

EASA Workshop: From JARs to IRs

Cologne 05 – 06 November 2008



# Commercial Air Transport

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# Agenda

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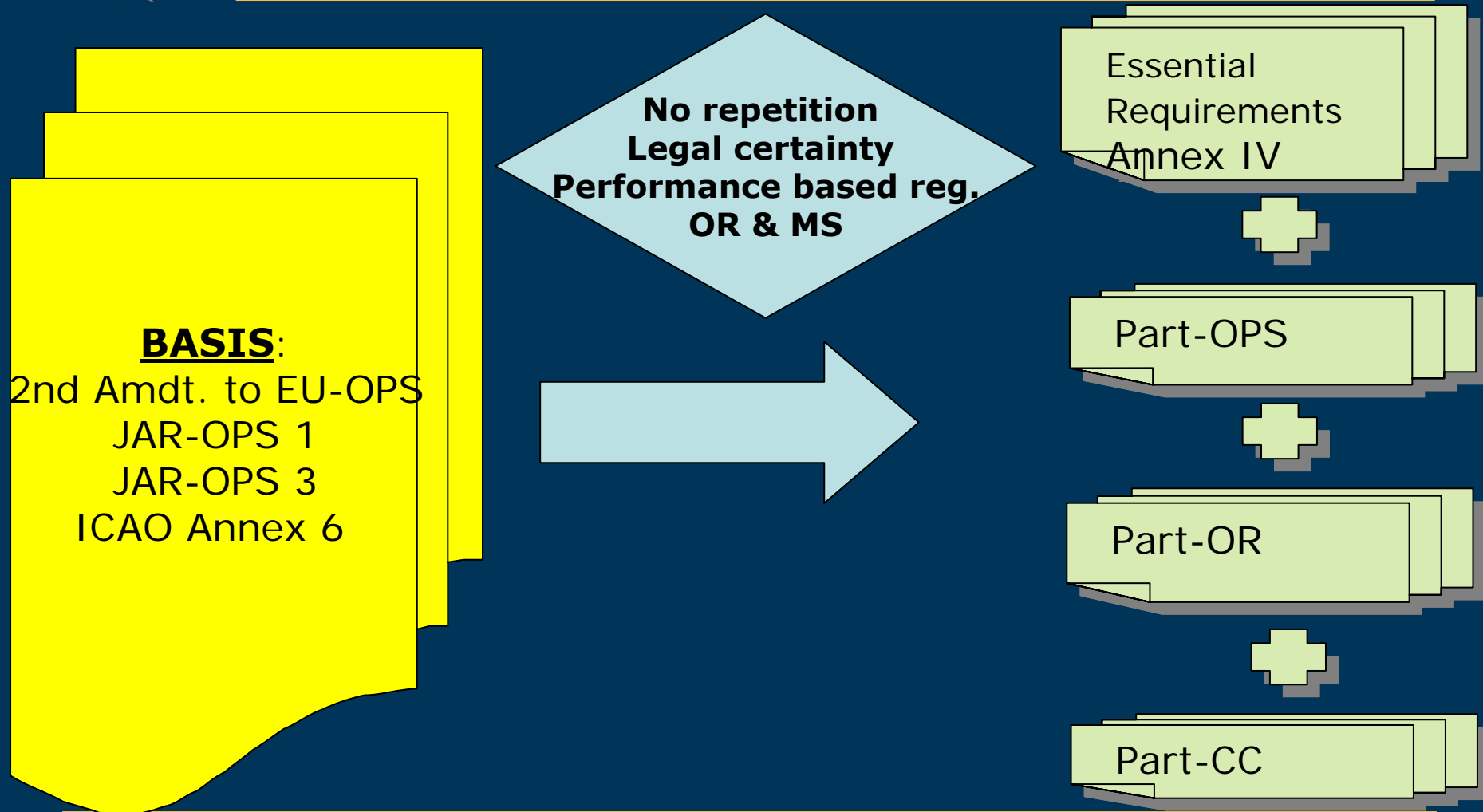
- **I. General Principles**
- **II. EU-OPS**
- **III. Air Operator Certificate**
- **IV. Part-OPS Subpart B OPS.CAT**
  - ✦ **General Requirements**
  - ✦ **Operational procedures**
  - ✦ **Aircraft performance and operating limitations**
  - ✦ **Instruments, data and equipment**
- **V. Where are other subparts of EU-OPS/JARs?**
- **VI. Annex II aircraft involved in CAT**



