

A photograph of an Airbus A350-900 aircraft on a tarmac. The aircraft is white with a blue tail and wingtips. The tail features the Airbus logo and the text 'A350'. The registration number 'F-YVMB' is visible on the fuselage. The aircraft is reflected in a large puddle in the foreground. In the background, another Airbus A350 is visible, along with airport buildings and a cloudy sky. The sun is low in the sky, creating a bright reflection on the water.

Experiences Introducing CBTA

EASA CBTA and EBT Workshop

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Director Flight Operations & Training Policy
20., 21. May 2019

AIRBUS

CBTA





Design of Pilots Training for A350 started in 2009
Entry into Service 2014

Evolution in Training

Rationales to change

Training Standards in 2009:

Rulemaking has started to promote development of competencies in alternative training concepts:

Recurrent Training:

- AQP (since 1990)
- ATQP (since 2006)
- ICAO EBT under development by IATA ITQI

Basic Training:

- MPL (since 2006)

Type Training:

- **No regulation yet**



Focus on Pilot's Competencies

Decision to develop the A350 pilot training following a

NEW TYPE-RATING CONCEPT

- Competency Based Design
- Choice of training tools to develop competencies
- Evidence driven

State of the Art Training,
while staying compliant with current regulation *)

Task Based Training

Today's standard

Today's Performance Standards for pilot training are Task Based: e.g. Appendix 9 PART FCL

3.3	Normal operation of systems and controls engineer's panel	P	→	→	→	→		
	Normal and abnormal operations of following systems:						M	A mandatory minimum of 3 abnormal shall be selected from 3.4.0 to 3.4.14 inclusive
3.4.0	Engine (if necessary propeller)	P	→	→	→	→		
3.4.1	Pressurization and air-conditioning	P	→	→	→	→		
3.4.2	Pitot/static system	P	→	→	→	→		
3.4.3	Fuel system	P	→	→	→	→		
3.4.4	Electrical system	P	→	→	→	→		

Height	
Generally	± 100 feet
Starting a go-around at decision height	+ 50 feet/- 0 feet
Minimum descent height/altitude	+ 50 feet/- 0 feet
Tracking	
on radio aids	± 5°
Precision approach	
	half scale deflection, azimuth and glide path
Heading	
all engines operating	± 5°
with simulated engine failure	± 10°
Speed	
all engines operating	± 5 knots
with simulated engine failure	+ 10 knots

How to assess?

PART FCL Flight Test Tolerance: "Demonstrate **Airmanship**"

Airmanship is the comprehensive use of all competencies required to operate an aircraft safely, effectively and efficiently

Application of Procedures

Communication

Flight Path Management - Automation

Flight Path management – Manual Control

Leadership and Teamwork

Problem Solving and Decision Making

Situation Awareness

Workload Management

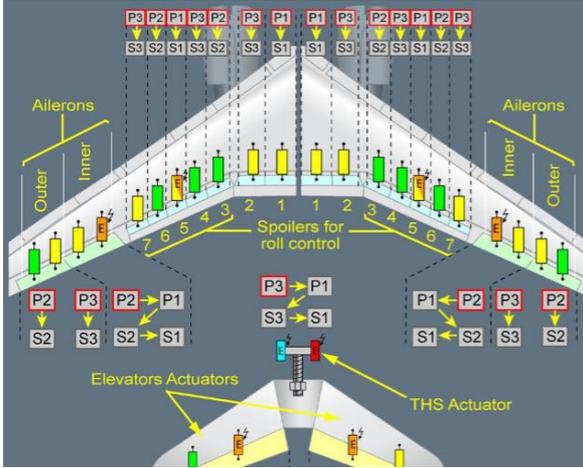
Knowledge *)

Pilot Competencies

The industry standard

Source ICAO Doc 9995

*) EASA



Technical Knowledge

> 30h CBT (e.g. A320, A380)

19h SKM A350

System Knowledge Modules (SKM)
are Quick User Guides for initial knowledge base

Consolidation of Knowledge continues throughout the course

New style of
knowledge
acquisition

Quick
User
Guide



ACE



“Airbus Cockpit Experience “

- Part Task Trainer
- Training Device Level C

ACE

- Cockpit Simulator on Laptop or Tablet
- ACE is used from Day 1 throughout the whole course - also for preparation of e.g. FFS sessions
- System Knowledge modules and ACE modules are intermixed
- “Learning by Discovery”
- Includes SOP training

