Implementation needs for Operators and ATO Air France experience

CBTA and EBT Workshop

COLOGNE , 20 & 21 May 2019

Direction de la Formation Opérationnelle

AIRFRANCE

Cpt Michel Lacombe - AF ATO Safety Manager

QUALIFICATION

Boeing 777 - Captain, TRE-TRI, 20,000 Hours Total Flight Time.

Member of ICAO Competencies Working Group and IPTC

Member of IATA Training & Qualification Initiative (2008 – 2012).

Member of EASA RMT 599 – EBT implementation

EXPERIENCE

2013 – present: AF EBT Facilitation Manager - AF ATO Safety Manager

2009-2013: Head of Air France Training Standards, ATQP leader - Captain B744

2005 – 2009: Head of Air France Training, TRTO – Captain 747

1992 – 2004: Deputy Manager, Air France Training Standards - Captain B737

1988 – 1992: Chief Instructor Pilot, French National Pilot Training School.

1983 – 1988 : Air France entry B727

1979–1983: CPL/IR/ATPL Instructor, Royal Air Morocco

1979: "Bush" pilot - Ivory Coast, Africa

EDUCATION

Graduate of "Ecole Nationale de l'Aviation Civile" (ENAC). Ab-initio cadet pilot.

What is a CBTA programme and what is an EBT programme?

Competency Based Training and Assessment (CBTA) concepts were defined by Russian in the 1860's.

And was developed in the USA in the 1950s, 1960s in reaction to the perceptions about Soviet Union technological progress that came a head in the launch of Sputnik.

The main outlines of CBTA were established in the industry by the end of the 1970s.

EBT, defined by IATA, is a CBTA programme based on :
- Evidence
- Competencies

EBT is a just a CBTA programme using a limited number of competencies.

Implementation of a CBTA system (ATQP, Mixed-EBT or EBT)

To introduce a CBTA system to conduct Type rating, Recurrent training or Checks (LPC : licence and OPC : operator check).

1. *Introduce* **Competencies** *and behavioural indicators.*

2. *Introduce (or use) a developed* **Grading and Assessment System.**

3. **Train the Instructors** *to use competencies and the defined grading and assessment System*

4. *To be efficient : Introduce a new Scheduling (CHECK first – DEVELOP after).*

Mixed Implementation of EBT concepts in the legacy recurrent

RMT.0696 'Implementation of EBT within the European regulatory framework'

European Aviation Safety Agency — Explanatory Note to Decision 2015/027/R — Table of contents

Implementation of evidence-based training (EBT) within the European regulatory framework
RELATED NPA/CRD: N/A — OPINION No: N/A — RMT.0696 — 16.12.2015

==*ED Decision 2015/027/7 – has been published on the 25/12/2016*==

Introduction of GM1 ORO FC 230 (a);(b);(f) Recurrent Training and Checking, <u>which allows </u>to conduct of LPC (licence) and OPC (operator check) using EBT 3 phases concept.

1. *Introduction of Competencies:*
2. *Introduction of a new Grading and Assessment System:*
   - *Training of the Instructors to use competencies and new Grading and Assessment System*
3. *Introduction of a new Scheduling:*
   (first day: *LOE + Manoeuvres Validation* second day : *Training - development*)
   - *(Equivalency of malfunctions, optional if sessions are too overloaded)*

European Aviation Safety Agency

SAFETY MATERIAL

RMT.0599
'Evidence-based and competency-based training'

Oversight guidance for transition to EBT
Mixed Implementation

According to:

GM1 ORO.FC.230 (a); (b); (f) Recurrent training and checking GM2 ORO.FC.A.245, ATQP

During the Mixed Implementation phase (minimum 2 years) the outcome does not change and there is no reduction in the regulatory training.

Publication of a Check-list for the implementation of Mixed-EBT for the NAA oversight.
(It is also recommended for operators willing to join).

Introduction of Competencies – WHY ???

