



OPERATIONAL EVALUATION REPORT

PILATUS AIRCRAFT LTD.

PC-24

REVISION 1 – AUGUST 1ST, 2023.

Revision Control

REVISION	DATE	HIGHLIGHTS OF CHANGE
Original	March 18, 2019	Original report.
1	August 01, 2023	Catch up with EASA OSD-FC Report including unpaved surfaces, steep approach, ILS CAT II and other operational capabilities. Editorial changes.

Approval

Pedro Henrique Leite Paludo

Acting Manager, Aeronautical Product Design Certification Branch

Department of Airworthiness

Table of Contents

REVISION CONTROL.....	2
APPROVAL.....	3
1 ACRONYMS	5
2 INTRODUCTION.....	8
3 AIRCRAFT SPECIFICS	10
4 PILOT TYPE RATING.....	14
5 OPERATOR DIFFERENCE REQUIREMENTS (ODR)	15
6 MASTER DIFFERENCE REQUIREMENTS (MDR)	16
7 SPECIFICATIONS FOR PILOT TRAINING	17
8 SUPERVISED LINE FLYING (SLF)/ FAMILIARIZATION FLIGHTS.....	22
9 SPECIFICATIONS FOR CHECKING	23
10 SPECIFICATIONS FOR RECENT EXPERIENCE AND CURRENCY	24
APPENDIX 1	25
APPENDIX 2	28
APPENDIX 3	29
APPENDIX 4	33
APPENDIX 5	35
APPENDIX 6	39

1 Acronyms

ACE	Advanced Cockpit Environment TM
AFM.....	Airplane Flight Manual
AIC	Aeronautical Information Circular
ANAC	Agência Nacional de Aviação Civil (Brazilian Civil Aviation Authority)
AP	Auto Pilot
ASP	Automatic Speed Protection
ATO	Approved Training Organization
AWO.....	All Weather Operations
AYT	Auto Yaw Trim
CAS.....	Crew Alerting System
CBT	Computer Based Training
CPDLC	Controller Pilot data Link Communication
CRM	Crew Resource Management
DECEA.....	Departamento de Controle do Espaço Aéreo (Brazilian ANSP)
DH	Decision Height
EASA.....	European Union Aviation Safety Agency
ECL	Electronic Checklist
EFIS	Electronic Flight Instrument System
FCD.....	Flight Crew Data
FCOM.....	Flight Crew Operational Manual
FD	Flight Director
FFS	Full Flight Simulator (Level C or D)

FMS..... Flight Management System

FSTD..... Flight Simulation Training Device

HW PG Honeywell Pilot's Guide for the Pilatus Advanced Cockpit Environment (ACE)

IFR Instrument Flight Rules

IFRA..... Airplane instrument rating

ILS..... Instrument Landing System

INAV..... Interactive Navigation (moving map)

IS Instrução Suplementar (ANAC Supplementary Instruction)

LPC License Proficiency Check

LVO..... Low Visibility Operations

LVP Low Visibility Procedures

LVTO..... Low Visibility Take-off

MCC..... Multi-Crew Coordination

MDR..... Master Differences Requirements

MEL Minimum Equipment List

MFD Multi-Function Display

MMEL..... Master Minimum Equipment List

MP Multi-Pilot

ODR Operator Differences Requirements

OEI..... One Engine Inoperative

OSD Operational Suitability Data

OTD..... Other Training Device

PDVA Pilot Defined Visual Approach

PF..... Pilot Flying

PFD Primary Flight Display

PIC Pilot in Command

PM..... Pilot Monitoring

PNF Pilot Not Flying

QRH Quick Reference Handbook

RBAC Regulamento Brasileiro de Aviação Civil (Brazilian Civil Aviation Regulation)

RVR..... Runway Visual Range

SAL Steep Approach Landing

SAR..... Search and Rescue

SIC Second in Command

SLF..... Supervised Line Flying

SOP..... Standard Operating Procedure

SP Single-Pilot

T2..... Handling qualities comparison test

T3..... System Differences Test and Validation of Training and Checking test

TASE Training Areas of Special Emphasis

TCAS..... Traffic Alert and Collision Avoidance System

TF Tactile Feedback

TOLD..... Take-off and Landing Data

TSC Touch Screen Controller

VNAV Vertical Navigation

2 Introduction

2.1 Background

On March 2019 ANAC conducted the initial evaluation of model PC-24, by documentation analysis, using the information provided by the manufacturer, including the EASA OSD Flight Crew Data Report, Issue 001, Revision 01, dated August 31st, 2018, and the related operational publications.

