Explanatory Notes

Transition from Operational Evaluation Board (OEB) Reports

to Operational Suitability Data (OSD)

for Flight Crew Data

27 March 2015

1. General

Based on request from industry, operational evaluations have been conducted by the JAA and then by EASA since 1997. Associated OEB reports are published on the EASA website in support of Approved Training Organisations (ATO) and operators, for the aircraft, equipment and/or operations which have been evaluated in the relevant OEB reports.

With the entry into force of Commission Regulation (EU) No 69/2014 on 18 February 2014 the concept of Operational Suitability Data (OSD) was implemented, integrating operational evaluation elements into the certification design process as foreseen in the Basic Regulation[1]. Available operational suitability data are then referenced in the applicable Type Certificate Data Sheet (TCDS).

2. Transition of existing OEB reports to OSD

Commission Regulation (EU) No 69/2014 introduces Article 7a of Commission Regulation (EU) No 748/2012. Paragraph 3 of Article 7a states: "*Operational Evaluation Board reports and master minimum equipment lists issued in accordance with JAA procedures or by the Agency before the entry into force of this Regulation* [18 February 2014] *shall be deemed to constitute the operational suitability data approved in accordance with point 21.A.21(e) of Annex I (Part 21) and shall be included in the relevant type-certificate. Before 18 June 2014 the relevant type-certificate holders shall propose the Agency a division of the operational suitability data in mandatory data and non-mandatory data*."

The Agency is in the process of reviewing the division of the operational suitability data of OEB reports. Completed reviews may be attached to published OEB reports on the EASA website as an interim measure, or may lead to completely transposed OSD documents held by the TC/STC holders.

The transition of OEB reports will be completed with the inclusion of OSD references in the relevant TCDS, the OEB reports concerned will be withdrawn from the EASA website, and associated OSD documents will be held by the manufacturer (TC/STC holder).

3. Provision of Operational Suitability Data (OSD) to users

Commission Regulation (EU) No 69/2014 amends Annex I (Part 21) to Regulation (EU) No 748/2012, para. 21.A.62 which regulates the provision of operational suitability data, as follows:

"*The holder of the type-certificate or restricted type-certificate shall make available:*

(a) at least one set of complete operational suitability data prepared in accordance with the applicable operational suitability certification basis, to all known EU operators of the aircraft, before the operational suitability data must be used by a training organisation or an EU operator; and

(b) any change to the operational suitability data to all known EU operators of the aircraft; and

(c) on request, the relevant data referred to in points (a) and (b) above, to:

[1] REGULATION (EC) No 216/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, and repealing Council Directive 91/670/EEC, Regulation (EC) No 1592/2002 and Directive 2004/36/EC, as amended.

1. *the competent authority responsible for verifying conformity with one or more elements of this set of operational suitability data; and*
2. *any person required to comply with one or more elements of this set of operational suitability data."*

4. Integration of OSD provisions by users

4.1 OSD Flight Crew (OSD FC) Data

In addition to reference of OSD FC data in the TCDS, the Agency maintains the EASA Type Rating & License Endorsement Lists Flight Crew on its website, one for Helicopters and one for all other aircraft. These lists constitute the class and type of aircraft categorisations in accordance with Part-FCL[2]. The lists also reference Operational Evaluation Board (OEB) Flight Crew reports and Operational Suitability Data (OSD) Flight Crew, where available.

Type rating training approved before the approval of the minimum syllabus of pilot type rating training in the Operational Suitability Data for the relevant type of aircraft shall include the mandatory training elements not later than 18 December 2017 or within two years after the operational suitability data was approved, whichever is the latest[3].

The ATO shall ensure that students meet all the pre-requisites for training as defined in the mandatory part of the operational suitability data, if established [Regulation (EU) No 748/2012, ORA.ATO.145][3].

Operators shall ensure that flight crew members who are already in operation and have completed training which did not include the mandatory elements established in the relevant operational suitability data, undertake training covering those mandatory elements not later than 18 December 2017 or two years after the approval of the operational suitability data, whichever is the latest[3].

Annex III (PART-ORO) and Annex V (PART-SPA) to Regulation (EU) No 965/2012 contain further amendments.

4. Further transition arrangements

Commission Regulation (EU) No 69/2014, No. 70/2014, and No. 71/2014 should be consulted for further transition arrangements.

[2] Annex I of Commission Regulation (EU) No 1178/2011 of 3 November 2011 ("Part-FCL"), as amended

[3] Commission Regulation (EU) No 70/2014 of 27 January 2014 amending Regulation (EU) No 1178/2011

Operational Suitability Data (OSD) for the Airbus A320 - A330 - A340 Family

CCQ & MFF

In accordance with Article 7a, para 3 of Commission Regulation (EU) No 69/2014 of 27 January 2014, the JOEB report, titled Airbus A320 - A330 - A340 CCQ & MFF, dated 12 March 2004 shall be deemed to constitute the operational suitability data approved in accordance with point 21.A.21(e) of Annex I (Part 21).

The following table establishes the division of the operational suitability data in mandatory data and non-mandatory data.

MANDATORY DATA	**NON MANDATORY DATA**
2. Pilot Type Rating requirements	
	3. Master Common Requirements
4. Master Difference Requirements tables	
5. Operator Differences Requirements Tables	
6.1.1 Prerequisites	6.1.2 Transition course: CCQ Type Rating
6.2.Low visibility training	
6.3 Skill tests	
6.4 CCQ and Line flying under supervision (LIFUS)	
6.5 Type Rating Instructor Training	
7.1 Prerequisites	
7.2 Recurrent training and proficiency checks	
7.3 Line checks	
7.4 Currency / recent experience	
	Annex 1 – Airbus CCQ footprints
Annex 2 – Airbus ODR for low visibility training	
Annex 3 – Reduced skill tests following CCQ	

The data were established in accordance with the JAA Terms of Reference and the JOEB Handbook and are in compliance with CS-FCD, initial issue dated 31 January 2014.