TAKE OFF WITH FUEL LOWER THAN MINIMUN FUEL	A320	xxxxxx	CDG - ATH

Difficult boarding, **Captain had to manage passengers** who had been upgraded (honeymoon) and then downgraded and separated. **I selected at the cockpit refuelling panel 10,6T instead of the requested 11,6T** (minimum fuel). This error was not detected at the end of the refuelling or when reporting the figures to the Aircraft Technical Log. We discovered the error when taxying because FMS indicated an amber EFOB. **We decided to continue**. We arrived in Athens with 3T (minimum requested ALTN + Final fuel was 2,9T).

How are you going to grade or assess this situation ?

Grading or Assessing in a legacy world

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Charact.	Handling and path	Flight management	Technical communication	
Handling and path control				
Handling				NA / A / S / S+
Precision				☐ ☐ ☐ ☐
Primary parameters control				☐ ☐ ☐ ☐
Degraded plane control				☐ ☐ ☐ ☐
Flight Path Control				NA / A / S / S+
Flight path conception				☐ ☐ ☐ ☐
Trajectory control				☐ ☐ ☐ ☐
Use of Automation				☐ ☐ ☐ ☐
Flight phases				NA / A / S / S+
Taxying				☐ ☐ ☐ ☐
Take of / Stop				☐ ☐ ☐ ☐
Landing / Go around				☐ ☐ ☐ ☐
Emergency procedures				☐ ☐ ☐ ☐
Remarks :				

Conduct of flight				NA / A / S / S+
Personal preparation				☐ ☐ ☐ ☐
Fuel management				✖ ? ☐ ☐
Flight management				☐ ☐ ☐ ☐

Required Pilot Skills : EBT Defined Competencies
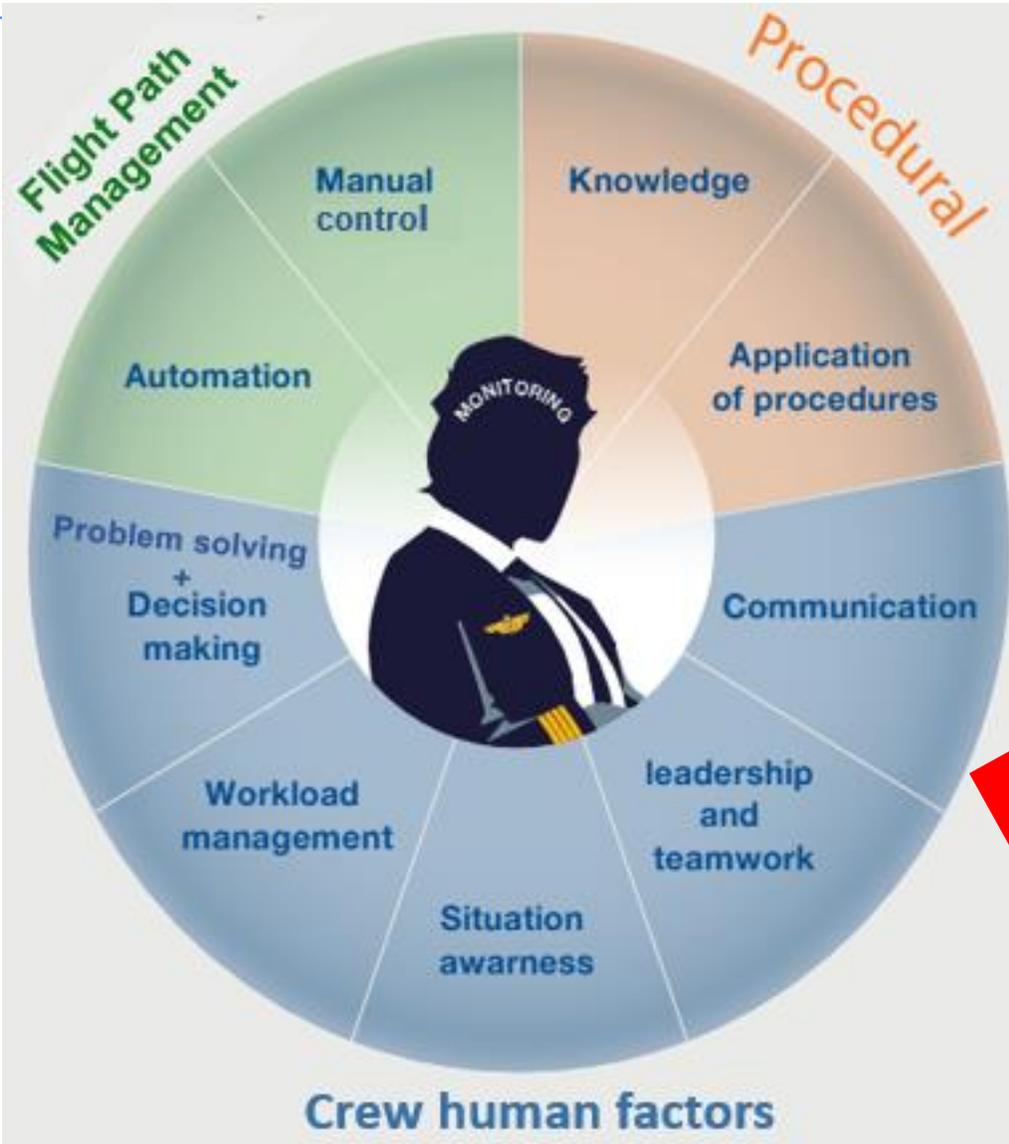
Technical Skills