On April 2023 ANAC conducted the evaluation of PC-24 additional operational capabilities including unpaved surfaces, steep approach and low visibility (ILS CAT II). This evaluation was conducted by documentation analysis, using the information provided by the manufacturer, including the EASA OSD Flight Crew Data Report, Issue 001, Revision 06, dated October 15th, 2021, and the related operational publications. Additionally, ANAC conducted some familiarization flights with support provided by Pilatus.

In case more detailed information is required, refer to the latest version of the EASA OSD FCD Report mentioned above.

2.2 Objective

This report presents ANAC results obtained from the operational evaluation activities of Pilatus Aircraft Ltd. airplane model PC-24.

2.3 Purpose

The purpose of this report is to:

- a. Determine the pilot type rating assigned for the PC-24 airplane;
- b. Recommend the minimum requirements for initial, transition and differences training, checking and currency applicable to flight crew for the PC-24, and functionalities;
- c. Provide the Master Differences Requirements (MDR) for crews requiring differences qualification for mixed-fleet-flying;
- d. Provide an acceptable Operator Differences Requirements (ODR);
- e. Describe the qualification and/or characteristics of the Flight Simulation Training Device (FSTD) and Other Training Device (OTD) used for flight crew training, checking and currency.

2.4 Applicability

This report is applicable to:

- a. ANAC employees responsible for training programs analysis and approval;
- b. ANAC employees and designees responsible for airmen certification; and
- c. Aircraft operators and training providers certified/ approved under Brazilian requirements to assist them in developing their flight crew member training, checking, and currency.

2.5 Cancellation

Not applicable.

3 Aircraft Specifics

3.1 General Description

The PC-24 is a low-wing, pressurized, twin turbojet, with a T-tail and retractable landing gear. It is designed to carry passengers, cargo, or various combinations of both passengers and cargo to and from short airfields, including taxi, takeoff and landing operations on unpaved surfaces.

The PC-24 may be operated by one pilot or two and can carry up to a maximum of 10 passengers when appropriately configured. Passenger amenities can include a forward lavatory and an aft galley area.

The construction of the PC-24 is conventional semimonocoque, primarily composed of aluminum alloy, with composite material structures in certain areas. Flush riveting is used where appropriate to minimize drag. Access panels are installed to facilitate inspection and maintenance. The airframe is electrically bonded to eliminate electromagnetic interference and static discharge wicks are fitted to reduce static charges that accumulate in flight.

For passenger comfort, the pressurization system automatically maintains a cabin altitude of 8,000 Foot (ft) when the airplane is at its maximum cruising altitude of 45,000 ft.

The Forward Cabin Door is located on the left side of the forward fuselage aft of the cockpit. Two over-wing emergency exits are located mid-cabin on both the left and right sides of the fuselage. Cargo and baggage loading and unloading is accomplished through a large Cargo Door on the left side of the rear fuselage immediately aft of the trailing edge of the left wing root.

3.2 Operations

3.2.1 General

All operations permitted by the latest ANAC approved issue of the PC-24 Airplane Flight Manual (AFM).

3.2.2 Steep Approach Operations

Approval of steep approach operations is described in section 91.1715 of RBAC 91.

The PC-24 is operationally suitable for steep approach landing operations up to an approach path angle of 6,65 degrees, in accordance with the applicable AFM Supplement.

Specific theoretical and practical training is required before conducting steep approach landing operations.

Pilots should be trained using the Steep Approach Procedure provided by Pilatus or equivalent approved SOPs.

Steep Approach Training is assessed as Level D/A/A for training, checking and currency.

Further details are contained in Appendix 3.

3.2.3 Unpaved Runway Operation

Operations on unpaved runways are unique for jet-powered aircraft and should emphasize the differences in performance and the handling characteristics on unpaved surfaces during taxiing, takeoff, and landing.

Specific theoretical and practical training is required before conducting takeoffs and landings on unpaved runways. Taxiing on unpaved surface shall be addressed during training as well.

Further details are contained in Appendix 4.

3.2.4 All Weather/ Low Visibility Operations (LVO)

PC-24 low visibility operations (including CAT II landing) to lower than standard ILS CAT I visibility conditions have been evaluated. Lower than standard CAT I constitutes the main part of All Weather Operations (AWO), which also consists of takeoff and taxiing in low visibility conditions.

Approval of ILS CAT II operations is described in section 91.1711 of RBAC 91.

