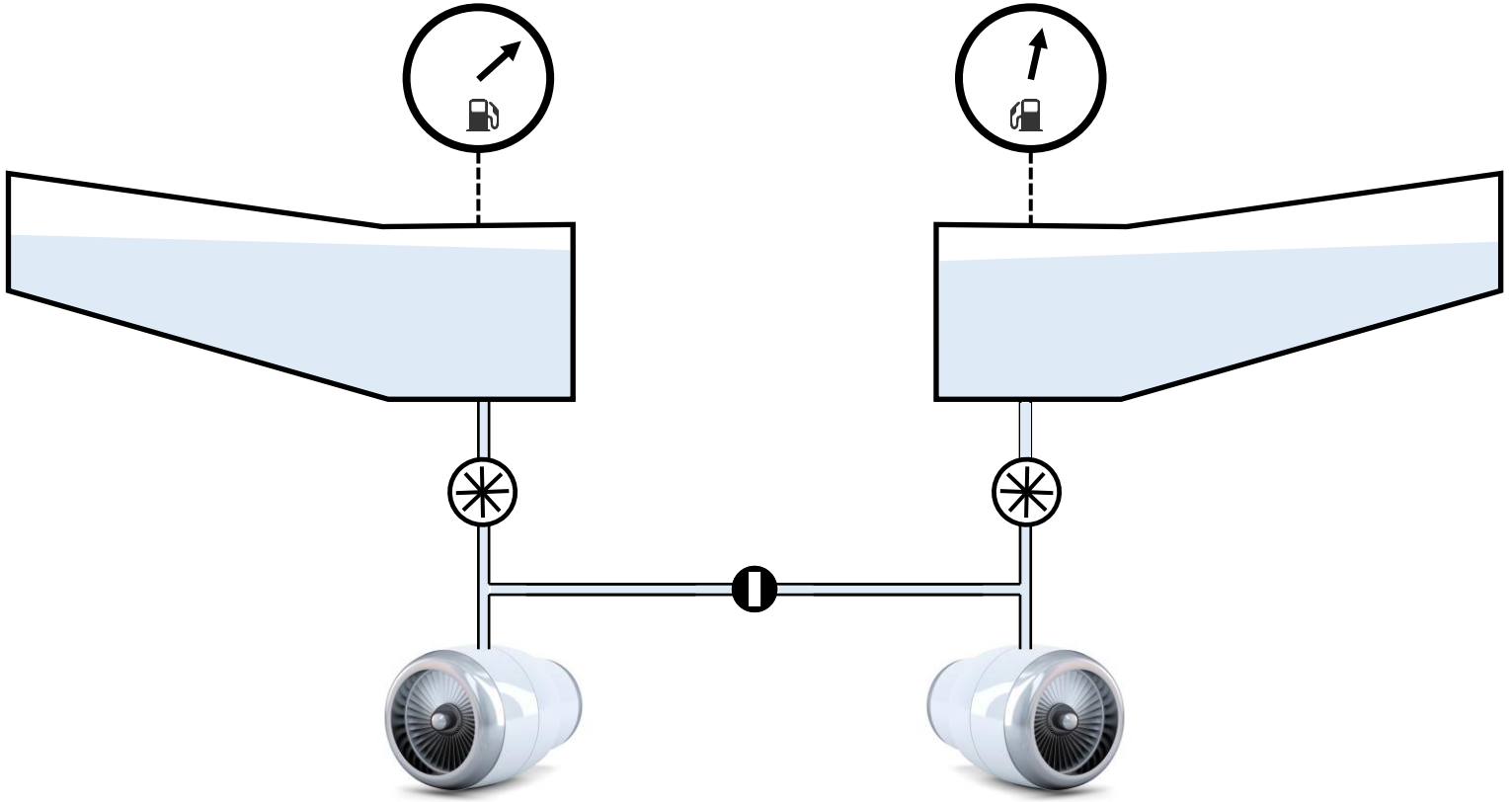

