

Presented by

Captain Robin Pursey  
Director Flight Operations  
Executive and Private  
Aviation



## Synthetic Training within the EASA changing rules



**AIRBUS**

# Training programs

- Initial training
  - ▶ Ab-initio training of cadet pilots to “frozen” ATPL stage
- Transition training to first or new type
  - ▶ Type specific training
  - ▶ Limited scope to change
- Recurrent training
  - ▶ Changes required to replace old ideas of box ticking with real safety enhanced training methods and concepts

# Initial – ab-initio training

- Huge shortage of young pilots
  - ▶ Airlines are not investing in new pilots (sponsorship)
  - ▶ Existing training is based on old ideas not current and future requirements

# Why MPL

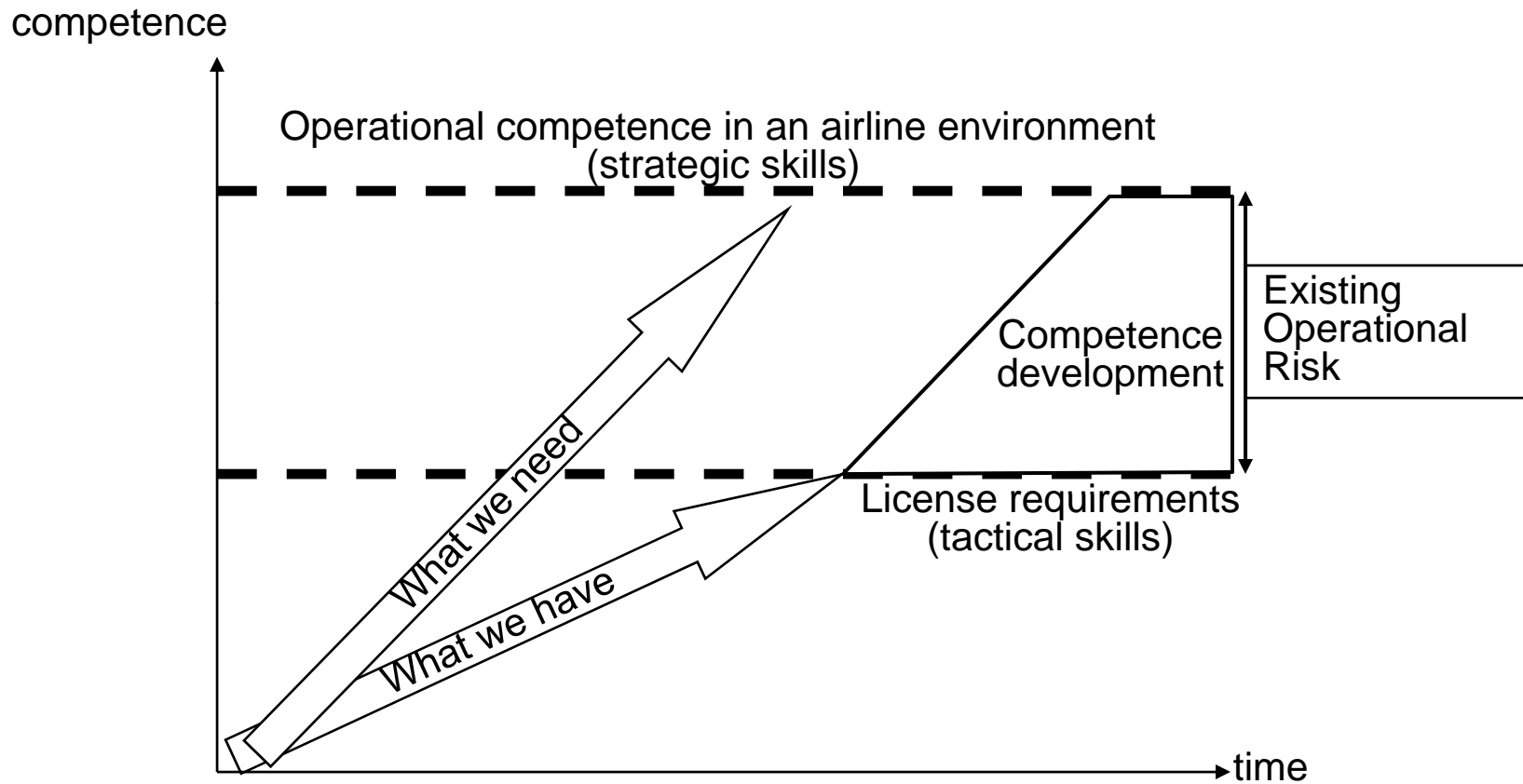
- Focus on the Single Pilot
- No competency criteria
- New technology not full utilised
- Need to train TEM and CRM
- Airline IOE experience – extra training