Further details are contained in Appendix 6.

3.3 Aircraft Approach Category

With reference to DECEA publication AIC N03/21 dated 28 Jan. 2021, the approach category for model PC-24 is:

Aircraft	Category
PC-24	B

The category is based on the approach speed provided by the manufacturer and need to be reconsidered if operators increase the approach speed.

3.4 Maximum altitude for SP Operations

The aircraft volume is very small and a decompression will lead to a fast reduction of pressure in the cabin and cockpit. When pressurization is lost, the time of useful consciousness without additional emergency oxygen decreases rapidly with increasing operating altitudes.

Operators should establish a maximum altitude for SP operations when not permanently wearing the oxygen mask.

3.5 Abnormal and Emergency Procedures – SP and MP Operations

The Emergency/ Abnormal procedures in the manufacturer's QRH and AFM, provide guidance to operators and should be followed as closely as possible.

A QRH should be available for all operations.

Operators should ensure that appropriate Standard Operating Procedures (SOP) and realistically achievable Normal, Abnormal and Emergency procedures are available for SP, as well as for MP operations.

The SOP should include clear instructions on the termination of a flight in case of an emergency/ abnormal situation during SP operations, taking into account the increase of workload for the single pilot.

Note: Normal and abnormal procedures are specifically designed for SP operations, to be conservative and simple, without cumbersome troubleshooting steps for abnormal procedures. Differentiation for MP operations should focus on incorporating the crew coordination of checklist execution in the operator's SOP. The FCOM gives adequate guidance for how to conduct crew coordination during MP checklist operations.

3.6 Autopilot

RBAC 91 and RBAC 135 contain provisions for SP operations under IFR.

If, during SP IFR or SP night operations, there is total failure of the autopilot system or at least one autopilot is no longer available, the flight should be terminated as soon as practical.

3.7 Airborne Weather Radar

In accordance with RBAC 91.1045 and RBAC 135.175(b) an airborne weather radar is required when operating the PC-24 at night or in IMC in areas where thunderstorms or other potentially hazardous weather conditions, regarded as detectable with airborne weather detecting equipment, may be expected to exist along the route.

3.8 Head-set

For SP operations, a head-set should be carried for “hands free” communication.

3.9 MMEL/MEL – SP Operations

With regard to MMEL/MEL, SP operations require specific considerations of some items, such as:

- Both autopilots are required for dispatch for SP operation; and
- Automatic pressurization control is required for dispatch for SP operation.

3.10 Instruments, Data and Equipment Requirements

No regulatory compliance checklists were provided by the manufacturer.

Brazilian operators must show compliance with applicable requirements of RBAC 91 and RBAC 135.

4 Pilot Type Rating

Model PC-24 pilot type rating endorsements are “**PC-24**” and “**PC-24/D**”, as follows:

- **PC-24**, which is issued to a pilot who received training and demonstrated proficiency in the single pilot operation. This pilot will be able to act as the pilot in command (PIC) in both single and dual pilot operations, as described in this report; and
- **PC-24/D**, which is issued to a pilot who received training and demonstrated proficiency in the dual pilot operation. This type rating is issued either with pilot in command (PIC) or second in command (SIC) privileges depending on how the pilot was trained and evaluated.

Table 1 - Pilot Type Rating

Fabricante (Manufacturer)	Aeronave (Aircraft)		Observações (Remarks)	Designativo (Designative)
	Modelo (Model)	Nome (Name)		
PILATUS AIRCRAFT LTD.	PC-24	PC-24	Relatório de Avaliação Operacional PC-24 ANAC Operational Evaluation Report PC-24	PC-24, PC-24/D

5 Operator Difference Requirements (ODR)

With the purpose of evaluating and to compare the handling quality of the base PC-24 aircraft with PC-24 aircraft equipped with Auto-Yaw Trim (AYT), Tactile Feedback (TF) and Touch Screen Controller (TSC), as introduced with APEX Build 5 with UMS Build 8, an EASA OSD T2 & T3 test was executed.

Refer to section 4 of Appendix 5.

6 Master Difference Requirements (MDR)

		From Airplane (base)			
		PC-24	PC-24 AYT	PC-24 TF	PC-24 AYT/TF
To Airplane (candidate)	PC-24	N/A	D/B/B	D/B/A	D/B/B
	PC-24 AYT	D/B/B	N/A	D/B/B	A/A/A
	PC-24 TF	D/B/A	D/B/B	N/A	D/A/A
	PC-24 AYT/TF	D/B/B	D/B/B	D/A/A	N/A

Difference levels:

Level A differences training are accomplished through self-instruction using operating manuals, bulletins or handouts.