## **➤ I. General Principles**



# General Principles





## **➤ II. EU-OPS**



# **EU-OPS**

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- **Is Annex III to Regulation (EEC) No. 3922/91 on the harmonisation of technical requirements and administrative procedures in the field of civil aviation as amended by Regulation (EC) No.1899/2006, Regulation (EC) No.8/2008 and Regulation (EC) No.859/2008.**
- **Is applicable since 16 of July 2008**
- **Amendments introduced by Regulation (EC) No.859/2008:**
  - ✦ **Related to Subpart E, shall apply from 16 July 2011**
  - ✦ **Related to Subpart O, shall apply from 16 July 2009**



# **EU-OPS**

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- **Amendments to EU-OPS are agreed by ASC and adopted by the EC, after scrutiny of the EP and the Council of Ministers**
- **Is EU law and shall be binding in its entirety and directly applicable in all Member States.**
- **Does not include guidance material or acceptable means of compliances**
- **The later could be developed by Member States. They could be based on Section 2 of amendment 13 to JAR-OPS 1.**

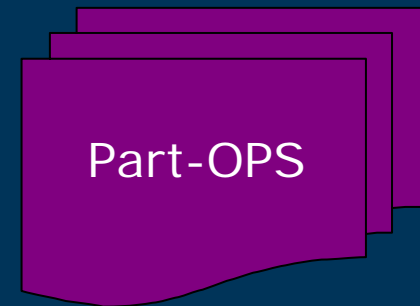




# EU-OPS

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- **Is applicable for commercial air transport of aeroplanes until Part-OPS apply.**
- **At the latest, until April 2012!!**
- **EU-OPS to be repealed**







## **➤ III. Air Operator Certificate**



# Air Operator Certificate

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- **Refer to Section IV Air operator certificate (OR.OPS.AOC)**
  - ✧ **Process of AOC application, changes and continued validity**
  - ✧ **Requirements for certificate holders**
  - ✧ **One certificate for all commercial operations = AOC**
  - ✧ **Ops Specs and privileges granted make the difference!**
  - ✧ **Leasing requirements**



## **➤ IV. Part-OPS Subpart B OPS.CAT**

### **★ General Requirements**



# **Part-OPS Subpart B structure**

Annex I Part-OPS

Subpart B  
OPS.CAT

Section I - General Requirements (OPS.CAT.001)  
Section II - Operational procedures (OPS.CAT.100)  
Section III - Aircraft performance and operating limitations (OPS.CAT.300)  
Section IV - Instruments, data and equipment (OPS.CAT.400)

AMC and GM to Part-OPS follow the IRs



# Part-OPS Subpart B OPS.CAT

## Numbering principles

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- **When same number than in OPS.GEN:**
  - ✧ **OPS.CAT is an additional requirement**
  - ✧ **Can also replace the requirement in OPS.GEN (e.g. notwithstanding OPS.GEN...)**
  
- **Different numbering than in OPS.GEN:**
  - ✧ **Always additional requirements to those in OPS.GEN**



# Section I: General Requirements

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- **OPS.CAT.001 Scope**
  - ★ **To all aircraft involved in CAT**
- **OPS.CAT.010 Definitions**
  - ★ **In addition to those in OPS.GEN.010, applicable to CAT**
- **OPS.CAT.040 Carriage of weapons and ammunition**
- **OPS.CAT.045 Information on emergency and survival equipment carried**



# Section I: General Requirements

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## ➤ OPS.GEN Section I: General Requirements



## ➤ OPS.CAT Section I: General Requirements

➤ = Subpart A and Subpart B of EU-OPS, JAR-OPS 1 and JAR-OPS 3

➤ ≠ Structure

➤ ≠ Quality and accident prevention and flight safety program requirements are included in Part-OR

➤ ≠ Does not contain exemptions for local area operations or non-complex motor-powered aircraft