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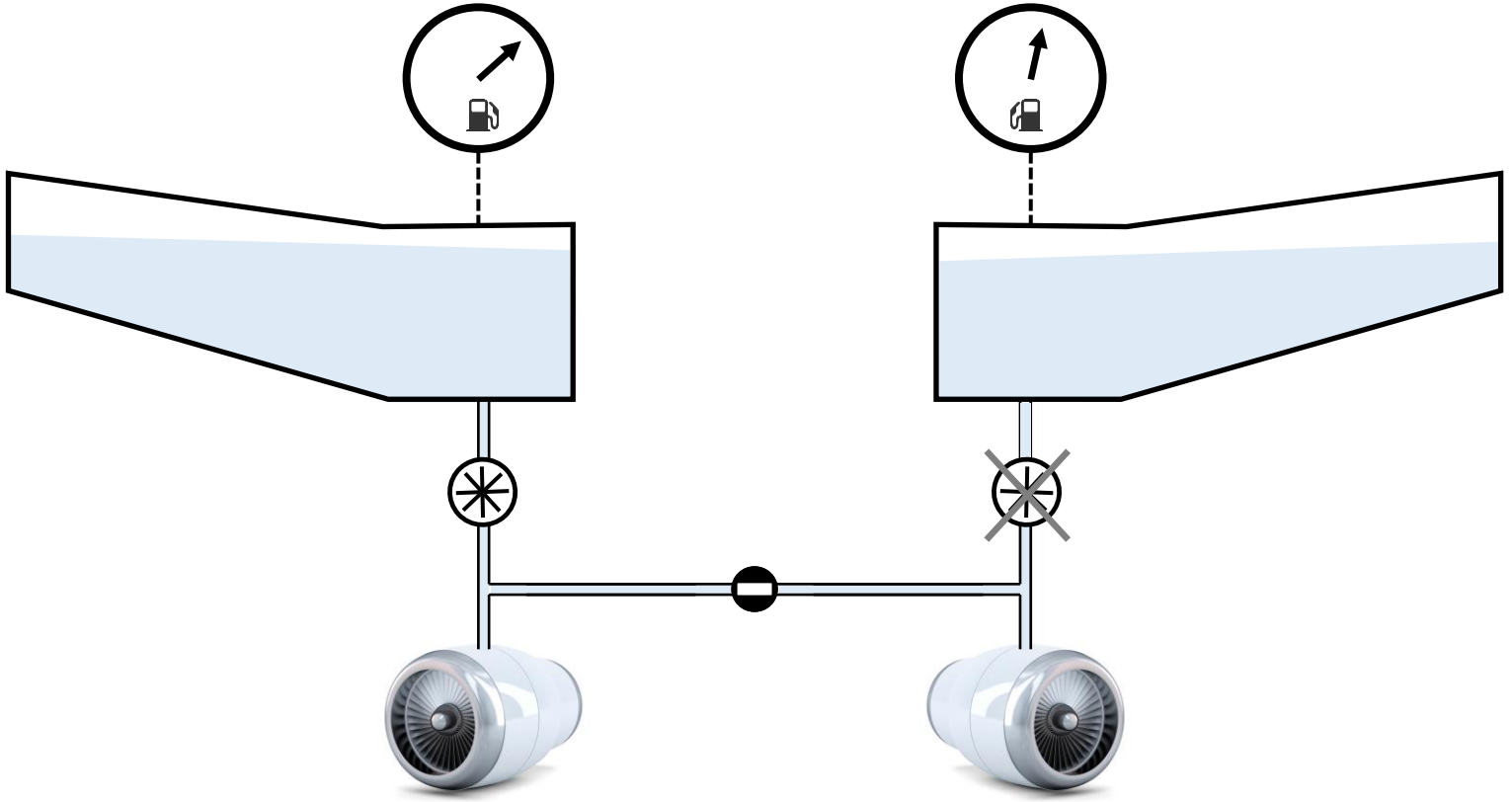