Provisions contained in the Airbus A320 - A330 - A340 CCQ & MFF report are related to the corresponding regulations for civil aviation aircrew and air operations.

These data will be included in the relevant type-certificate(s) in due course.

CENTRAL
JOINT AVIATION AUTHORITIES
JOINT OPERATION EVALUATION BOARD REPORT

Airbus A320 - A330 - A340
CCQ & MFF
12 March 2004

Contents

JAA Operation Evaluation Board – CCQ & MFF

Capt. Pete Griffiths
UK CAA
JOEB Chairman

Capt. Hans Schulz
LBA representative

Mike Dobson
UK CAA – FCL Advisor

Kaj Skarstrand
LFV Sweden

Jean Baril
Evan Nielsen
(CJAA - JOEB Coordinators)

Report prepared and submitted by: Pete Griffiths

Preamble

Airbus has requested a JOEB catch up process for the Airbus fly by wire family, to cover type rating courses between A320, A330 and A340 that Airbus named Cross Crew Qualification (CCQ) and operations of more than one type named Mixed Fleet Flying (MFF).
The enclosed report only covers the specifics of CCQ and MFF activities and the results of the JOEB process for each of the individual aircraft is to be found in separate reports.

As no JAA JOEB report is available for Airbus family, this Joint Operation Evaluation report includes the differences between the Airbus types (A320 – A330 – A340) using the findings of existing evaluation reports from NAA and the FAA FSB.

The report specifies the JAA CCQ type rating, Checking and Currency minimum requirements between types:i.e;

- for pilots already qualified on one A320 variant and transitioning onto A330 or A340,
- for pilots already qualified on one A330 variant and transitioning onto A320 or A340
- for pilots already qualified on one A340 variant and transitioning onto A320 or A330.

This report also includes recommendations for flying more than one type. (Mixed Fleet Flying)

This Evaluation has been made in compliance with the JAA Terms of Reference and the JOEB handbook.

Central JAA recommends approval of the Airbus referenced ODR Tables
Central JAA recommends the approval of the Airbus proposed CCQ training courses
Central JAA stresses that enclosed recommendations for MFF are in compliance with JAR-FCL1 and JAR-OPS 1.

Fergus Woods
Licensing Division Director

Georges Rebender
Operations Division Director

Operational Evaluation Report / CCQ & MFF

1. Purpose and Applicability

This report

- Recalls the Type Rating assigned to the various aircraft from the Airbus Fly by Wire family.
- Proposes Master Common Requirements (MCR).
- Describes Master Differences Requirements (MDR)
- Provides reference of acceptable Operator Difference Requirements (ODR tables).
- Makes recommendations for initial Training between Airbus types (CCQ)
- Makes recommendations for checking
- Makes recommendations for currency/ recent experience
- Makes recommendations for operations of more than one type (Mixed Fleet Flying – MFF)
- Makes recommendations for instructor training

Terminology:

- Base aircraft: An operator designated aircraft or group of aircraft used as a reference to compare differences with other aircraft within an operator's fleet.

- The term "CROSS CREW QUALIFICATION" (CCQ) refers to a reduced type rating transition course which gives credit for the technical similarities and common operational and handling procedures. The term CCQ is reserved for such courses between Airbus fly-by-wire types.

- The term “STANDARD “ type rating, as applied in this report, refers to the full transition program (full type rating) for a given aircraft type.

- The term "MIXED FLEET FLYING” (MFF) is used in this report to outline the operations of more than one type in compliance with JAR 1.980. In this context MFF refers to the operations of:

  - A320 & A330, or
  - A320 & A340, or
  - A330 & A340.

2. Pilot Type Rating requirements

With reference to JAR FCL1,the following Licence Endorsements have been assigned:

Aircraft types & variants	Licence endorsement
A318 series A319-100 series A320-100 series -200 series A321-100 series -200 series	A318/319/320/321
A330-300 series -200 series	A330
A340-200 series -300 series -500 series -600 series	A340

For the purpose of this report, any A320 variant is designated as "A-320", any A330 variant as "A-330" and any A340 variant is designated as "A-340".

3. Master Common Requirements

The A320, A330 and A340 have been designed with a high level of commonality in terms of:

1) cockpit layout,
2) system definition and operation, and
3) handling characteristics.

This level of commonality has a direct and significant impact on the definition of the training programs.

3.1 Cockpit Layout

The cockpit arrangement has been designed to:

- provide similar dimensions
- provide similar panel arrangements
- provide similar controls (including same slat/flap nomenclature)
- provide same "dark cockpit and push button" concept

3.2 System Definition and Operation

Although the avionics architecture may differ from one aircraft to another due to operational considerations (4 engine aircraft versus 2 engine aircraft, long range versus short/medium range operational requirements), the systems have been designed so as to be as similar as possible in terms of pilot/machine interface and in terms of operation.

The following are reflected in the design:

- EFIS Primary Flight Displays (PFD) and Navigation Displays (ND) provide similar information, with similar symbology, colour coding and display principles.

- ECAM Engine/Warning and System displays provide similar information. The "READ and DO" concept minimises the impact of system dissimilarities, when dealing with abnormal and emergency operations. Crew response to CAUTION and WARNINGS incorporates the same philosophy.

- AUTO PILOT/FLIGHT DIRECTOR/AUTO THRUST (FMGC) incorporates similar architecture, and operating procedures.

3.3 Handling Characteristics

Although the size, gross weight, and aerodynamic characteristics of the various aircraft may differ, the Fly By Wire (FBW) system was designed to minimize the differences between each aircraft in terms of pilot perceived handling characteristics. This similarity in the flight control laws permits a significant level of commonality in handling qualities.

3.4 Commonality in aircraft operational philosophy

Commonality in the design of these aircraft permits commonality of procedures:

- Similar normal procedures: checklist, EFIS, ECAM, FMGS
- Similar abnormal/emergency procedures dictated by ECAM (ECAM read and do list)
- Similar control location for emergency procedures
- Same task sharing rules (PF-PNF/CM1-CM2)

3.5 Altitude callout during landing

Use of automatic voice callouts for landing is the same for A320, A330 and A340 aircraft.

