



EUROPEAN AVIATION SAFETY AGENCY



Operational Evaluation Board Report

ATR 42/72

Report of the FCL/OPS Subgroup

Revision 1

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**European Aviation Safety Agency
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ATR 42/72

Operational Evaluation Board (OEB)



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Acronyms

AC	Advisory Circular
ACJ.....	Advisory Circular Joint
AFCS	Automatic Flight Control System
AMC.....	Acceptable Means of Compliance
AOC	Air Operator Certificate
AP.....	Autopilot
APM	Aircraft Performance Monitoring
ATR	Avions de Transport Régional
CBT	Computer Based Training
CL	Condition Lever
CPD	Common Procedures Document for conducting Operational Evaluation Boards, dated 10 June 2004
CRM	Crew Resource Management
Difference Level	a designated level of difference as defined in the CPD for the evaluation of pilot training, checking, and currency
EASA	European Aviation Safety Agency
ECL.....	Electronic Check List
EFB.....	Electronic Flight Bag
EGPWS	Enhanced Ground Proximity Warning System
EU-OPS	Commission Regulation (EC) No 859/2008 of 20 August 2008 amending Council Regulation (EEC) No 3922/91 as regards common technical requirements and administrative procedures applicable to commercial transportation by aeroplane.
EVS	Enhanced Vision System
FAA.....	Federal Aviation Administration
FAR	Federal Aviation Regulation
FCL.....	Flight Crew Licensing
FFS	Full Flight Simulator (Level C/D)
FFT	Full Flight Trainer
FMA	Flight Mode Annunciator
FMS	Flight Management System
FSB.....	Flight Standardization Board
GI	Ground Instructor
GPWS.....	Ground Proximity Warning System
IEM	Interpretative / Explanatory Material
ICP	Index Control Panel
JAA.....	Joint Aviation Authorities
JAR.....	Joint Aviation Requirements
JOEB	JAA Joint Operational Evaluation Board
LIFUS	Line Flying Under Supervision
LPC.....	Licence Proficiency check
LOFT	Line Orientated Flying Training
MCP	Multifunction Control Panel
MDR	Master Difference Requirements

MEL	Minimum Equipment List
MMEL	Master Minimum Equipment List
NAA	National Aviation Authority
ND	Navigation Display
OEB	Operational Evaluation Board
ODR.....	Operation Differences Requirements
ORI	Operational Review Item
Part-FCL	Commission Regulation (EU) No 1178/2011 of 3 November 2011 laying down technical requirements and administrative procedures related to civil aviation aircrew pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council.
PCU	Propeller Control Unit
PEC	Propeller Electronic Control
PF	Pilot Flying
PIC	Pilot In Command
PL	Power Lever
PM	Pilot Monitoring
PNF	Pilot non-Flying
SIC	Second In Command
TASE	Training Areas of Special Emphasis
TCAS.....	Traffic Alert and Collision Avoidance System
TCCA.....	Transport Canada Civil Aviation
VHP	Virtual Hardware Platform
WBT	Web Based Training

Terminology

Base aircraft means an aircraft or group of aircraft used as a reference to compare differences with another aircraft.

Common Takeoff and Landing Credit (CTLC) means a programme/process that allows credit for recent experience between aircraft that can be demonstrated to have the same handling and flying characteristics during takeoff and initial climb, approach and landing, including the establishment of final landing configuration.

Currency means the experience necessary for the safe operation of aircraft, equipment and systems.

Recent experience means the recent experience described in JAR-FCL 1 and EU-OPS.

Difference level means a designated level of difference as defined in the CPD, between a base and a candidate aircraft, for the evaluation of pilot training, checking, and currency.

Preamble

1. An initial operational evaluation for the ATR 42 and 72 aircraft was conducted by a JOEB during the summer of 2004 to determine the type rating designation and the differences / familiarisation training required. This evaluation was conducted as a “catch-up” process in a series of meetings with the manufacturer. All pilots involved were familiar with the ATR 42/72 series aircraft. Therefore, physical inspections of the aeroplanes or any flight evaluations were not required. The JOEB concluded that the ATR differences / familiarisation training was satisfactory for the purpose. An initial ATR 42/72 type rating training was not part of the scope of this evaluation.