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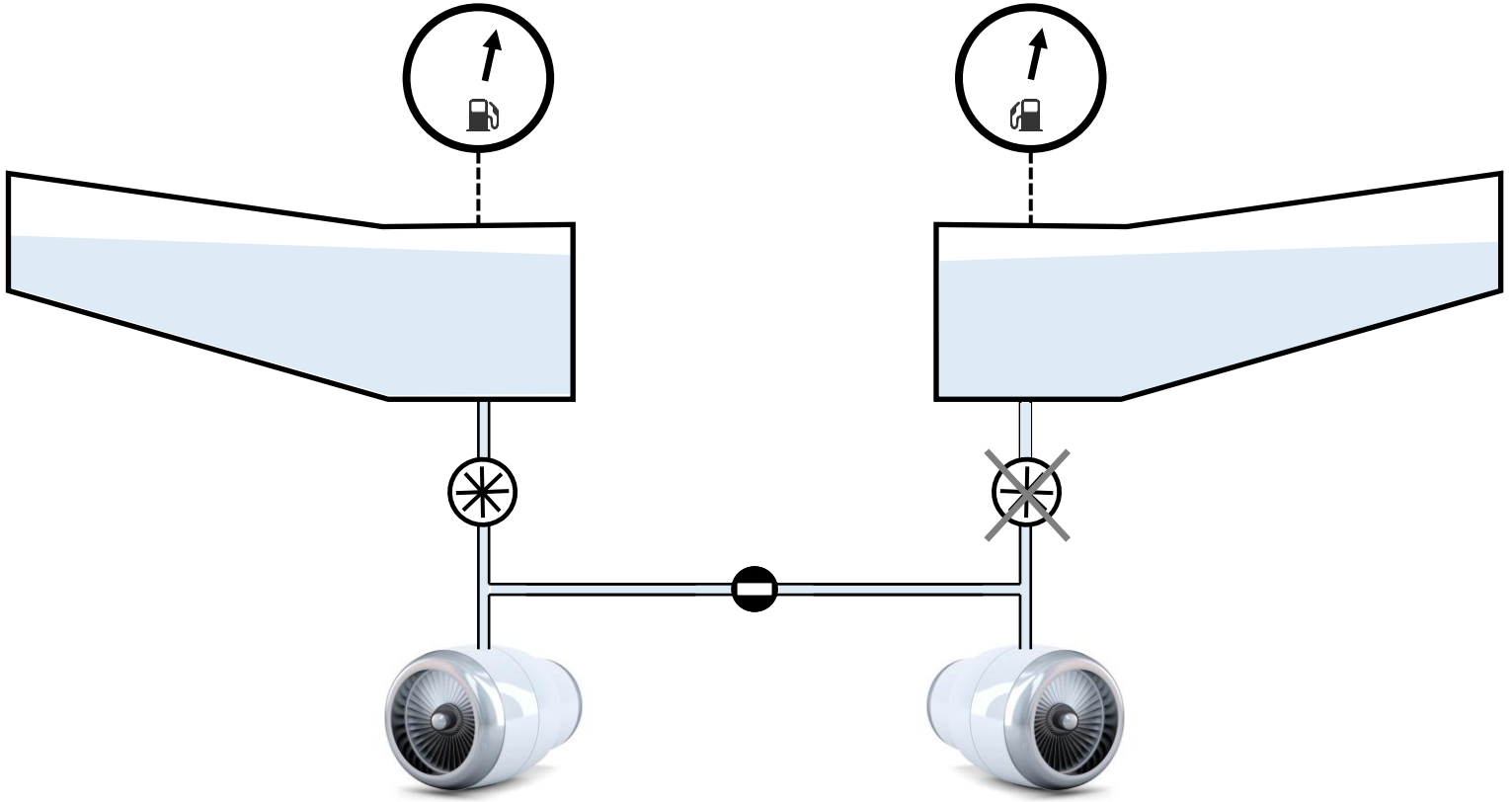

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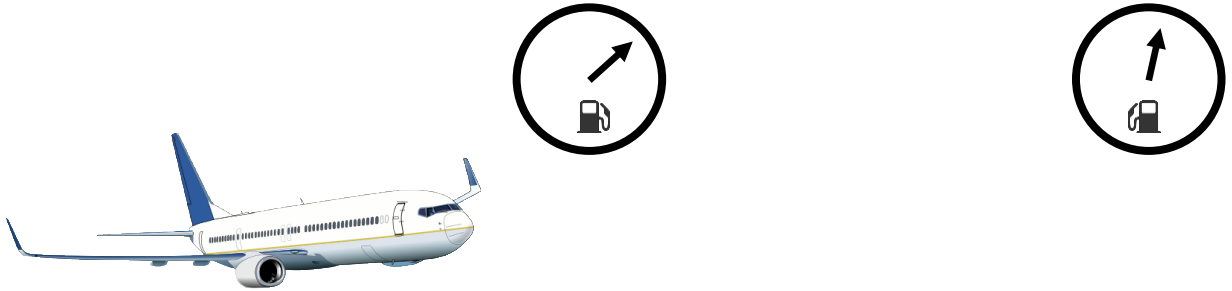