Level D differences training are accomplished using devices that are capable of performing flight maneuvers and addressing full task differences of knowledge, skills, and/or abilities.

Level A checking indicates that no check is required at the time of training, or the differences can be addressed in the subsequent proficiency check.

Level B checking requires a task or system check after training.

Level A currency indicates that currency is applicable.

Level B currency is achieved through a self-review based on operating manuals, bulletins, handouts and other methods.

7 Specifications for Pilot Training

7.1 Pilot Prerequisites and Previous Experience

RBAC 61.213(a)(1) applies regarding prerequisites for type ratings.

Prior knowledge on advanced EFIS, FMS operation and integrated avionics is recommended for PC-24 initial type rating training. Pilots without this previous experience in such systems should be offered additional training either integrated into the Initial Type Rating course or prior to entry into the training programmes described in this report.

Pilots with limited or no experience of high-performance airplanes will benefit from additional training which should be completed before starting the type rating course (such as High-Performance Airplane Course).

ATOs should have a method of determining if additional training is necessary in case of little or no experience with automatic flying (FMS, PFD, glass cockpit) and/ or high performance aeroplanes. This can be accomplished through a pre-screening process or a signed declaration / pre-requisites form by the applicant that verifies automatic flying experience.

Pilots undergoing training as MP crew should have completed an MCC course, before commencing MP training for a PC-24 type rating.

For MP operations CRM and MCC aspects should be incorporated throughout the theoretical and practical training.

ATOs should review their training courses when applicable aircraft modifications occur.

7.2 PC-24 Initial Type Rating Training

7.2.1 Theoretical Training

Theoretical training should include classroom / CBT training and System Integration using a suitable OTD device. 44.5 hours are recommended for classroom / CBT training and 6 hours are recommended for additional System Integration. Theoretical training should include a method to ensure a level of knowledge and competency.

Theoretical training must include the following elements:

- Ground training (G) such as CBT/OTD;

- Systems Integration (SI) training such as in the FTD/OTD;
- Flight training (F) that includes operation of the Flight Management System (FMS) with a suitable device.

Thorough knowledge of the ACE Honeywell pilot guide is recommended in order to fully understand the avionic system.

7.2.2 Practical Training

SP Operations. Practical training for a PC-24 initial type rating requires a minimum of 16 hours as PF.

MP Operations. When combined with the initial type rating training, practical training for MP operations requires 32 hours which includes, no less than: 16 hours as PF; 4 hours as PM.

For pilots current on the PC-24 for SP operations, practical training for MP operations should be conducted in accordance with Appendix 1.

Practical training should be performed using an FFS (Level C or D).

Note: PC-24 Initial Type Rating Training footprint is outlined on Appendix 2.

7.2.3 Training Areas of Special Emphasis (TASE)

All TASE items must be included in initial and in recurrent training, unless specified otherwise.

- Electronic Displays, normal, reversionary and degraded operations
- Computerized AFM Data, mass and balance
- OEI operation and engine failure in different flight phases, including transition between manual and automatic flying
- Primary Flight Display (PFD), Flight Director (FD)
- Flight Management System (FMS)
- Flight Path Vector vs. Flight Director
- Electronic Checklist (Normal and Non-Normal procedures)
- Autothrottle operations
- Abnormal Flight controls, i.e. flap failures
- Weather Radar function on ground and in flight
- Rudder Bias and Yaw-Damper function

- MFD Dropdown Menu
- VNAV operation
- Handling of Emergency Brake

7.3 Differences Training

7.3.1 APEX Build 5 & UMS Build 8 without AYT/TF+ASP

No difference training is required, provided no new options/functionalities are installed in conjunction with the accomplishment of SB 42-011 Honeywell Primus APEX DFZ Build 5.0 Software Load and SB 42-012 Upgrade of the Utility Management System to Build 8.0.

7.3.2 APEX Build 5 & UMS Build 8 with Functionalities According ODR

Training, checking and currency levels D/B/B are applicable for differences training from PC-24 to the PC-24 AYT. Level D training is performed on the aircraft or requires the use of an FSTD with the minimum qualification of FFS Level D and covers the equipment of the new variant.

- Automatic Yaw Trim (AYT).
- MFC or TSC (It is recommended to combine theoretical training for both devices).
- INAV enhancements.