2. A further operational evaluation for the ATR 42/72 Glass Cockpit series, hereunder referred to as “ATR-600” was requested by the manufacturer. This evaluation was conducted in 2011/2012 jointly by the Agência Nacional de Aviação Civil (ANAC), the Federal Aviation Administration (FAA), the European Aviation Safety Agency (EASA), and Transport Canada Civil Aviation (TCCA) to simultaneously meet the ANAC operational evaluation requirements, the FAA requirements for a Flight Standardization Board (FSB) report, the EASA requirements for the OEB report, and the Canadian requirements for an Operational Evaluation of the ATR-600.

The scope of the EASA OEB evaluation comprises

- pilot type rating designation & license endorsement;
- flight crew training, checking and currency
 - evaluating the differences between
 - the existing ATR 42 series aircraft (with PEC) and the new ATR 42 glass cockpit version; and
 - the existing ATR 72 series aircraft (with PEC) and the new ATR 72 glass cockpit version
 - for an initial ATR-600 type rating course
- Master Minimum Equipment List (MMEL);
- simulator qualification;
- Cabin Crew Training; and
- Electronic Flight Bag.

Not included is the evaluation of other equipment or functions such as EU-OPS Subpart K and L aircraft type compliance, Head Up Display (HUD), Enhanced Vision Systems (EVS), RNP (AR) or Steep Approaches, etc.

The L2B1.4 / L2B2.5 Modification which added the installation of the ECL was evaluated on 12 - 13 April 2012. The OEB evaluated the relevant training which is incorporated into the applicable initial and differences courses.

4. Each Authority uses the results of the evaluation process to produce a report specific to its particular requirements that, while similar in intent, may differ in detail. This OEB report is applicable to operations under the framework of EASA.

The initial JOEB Operational Evaluation was conducted in accordance with the JAA Administrative and Guidance Material (dated 1 February 2004), the JOEB Procedures Document, JAR-FCL 1 Amendment 3, and JAR-OPS 1 Amendment 8.

The EASA Operational Evaluation was conducted in accordance with the EASA OEB Handbook, the CPD, and applicable JAR-FCL 1 and EU-OPS requirements. Determinations made in this report are based on the evaluations of specific ATR 42/72 aircraft models equipped in a given configuration and in accordance with current regulations and guidance. Modifications and upgrades made to the models described herein, or introduction of other variants may require amendment of the contents of this report.

OEB ATR 42/72 FCL/OPS Subgroup Composition

Name	Organization	Function
Initial Evaluation		
Guy Puech	JAA (DGAC)	OEB Chairman
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ATR-600 Evaluation		
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Gabriel Murta ¹⁾	ANAC	ANAC Chairman
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Stephen Dunn ^{1) 4)}	FAA	FAA Team Member
Roman Marushko	TCCA	TCCA Team member
Georges Lagacé	TCCA	TCCA Team Member

¹⁾ ATR-500 to ATR-600 Differences Training Course (Jun 2011)

²⁾ ATR-600 Initial Type Rating Course (Jan / Feb 2012)

³⁾ ATR-600 Entry Level Training (ELT) (Jan 2012)

⁴⁾ ATR-500/-600 T2 Test (Mar 2011)

⁵⁾ L2B1.4 / L2B2.5 Modification (Apr 2012)

Note on references and reference texts:

Where references are made to requirements and where extracts of reference texts are provided, these are at the amendment state at the date of publication of the report. Readers should take note that it is impractical to update these references to take account of subsequent amendments to the source documents.

Executive Summary

1. Scope of the evaluation

This report specifies the EASA pilot type rating licence endorsement and identifies the Training, Checking and Currency minimum requirements. The OEB did not evaluate Maintenance Training, or the use of equipment or functions such as Head Up Display (HUD), Enhanced / Synthetic Vision Systems (E/SVS), RNP (AR) operations, Steep Approaches, wake vortex categorization, etc.

The installation of the ECL was introduced through L2B1.4/L2B2.5 Modification and was evaluated as follow-on to the initial and differences course evaluations. The OEB evaluated the relevant training which is being incorporated into the applicable initial and differences courses.

The evaluation of the ATR 42/72 Cabin Crew Training and Electronic Flight Bag, as well as the MMEL have been performed in separate operational evaluations and are subject to dedicated OEB reports.

All relevant reports are available on the EASA OEB website at

<http://www.easa.europa.eu/certification/experts/flight.php>

2. Operational Evaluation ATR 42/72

The EASA OEB evaluation was conducted jointly with the Agência Nacional de Aviação Civil (ANAC), the Federal Aviation Administration (FAA), and Transport Canada Civil Aviation (TCCA) to simultaneously meet the applicable requirements. Each Authority uses the results of the evaluation process to produce a report specific to its particular requirements that, while similar in intent, may differ somewhat in detail. This OEB report is applicable to operations under the framework of EASA.