Procedural Knowledge	Systems Knowledge
Psychomotor Skill	Hand-Eye Coordination
Comply With Checklists	Comply With Procedures

Non technical skills

Decision Making	Error Mitigation
Situational Awareness	Team Building
Workload Management	Planning
Communication	Critical Thinking

8

Develop a Grading and Assessment system *(or adapt it if required).*

Characteristics / Competencies / Remarks / General view

Characteristics / Competencies	NA	A	S	S+	Remarks	Comments
Leadership and Work Team Building			X			Good participation
Situation Awareness				X		Always optimum
Work Load Management			X			
Decision Making			X			
Communication			X			
Manual Aircraft Control			X			
Automation Aircraft Control			X			
Application of procedures				X		Good monitoring of track (PF and PM) calls out OK
Knowledge			X			

Procédures

Aptitude à utiliser et adhérer aux procédures en vigueur.

Standard+	Adhère et incite au respect des procédures	Pratique systématiquement un cross-check rigoureux	Applique les procédures avec rigueur, efficacité et au bon moment	Utilise les procédures pour gérer le vol de manière sûre et efficace en optimisant le confort passager	Sait s'écarter des procédures avec un briefing TEM en concertation équipage lorsque la sécurité l'exige
Standard	Adhère aux procédures	Pratique un cross-check rigoureux	Applique correctement les procédures avec un bon niveau de conformité et au bon moment	Utilise les procédures pour gérer le vol de manière sûre en considérant le confort passager	Sait s'écarter des procédures en concertation équipage lorsque la sécurité l'exige
Acceptable	Applique les procédures	Pratique un cross-check avec quelques oublis	Applique les procédures avec un niveau acceptable de conformité ou ne les applique pas toujours au bon moment	Utilise les procédures pour gérer le vol de manière sûre	Sait s'écarter des procédures lorsque la sécurité l'exige
Non Acceptable	Dévie volontairement aux procédures ou invente des procédures	N'effectue pas suffisamment le cross-check	N'applique pas ou applique incorrectement les procédures.	Utilise mal les procédures ce qui dégrade la sécurité du vol	Ne sait pas s'écarter des procédures lorsque la sécurité l'exige