## **➤ IV. Part-OPS Subpart B OPS.CAT**

### **★ Operational procedures**





# Operational Procedures

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- **This section contains the specific CAT operational procedures supplementing OPS.GEN.**
  - ★ **based on EU-OPS (Amdt2), JAR-OPS 1 (amdt13) and JAR-OPS 3 (amdt6).**
- **Some of the requirements deviate from the requirements in OPS.GEN.**
  - ★ **e.g. selection of aerodromes**
    - ➔ This is due to the fact that the accepted level of risk is lower for CAT operations than those for GA



# Operational Procedures

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## ➤ It includes:

### ★ JAA draft NPA-OPS 61 Selection of aerodromes and In-flight Fuel Management

- ➔ allowing the use of one en-route alternate plus one destination alternate versus two destination alternates in certain conditions (OPS.CAT.155.A)

### ★ ETOPS requirements as this is a specific commercial air transport operation.



# Operational Procedures

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- **Conditions for the transport of special categories of passengers**
  - ★ **Concerns were voiced regarding the conditions under which special categories of passengers are carried, thus referring to persons who require special assistance and/or conditions. Simultaneously, questions were raised regarding the related EU-OPS requirements related especially to 1.260.**
    - It is the responsibility of the operator to establish procedures as relevant to its operations and aircraft in order to meet its obligations.
    - Nonetheless, requirements should be clear enough to allow the operators to do so. The Agency therefore reviewed carefully the current EU-OPS requirements and proposes a revised text in this NPA.
  - **Comments on this matter would be particularly welcome.**



# Operational Procedures

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- **It further contains:**
  - ✧ **OPS.CAT.110 Carriage of special categories of passengers**
  - ✧ **OPS.CAT.111 Persons under the influence of alcohol or drugs**
  - ✧ **OPS.CAT.115 Passenger briefing**
  - ✧ **OPS.CAT.116 Embarking and disembarking of passengers**
  - ✧ **OPS.CAT.120 Stowage of baggage and cargo**
  - ✧ **OPS.CAT.130 Smoking on board**
  - ✧ **OPS.CAT.150.H Operating minima - Helicopter Airborne Radar Approaches (ARAs) for overwater operations**
  - ✧ **OPS.CAT.155.A Selection of aerodromes - Aeroplanes**
  - ✧ **OPS.CAT.155.H Selection of aerodromes – Helicopters**
  - ✧ **OPS.CAT.156.A Selection of take-off alternate aerodromes – Aeroplanes**



# Operational Procedures

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➤ **And:**

- ✦ **OPS.CAT.156.H Selection of take-off alternate aerodromes – Helicopters**
- ✦ **OPS.CAT.170 Minimum terrain clearance altitudes**
- ✦ **OPS.CAT.180 Routes and areas of operation**
- ✦ **OPS.CAT.185.H Meteorological conditions - Helicopters**
- ✦ **OPS.CAT.210 Refuelling/defuelling with wide cut fuels**
- ✦ **OPS.CAT.215 In-flight fuel checks**
- ✦ **OPS.CAT.220.A Maximum distance from an adequate aerodrome for two-engined aeroplanes**
- ✦ **OPS.CAT.225.A Pushback and towing - Aeroplanes**
- ✦ **OPS.CAT.230 Air Traffic Services - Motor-powered aircraft**
- ✦ **OPS.CAT.235.A Threshold crossing height - Aeroplanes**



- **IV. Part-OPS Subpart B OPS.CAT**
  - ★ **Aircraft performance and operating limitations**



# **Section III: Aircraft performance and operating limitations –All aircraft**

**Annex IV – Air Operations  
Chapter 4  
Aircraft performance and  
operating limitations**



**OPS.GEN  
Section III:  
Aircraft performance and  
operating limitations**



**OPS.CAT  
Section III:  
Aircraft performance and  
operating limitations**

- **Performance factors that affect each phase of flight (e.g. runway conditions)**
  - **Aircraft to be operated in accordance with the AFM or equivalent**
- 
- **Operating limitations, weighing, mass and balance system**
  - **General performance requirements for take-off, critical power unit/engine inoperative and landing**