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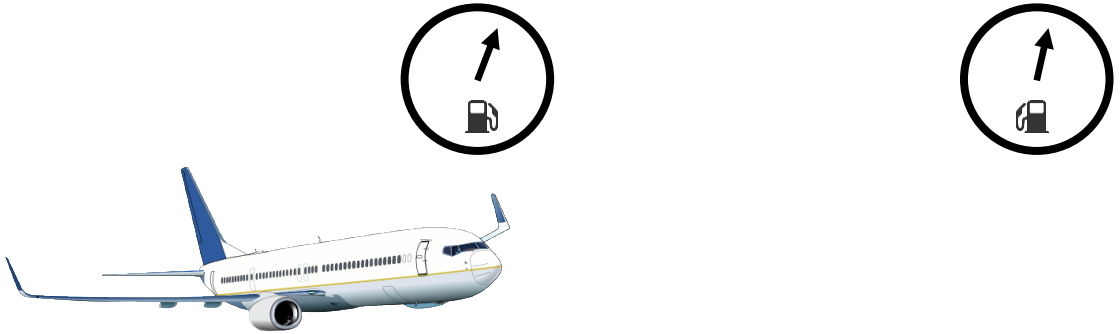

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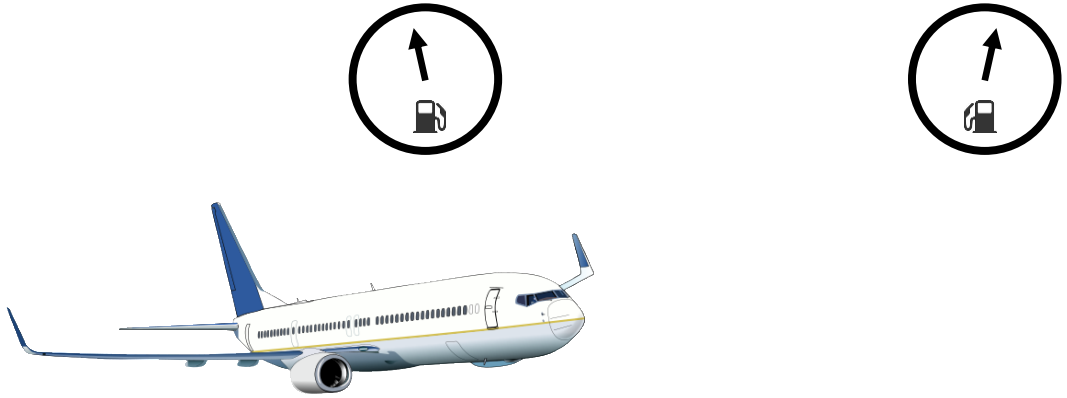