LEVELS OF REQUIREMENTS

|	UNACCEPTABLE — Flight Safety is engaged	ACCEPTABLE — Flight Safety is ensured	STANDARD — Safety margins are maintained	STANDARD + — Safety margins are enhanced by good practices
SITUATION	• Major UAS	• Ignored or abused threat • Ignored or abused error • Intentional error • Minor UAS	• Threat anticipated or recognized and mitigated • Error detected and corrected	• TEM outstanding performance
COMPETENCIES	• One UNACCEPTABLE • Too many ACCEPTABLE	• One or more significant ACCEPTABLE	• Occasional ACCEPTABLE or STANDARD + are not significant	• Performance observed always STANDARD or STANDARD +
	Adjournment, treatment before return to flight	Must take into consideration recommendations to improve the performance	Performance expected and to be maintained	Performance can serve as an example

Grade Levels

- Grade 1 = FAIL
- Grade 2 = MINIMUM EXPECTATION
- Grade 3 = easyJet STANDARD
- Grade 4 = EXCEEDED easyJet STANDARD
- Grade 5 = VERY GOOD

1!	2!	3!	4!	5!
Ineffective performance which resulted in an unacceptable reduction in safety margin, by rarely demonstrating any of the performance indicators when required	Minimum acceptable performance but which did not result in an unsafe situation, by only occasionally demonstrating some of the performance indicators when required.	Adequate performance which resulted in a safe situation, by regularly demonstrating most of the performance indicators when required.!	Effective performance which enhanced safety, by regularly demonstrating all of the performance indicators when required.	Exemplary performance which significantly enhanced safety, efficiency and effectiveness by always demonstrating all of the performance indicators when required!
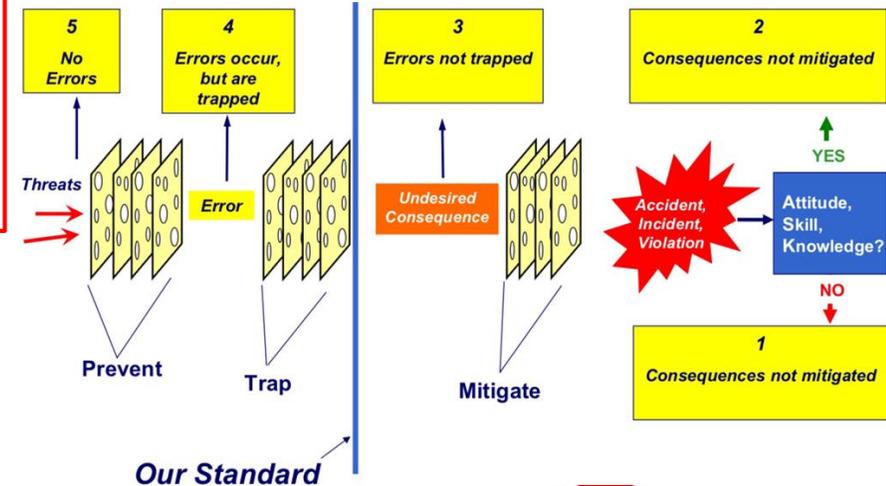
Training Overall

NA ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

PAM	NA	1	2	3	4	5	PAM	NA	1	2	3	4	5
(M) Workload Management	☐	☐	☐	☐	☐	☐	(D) Problem Solving / Decision Making	☐	☐	☐	☐	☐	☐
(K) Knowledge	☐	☐	☐	☐	☐	☐	(S) Situation Awareness	☐	☐	☐	☐	☐	☐
(P) Application of Procedures	☐	☐	☐	☐	☐	☐	(L) Leadership / Teamwork / Support	☐	☐	☐	☐	☐	☐
(H) Handling	☐	☐	☐	☐	☐	☐	(A) Use of Autoflight	☐	☐	☐	☐	☐	☐
(C) Communication	☐	☐	☐	☐	☐	☐							

TEM / Swiss cheese model

5 No Errors	4 Errors occur, but are trapped	3 Errors not trapped	2 Consequences not mitigated

Threats → Prevent → Error → Trap → Undesired Consequence → Mitigate → Accident, Incident, Violation → Attitude, Skill, Knowledge?