Operational Evaluation Report – FCL/OPS Subgroup

1. Purpose and Applicability

This report addresses:

- pilot licence endorsement for the ATR 42/72 series aircraft;
- Master Differences Requirements (MDR) for flight crews requiring differences training;
- Operator Differences Requirements (ODR) tables;
- recommendations for the initial type rating training course ATR-600
- recommendations for ATR-500 to ATR-600 differences training courses:
- recommendations for operations on more than one type or variant; and
- recommendations for checking, currency / recent experience.

This report does not address MMEL, Cabin Crew Training, Maintenance Training, or the use of equipment or functions such as Head Up Display (HUD), Enhanced / Synthetic Vision Systems (EVS/SVS), RNP (AR) operations, Steep Approaches, wake vortex categorization, etc.

2. Pilot License Endorsement

EASA recommends that a single license endorsement “**ATR42/72**” is applied for all ATR 42/72 series aircraft as shown in the following table.

1 Manufacturer	2 Aeroplanes	3	4 Licence Endorsement
ATR	ATR 42 (not PEC equipped) ¹	(D)	ATR42/72
	ATR 42 (PEC equipped)		
	ATR 72 (not PEC equipped) ²		
	ATR 72 (PEC equipped)		
	ATR 42 (glass cockpit) ³		
	ATR 72 (glass cockpit) ³		

PEC = Propeller Electronic Control

¹ A differences training course from the ATR 42 (not PEC equipped) to the ATR 72 (glass cockpit) has not been evaluated. In this case, additional differences training between the ATR 42 (not PEC equipped) and the ATR 42 (PEC equipped) is required.

² A differences training course from the ATR 72 (not PEC equipped) to the ATR 72 (glass cockpit) has not been evaluated. In this case, additional familiarization training between the ATR 72 (not PEC equipped) and the ATR 72 (PEC equipped) is required.

³ The differences training course is valid from the ATR 42 (PEC equipped) to the ATR 42 (glass cockpit) and from the ATR 72 (PEC equipped) to the ATR 72 (glass cockpit) for crew members previously qualified on the respective ATR 42/72 PEC equipped variants. Differences training from the ATR 42/72 (glass cockpit) to any other ATR 42/72 "classic" variant has not been evaluated. In this case, a full type rating training course is required.

3. ATR Family Concept and aircraft specifics

3.1 Aircraft Design

The ATR family of aircraft are conventional high-wing monoplane passenger aeroplanes, powered by two Pratt & Whitney 120 series turbo-propeller engines. The 42 and 72 variants differ primarily in a fuselage stretch of 4.49 metres for the latter, although significant product improvements over the years means that there are a number of variants within each model.

The flight controls are all mechanically actuated and are conventional in arrangement, comprising two elevators, one aileron on each wing and a single rudder; roll assistance is provided by one spoiler on each wing. Engine maximum power ratings vary from 2000SHP for the ATR 42-300 to 2750SHP for some ATR 72 models. The maximum operating altitude for all aircraft is 25,000 ft.

3.2 Customization of Procedures and Checklists

The OEB evaluated standard ATR procedures and checklists. Any customization should be evaluated by the Competent Authority.

3.3 Aircraft Approach Category

With reference to EU-OPS Appendix 2 to 1.430(c) the approach category for all ATR 42/72 variants is as follows:

Aircraft	Category
ATR 42/72	B

The approach category can be higher dependent on the operation. The determination should be made by the operator based on approach speed calculations in accordance with applicable regulations.

4. Master Differences Requirements (MDR)

4.1 MDR Tables

MDR tables for the ATR 42/72 variants are shown below. Definitions of the various levels for Training/Checking/Currency are those used in the CPD.

Master Differences Requirements (MDR)							
		FROM AIRPLANE					
TO AIRPLANE		ATR 42 (not PEC equipped)	ATR 72 (not PEC equipped)	ATR 42 (PEC equipped)	ATR 72 (PEC equipped)	ATR 42 (Glass Cockpit)	ATR 72 (Glass Cockpit)
	ATR 42 (not PEC Equipped)	---	C/B/A	C/B/A	C/B/A	(1)	(1)
	ATR 72 (not PEC Equipped)	C/B/A	---	B/B/A	B/B/A	(1)	(1)
	ATR 42 (PEC Equipped)	C/B/A	B/B/A	---	A/A/A	(1)	(1)
	ATR 72 (PEC Equipped)	C/B/A	B/B/A	A/A/A	---	(1)	(1)
	ATR 42 (Glass Cockpit)	(1)	(1)	D/C/C	(1)	---	(1)
	ATR 72 (Glass Cockpit)	(1)	(1)	(1)	D/C/C	(1)	---
	(1) has not been evaluated for the time being.						