Training Tools



Training Tools

Better use of tools

Shift training from **FFS** to **APT+**
Shift training from **APT+** to **ACE**

More training
time in the FFS



Start with Manual Flying



More training time in the FFS

Natural development of all Competencies needed

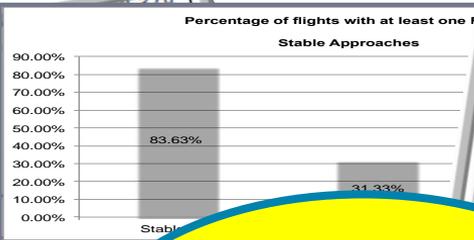
Scenario Based Training



Surprise as a training element to enable resilience



**Evidence
Driven**



1008	Speed Above VLE
1009	Speed Above VLE
1016	Speed Above VLO Extension
1017	Speed Above VFE
1025	Speed Above Recommended Turbulence Speed
1028	Speed Low
1032	Speed High in Climb (below 1000ft)
1038	Speed Low in Climb (100ft - 1500ft)
1100	Pitch High at Take Off
1101	Pitch Rate High at Take Off
1102	Pitch Rate Low at Take Off
1103	Pitch High in Climb

1035	Braking Questionable at Landing
1105	Pitch Input cycling at Landing (below 100ft)
1108	Pitch High at Touch Down
1109	Pitch Low at Touch Down
1111	Pitch Rate High at Landing
1200	Bank High in Approach (below 100ft)
1205	Roll input cycling (below 200ft)
1210	Bank High during Flare (below 10ft)

Gen4 Jet Training Topics

A

Adverse weather
Automation management
Competencies non-technical (CRM)
Compliance
Error management
Go-Around management
Manual aircraft control
Mismanaged aircraft state
Monitoring & cross-checking
Unstable approach

ATC
Engine failure
Fire and smoke management
Loss of communications
Managing loading, fuel, performance errors
Navigation
Operations or type specific
Pilot incapacitation
Traffic
Upset recovery
Windshear recovery

programme
995

Use of Data

IATA Data Report
was published in
2013

Application of Procedures

Communication

Flight Path Management - Automation

Flight Path management – Manual Control

Leadership and Teamwork

Problem Solving and Decision Making

Situation Awareness

Workload Management

Knowledge

Competencies drive training

- Design
- Execution
- Assessment

Performance Indicators define the desired outcome

Grading System

Strong fundament of Competency development

6 APPENDIX 2 - AIRBUS PILOT COMPETENCIES AND ITS INDICATORS

Competency	Competency Description	Performance Indicators
Application of Procedures	Identifies and applies procedures in accordance with published operating instructions and applicable regulations, using the appropriate knowledge.	<ul style="list-style-type: none"> - Follows SOPs unless a higher degree of safety dictates otherwise - Identifies and applies all operating instructions in a timely manner - Correctly uses aircraft systems, controls and instruments - Safely manages the aircraft to achieve effective and efficient operation, concerning fuel, environment, passenger comfort and punctuality - Identifies the source of operating instructions
Communication	Demonstrates effective oral, non-verbal and written communication in the cockpit and on the ground.	<ul style="list-style-type: none"> - Knows what, how, where, when, how much and with whom he or she needs to communicate - Ensures the recipient is ready and able to receive the information - Conveys messages and information clearly, accurately, timely and adequately - Confirms that the recipient correctly understands important information



Remedial
 Session type
 (select none)

Pilot Training

Session date

Trainee's details
 Customer
 Lastname
 Firstname
 Position
 Course Number
 Course type
 From/To

Competencies	Competency Grading					Competent
	1	2	3	4	5	
Application of procedures						Not yet Competent
Communication						
Flight path management - Automation						
Flight path management - Manual						
Leadership and teamwork						Instructor's name
Problem solving and decision making						Name
Situation awareness						
Workload management						Code

Free text

I confirm that all the required manoeuvres and exercises for this session are either completed or listed in the free text box
 I confirm that the reporting has been presented to the trainee and validated in his/her presence
Note: Any missing/unstaffed exercises will be notified to the next instructor