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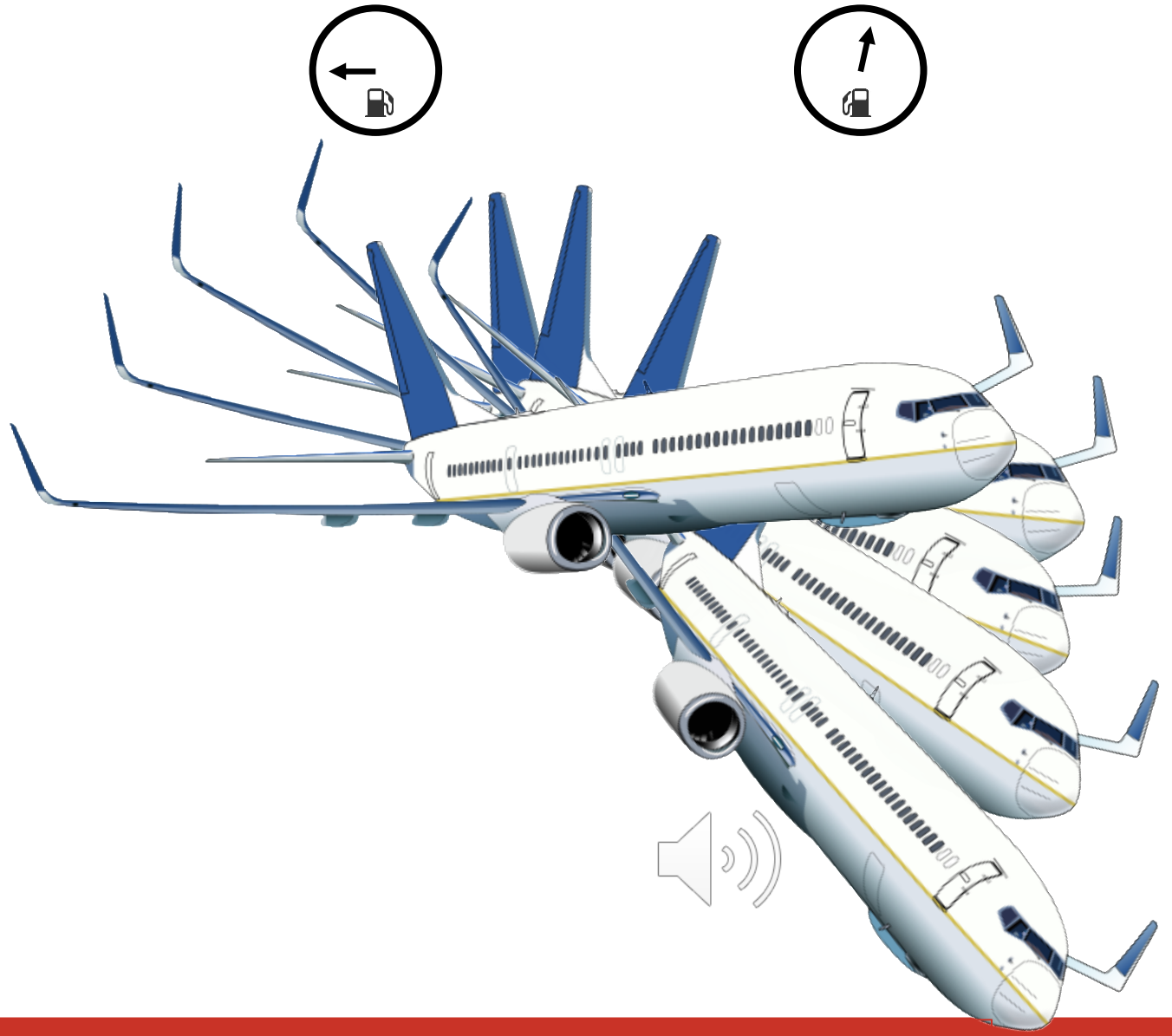