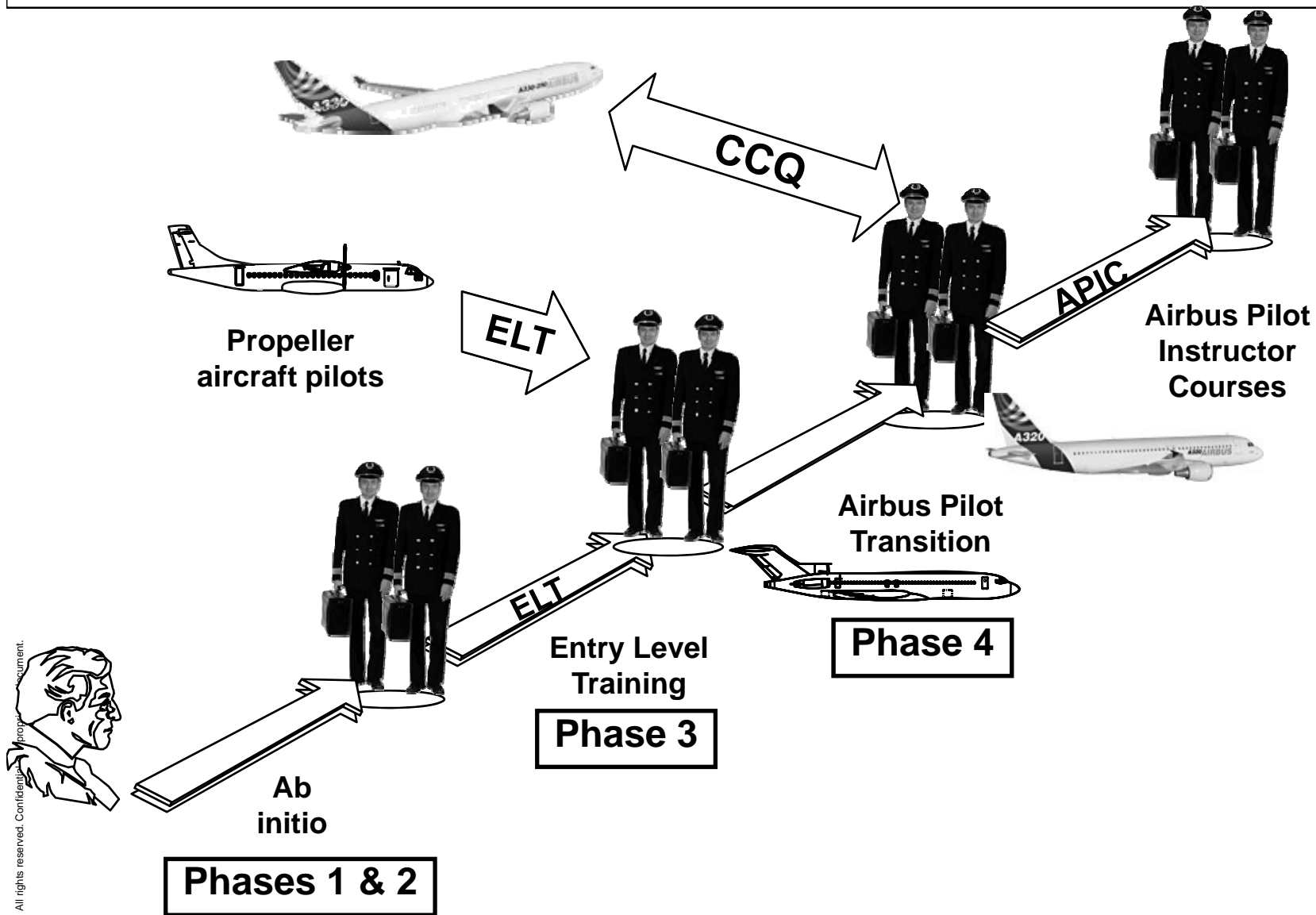
Existing Courses

# Industry View

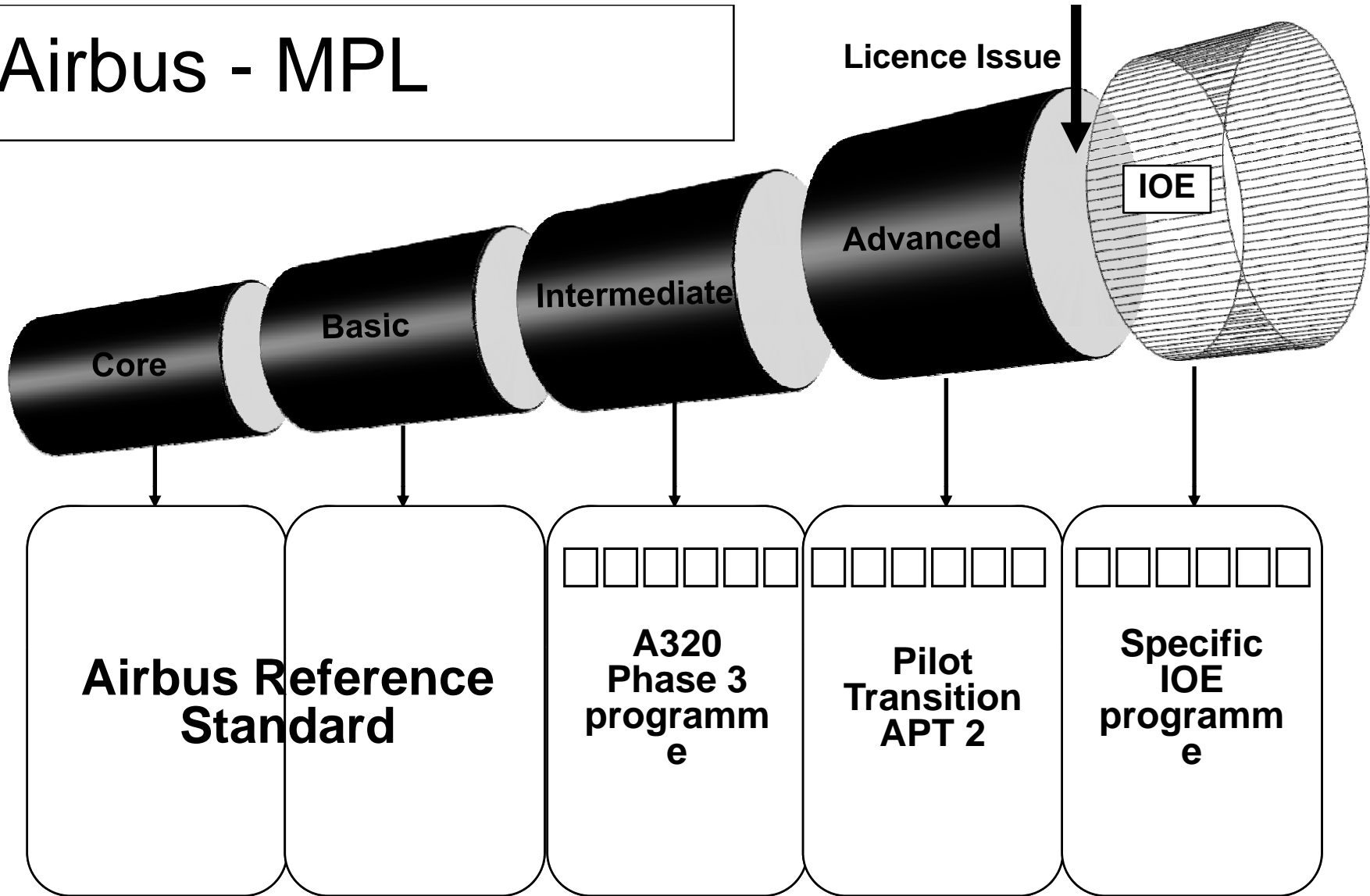
## Ab-Initio Training



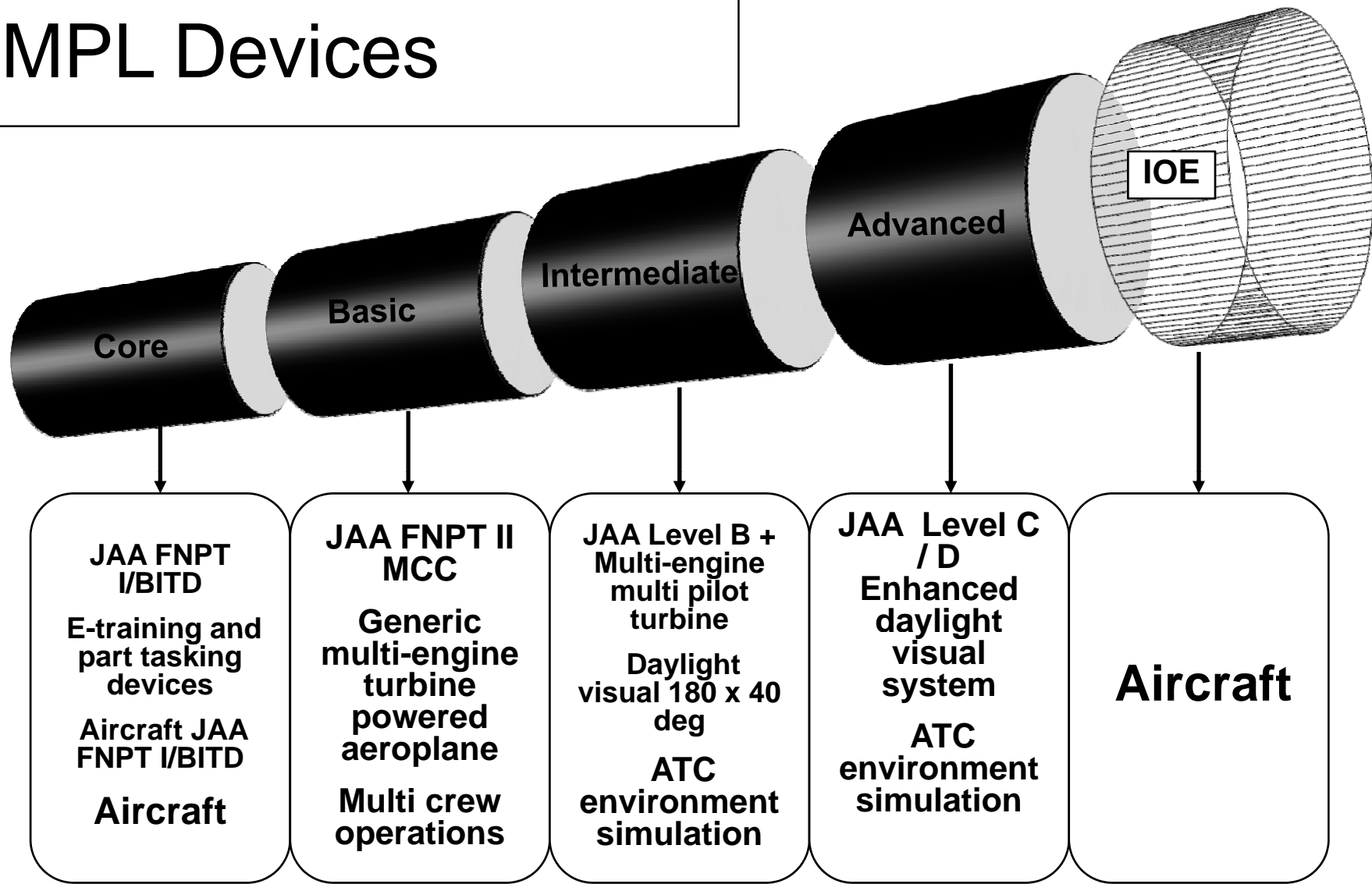
# Airbus Flight Crew Training



# Airbus - MPL



# MPL Devices





# Phase 3 Device

**JAA Level B + (motion)  
Multi-engine multi pilot turbine**

**Daylight visual 180 x 40 deg**

**Type Specific Device**

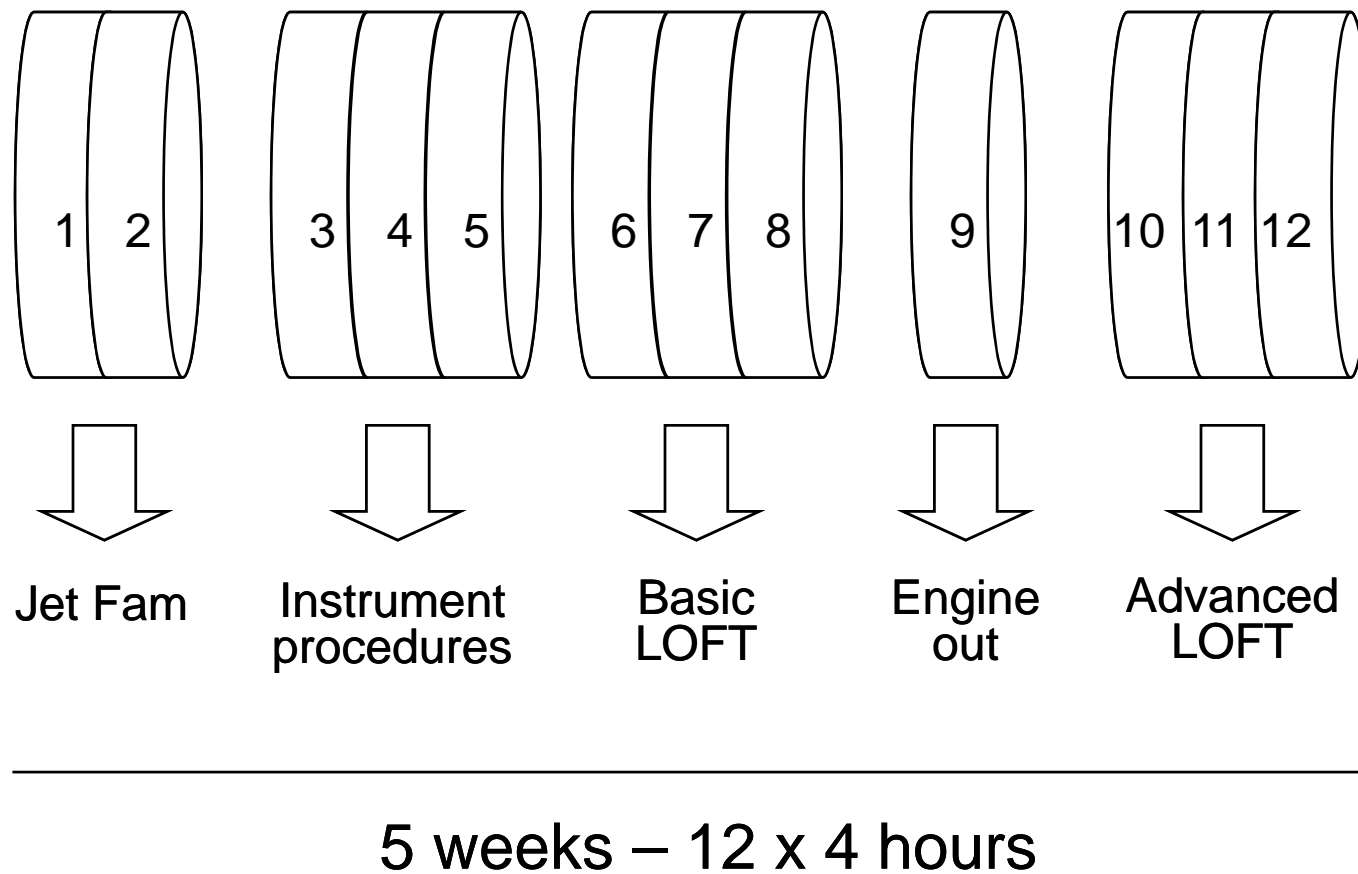
**Training is not type specific**

**ATC Environment Simulation**



# The MPL phase III structure

## Airbus MPL III structure (project)



# The MPL phase III principles

## Airbus MPL III project:

- a five week course including 12 simulator sessions
- a 3 trainee team: 1 PF, 1 PNF and 1 observer
- a 48 hour training (credits for 32 hours as PF+PNF)
- a generic medium-weight jet training
- crew coordination reinforcement with threat and error management and development of situation awareness
- Line oriented flight training (6 loft sessions included)

# MPL/ELT main characteristics

- Reinforced synthetic training, analytical training reduced to minimum – simplified procedures
  - Reinforcement of decision making, situation awareness and threat management (continuous exposure to threats)
  - Reinforced IFR experience through real flight situations
  - Airline context
  - Merged theoretical and practical training
  - Reinforced competency-based training