## Section III: Aircraft performance and operating limitations –All aircraft

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- This section contains the specific CAT aircraft performance and operating limitations supplementing OPS.GEN:
  - ★ based on EU-OPS (Amdt2), JAR-OPS 1 (and13) and JAR-OPS 3 (amdt5).
- Difference between the way the performance requirements draft for aeroplanes and helicopters:
  - ★ Performance classes defined only for helicopters as they are also used in equipment
- Performance criteria not adapted to VLJ:
  - ➔ Separate RM task
- SE-IMC
  - ➔ Separate RM task





## Section III: Aircraft performance and operating limitations -Aeroplanes

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- **OPS.CAT.316.A Performance General**
  - ★ **Aeroplane performance classes shall be in OM**
  - ★ **Aeroplane data in the AFM and its complements**
  - ★ **Effects of the aeroplane configuration and environmental conditions on performance**
  - ★ **Mass of the aeroplane shall not be greater than the mass permitted for the flight.**
  - ★ **Prohibition, for the time being, of operation of single propeller-driven aeroplanes at night or in IMC conditions.**



## Section III: Aircraft performance and operating limitations -Aeroplanes

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### ➤ OPS.CAT.326.A Take-off requirements- aeroplanes

- ★ **Take-off distance shall not exceed TODA**



### ➤ OPS.CAT.327.A Take-off obstacle clearance- aeroplanes

- ★ **Take-off flight path shall clear all obstacle by an lateral and horizontal or vertical distances depending of aeroplane size and type of engines**

Technical criteria  
to the safety objectives  
in the rules  
are in AMCs & GMs  
(e.g. Performance classes  
A, B and C)



## Section III: Aircraft performance and operating limitations -Aeroplanes

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- **OPS.CAT.340.A En-route requirements - Aeroplanes**
  - ★ **Single-engined aeroplane: to be capable to reach a place where a safe landing can be performed.**
  - ★ **Multi-engined aeroplanes with all engines operative: to be capable of specific rate of climb.**
  - ★ **Multi-engined aeroplanes with one engine operative: to be capable to continue the flight or to divert to an aerodrome where a landing can be performed.**
  - ★ **Three or more engines aeroplane, two engines inoperative: aeroplane shall not be at less than 90 minutes away from an adequate aerodrome unless the aeroplane is able to continue the flight with two engines inoperative to an aerodrome where a landing can be performed.**



## Section III: Aircraft performance and operating limitations -Aeroplanes

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- OPS.CAT.345.A Landing requirements - aeroplanes
  - ★ **Landing criteria for dry and for wet or contaminate runways.**
  - ★ **Steep approach (glide slope angles  $> 4.5^\circ$ )**
  - ★ **Short landing operations**





# **Aeroplane performance and operating limitations – OPS.CAT versus EU-OPS**

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- **Section III of OPS.CAT aeroplanes:**
  - ★ **Safety objectives no quantitative applicable to all aeroplanes.**
  - ★ **There are not definitions of performance classes in the rule (A, B or C).**
  - ★ **Technical criteria and definitions of perf classes are in integrate AMCs and GMs**
  - ★ **Approved in OM as part of AOC**
- **Subparts F, G, H and I of EU-OPS:**
  - ★ **Prescriptive performance criteria from which the competent authority can deviate if the aeroplane does not meet the criteria**
  - ★ **Repetitive requirements for each performance classes**
  - ★ **Doest not have AMCs or GMs. However those in JAR-OPS 1 could be used.**



## Section III: Aircraft performance and operating limitations -Helicopters

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- **With regard to helicopter performance:**
  - ★ **all provisions from JAR-OPS 3 have been transferred into the implementing rules and its AMC and GM material**
  - ★ **However, the requirements have been split:**
    - ➔ Objectives in the rule
    - ➔ Technical requirements in the AMC/GM
  - ★ **Performance requirements have been split into 2 sections:**
    - ➔ Those generally applicable in OPS.CAT
    - ➔ Those with 'exposure' requiring specific approval in OPS.SPA.SFL