These callouts may be customized consistent with JARs for low visibility operations (JAR-AWO) for the intended operation. Unless otherwise agreed to by the NAA, operators seeking mixed fleet flying, should standardize those callouts within the applicable fleets.

3.6 Automatic landing

The autoland systems of the A320, A330 and A340 are similar in architecture and operating procedures. Consequently, low visibility training and qualification including Cat II, Cat III and autoland procedures may be carried out on any of these types. Qualification onto the other types may then be achieved in accordance with the ODR tables and paragraph 6.2.

3.7 Flight management system

The FMS's are similar in the A320, A330 and A340 aircraft. Training and qualification with the FMS and its components on one type, may be applied to other types, as specified by ODR tables.

3.8 Hazardous weather and winter operations

While specific operational differences are identified in the appropriate FCOM chapter, precautions and procedures regarding hazardous weather/winter operations are similar for A320, A330 and A340 aircraft. Consequently, training on these topics for one type may be credited to the other types, as specified by ODR tables and detailed in the operator training manual.

3.9 Aircraft Approach and circling categories

Ref: Appendix 2 to JAR-OPS 1.430(c)

Aircraft	Category
A318, A319, A320, A321	C (Some A321 may be D)
A330	C
A340-200/300	C
A340-500/600	D

4. Master Differences Requirements tables

Master Difference Requirements for the A320/A330/A340 aircraft are shown in the table below. **{**They are based on the FAA FSB report. (catch up process) **}**
Definitions of the various levels for Training/ Checking/ Currency are the ones from the JOEB handbook, and the relevant definitions are included after the table for reference.

TO / **FROM**	**A320**	**A330**	**A340**
A320	NA	E/E/D**	E/E/D**
A330	E/E/D**	NA	E/E/C**
A340	E/E/D**	B/E*/C**	NA
*E : the analysis (ODR tables) requires only level B, but a skill test (Level E) is mandated by JAR-FCL. (See § 6.3 & Annex 3). ** See § 7.4 for detailed currency requirements			

Extracts from the JOEB Handbook regarding the Training/Checking/Currency levels (For full definitions refer to JOEB Handbook)

TRAINING LEVELS:

> ***Level B Training****. Level B difference training is applicable to functionally similar aircraft with system or procedure differences that can adequately be addressed through aided instruction. At Level B, aided instruction is appropriate to ensure crew understanding, emphasize issues, provide a standardised method of presentation of material, or to aid retention of material following training. Level B aided instruction typically employs such methods as slide/tape presentations, computer based training (CBT), stand-up lectures, or video tapes.*

***Level C Training**. Level C differences training can only be accomplished through use of devices capable of systems training. It is applicable to variants having "part task" differences that affect skills or abilities, as well as knowledge. Training objectives focus on mastering individual systems, procedures, or tasks, as opposed to performing highly integrated flight operations and manoeuvres in "real time." Level C may also require self-instruction or aided instruction of a crewmember, but cannot be adequately addressed by a knowledge requirement alone. Training devices are required to supplement instruction to ensure attainment or retention of crew skills and abilities to accomplish the more complex tasks, usually related to operation of particular aircraft systems*

***Level E Training**. Level E is training applicable to candidate aircraft having such significant "full task" differences that the equivalent of a full transition training course is required to meet the training objectives. The training requires a "high fidelity" environment to attain or maintain knowledge, skills, or abilities that can only be satisfied by use of a FFS certified to Level C or higher, or the aircraft itself. Level E training, if done in an aircraft, should be modified for safety reasons where manoeuvres can result in a high degree of risk (example: engine set at idle thrust to simulate an engine failure). As with other levels, when Level E training is assigned, suitable credit or constraints may be applied for knowledge, skills, and/or abilities related to other pertinent variants and/or types. Credits or constraints are specified for the subjects, procedures, or manoeuvres shown in JOEB reports and are applied through ODR tables.*

CHECKING LEVELS:

***Level B Checking**. Level B checking indicates a "task" or "systems" check is required following transition and recurring differences training. Level B checking typically applies to particular tasks or systems such as INS, FMS, TCAS, or other individual systems or related groups of systems.*

***Level E Checking**. Level E checking indicates that a full proficiency check according to each authority's regulations/policy is conducted in a Level C or D FFS or aircraft for each variant following both transition and recurrent differences training. Alternating checks in accordance with national regulations are permitted. Credit for manoeuvres common to level E variants may also be permitted.*

CURRENCY LEVELS:

Level C Currency *Level C currency is applicable to one or more designated systems or procedures, and relates to skill as well as knowledge requirements. An example would be establishment of INS currency, FMS currency, flight guidance control system currency, or other particular currency that is necessary for safe operation of a variant. Establishment of Level C for a variant with a flight management system (FMS) would typically require a crewmember to fly that variant within the specified period or re-establish currency. Currency constraints for level C typically are 90 days*

Level D Currency*. Level D currency is related to designated manoeuvres, and addresses knowledge and skills required for performing aircraft control tasks in real time, with integrated use of associated systems and procedures. Level D currency may also address certain differences in flight characteristics; including performance of any manoeuvres including related normal/ abnormal/emergency procedures for a particular variant*

5. Operator Differences Requirements Tables

ODR tables are used to show an operator's compliance method. Detailed Airbus generic ODR tables are on file with the Central JAA. Copies are available on request. These ODR tables are provided as Airbus generic, and therefore may not include items that are applicable to particular operators. In accordance with JAR-OPS1, the ODR tables assume that pilots are qualified, current and experienced in operating the base aircraft.
The Airbus ODR tables have been developed in accordance with AMC 1.980(b) & IEM 1.980(b) of JAR-OPS 1 Subpart N.
These ODR tables have been found acceptable by the JOEB. They represent an acceptable means of compliance with MDR provisions for the aircraft evaluated based on those differences and compliance methods shown. These tables do not necessarily represent the only means of compliance for operators with aircraft having other differences.