  - Close trainees follow-up: the instructor tutor roll
- The quality, availability and training of instructors is the key issue for MPL**

# Recurrent training



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# The Airline Burden

- Existing framework
  - Mandatory items – licensing and operations
  - Low Visibility mandatory items
  - Special airport operations
  - ETOPS
- Very little scope for effective additional training within existing cost structure
- Too much focus on abnormal procedures
- Much more needed in approach & landing

# JAR-FCL Mandatory Items

| Manoeuvres/Procedures<br>(including Multi-Crew Cooperation)                                                                                                                                                                                                                                                                             | OTD | FTD | FS | A  | Instructor's<br>initials<br>when<br>training<br>completed | Chkd in |  | Examiner's<br>initials<br>when<br>test<br>completed                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|----|----|-----------------------------------------------------------|---------|--|-------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                         |     |     |    |    |                                                           | FS<br>A |  |                                                                                                             |
| <ul style="list-style-type: none"> <li>• Engine</li> <li>• Pressurisation</li> <li>• Pitot-static</li> <li>• Fuel</li> <li>• Electrical</li> <li>• Hydraulic</li> <li>• Flight controls</li> <li>• Anti ice</li> <li>• Autopilot/flight director</li> <li>• Stall warning system</li> <li>• GPWS</li> <li>• Radio navigation</li> </ul> |     |     |    |    |                                                           | FS<br>A |  |                                                                                                             |
|                                                                                                                                                                                                                                                                                                                                         |     |     |    |    |                                                           | M       |  | A<br>mandatory<br>minimum of<br>3 abnormal<br>shall be<br>selected<br>from 3.4.0<br>to 3.4.14<br>inclusive. |
|                                                                                                                                                                                                                                                                                                                                         | P—> | —>  | —> | —> |                                                           |         |  |                                                                                                             |
|                                                                                                                                                                                                                                                                                                                                         | P—> | —>  | —> | —> |                                                           |         |  |                                                                                                             |
|                                                                                                                                                                                                                                                                                                                                         | P—> | —>  | —> | —> |                                                           |         |  |                                                                                                             |