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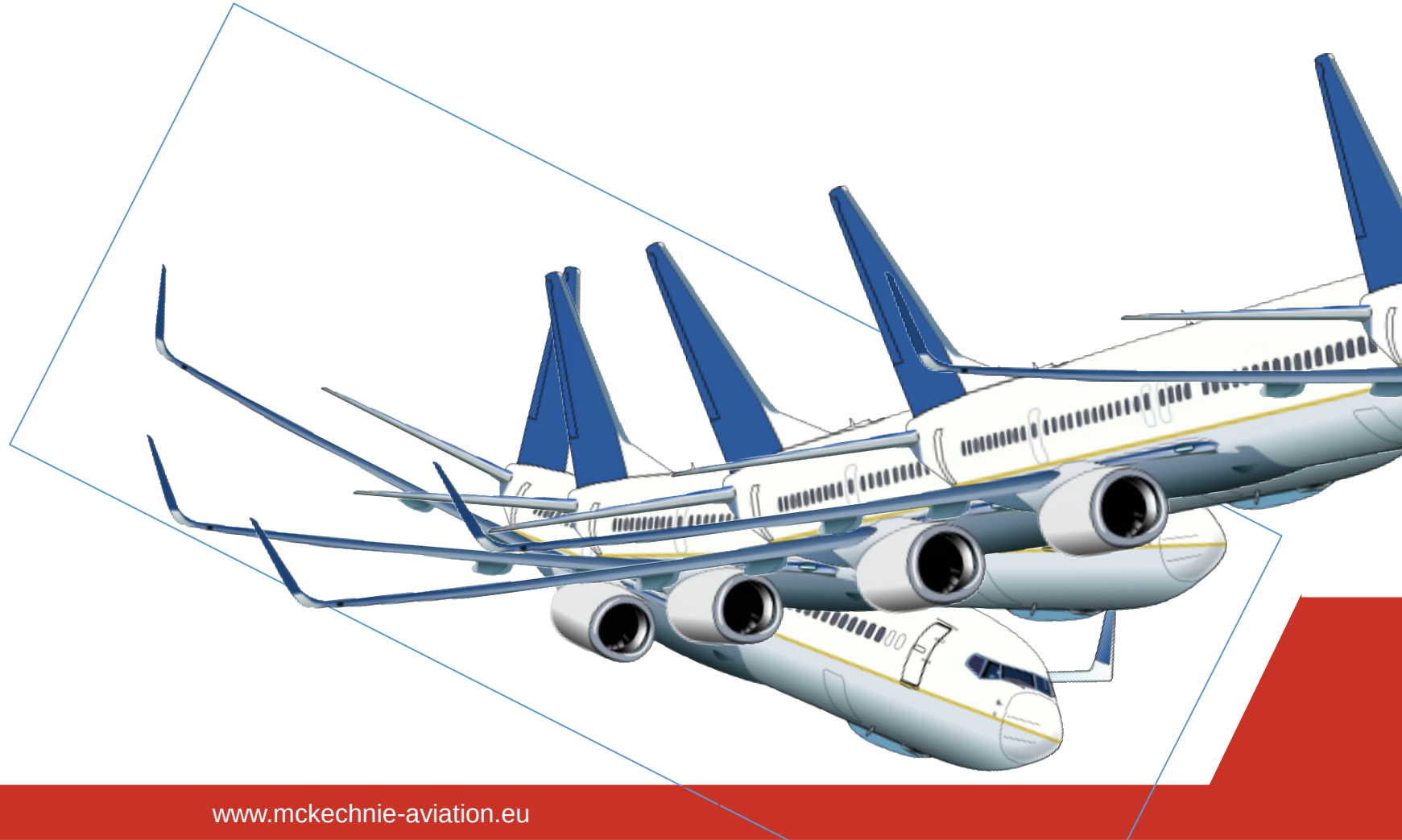

Upset prevention and recovery training

Upset prevention training

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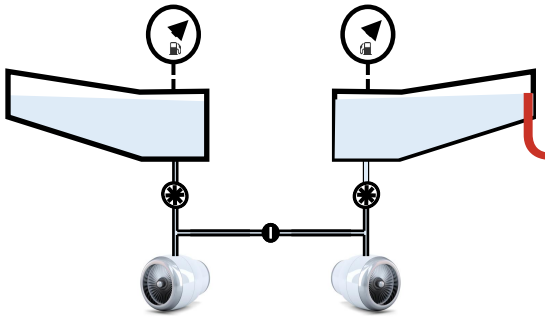

Upset Prevention and Recovery Training

Upset prevention training

Table 1: Elements and respective components of upset prevention training

	Elements and components	Ground training	FSTD/ Aeroplane training
A.	**Aerodynamics**		
1.	General aerodynamic characteristics	•	
2.	Aeroplane certification and limitations	•	
3.	Aerodynamics (high and low altitudes)	•	•
4.	Aeroplane performance (high and low altitudes)	•	•
5.	Angle of attack (AOA) and stall awareness	•	•
6.	Stick shaker or other stall-warning device activation (as applicable)	•	•
7.	Stick pusher (as applicable)	•	•
8.	Mach effects (if applicable to the aeroplane type)	•	•
9.	Aeroplane stability	•	•
10.	Control surface fundamentals	•	•
11.	Use of trims	•	•
12.	Icing and contamination effects	•	•
13.	Propeller slipstream (as applicable)	•	•
B.	**Causes of and contributing factors to upsets**		
1.	Environmental	•	•
2.	Pilot-induced	•	•
3.	Mechanical (aeroplane systems)	•	•
C.	**Safety review of accidents and incidents relating to aeroplane upsets**		

- operators conversion course (ORO.FC.220)
- recurrent ground training & recurrent FSTD training (ORO.FC.230)

'**Scenario-based training**' means training that incorporates manoeuvres into real-world experiences to cultivate practical flying skills in an operational environment

'**Manoeuvre-based training**' means training that focuses on a single event or manoeuvre in isolation.