Operators flying "more than one type or variant" (Mixed fleet between A320, A330 and A340) must have approved ODR tables pertinent to their fleet.

6 Specification for Training within the Airbus fly-by-wire family - CQQ

6.1 Initial transition course –CCQ type rating

6.1.1 Prerequisites

Pilots who are entitled to commence the CCQ course on the difference aircraft must be current, qualified (valid LPC) and experienced on the base aircraft.
Minimum experience on the base aircraft: as required by Appendix 1 to JAR-OPS 1.980, § 3 is: 3 months and 150 hours on the base aircraft.
Operators should ensure that crews have a very good knowledge of base aircraft systems prior to commencing a CCQ course, as the training programme will only present the differences between the 2 types.

Note 1: Pilots not current but holding a valid LPC on the base aircraft, may be eligible for a CCQ via a refresher programme to be approved by their NAA.

6.1.2 Transition course: CCQ Type Rating

The Airbus CCQ courses are built in accordance with ODR Tables, and are designed to transition pilots within the Airbus fly-by-wire family.
A CCQ course is a course, which only addresses the differences between the base aircraft and the difference aircraft (new type).

The Airbus proposed CCQ courses have been assessed by the JOEB and found acceptable in compliance with the AMC 1.261 (c) (2) of JAR-FCL 1 (A) Subpart F and JAR-OPS 1.980.

The CCQ courses are divided into the following phases, as appropriate:

- Ground phase:

System study is achieved by CBT (Computer Based Training) and presents only the differences between the base aircraft and the new type. At the end of the CBT the system test (CBT) is a full system test on the new type as for a standard type rating.

- Simulator Phase: All items identified in the ODR tables must be trained.
- Skill test (See §6.3 for details)
- Flight Phase (base training if applicable) or Zero flight Time Training (ZFTT) session.

The various CCQ courses are identified below, and for each case recommendations for simulator use is included:

a) CCQ onto A320

CCQ footprint and detailed content is identical whether the base aircraft is an A330 or an A340. The CCQ A330/A340 to A320 footprint is included in Annex 1 for reference and reflects the status of the Airbus A320 CCQ course at the time of the evaluation;(October 2003)

The term A320 refers to an A320 type rating. The A320 family encompasses A318, A319, A320 and A321 variants. Familiarization training is required between the A320 variants. (Refer to Airbus A320 JAA JOEB report)

As a consequence any simulator from the A320 family can be used provided that the familiarization training for the variant to be flown is subsequently conducted.

b) CCQ onto A330

The CCQ footprint and detailed content differs according to base aircraft. Both the CCQ A320 to A330 footprint and the footprint for CCQ A340 to A330 are included in Annex 1 for reference and reflect the status of the Airbus A330 CCQ course at the time of the evaluation (October 2003)

The term A330 refers to an A330 type rating. The A330 family encompasses A330-200 and A330-300 variants. Familiarization training is required between the A330 variants. (Airbus A330 JAA JOEB report to be published)

As a consequence any simulator from the A330 family can be used provided that the familiarization training for the variant to be flown is subsequently conducted.

b) CCQ onto A340

The CCQ footprint and detailed content differs according to base aircraft. Both the CCQ A320 to A340 footprint and the footprint for CCQ A330 to A340 are included in Annex 1 for reference and reflect the status of the Airbus A340 CCQ course at the time of the evaluation (October 2003)

The term A340 refers to an A340 type rating. The A340 family encompasses A340-200, A340-300, A340-500 and A340-600 variants. Familiarization training is required between the A340 variants. (Refer to Airbus A340 JAA JOEB report)

As a consequence any simulator from the A340 family can be used provided that the familiarization training for the variant to be flown is subsequently conducted.

6.2 Low visibility training

JAR-OPS 1.450 requires low visibility training.
Under Appendix 1 to JAR-OPS 1.450 § (d) and JAR-OPS1.980, an abbreviated course is acceptable for an already experienced pilot in low visibility training.

In addition for a pilot already qualified and experienced in low visibility operations on one of the Airbus fly-by wire aircraft, additional credit can be granted in accordance with low visibility ODR tables (see Annex 2) and the JOEB recommends the following:

- Between A320 and A330/A340, one low visibility approach and landing should be included in the CCQ syllabi
- Between A330 and A340: full credit, no need for additional low visibility training when already experienced in one of them.

6.3 CCQ Skill tests

6.3.1 CCQ Skill tests

Items to be covered in skill tests/proficiency checks are given in the Applicable Appendix 1 and 2 to JAR-FCL 1.240 and 1.295. When recommended by a JOEB and agreed by the Authority, credit may be given for skill test items common to other types where the pilot is experienced on that other type.
In the specific case of the Airbus fly-by-wire family, the JOEB, based on ODR tables, has assessed the content of Airbus proposed reduced skill test and found them acceptable. In addition consideration was given to Zero Flight Time training, and in the process of a CCQ type rating under ZFTT, the JOEB considers it is acceptable to combine the reduced skill test and the ZFTT in a single simulator session, provided that the testing and the training parts are well identified in the syllabus. The ZFTT training must follow the skill test.

Combined reduced skill test/ZFTT syllabi recommended for approval by the JOEB are included in Annex 3.

6.3.2 CCQ Skill tests and pass/fail criteria

In the case of the reduced skill test for CCQ, the policy for pass/fail criteria should be:

- If one item is failed, the candidate may retake the failed item. If the retest is not successful, then the reduced skill test is failed.
- If more than one item is failed, then the reduced skill test is failed.
- The pilot will then go for a remedial training followed by another reduced skill test.
- A full skill test MUST follow 2 consecutive failures of reduced skill test.

6.3.3 CCQ Skill test and validity of the rating

The JOEB considers that the reduced skill test is to be associated with a validity of 6 months ONLY.
For pilot undertaking a CCQ course and not going to fly in Mixed Fleet operations, 2 options:

- reduced skill test with a validity of 6 months, then revalidation of the rating under JAR-FCL, or
- full skill test and the validity is as for all ratings: one year.