## **Section III: Aircraft performance and operating limitations -Helicopters**

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- **OPS.CAT.355.H Performance applicability – Helicopters**
  - ➔ Defining in which cases PC 1, 2 and 3 are required
- **OPS.CAT.360.H Performance General – Helicopters**
  - ➔ Mass limitations
- **OPS.CAT.365.H Obstacle accountability - Helicopters**
- **OPS.CAT.370.H Flight hours reporting - Helicopters**



## **➤ IV. Part-OPS Subpart B OPS.CAT**

### **★ Instruments, data and equipment**





# **Section IV: Instruments, data and equipment – All aircraft**

**Annex IV – Air Operations  
Chapter 5  
Instruments, data and equipment**



**OPS.GEN  
Section IV:  
Instruments, data and equipment**



**OPS.CAT  
Section IV:  
Instruments, data and equipment**

- **Aircraft must be equipped with all instruments, data and equipment necessary for the flight taking into account the air traffic regulations and rules of the air applicable during any phase**
- **All flight instruments, navigation, communication, surveillance, safety, emergency and survival equipment and data required for each aircraft type involved in non-commercial operations or common to all commercial operations**
- **All additional flight instruments, navigation, communication, surveillance, safety, emergency and survival equipment and data required for each aircraft type involved in commercial air transport**



## **Section IV: Instruments, data and equipment – All aircraft**

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- **This section contains the specific CAT instruments, data and equipment supplementing OPS.GEN**
  - ★ **It is based on:**
    - **Amendment 2 to EU-OPS,**
    - **Amendment 13 to JAR-OPS 1,**
    - **Amendment 5 to JAR-OPS 3,**
    - **Associated JAA TGLs, and**
    - **Requirement applicable to other categories of aircraft (e.g. balloons) on existing regulations in different EASA Member States or foreign regulators.**
  - ★ **The equipment requirements also incorporate the prescribed use of the equipment.**
  - ★ **Equipment related to health issues are not included (e.g. EMK, cosmic radiation indicator )**



## Section IV: Instruments, data and equipment – All aircraft

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- ★ Exemptions for equipment requirements in Appendices to OPS 1.005/JAR-OPS 3.005 have been included, except the one on the carriage of supplemental oxygen when flying above 10 000 ft up to 16 000 ft (excursions of short duration up to 16 000 ft in Appendix 1 to JAR-OPS 3.005(f) para (d)(12)).
  
- ★ Reasons:
  - ➔ **Medical (risk of hypoxia)**
  - ➔ **There is not definition of short duration**
  - ➔ **The criteria of pilots acclimatised to high altitudes is not objective**
  - ➔ **If it is considered necessary, to have excursions for a short duration up to 16 000 ft for certain operations, Article 14 of the Basic Regulation provides the appropriate flexibility provisions to be applied in those circumstances.**



## Section IV: Instruments, data and equipment – All aircraft

- **Additional Safety equipment for CAT (I):**
  - ★ OPS.CAT.405 Hand fire extinguishers – Motor powered aircraft: **number and location.**
  - ★ OPS.CAT.406.A Safety harness – Aeroplanes: **based on JAA draft NPA 26-20. RIA included.**
  - ★ OPS.CAT.407.A Number of spare electrical fuses - Aeroplanes: **based on JAA NPA-OPS 43. Alignment with airworthiness code.**
  - ★ OPS.CAT.416 Airborne weather equipment: **airborne weather radar in AMC.**





## Section IV: Instruments, data and equipment – All aircraft

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### ➤ Additional Safety equipment for CAT (II):

- ★ OPS.CAT.417.A      Equipment to wipe windshield - Aeroplanes:  
**windshield wiper in AMC.**
- ★ OPS.CAT.424.A      Ditching - Aeroplanes: **required certification for ditching**
- ★ OPS.CAT.436.A      Crew protective breathing equipment - Aeroplanes





## Section IV: Instruments, data and equipment – All aircraft

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### ➤ Additional Safety equipment for CAT (III):

- ★ OPS.CAT.480 Seat belts and harnesses for the observer seat in the cockpit: safety belt with shoulder harness
- ★ OPS.CAT.490 Flight data recorder – Motor powered aircraft: from EU-OPS and JAR-OPS 3
- ★ OPS.CAT.495 Cockpit voice recorder – Motor powered aircraft: from EU-OPS and JAR-OPS 3