4.2 Levels of Training, Checking and Currency (excerpts from the CPD)

Level A Training. Level A difference training is applicable to aircraft with differences that can adequately be addressed through self-instruction. Level A training represents a knowledge requirement such that, once appropriate information is provided, understanding and compliance can be assumed to take place. Compliance with level A training is typically achieved by methods such as issuance of operating manual page revisions, dissemination of flight crew operating bulletins or differences hand-outs to describe minor differences between aircraft. Level A training is normally limited to situations such as the following:

- The change introduces a different version of a system/component for which the flight crew has already shown the ability to understand and use;
- The change results in minor or no procedural changes and does not result in adverse safety effects if the information is not reviewed or is forgotten; or
- Information highlighting a difference that, once called to the attention of a crew, is self-evident, inherently obvious, and easily understood.

Level B Training. Level B difference training is applicable to 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 standardized method of presentation of material, or to aid retention of material following training. Level B aided instruction typically employs means such as presentations, tutorials, Computer Based Training (CBT), stand-up lectures, videotapes, or DVDs.

Level C Training. Level C differences training can only be accomplished with devices capable of performing flight manoeuvres and addressing full task differences affecting knowledge, skills, and/or abilities. Devices capable of flight manoeuvres address full task performance in a dynamic "real time" environment and enable integration of knowledge, skills and abilities in a simulated flight environment, involving combinations of operationally oriented tasks and realistic task loading for each relevant phase of flight. At Level D, knowledge and skills to complete necessary normal/abnormal/emergency procedures are fully addressed for each variant. Training for Level D differences requires a training device that has accurate, high fidelity integration of systems and controls and realistic instrument indications. FFS or aircraft training may be specified for the conduct of specific manoeuvres or handling differences, such as HUD training or a single manoeuvre.

Level D Training. Level D differences training can only be accomplished with devices capable of performing flight manoeuvres and addressing full task differences affecting knowledge, skills, and/or abilities. Devices capable of flight manoeuvres address full task performance in a dynamic "real time" environment and enable integration of knowledge, skills and abilities in a simulated flight environment, involving combinations of operationally oriented tasks and realistic task loading for each relevant phase of flight. At Level D, knowledge and skills to complete necessary normal/abnormal/emergency procedures are fully addressed for each variant. Training for Level D differences requires a training device that has accurate, high fidelity integration of systems and controls and realistic instrument indications. FFS or aircraft training may be specified for the conduct of specific manoeuvres or handling differences, such as HUD training or a single manoeuvre.

Level A Checking. Level A checking indicates that no check related to differences is required at the time of differences training. A pilot is, however, responsible for knowledge of each variant flown. Differences items should be included as an integral part of subsequent proficiency checks.

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 C Checking. Level C checking requires a partial check using a device suitable for meeting Level C (or higher) differences training requirements is required following transition and recurrent differences training. The partial check is conducted relative to particular manoeuvres or systems designated by the OEB. An example of a Level C check would be evaluation of a sequence of manoeuvres demonstrating a pilot's ability to use a flight guidance control system or flight management system. An acceptable scenario would include each relevant phase of flight but would not necessarily address manoeuvres that do not relate to set up or use of the FGCS or FMS.

Level A Currency. At Level A currency is considered to be common to each variant. Thus, assessment or tracking of currency for separate variants is not necessary or applicable. Maintenance of currency in any one variant or a combination of variants suffices for any other variant.

Level C Currency. *Level C currency is applicable to one or more designated systems or procedures, and relates to both skill and 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. However, some systems or procedures may require shorter time limits while others may be longer than the normal interval for proficiency checks, if the pertinent items are not always addressed by these checks. When level C currency applies, any pertinent lower level currency must also be addressed. Examples of methods acceptable for addressing level C currency are:*

- a. Crew scheduling practices resulting in a crewmember being scheduled to fly a variant with the pertinent system/procedure within the specified period;*
- b. Tracking of an individual crewmember's flying of variants to ensure that the particular system/procedure has been flown within the specified period;*
- c. Use of a higher level method (level D or E currency); or*
- d. Other methods as designated or found acceptable by the OEB.*

5. Operator Differences Requirements (ODR)

ODR tables are used to show an operator's compliance method. Acceptable ODR tables for the initial ATR 42/72 evaluation were provided to the JOEB. ATR generic ODR tables concerning differences between the ATR-600 and previous variants are on file with EASA.