YES / NO

1 Consequences not mitigated

Our Standard

How to evaluate competencies ?

Workload Management

Organize task priority, task allocation and task interruption depending on resources and situation.

NA
• Does not allocate tasks or allocates them incorrectly or does not ensure they are tak... into account.
• Does not take into account essential tasks
• Allows task interruptions to interfere with w...
• Acts alone too often or overloads excessiv... resource

Application of procedures

Apply and adhere to current SOP's.

NA
• Deviates voluntarily from SOP's or invents procedures.
• Insufficient crosschecks.
• Fails to apply SOP's or applies them incorrectly.
• Uses SOP's incorrectly degrading flight safety.
• Does not know when to deviate from SOP's for flight safety.

Problem solving decision making

Identify a problem, work out options, evaluate them, choose an action plan, execute it, Supervise it and if Needed adapt and revise it.

NA
• Fails to collect critical information.
• Fails to list the options.
• Misses certain critical risks.
• Makes a decision which compromises flight safety or does not make a decision...
• Unable to execute the decision.
• Fails to revalidate the decision once failure is obvious or constantly question... the decision even when the context remains unchanged.

Problem Solving and Decision Making

Problem solving and decision making is effective and effi...
- Anticipates, accurately identifies, and prioritises all...
- Actively verifies facts.
- Actively gathers information and considers as many... practicable.
- Makes very good decisions and implements solutio... manner.
- Reviews outcomes and adapts solutions.
- Effectively considers and manages threats.

Problem solving and decision-making appropriate.
- Identifies and prioritises problems. Verifies facts.
- Gathers information and considers relevant options...
- Makes good decisions and implements solutions w... awareness of time.
- Normally reviews outcomes.
- Considers and manages threats appropriately

Problem solving and decision-making is adequate for the... be improved.
- Identifies problems and collects facts.
- Gathers essential information and considers obviou...
- Makes a satisfactory decision in the time available... adequate solutions.
- Reviews outcomes when time is available or solutio... failing.
- Adequately considers and manages threats.

Training: Significant instructor assistance required to sol... and make decisions. Requires further development to re... standard. Slow to identify problems and/or limited attemp... facts.
- Gathers minimal information and considers limited...
- Makes decisions and implements solutions with hes... uncertainty.
- Inconsistent or ineffective review of decisions.
- Threats are not considered.

Evaluating: Problem solving and/or decision making req... improvement and/or may have needed excessive prompt... pilot. Safety margin reduced.

Training: Unable to solve problems and make adequate... despite significant instructor assistance.
- Misidentifies or ignores problems requiring interven...
- Fails to gather critical information or does not consi...
- Fails to make a decision or implements an inappro...
- Fails to review decisions or fails to take the opportu... poor solution.
- Takes unnecessary risks.

Evaluating: Consistently poor or inappropriate problem s... making and/or safety compromised.

Application of Procedures

Procedural application is very effective and efficient.
- Consistently applies correct procedures in a timely manner.
- Deviates from procedures when safety dictates and... accordingly.
- Aircraft managed to optimise safety, passenger co... efficiency.

Procedural application is appropriate for the situation.
- Applies correct procedures to a high standard in a t...
- Deviates from procedures when safety dictates oth... generally briefs accordingly.
- Aircraft managed safely and efficiently with due reg... passenger comfort.

Procedural application is adequate for the task but could...
- Applies correct procedures with minor lapses.
- Deviates from procedures when safety dictates oth... neglects to brief accordingly.
- Aircraft managed safely with opportunities to impro... missed.