6.4 CCQ and Line flying under supervision (LIFUS)

Based upon ODR tables, credit in LIFUS can be granted for pilots previously qualified on an Airbus “fly-by-wire” aircraft and moving to another type.

JOEB recommendations are as follows

<table>
<tr><td colspan="3">Base training (Aircraft) or Zero Flight Time Training (Simulator)</td></tr>
<tr><td>CCQ</td><td>Single aisle from / to long range</td><td>Between long range</td></tr>
<tr><td>LIFUS

Standard</td><td>4 Sectors
3 PF
1 PNF</td><td rowspan="2">2 Sectors as PF</td></tr>
<tr><td>LIFUS

* additional sectors for specific requirements</td><td>2 Sectors
1 PF
1 PNF</td></tr>
<tr><td>Line check</td><td>2 Sectors
1 PF
1 PNF</td><td>2 Sectors
1 PF
1 PNF</td></tr>
<tr><td>TOTAL

Standard

Specific requirements*</td><td>4 +2 = 6 Sectors

4+2*+2 = 8 Sectors</td><td>4 Sectors</td></tr>
</table>

* Specific requirements include as example:

- Oceanic operations: MNPS / FANS
- Change in route structure
- Special operations

Under Zero Flight Time Training (ZFTT), the LIFUS is to be conducted by a Type Rating Instructor.

In case of base Training completed in an aircraft, the LIFUS is to be conducted by a flight crewmember nominated by the operator and acceptable to the Authority.

6.5 Type Rating Instructor training

JAR-FCL 1.365(b), the JOEB recommends the following:

For a TRI already qualified and current TRI on one of the Airbus types (A320, A330, A340) to qualify for an additional Airbus TRI qualification, the instructor must:

- hold the type rating of the new aircraft (CCQ program),
- have completed the relevant LIFUS
- have completed the 15 sectors as per JAR-FCL 1.365(b)(1) or 50 hours on the new type

The JOEB considers that there is no need to repeat on the new type, the requirements from JAR-FCL 1.365(b)(3), provided that the TRI is familiar with the operation of the relevant simulator.

The above does not remove any TRI restriction.

7 Specification for Operations of more than one type – MFF (Mixed Fleet Flying)

In this paragraph are listed the JOEB recommendations for operators to conduct Mixed Fleet Flying with the Airbus fly-by-wire family of aircraft.

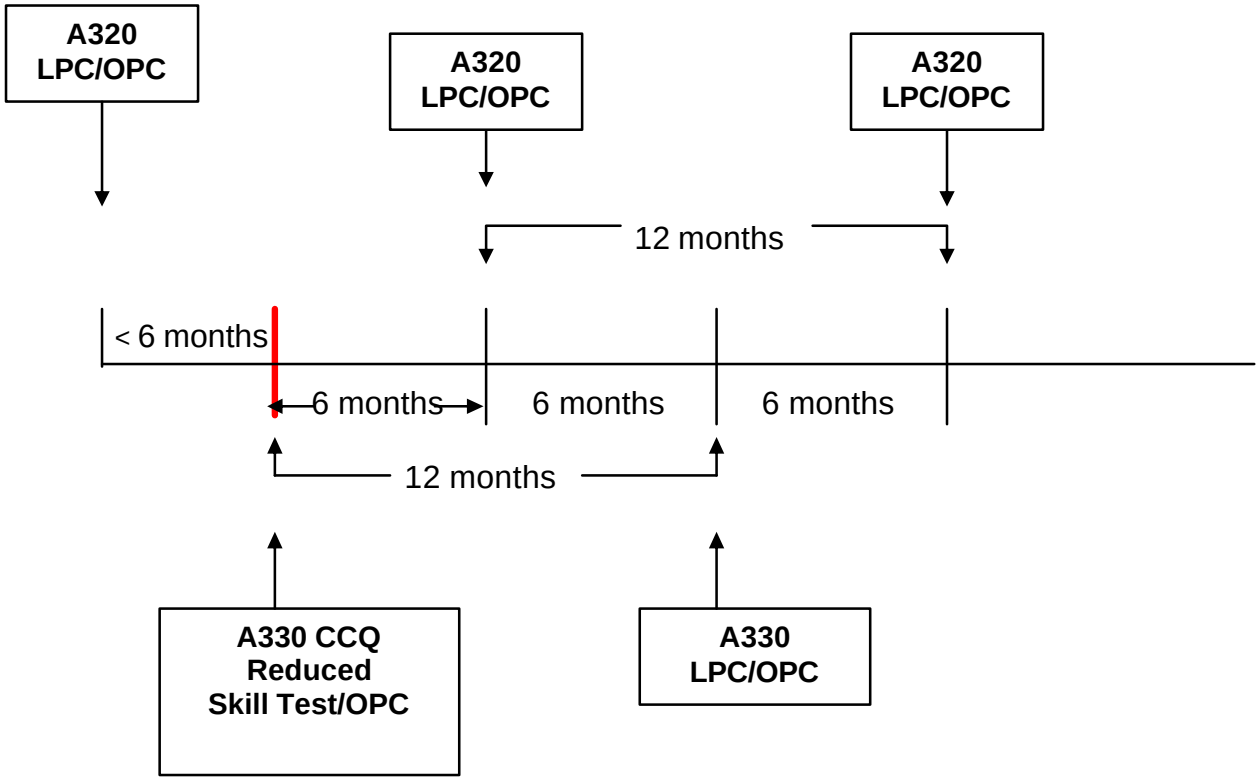
7.1 Prerequisites

Prerequisites for flying more than one type (Mixed Fleet Flying –MFF) are set up in JAR-OPS 1.980. Typically it consists of a consolidation period following the initial line check on the new type of 50 flying hours or 20 sectors, to be achieved solely on aircraft of the new type rating.

7.2 Recurrent training and proficiency checks

Recurrent training should comply with JAR-OPS 1.965. However under MFF, for operations of more than one type, JAR-OPS 1.980 applies.
In accordance with Appendix 1 to JAR-OPS 1.980 §(d)(7)(i), an alternate recurrent training and checking program can be established.