These ODR tables are provided as ATR generic and therefore may not include items that are applicable to particular operators. The ODR tables assume that pilots are current and qualified on the base aircraft.

The ATR ODR tables have been developed in accordance with EU-OPS 1.980 and TGL 44, AMC & IEM to Appendix 1 to OPS 1.980.

These ODR tables have been found acceptable by EASA. 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 using more than one variant must have approved ODR tables pertinent to their fleet.

6. Specifications for Pilot Training

6.1 ATR-600 Initial Type Rating Course (Transition Course)

6.1.1 ATR-600 Transition Course

The OEB reviewed the ATR-600 Standard Transition Course for initial pilot type rating and found it to be compliant with JAR-FCL 1. The OEB recommends this course as a baseline for the ATR-600 type rating training and checking.

The ATR generic course used the FFT for part of the practical training. The FFT is an approved device in accordance with JAR-FSTD A Level 2 and FNPT Level II MCC. It can be substituted with an FFS Level C or D (no motion required).

In accordance with Part-FCL, Annex VII, AMC2 ORA.ATO.125 (Training programme) (i)(2) "... A successful pass of the theoretical knowledge course and final examination should be a prerequisite for progression to the flight training phase of the type rating course, unless otherwise determined in the OSD established in accordance with Regulation (EC) 1702/2003." The footprint of the evaluated course which includes the course duration and training devices used (Appendix 1) has been found suitable to meet this requirement.

6.1.2 Entry Level Training (ELT)

The OEB reviewed ELT for pilots who do not meet the knowledge and skills as determined by the Training Organisation. The OEB recommends this course where needed for currency and proficiency.

The ELT uses Ground and SFI Instructors and Web Based Training and the training devices (VHP, FFT, FFS), as needed.

6.2 ATR 42/72 non-Glass Cockpit Differences / Familiarisation Training

The Differences/Familiarisation Training Courses are designed to provide the ATR qualified pilot with the theoretical (Differences/Familiarisation Training) and practical skills (Differences Training) necessary to safely and competently transition between the various non-Glass Cockpit models in the ATR 42/72 range. Only training modules offered by the manufacturer in June 2004 have been reviewed and endorsed by the JOEB.

Differences training between the ATR 42 (not PEC equipped) and the ATR 42 (PEC equipped) or familiarization training between the ATR 72 (not PEC equipped) and the ATR 72 (PEC equipped) typically lasts one day.

It should be noted that no initial JOEB evaluation of the ATR 42/72 range took place and thus no assessment of the Initial Type Rating Course has been conducted.

6.3 ATR-500 to ATR-600 Differences Training Course

6.3.1 Prerequisites

The ATR-500 to ATR-600 Differences Training Course requires the trainee to be "current and qualified" on the ATR-500. In accordance with JAR-FCL 1 and EU-OPS this requires the trainee to have a valid License Skill Test (LST) or License Proficiency Check (LPC) and have met the EU-OPS 1.970(a)(1) recent experience requirements on the ATR-500.

6.3.2 Training

The OEB has determined that the maximum level of differences between the ATR-500 and ATR-600 are Level D as shown in the MDR table.

The ATR-500 to ATR-600 Differences Training Course has been assessed and found acceptable to meet the training requirements. The training is based upon clearly defined objectives and addresses all items as identified in the ODR tables and validated by the OEB team in a joint evaluation.

The differences training course is valid from the ATR 42 (PEC equipped) to the ATR 42 (glass cockpit) and from the ATR 72 (PEC equipped) to the ATR 72 (glass cockpit) for crew members previously qualified on the respective ATR 42/72 PEC equipped variants.

Differences training from the ATR 42/72 (glass cockpit) to any other ATR 42/72 "classic" variants has not been evaluated. In this case, a full type rating training course is required.

Appendix 3 shows the footprint of the evaluated course, including the minimum course duration and training devices used.

A differences training course from the ATR 42 (not PEC equipped) to the ATR 42 (glass cockpit) has not been evaluated. In this case, additional differences training between the ATR 42 (not PEC equipped) and the ATR 42 (PEC equipped) is required.