## Section IV: Instruments, data and equipment – All aircraft

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### ➤ Additional Safety equipment for CAT (IV):

- ★ OPS.CAT.518 Fasten seat belts and no-smoking signs: means to indicating that seat belts shall be fastened and when smoking is not allowed
- ★ OPS.CAT.519.A Internal doors and curtains - Aeroplane: cockpit door and locking mechanism plus locking of curtains between pax compartments for take-off and landing





## Section IV: Instruments, data and equipment – All aircraft

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- **Additional flight instruments for VFR, VFR night and IFR:**
  - ★ *OPS.CAT.410 Flight instruments and equipment for VFR flights – Motor powered aircraft*
  - ★ *OPS.CAT.415 Flight instruments and equipment for VFR night flights and IFR flights – Motor powered aircraft*
    - ➔ Includes the flight magnitude needed to be measured and displayed instead of name of particular equipment (e.g. Pressure altitude instead of altimeter) to align with latest version of ICAO Annex 6.
    - ➔ Includes additional flight instruments and equipment for CAT (e.g. redundancy and stand-by instruments)







## Section IV: Instruments, data and equipment – All aircraft

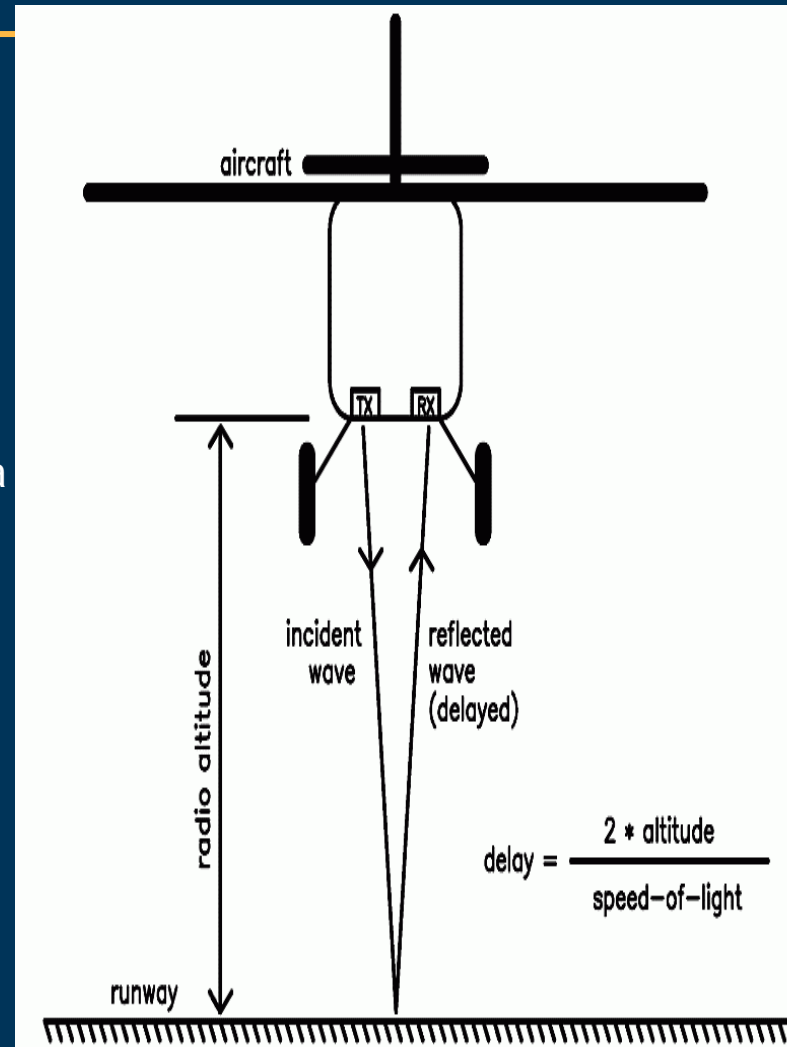
### ➤ Additional flight instruments:

#### ★ OPS.CAT.418.H Radio altimeters - Helicopters

- ➔ on flights over water, to be equipped with a radio altimeter capable of emitting an audio warning below a preset height and a visual warning at a height selectable by the pilot.