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|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|----|---|-----------------------------------------------------------|---------|---|--------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                   |     |     |    |   |                                                           | FS      | A |                                                                                                        |
| <ul style="list-style-type: none"> <li>• Fire Drills</li> <li>• Smoke control &amp; removal</li> <li>• Engine failures</li> <li>• Fuel dumping</li> <li>• Windshear</li> <li>• Pressurisation failure</li> <li>• Incapacitation</li> <li>• Other emergency procedures</li> <li>• ACAS event</li> <li>• Steep turns</li> <li>• Stalling</li> </ul> |     |     |    |   |                                                           |         |   |                                                                                                        |
|                                                                                                                                                                                                                                                                                                                                                   |     |     |    |   |                                                           |         | M | A<br>mandatory<br>minimum of<br>3 items<br>shall be<br>selected<br>from 3.6.1<br>to 3.6.9<br>inclusive |
|                                                                                                                                                                                                                                                                                                                                                   |     | P→  | →  | → |                                                           |         |   |                                                                                                        |
|                                                                                                                                                                                                                                                                                                                                                   |     | P→  | →  | → |                                                           |         |   |                                                                                                        |
|                                                                                                                                                                                                                                                                                                                                                   |     | P→  | →  | → |                                                           |         |   |                                                                                                        |
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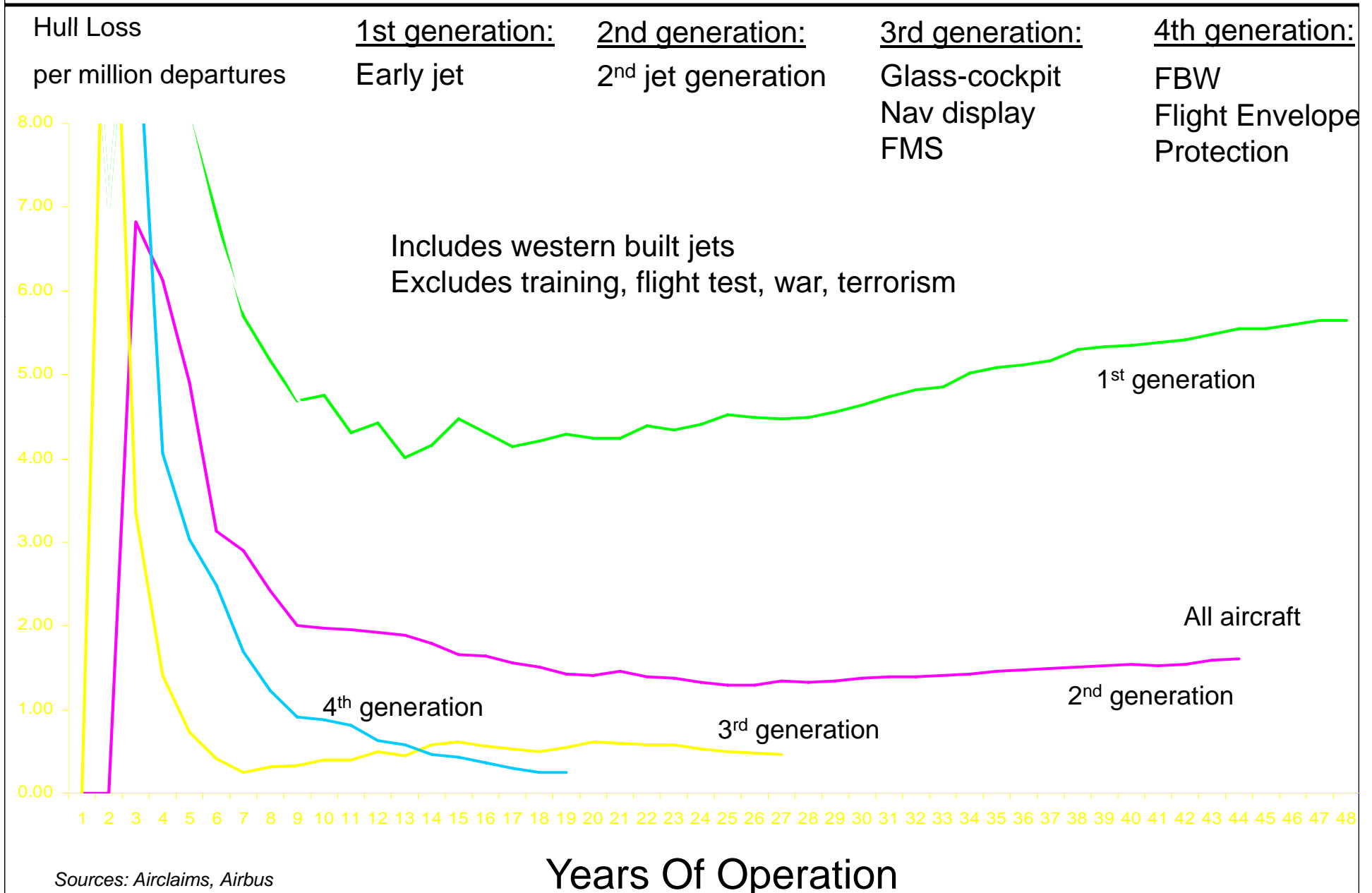