The JOEB assessed the proficiency checks requirements from the FAA FSB report. The JOEB also reviewed the current JAA operator MFF experience. Consequently in compliance with Appendix 1 to JAR-OPS 1.980 §(d)(7)(i), JOEB recommends the following MFF implementation plan

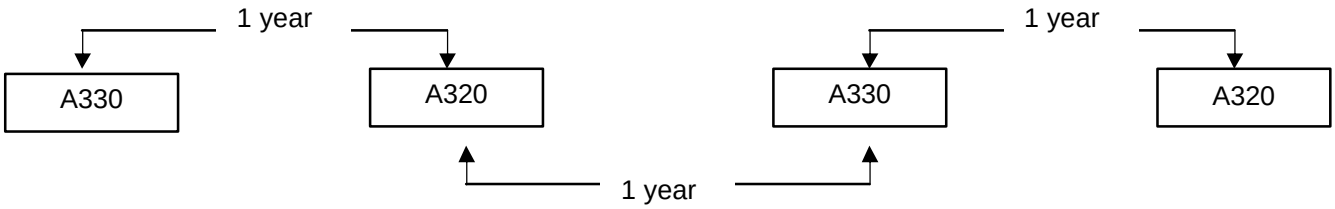


The above scheme allows compliance with the mandatory 1 year for type rating revalidation under JAR-FCL 1.245 (b), as well as with the operator proficiency check requirement taking benefit of the alternate provision as set up in Appendix 1 to JAR-OPS 1.980 (see § (d)(7)(i)), and of the reduced skill test in accordance with LST Long Term Exemption N° 40.

Note : Concerning the recurrent training for low visibility operations, the JOEB team considers that full credit applies between types, provided that low visibility training is conducted during recurrent training every 6 months.

7.3 Line checks

Compliance with JAR-OPS 1.965 (c) is required. Nevertheless under MFF JAR-OPS 1.980 applies. Consequently under MFF, JOEB recommend that Line checks between Airbus fly-by-wire aircraft alternate between types every year in accordance with Appendix 1 to JAR-OPS 1.980 § (d)(7)(ii), for example:



Each line check revalidates the line check for the other type flown under MFF.

7.4 Currency / recent experience

Compliance with JAR-OPS 1.970 or JAR-FCL 1.026 as appropriate is required for recent experience. Under Mixed Fleet Flying, JAR-OPS 1.980 applies.

The JOEB assessed the currency requirements form the FAA FSB report. The JOEB also reviewed the current JAA operator MFF experience. Consequently in compliance with Appendix 1 to JAR-OPS 1.980 § (d) (5) & (7) JOEB recommends the following:

MIXED FLEET FLYING Aircraft types	CURRENCY/RECENT EXPERIENCE Requirements
A330 and A340	-3 take-offs and landing in either A330 or A340 - 1 take-off and landing in each type **every 90 days**.
A320 and (A330 or A340)	-3 take-offs and landing in either A320 or (A330 or A340) - 1 take-off and landing in each type **every 45 days**

Re-establishing currency /recent experience: When currency is lost, currency may be re-established by a training flight or use of a flight simulator of the aeroplane type to be used

Annex 1

Airbus CCQ footprints

CCQ onto A320

CCQ onto A330

CCQ onto A340

CCQ A330/A340 to A320

DAY 1		DAY 2		DAY 3	
Welcome	1:00				
CBT:		**CBT:**		**CBT:**	
- Introduction	0:20	- Fuel	1:00	- Performance	0:30
- Aircraft general	0:15	- APU	0:10	- Derated (optional)	0:30
- Air conditioning / pneumatic	1:20	- Doors	0:10	- Cabin trainer	0:30
- Communication	0:10	- Navigation	0:10	- Walk around video	1:00
- Electric	0:50	- Cabin	0:10		
- Flight Controls	0:40	- Power plant	1:50		
- Ice & rain protection	0:10	- Fire protection	0:50		
- Landing gear	0:20	- Hydraulic	0:30	- System test	3:00
		- Ind/§Record EIS	0:40	- Debriefing	1:00
		- Lights	0:10		
DAY 4		**DAY 5**		**DAY 6**	
FFS 1		*FFS 2*		*FFS 3*	
DAY 7					
Combined *Reduced Skill test FFS* + *ZFTT**					

*: If the CCQ course is not approved for ZFTT, 4 landings on the aircraft will also be required.

CCQ A320 to A330

DAY 1				DAY 2	
Welcome	1:00				
CBT:		**CBT:**		**CBT:**	
- Introduction	0:20	- Ice & rain protection	0:15	- Fuel	1:10
- Aircraft general	0:15	- Landing gear Fuel	0:15	- APU	0:10
- Air conditioning / pneumatic	1:00	- Auto Flight	0:30	- Doors	0:10
- Communication	0:15	- Fire protection	0:30	- Navigation	0:10
- Electric	0:50	- Hydraulic	0:15	- Cabin	0:10
- Flight Controls	0:20	- Ind/§Record EIS	0:30	- Power plant	0:50
		- Lights	0:15		
				FMGS	2:00

DAY 4		DAY 5	DAY 6
CBT:			
- Performance	0:30		
- Derated (optional)	0:30	*FFS 1*	*FFS 2*
- Cabin trainer	0:30		
- Walk around video	1:00		
- System test	3:00		
- Debriefing	1:00		

DAY 7	DAY 8
FFS 3	*Combined Reduced Skill test FFS + ZFTT**

*: If the CCQ course is not approved ZFTT, 4 landings on the aircraft will also be required.

CCQ A340 to A330

DAY 1				DAY 2
Welcome			1:00	
Introduction to CBT			0:15	
CBT:			**3:00**	*Combined*
- Aircraft general	-	Hydraulic		*Reduced*
- Electric	-	Landing gear		*Skill test FFS*
- Flight control	-	Pneumatic		+
- Fuel	-	Power plant		*ZFTT**
- Aircraft operation				
- System test			3:00	
- Debriefing			1:00	

*: If the CCQ course is not approved for ZFTT, 3 landings on the aircraft will also be required.