A differences training course from the ATR 72 (not PEC equipped) to the ATR 72 (glass cockpit) has not been evaluated. In this case, additional familiarization training between the ATR 72 (not PEC equipped) and the ATR 72 (PEC equipped) is required.

6.3.3 Checking

Training organisations and operators should ensure that the knowledge and skills received in differences training are validated appropriately.

6.4 Training Areas of Special Emphasis (TASE)

6.4.1 The following items should receive special emphasis at the appropriate point during the ground and flight training (e.g. during CBT, VHP, FFT and/or FFS training) in all referenced training courses:

- Engine malfunctions during take-off;
- Use of avionics in normal and abnormal / emergency operations, including FMA annunciations, caution and warning messages on the Engine & Warning Display (EWD), and associated human factors issues;
- Use of Flight Management System (FMS);
- Use of Electronic Checklist (ECL);
- Ice detection and management systems and displays (including APM); and
- Crew Resource Management (CRM) with regard to the new functionalities.

6.4.2 Operators may add additional elements as required by their operation, and these will vary. Training organisations should review their training courses when applicable aircraft modifications occur. Training organisations may add additional elements as required by the operator.

6.5 Special Events Training

Special events training to improve basic crew understanding and confidence regarding aircraft handling qualities, options and procedures as these relate to design characteristics and limitations may include the following:

- recovery from unusual attitudes;
- manual flight with minimum use of automation, including flight under degraded levels of automation;
- handling qualities and procedures during recovery from an upset condition (e.g., wake vortex encounter, loss of control incident);
- high altitude high and low speed buffet margins and flight characteristics;
- Controlled Flight Into Terrain (CFIT), TCAS, EGPWS (emphasis on avoidance and escape manoeuvres, altitude awareness, TCAS / EGPWS warnings, situational awareness and crew co-ordination, as appropriate).

Special events training is not considered as required additional training.

6.6 Recurrent Training

The recurrent training programme must comply with EU-OPS 1.965.

When operating the ATR 42/72-600 series together with any other ATR 42/72 variant(s), the recurrent training should be conducted on an alternating basis between an ATR 42/72-600 FFS and any other applicable ATR 42/72 FFS of the variant(s) flown, also addressing the differences.

Differences between the ATR 42/72 series aircraft are identified in ODR tables, as specified in EU-OPS 1.980. The ATR 42/72-600 differences to other ATR 42/72 variants have been assessed at Level C for recurrent training, i.e. these differences must be addressed in a VHP (or higher device).

Recurrent training should incorporate special events training as described in para. 6.7 on a rotational basis.

7. Specifications for Checking

7.1 Recurrent Checks

Proficiency checks must be conducted in compliance with JAR-FCL 1.245 and EU-OPS 1.965.

When operating a mixed fleet of PEC and non PEC variants, checking should encompass both groups such that all pilots are checked in each group at least once per annum.

When operating the ATR 42/72-600 series together with any other ATR 42/72 variant(s), proficiency checks should be conducted on an alternating basis, on an ATR 42/72-600 FFS and on any other applicable ATR 42/72 FFS of the variant(s) flown, addressing the differences.

Differences between the ATR 42/72 series aircraft are identified in ODR tables, as specified in EU-OPS 1.980. The ATR 42/72-600 differences to other ATR 42/72 variants have been assessed at Level C for checking, i.e. these differences must be addressed in a VHP (or higher device).

7.2 Line Checks

As all ATR 42/72 series aircraft share the same single licence endorsement, a line check on any variant is valid for all variants.

This does not relieve operators from line check requirements specific to route and airport qualification as prescribed in EU-OPS.

8. Specifications for Recent Experience and Currency

8.1 Recent Experience

Compliance with EU-OPS 1.970 or JAR-FCL 1.026 as appropriate is required for recent experience. Take-offs and landings performed on any ATR 42/72 variant are valid for all variants.

8.2 ATR-600 Currency

Flight crews operating the ATR-600 together with any other variant should perform at least one sector (as PF or PNF) in an ATR-600 and one sector in any other variant(s), within the previous 90 days.