# Aircraft accident statistics – valid up to end 2006

The accident statistics which follow:

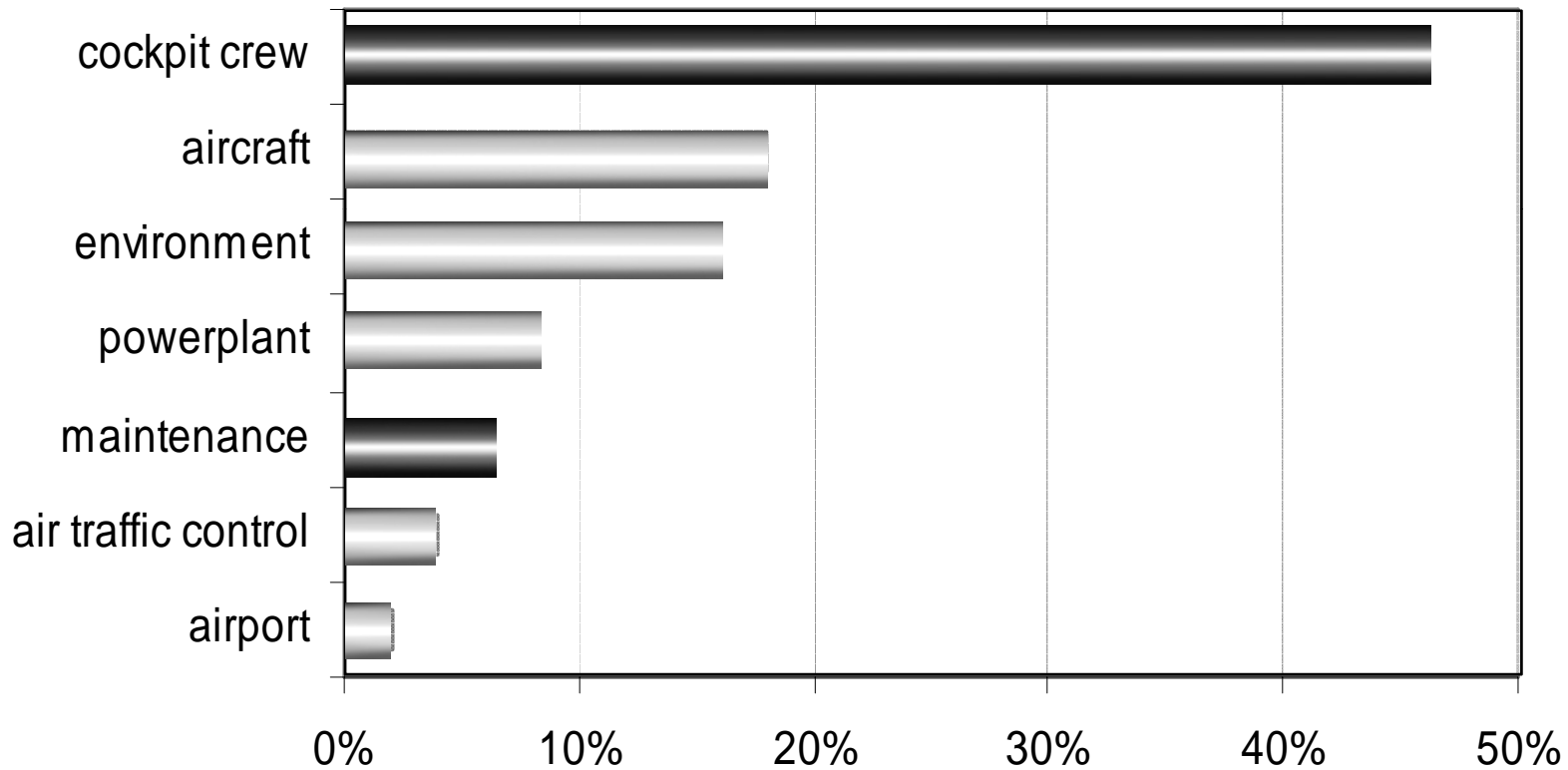
- Include western built airplanes
- Exclude test flights, training flights, terrorism & acts of war
- Include all known hull losses & fatal accidents during revenue flights