Upset recovery training

‘**Manoeuvre-based training**’ means training that focuses on a single event or manoeuvre in isolation.

- Stall events
- Nose high at various bank angles,
- Nose low at various bank angles
- Consolidated summary of recovery techniques

Table 2: Exercises for upset recovery training

	Exercises	Ground training	FFS training
A.	**Recovery from developed upsets**		
1.	Timely and appropriate intervention	•	•
2.	Recovery from stall events, in the following configurations; — take-off configuration, — clean configuration low altitude, — clean configuration near maximum operating altitude, and — landing configuration during the approach phase.	•	•
3.	Recovery from nose high at various bank angles	•	•
4.	Recovery from nose low at various bank angles	•	•
5.	Consolidated summary of aeroplane recovery techniques	•	•

- recurrent ground training & recurrent FSTD training (ORO.FC.230)
- Be completed from each seat

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Implementation of ED Decision 2015/12/R

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1. Conduct a ‘gap analysis’.
2. Update training programmes
3. Train the trainer

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	Operator’s Conversion Course	Recurrent Ground Training	Recurrent FSTD Training	Dual-seat qualifications
	ORO.FC.220	ORO.FC.230	ORO.FC.230	ORO.FC.235
Upset Prevention Training	✓	✓	✓	
Upset Recovery Training		✓	✓	✓

Implementation of ED Decision 2015/12/R

1. Conduct a ‘gap analysis’.
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1. Must be complaint by 4 May 2016 *[article 3]*
2. Must be approved by Competent Authority *[ORO.FC.145(c)]*
3. Allow sufficient time for approval…

Implementation of ED Decision 2015/12/R

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> *“The operator should ensure that personnel providing FSTD UPRT are competent and current to deliver the training, and understand the capabilities and limitations of the device used” [AMC1/2 ORO.FC.220&230 (c)]*

Implementation of ED Decision 2015/12/R

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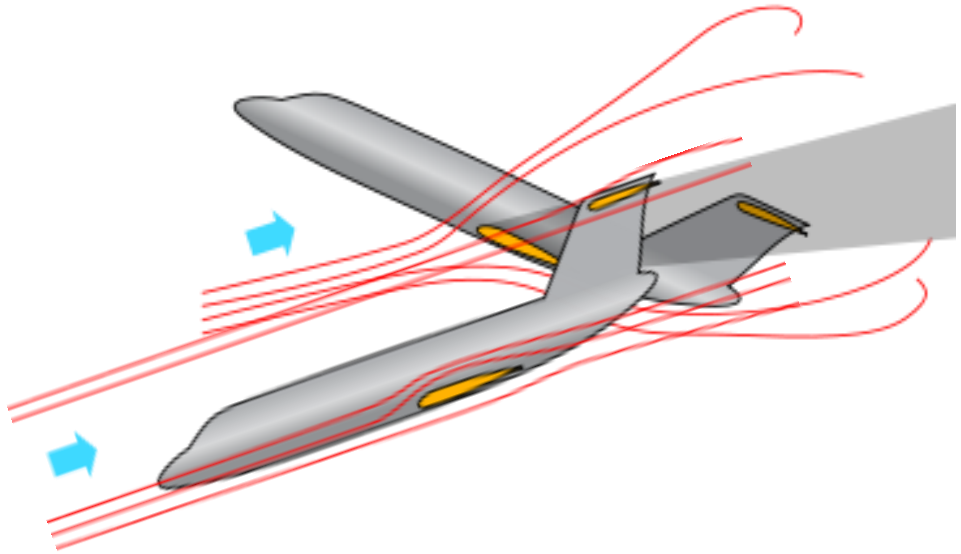

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Implementation of ED Decision 2015/12/R

3rd Workshop on the Implementation of Regulation (EU) No 965/2012

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Implementation of ED Decision 2015/12/R

www.mckechnie-aviation.eu/resources-for-uprt

- Gap analysis checklists
- Links to source documents
- Instructor training outline

www.mckechnie-aviation.eu/events

- UPRT Seminar
- Instructor training

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