9. Line Flying Under Supervision (LIFUS) / Familiarization Flights

9.1. Purpose of LIFUS / Familiarization Flights

LIFUS must be performed in accordance with relevant EU-OPS requirements. There are a variety of reasons why the OEB may specify LIFUS / Familiarization Flights in conjunction with Master Differences Requirements. One or more of the reasons described below may apply:

- a. Introduction of new aircraft types or variants;
- b. Introduction of new systems (e.g., FMS, ECL, TCAS, HUD);
- c. Introduction of new operation (e.g. oceanic, polar or ETOPS operations);
- d. Experience for a particular crew position (e.g. PIC, SIC);
- e. Post qualification skill refinement (e.g. refining alternate or multiple ways to use particular equipment to increase operating efficiency, operating flexibility, or convenience); or

- f. Special characteristics (e.g. airport category in accordance with EU-OPS 1.975, mountainous areas, unusual or adverse weather, special air traffic control procedures, non-standard runway surfaces and dimensions, etc.).

9.2 LIFUS following ATR 42/72 Type Rating Courses

In the case of Pilots completing Initial Type Rating for the ATR 42/72, LIFUS must be completed in accordance with EU-OPS 1.945.

In the case of an initial type rating onto the ATR 42/72, a minimum of 10 sectors including a line check is recommended for Line Flying Under Supervision (LIFUS), meaning 8 sectors plus 2 sectors line check.

Where there is a change of operating conditions or route structure this should also be taken into account and may need the addition of sectors to cover these elements.

In accordance with JAR-FCL 1, a supervised exterior inspection on the aircraft must be part of the training course or LIFUS following the ATR 42/72 full type rating course. An unsupervised exterior inspection is not permitted until this requirement has been fulfilled.

9.3 Familiarization Flights Following ATR-500 to ATR-600 Pilot Differences Training

9.3.1 Familiarization Flights between ATR 42/72 non-Glass Cockpit variants

In the case of conversion to the original ATR 42-200/300 series, it is recommended that a minimum of two sectors be flown under supervision as illustrated below.

Recommended number of sectors for familiarization flights				
FROM \ TO	ATR 42 (not PEC equipped)	ATR 72 (not PEC equipped)	ATR 42 (PEC equipped)	ATR 72 (PEC equipped)
ATR 42 (not PEC equipped)	--	0	0	0
ATR 72 (not PEC equipped)	2	--	0	0
ATR 42 (PEC equipped)	2	0	--	0
ATR 72 (PEC equipped)	2	0	0	--

9.3.2 Familiarization Flights following ATR-500 to ATR-600 Differences Course

Familiarization flights are recommended following an ATR-500 to ATR-600 differences course. The number of sectors required should consider previous ATR and/or glass cockpit experience and may range from 6 to 10 sectors flown as PF or PNF.

10. Specification for Operations of More Than One Type or Variant

Prerequisites for flying more than one type or variant are contained in EU-OPS 1.980. Typically it consists of a consolidation period following the initial line check on the new type.

Following ATR-500 to ATR-600 differences training, a consolidation period of 30 sectors and a minimum of 30 flight hours, as PF or PNF (including any Familiarization Flights) on ATR-600 aircraft is recommended prior to operating the ATR-600 together with any other ATR 42/72 variant.

Appendix 1

ATR-600 Initial Type Rating

Day 1	Day 2	Day 3	Day 4	Day 5
Introduction (3:00) WBT (4:00) VHP A (1:00)	GI (1:00) WBT (4:00) VHP B (1:00)	GI (1:00) WBT (4:00) VHP C (1:00)	GI (4:00) GI - Icing (1:30) GI - Safety (1:00)	FFT 0 (2:00) FMS 1/2 - VHP (4:00)
Day 6	Day 7	Day 8	Day 9	Day 10
GI - CRM (7:00)	VHP 1 (3:00) WBT (2:00)	VHP 2 (3:00) WBT (2:00)	VHP 3 (3:00) WBT (2:00)	VHP 4 (3:00)
Day 11	Day 12	Day 13	Day 14	Day 15
VHP 5 (3:00)	VHP 6 (3:00)	FFT 1 (3:00)	FFT 2 (3:00)	FFT 3 (3:00)
Day 16	Day 17	Day 18	Day 19	Day 20
Theoretical Knowledge Test (3:30) GI - TEM Briefing (2:00) FAL Visit (1:30)	FFT 4 (3:00)	FFS 1 (3:00)	FFS 2 (3:00)	FFS 3 (3:00)
Day 21	Day 22	Day 23	Day 24	
FFS 4 (3:00)	FFS 5 (3:00)	FFS 6 (3:00)	Skill Test - FFS (4:00)	

Notes:

FFS = Full Flight Simulator (ATR-600 FFS Level C or D)

FFT = Full Flight Trainer (JAR-FSTD A Level 2 and FNPT Level II MCC)

GI = Ground Instructor

VHP = Virtual Hardware Platform Trainer

WBT = Web Based Training

FFS, FFT and VHP sessions DO NOT INCLUDE time for briefing and de-briefing.