Training: Procedures only applied correctly with significa... assistance. Requires further development to reach requi...
- Applies procedures with difficulty and/or frequent er... excessive time, prompting from other pilot or inappr... reference to manuals.
- Deviates when unnecessary and/or without prior bri...
- Opportunities to increase the safety margin missed.

Evaluating: Procedural application requires improvemen... have needed excessive prompting from other pilot. Safet... reduced.

Training: Failed to apply procedures correctly despite si... instructor assistance and support.
- Correct procedures not known, not applied or appli... inappropriately.
- Consistently deviates from procedures inappropriat... without prior briefing.
- Aircraft operated in an unsafe manner.

Evaluating: Consistently poor procedural application an... compromised.

Workload Management

5	**Workload management is effective and efficient.** - Consistently schedules, shares and/or sheds tasks in a structured and effective manner. - Uses automation very effectively to reduce workload. - Highly efficient use of all available resources. - Effectively manages all distractions and interruptions, and protects tasks.
4	**Workload is managed appropriately.** - Schedules, shares and/or sheds tasks appropriately. - Uses automation appropriately to reduce workload. - Identifies and utilises resources appropriately. - Manages distractions and interruptions, and protects tasks.
3	**Workload management is adequate for the task but could be improved.** - Schedules, shares and/or sheds tasks adequately. - Adequate use of automation to manage workload. - Generally utilises available resources. - Generally manages distractions and interruptions adequately.
2	**Training:** Workload only managed with significant instructor assistance. Requires further development to reach required standard. - Attempts to organize and prioritise tasks are ineffective. - Frequently misses opportunities to reduce workload through automation or delegation. - Ineffective use of available resources. - Allows distractions and interruptions to interfere with successful task protection. **Evaluating:** Workload management requires improvement and/or may have needed excessive prompting from other pilot. Safety margin reduced.
1	**Training:** Not able to manage workload despite significant instructor input. - No attempt to schedule, share and/or shed tasks. - Consistently inappropriate use of automation to reduce workload. - Available resources not identified or used. - Easily distracted and/or distracts other crewmembers from essential tasks. **Evaluating:** Consistently poor workload management and/or safety compromised.

Training and standardising the instructors

**Submit an amended OM D Part containing CBTA Instructor training course.**

Recommendation : operator should include in the OMD
- *recurrent training for instructors and*
- *Instructor standardisation*
  (inter-rater reliability-instructors concordance).

At the completion of the CBTA instructor training, the instructor should know :

- *To conduct objective observations based on a competency framework, and document evidence of observed performance.*
- *Analyse trainee performance to determine competency-based training needs and recognise strengths*
- *Evaluate performance using a competency-based grading and assessment system*
- *Conduct a debriefing using facilitation techniques*
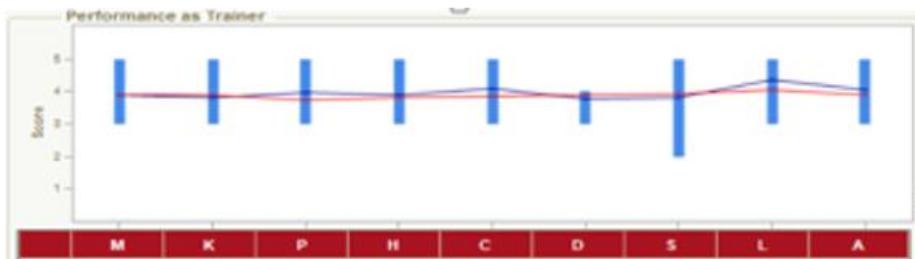
When you have trained them, follow the grading of your instructors, and provide it to them.

Evidence based training.

When launching a CBTA or an EBT program, including or not an ATQP program, Operators and NAA shall keep in mind that the main goal is:

To improve the overall safety through a more efficient training and checking program for pilots.

One major component to reach this goal is a close and efficient collaboration between the operator and its NAA.

Thank you !!

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Direction de la Formation Opérationnelle

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