#### ★ OPS.CAT.461.A Altitude alerting system – Aeroplanes:

- ➔ altitude alerting system capable of alerting the flight crew when approaching, or deviating from, a pre-selected altitude.





## Section IV: Instruments, data and equipment – All aircraft

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- **Additional survival equipment (I):**
  - ★ **OPS.CAT.420 Flight over water - Motor powered aircraft**
    - ➔ Life jackets, life-saving rafts, life-saving equipment including means of sustaining life.
  - ★ **OPS.CAT.426.H Crew survival suits - Helicopters**
    - ➔ For crew members when sea temperature will be less than plus 10° C
  - ★ **OPS.CAT.431 Survival equipment– Motor powered aircraft**
    - ➔ In areas where search and rescue would be especially difficult. ELTs and additional survival equipment for the route to be flown taking account of the number of persons on board





## Section IV: Instruments, data and equipment – All aircraft

### ➤ Additional survival equipment (II):

#### ★ OPS.CAT.435 High altitude flights – Oxygen requirements for motor powered aircraft

- ➔ Including tables detailing Oxygen requirements for pressurised and non-pressurised aircraft

#### ★ OPS.CAT.437.A First aid oxygen – Aeroplanes

- ➔ Above 25000ft, to be equipped with a sufficient supply of undiluted oxygen



2D (2 person D cyl.)



## Section IV: Instruments, data and equipment – All aircraft -GEN

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### ➤ Additional emergency equipment:

- ★ **OPS.CAT.427.H Additional requirements for helicopters operating to or from helidecks located in a hostile sea area**

(e.g. Emergency lightening, emergency exits, non-jettisonable doors which are designated as Ditching Emergency Exits, life jackets (survival), crew survival suits)

- ★ **OPS.CAT.430 Emergency Locator Transmitter (ELT) – Motor powered aircraft**

➔ EU-OPS and ICAO alignment.  
Requirement of Automatic ELT (CoA > July 2008)





## Section IV: Instruments, data and equipment – All aircraft

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➤ **Additional communication, Navigation and surveillance equipment:**

★ *OPS.CAT.432 Megaphones*

– *Motor powered aircraft*

★ *OPS.CAT.515.A Microphones*

- *Aeroplanes*

★ *OPS.CAT.516 Crew member*

*interphone system – Motor powered aircraft*

★ *OPS.CAT.517 Public address system– Motor powered aircraft*

★ *OPS.CAT.525 Communication and navigation equipment for controlled VFR flights, night flights or IFR flights – Motor powered aircraft*

➔ No prescriptive, 2 independent COM, 2 NAV and one approach aid. Rest in AMC

★ **OPS.CAT.526 Audio selector panel**





# **Aeroplane performance and operating limitations – Part OPS.CAT versus EU-OPS**

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➤ **Section IV of OPS.CAT:**

- ★ **Safety objectives mainly.**
- ★ **Detailed specifications in AMC and GMs**
- ★ **The use of the equipment is defined with the equipment requirement**
- ★ **Includes JAA (drafts) NPA-OPS (NPA-OPS 39C, NPA-OPS 48A, NPA 26-20, draft NPA-OPS 67 and draft NPA-OPS 43)**