This table reflects the Full Type Rating course evaluated by EASA, which was found to be compliant with applicable requirements. Any variations to this course should be evaluated by the Competent Authority or through an OEB evaluation. This serves to ensure that an equivalent level of training and safety are reached, and may lead to variations to the table above.

Appendix 2

“ATR-500 to ATR-600” Differences Training

ATR 42 (PEC equipped) to ATR 42 (glass cockpit)
AT.R 72 (PEC equipped) to ATR 72 (glass cockpit)

Day 1	Day 2	Day 3	Day 4	Day 5
Introduction, Description of the Colour Code (0:30) CRM Module (3:00) VHP Introduction (0:30) WBT (3:00)	Review (0:30) WBT (2:00) ATR 500/600 Systems (2:30, with GI) Training Devices (DU, IESI, VCP) (1:00, with GI) VHP 1 (1:30)	Briefing (0:30) WBT (2:00) VHP 2 (1:30) FMS Ground Course (1:30, with GI) VHP 3 FMS (1:30)	Briefing (0:30) Abnormal-/Emergency Briefing (1:30) WBT (1:30) VHP 4 (1:30) VHP 5 (1:30)	FFT * (4:00 per crew)
Notes: GI = Ground Instructor VHP = Virtual Hardware Platform Trainer WBT = Web Based Training VHP sessions DO NOT INCLUDE time for briefing and de-briefing * or higher device, such as FFS, Level C or D				

This table reflects the Differences Training course evaluated by EASA, which was found to be compliant with applicable requirements. Any variations to this course should be evaluated by the Competent Authority or through an OEB evaluation. This serves to ensure that an equivalent level of training and safety are reached, and may lead to variations to the table above.

Appendix 3

Virtual Hardware Platform (VHP) Trainer

Description of the VHP device used in the ATR Pilot Training Courses and recommendations.

1. Description of the device used

The three dimensional type specific device consisted of graphically simulated, interactive touch panels, instruments, switches and controls in a spatially correct position.

Instruments and panels were computer generated, interactive touch activated graphics displayed on multiple screens, however aircraft panels requiring intensive manipulation such as Flight Guidance Control Panel (FGCP), Index Control Panel (ICP), MCDU, MCP and Electronic Flight Bag (EFB), if installed; consisted of replicated aircraft panels with physical controls, knobs and switches. The throttle box was displayed on a computer generated graphics display.

Airplane systems were operative for flight and ground conditions. Simulated aircraft systems were fully integrated to ensure correct interaction, especially between the FMS, ECL, flight instrument displays and EFB, if installed. The device was able to simulate the different approach modes. Warning and caution sounds were simulated.

Computer generated schematics to visualize aircraft system operation were provided.

The device incorporated the necessary malfunctions to accomplish the training of Normal, Supplementary Normal and Non-Normal operating procedures.

The device incorporated the necessary navigational databases to complete the defined training scenarios.

An instructor facility was available to allow the modification of flight and environmental conditions (wind, temperature, pressure, etc.). It permitted repositions (flight and ground), freezes, system resets, airport selection, aircraft services (doors, ground power, virtual circuit breaker, etc.). Lesson plan tools were provided.

The computer(s) had sufficient capacity and capability to ensure an accurate and reliable operation, with realistic responsiveness and aliasing free graphics.

The device was located in a suitable quiet room, free of training distractions, with adequate temperature and lighting conditions.

2. Recommendations

- 2.1 The device should allow airline specific options.
- 2.2 The competent Authority approving the Training Organisation should review the device for suitability to complete the customer specific training programme.
- 2.3 The training organisation operating the device should have a Quality Assurance Programme in place to cover, at least, the following training device aspects:
 - Recording, monitoring and rectification of failures and discrepancies;
 - Failure analysis and reliability figures;
 - Link with the aircraft manufacturer to ensure the device continues to reflect the real aircraft;
 - Link with the training device manufacturer for the incorporation of updates and modifications;
 - Configuration control processes to ensure adequate tracking and recording of software and hardware modifications; and
 - Resources and personnel training to support its operation.