CCQ A330 to A340

DAY 1				DAY 2	DAY 3
Welcome			1:00		
Introduction to CBT			0:15		
CBT:			**3:00**		*Combined*
- Aircraft general	-	Hydraulic		*CCQ FFS*	*Reduced*
- Electric	-	Landing gear			*Skill test FFS*
- Flight control	-	Pneumatic			+
- Fuel	-	Power plant			*ZFTT*
- System test			3:00		
- Debriefing			1:00		

*: If the CCQ course is not approved for ZFTT, 3 landings on the aircraft will also be required.

CCQ A320 to A340

DAY 1				DAY 2	
Welcome	1:00				
CBT:		**CBT:**		**CBT:**	
- Introduction	0:20	- Ice & rain protection	0:15	- Fuel	1:10
- Aircraft general	0:15	- Landing gear Fuel	0:15	- APU	0:10
- Air conditioning / pneumatic	1:00	- Auto Flight	0:30	- Doors	0:10
- Communication	0:15	- Fire protection	0:30	- Navigation	0:10
- Electric	0:50	- Hydraulic	0:15	- Cabin	0:10
- Flight Controls	0:20	- Ind/§Record EIS	0:30	- Power plant	0:50
		- Lights	0:15	***FMGS***	2:00

DAY 4		DAY 5	DAY 6
CBT:			
- Performance	0:30		
- Derated (optional)	0:30	*FFS 1*	*FFS 2*
- Cabin trainer	0:30		
- Walk around video	1:00		
- System test	3:00		
- Debriefing	1:00		

DAY 7	DAY 8
FFS 3	*Combined* *Reduced Skill test FFS* + *ZFTT **

*: If the CCQ course is not approved for ZFTT, 4 landings on the aircraft will also be required.

Annex 2

Airbus ODR for low visibility training

A320 & A330 & A340

PRECISION APPROACHES

A320 & A330 & A340 ODR tables

DATE: NOV 03
ISSUE 1

N°	Design	Differences				Flt chr	Proc chg	Training level	Device
		A320 family	A330	A340	A340-500-600				
1	**AIRCRAFT CATEGORY**	C(121-141) Some A321 D	C (121-141)	C (121-141)	D(141-166)	NO		A	
2	***LIMITATIONS*** CAT 2 Minimum DH	100 ft	100 ft	100 ft	100 ft				
	CAT 3 Fail passive Minimum DH	50 ft	50 ft	50 ft	50 ft				
	CAT 3 Fail operational ALERT	100 ft	200 ft	200 ft	200 ft	NO		A	
	with DH (MABH)	20 ft	20 ft	20 ft	20 ft	NO		A	
	With DH (RVR)	75m	75m	75m	75m				
	Maximum wind conditions Head wind	30 kt	35 kt	30 kt	30 kt	NO		A	
	Tail wind	10 kt	10 kt	10 kt	10 kt				
	Cross wind	20 kt	20 kt	20 kt	23 kt	NO		A	
3	**DISPLAY COMMONALITY:** PFD	Same display in terms of: FMA-FD-RA-MARKER-ILS (FREQ. COURSE. LOC. G/S)							
	ND	Same display in terms of: ILS freq, course, LOC/Gs, deviation bar							
	FCU	Same APPR push button.							

N°	Design	Differences				Flt chr	Proc chg	Training level	Device
		A320 family	A330	A340	A340-500-600				
	AUTOLAND								
	ECAM								
	STAND BY HORIZON	Identical			ISIS+LCD	NO		A	
4	**OTHER EQUIPEMENT:** Side stick AP disconnection	Identical							
	Window heat	Same PB switch location							
	Windshield wipers	Same control location							
	Rain repellent	Same control location							
	Auto call out RA	Same auto call out (can be PIN program)							
	Internal LIGHTS	Some controls locations are different				NO		A	
	External LIGHTS	2switches (LDG light)	1 switch	1 switch	1 switch	NO		A	

N°	Design	Differences				Flt chr	Proc chg	Training level	Device
		A320 family	A330	A340	A340-500-600				
[2]5	**AFS SYSTEM**	All the following functions are strictly identical Data lock Transmitter and receiver failure (LOC&G/S) Warning associated with autoland capability downgrading Excessive deviation Autoland warning G/S beam capture LOC beam capture Early APPR mode selection G/S interception from above							
6	**MINIMUM EQUIPMENT LIST**	Some minor differences in terms of Flight control computers							
	CAT II **CAT III DH** **CAT III NO DH**	ELAC&FAC	PRIM&SEC			NO		A	
7	**FLIGHT PLANNING** FMGS preparation	Similar: Different options and functions are available on A330/340 Refer to ODR system table. (ATA 22) Differences are covered during the CCQ transition course				NO		B	CBI (brief)
	Infrastructure equipment	identical							
	Approach charts	Identical			Minima can be different according to aircraft capability	no		A	
	Briefings	Identical							

N°	Design	Differences				Flt chr	Proc chg	Training level	Device
		A320 family	A330	A340	A340-500-600				
8	**TASK SHARING**	Identical							
	Mandatory PNF call out	Pitch <-2°5 or >10°	Pitch <0° or >10°	Pitch <0° or >10°	Pitch <0° or >10°	no		A	
9	***VISUAL SEGMENT*** Landing geometry	Touch go point (no flare) from threshold is shorter on A330&340				no		A	
	Minimum visual ground segment Pitch attitude 100 ft	4,7	5	3,7	3	no		A	
	Pitch attitude 50ft	4,7	5	3,7	3	no		A	
	Pitch attitude 15ft	5,4	5,1	4,3	4,2	no		A	
	Visual segment	Identical	Identical	Identical	Identical				
	Obscured segment	Similar	Similar	Similar	Similar				

N°	Design	Differences				Flt chr	Proc chg	Training level	Device
		A320 family	A330	A340	A340-500-600				
10	**FAILURES AND ASSOCIATED ACTIONS;**								
	CAT II & III ONE ENGINE OUT	Approved in conf full	Approved in conf 3	Approved in conf 3 CAT III fail passive if inner engine out CAT III fail operational if outer engine out	Approved in conf 3 CAT III fail passive if inner engine out CAT III fail operational if outer engine out	NO		A	

Annex 3

Reduced skill tests following CCQ

The JOEB accepted that a reduced skill tests could be used following CCQ courses; In addition for an operator approved to conduct Zero Flight Time Training (ZFTT), the reduced skill test and ZFTT may be combined in one single simulator sessions.