➤ **Subparts K and L of EU-OPS and JAR-OPS 3:**

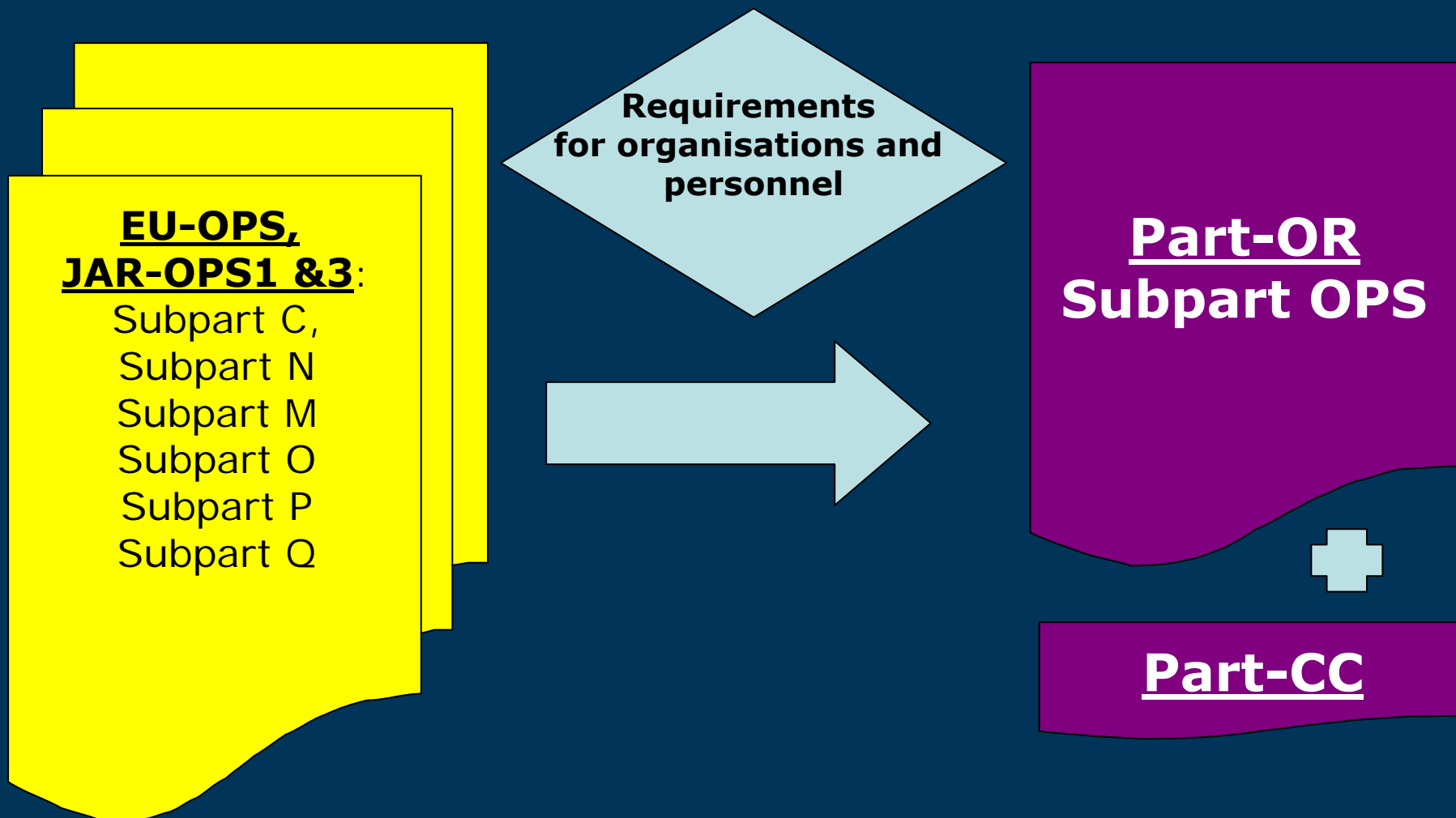
- ★ **Prescriptive equipment requirement**
- ★ **Do not include the use of the equipment (which is normally in Subpart D)**
- ★ **Exemptions and different means of compliance with the equipment requirements were include in the rule**



**➤ V. Where are other subparts of EU-OPS/JARs?**



# Where are other subparts of EU-OPS/JARs?







## **➤ VI. Annex II aircraft involved in CAT**



# Annex II aircraft in CAT

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➤ The Agency plan to initiate a RM task during the implementing phase of Part-OPS to address the CAT operations of Annex II aircraft ((a)(ii), (d) and (h)).



# **Disclaimer**

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- **Although this presentation is a summary of the explanatory note it is not intended to substitute reading it.**
- **The explanatory note contains valuable other information that is required to understand the framework of Community regulations in the field of Air Operations.**
- **During the ongoing internal consultation (part of the EASA rulemaking procedure) comments have been given indicating that some rules need to be reconsidered regarding their inclusion in wrong sections. Therefore the numbering given in this presentation may deviate from the numbering contained in that of the NPA to be published.**



**Thank you  
for your attention**