6


 Remedial

Session type

(sélectionnez) ▼

▼

▼

Session date

Trainee's details

Customer

LFI

Lastname

SIVONE

Firstname

G. Hernandez

Position

Captain ▼

Course Number

EUR16-5501706

Course Type

VF2HA2

From/To

15MAR2016-20APR2016

ORS

Com

Pilot Training

Appl
Proc

Com

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Competency

Application
Procedures

Communicat

Competency Grading

Competencies	1	2	3	4	5	N/O	Competent
Application of procedures							Not yet Competent
Communication							
Flight path management - Automation							
Flight path management - Manual							
Knowledge							
Leadership and teamwork							Instructor's name
Problem solving and decision making							Name
Situation awareness							
Workload management							Code

Free text

Validate

Save without validation

Unprotect

 I confirm that all the required manoeuvres and exercises for this session are either completed or listed in the free text box.

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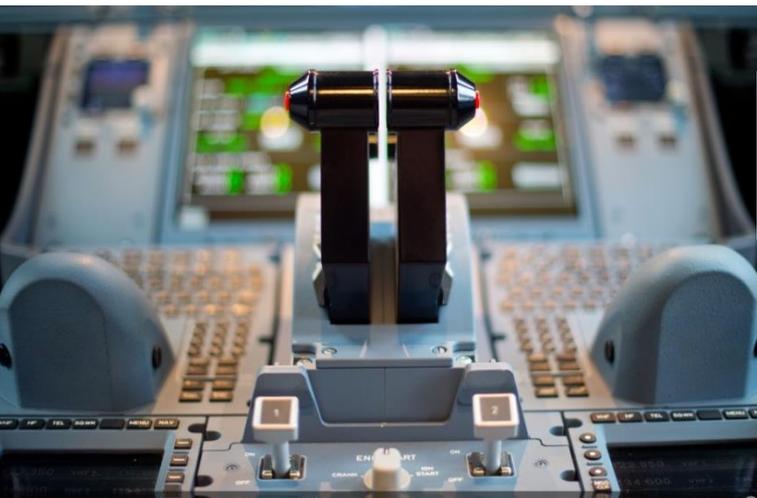
ironment, passenger comfort and punctuality

cate

Day1	Day 2	Day 3	Day 4	Day 5
CREW registration SYSTEM KNOWLEDGE & PTT	SYSTEM KNOWLEDGE & PTT			
Day 6	Day 7	Day 8	Day 9	Day 10
SYSTEM KNOWLEDGE & PTT + SYSTEM TEST	SOP PTT	FFS 1	APT+ 1	APT+ 2
Day 11	Day 12	Day 13	Day 14	Day 15
APT+ 3	FFS 2	FFS 3	FFS 4	APT+ 4
Day 16	Day 17	Day 18	Day 19	Day 20
APT+ 5	APT+ 6	FFS 5	FFS 6	FFS 7
Day 21	Day 22	Day 23		
FFS 8	FFS 9	SKILL TEST		

Footprint

Driven by trainee's needs



Decision by Airbus to extend the new training paradigm to A320 and A330 and Ab-Initio Training

October
2014

March
2017

- **Very positive feedback** from the start
- Noticeable: **accelerated learning especially in short courses**
- **More competent crews** with fewer remedials
- **Better integration** in operation

Worldwide Review

After 2 ½ years
New A350 training

NEW

A320 Competency Based Modular Training

New Training by Airbus

Initial Training
(PPL, CPL/IR)

Intermediate
Training
'bridge
courses'

Advanced
Training:
Type Rating
ZFTT/Base

LIFUS

Instructor
course

Recurrent
Training

Command
course

Initial Training

Airbus Competency-based modular
Training

EASA Ops
Qualifications

Influence community to implement the same high-level standards worldwide

- Raises **quality** in flight training worldwide
- **Harmonises training standards globally**
- Ensures **competent pilots** in the cockpit of Airbus A/C
- Improves **safety**
- Contribute to airlines' **profitability**



Airbus Training

Airbus Customer Services

Lessons Learned

October
2014

May 2019

- **Very strong results**
- **Good feedback** by trainees
- **Instructor standardization** for **Competency** based training is an ongoing challenge
- **Training design** is straight-forward if keeping the principles in mind especially with complex **Regulatory material**

5 Years CBTA...

... in Airbus