# Hull Loss per million departures - valid end 2006



# Summary Causes

**Relative Importance of contributing factor in fatal accidents**  
(Source: Civil Aviation Safety Data, 1989-2003)



# Training - Does One Size fit All?

- Existing regulation applies equally to all



# Training - Does One Size fit All?

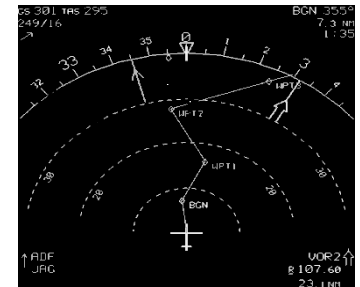


# Cockpit Displays & Avionics

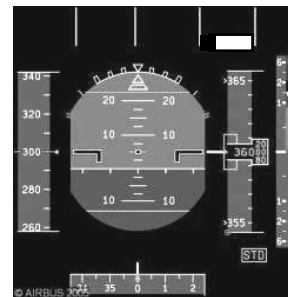


# Cockpit Displays & Avionics

- Onboard Airport Navigation System
  - ▶ Navigating around complex airports
- Aircraft Traffic Situational Awareness (ATSAW)
  - ▶ In trail procedures
  - ▶ Enhanced visual separation in approach
  - ▶ Enhanced situational awareness on the airport surface
- Brake To Vacate (BTV)
  - ▶ Minimize runway occupancy
- Autopilot TCAS (APTCAS)
  - ▶ participates in increasing safety level in TCAS operation



OANS with BTV  
HMI screenshot  
example



# The risk of apathy

- Increasing complacency
- Devalued and ineffective training programmes
- No impact on accident rates
- Difficulty of designing programmes



# The benefits

- Risk based training programmes adapted to the type of aircraft and operation
- Greater focus on normal operations managing difficult situations
- Emphasis on the human performance
- Capture and train the non technical skills in a meaningful environment



## Global Training & Quality Initiative

By using the evidence and developing fleet and operation specific best practice, airlines will have the freedom and responsibility to use data correctly and deploy a variety of training resources and tools to mitigate the real risks in line operations.

# Pilot Training

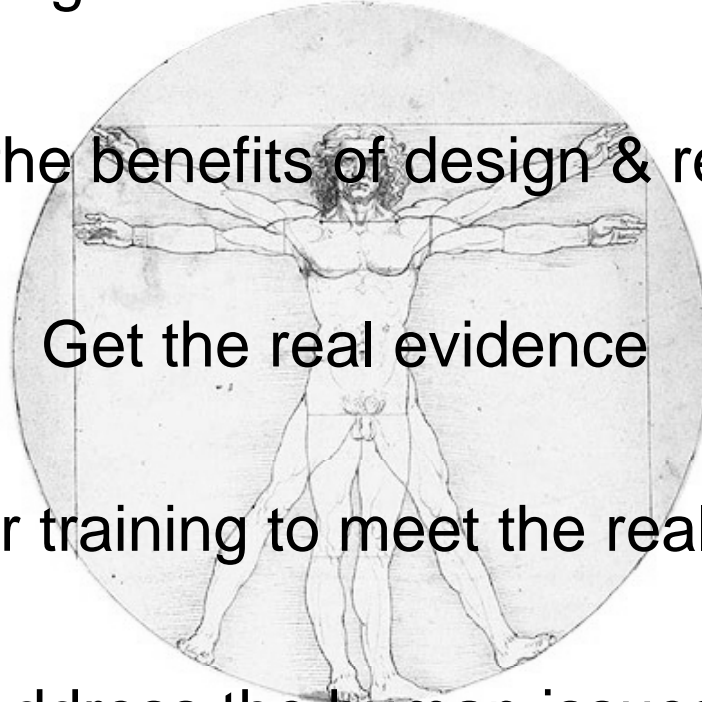
Recognise the need for change

Accept the benefits of design & reliability

Get the real evidence

Consider training to meet the real threats

Address the human issues





# Thank You