Hereafter are JOEB recommendations for combined skill test/ZFTT simulator sessions following:

- A320 to A330 CCQ
- A320 to A340 CCQ
- A330 to A340 CCQ
- A340 to A330 CCQ
- A330/A340 to A320 CCQ

The following combined skill test / ZFTT simulator session are compliant with Appendix 1 to JAR-OPS 1.965 (b)

COMBINED SKILL TEST / ZFTT Simulator session
CCQ A320 to A330

Skill test

Exercises	ODR Requirements	JAR OPC
Transit cockpit preparation		
Engine start – After start		
Taxi	X	
Take-off (Cross wind)	X	
Radar vector – ADR Fault		
Non precision approach		X
Go around	X	
Missed approach procedure – 2d ADR Fault		
ILS approach - alternate law	X	
Landing - alternate law	X	
Take-off		
Engine failure after V1	X	X
Radar vectors		
ILS approach - one engine out		X
Go around - one engine out		X
Visual pattern	X	
Landing - one engine out		X
Take-off - Engine fire before V1 (Low visibility)	X	X
Rejected Take-off	X	X
Emergency evacuation	X	

Zero Flight Time Training

The session must include the following:

- Taxi
- 4 Take-offs
  - One at MTOW
  - One with cross wind
- 4 Landings
  - One at MLW
  - One with cross wind

Note: If the course is not approved for Zero Flight Time Training, 4 landings on the aircraft would also be required.

COMBINED SKILL TEST / ZFTT Simulator session
CCQ A320 to A340

Skill test

Exercises	ODR Requirements	JAR OPC
Transit cockpit preparation		
Engine start – After start		
Taxi	X	
Take-off (Cross wind)	X	
Radar vector – ADR Fault		
Non precision approach		X
Go around		
Missed approach procedure – 2d ADR Fault		
ILS approach - alternate law	X	
Landing - alternate law	X	
Take-off		
Engine failure after V1	X	X
Down wind		
ILS approach - one engine out		X
Go around - 2d engine failure (same side)	X	X
Visual approach – 2 engine out	X	X
Landing - Two engine out	X	X
Take-off - Engine fire before V1	X	X
Rejected Take-off	X	X
Emergency evacuation	X	

Zero Flight Time Training

The session must include the following:

- Taxi
- 4 Take-offs
  - One at MTOW
  - One with cross wind
- 4 Landings
  - One at MLW
  - One with cross wind

Note: If the course is not approved for Zero Flight Time Training, 4 landings on the aircraft would also be required.

COMBINED SKILL TEST / ZFTT Simulator session
CCQ A330 to A340

Skill test

Exercises	ODR Requirements	JAR OPC
Transit cockpit preparation		
Engine start		
After start		
Taxi		
Take-off		
Radar vector		
Non precision approach		X
Landing		
Take-off (MTOW)	X	
Engine failure after V1	X	X
Down wind - Jettison		
ILS approach - one engine out		X
Go around - 2d engine failure (same side)		X
Landing - two engines out	X	X
Take-off – Engine fire before V1	X	X
Rejected Take-off	X	X
Emergency evacuation		

Zero Flight Time Training

The session must include the following:

- Taxi
- 3 Take-offs
  - One at MTOW
  - One with cross wind
- 3 Landings
  - One at MLW
  - One with cross wind

Note: If the course is not approved for Zero Flight Time Training, 3 landings on the aircraft would also be required.

COMBINED SKILL TEST / ZFTT Simulator session
CCQ A340 to A330

Skill test

Exercises	ODR Requirements	JAR OPC
	The analysis (ODR tables) requires only level B, but a skill test (Level E) is mandated by JAR-FCL	
Transit cockpit preparation		
Engine start		
After start		
Taxi		
Take –off		
Radar vectors		
Non precision approach		X
Landing		
Take-off (MTOW)		
Engine failure after V1		X
ILS approach - one engine out		X
Go around - one engine out		X
Landing - one engine out		X
Take-off - Engine fire before V1		X
Rejected Take-off		X
Emergency evacuation		

Zero Flight Time Training

The session must include the following:

- Taxi
- 3 Take-offs
  - One at MTOW
  - One with cross wind
- 3 Landings
  - One at MLW
  - One with cross wind

Note: If the course is not approved for Zero Flight Time Training, 3 landings on the aircraft would also be required.

COMBINED SKILL TEST / ZFTT Simulator session
CCQ A330/A340 to A320

Skill test

Exercises	ODR Requirements	JAR OPC
Transit cockpit preparation		
Engine start		
After start		
Taxi	X	
Take-off (Cross wind)	X	
Radar vectors – ADR Fault		
Non precision approach		X
Go around		
Missed approach procedure – 2d ADR Fault		
ILS approach – direct law	X	
Landing - direct law	X	
Take- off		
Engine failure after V1	X	X
Down wind		
ILS approach - one engine out		X
Go around - one engine out		X
Visual pattern	X	
Landing - one engine out		X
Take-off - Engine fire before V1 (low visibility)	X	X
Rejected Take-off	X	X
Emergency evacuation	X	

Zero Flight Time Training

The session must include the following:

- Taxi
- 4 Take-offs
  - One at MTOW
  - One with cross wind
- 4 Landings
  - One at MLW
  - One with cross wind

Note: If the course is not approved for Zero Flight Time Training, 4 landings on the aircraft would also be required.