Training, checking and currency levels D/B/A are applicable for differences training from PC-24 to the PC-24 TF. Level D training is performed on the aircraft or requires the use of an FSTD with the minimum qualification of FFS Level D and covers the equipment of the new variant.

- MFC or TSC (It is recommended to combine theoretical training for both devices).
- Tactile Feedback TF & Automatic Speed Protection ASP.
- INAV enhancements.

Training, checking and currency levels D/B/B are applicable for differences training from the PC-24 to the PC-24 AYT/TF variant. Level D training is performed on the aircraft or requires the use of a FSTD with the minimum

qualification of FFS Level D and covers the standard equipment of the new variant:

- Automatic Yaw Trim (AYT).
- Tactile Feedback TF & Automatic Speed Protection ASP.
- MFC or TSC (It is recommended to combine theoretical training for both devices).
- INAV enhancements.

Training of optional equipment will be provided according to order placement by the respective customer. Options are:

- Take off & Landing Data Computation TOLD.
- RDR7000 3D solid state Weather Radar.
- Pilot Defined Visual Approach PDVA.
- FANS 1/A+ interface CPDLC & ADS-C.
- Integrated SATCOM.
- Sirius XM Weather.

The training footprint including the course duration is shown in Appendix 5.

Difference Training can be incorporated in the initial type rating course.

Difference Training from PC-24 equipped with Auto-Yaw Trim (AYT), Tactile Feedback (TF) and Touch Screen Controller (TSC) to PC-24 or the PC-24 TF must include the knowledge and awareness of the following equipment:

- YD without AYT function.
- For PC-24: No Autothrottle ASP, Overspeed Protection Mode only.
- Multi-Function Controller (MFC).

The YD without AYT function must be emphasized during practical training especially for OEI flying training during Take Off and during Missed Approach.

Practical difference training is recommended to be done using respective PC-24 variant FFS Level D.

7.3.3 Training Areas of Special Emphasis (TASE)

The following aircraft systems or procedures shall receive special emphasis during difference training:

- Yaw Damper including Automatic Yaw Trim AYT function for PC-24 (equipped with Auto-Yaw Trim (AYT)).
- Yaw Damper without AYT function for PC-24 and PC-24 TF.
- TSC + TSC blank/failure, if used/optional.

8 Supervised Line Flying (SLF)/ Familiarization Flights

Although it is not a requirement, it is recommended SLF/ familiarization flights to be performed in accordance with ANAC IS 00-007A item 7.6 prior to the exercise of the privileges of the PC-24 type rating for SP operations or MP operations as PIC as follows:

	License and previous experience	SLF/ Familiarization flights
SP Operations or MP Operations as PIC	ATPL(A); and Previous experience turbo-jet aircraft type rating	None
	PPL/ CPL/ ATPL(A); and MLTE + IFRA; and Minimum of 1.000 hrs total flying experience	25 hrs
	PPL/ CPL/ ATPL(A); and MLTE + IFRA; and Minimum of 500 hrs total flying experience	50 hrs
MP Operations as SIC	PPL/ CPL; and MLTE + IFRA; and Minimum of 200 hrs total flying experience; and Minimum of 70 hrs PIC; and Type rating PC-24/D (SIC privileges)	0 hrs

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

No SLF/ familiarization flight recommendations have been established for MP operations as co-pilot.

Flights under supervision should include a representative cross-section of the normal operation of the aircraft.

SLF/ familiarization flights may be replaced by an equal number of flight hours route experience when engaged in commercial air transport operations.

9 Specifications for Checking

9.1 Differences checking

The following items must be included, according to the ODR table presented in Appendix 5:

- YD including Automatic Yaw Trim function for PC-24 (equipped with Auto-Yaw Trim (AYT)).
- Touch Screen Controller TSC for PC-24 (equipped with Touch Screen Controller).
- YD without AYT function for PC-24.
- Multi-Function Controller MFC for PC-24.

9.2 Recurrent Checking (OPC and LPC)

Recurrent checking can be performed on any PC 24 aircraft, provided that the respective difference training on the variant aircraft has been completed.

10 Specifications for Recent Experience and Currency

10.1 Recent Experience

No type-specific requirements for recent experience other than those established in RBAC 61 and RBAC 135 have been established for the PC-24.

10.2 Currency

Currency items must be considered according to the ODR table presented in Appendix 5.

Appendix 1

PC-24 Transition Training SP to MP (and vice-versa)

The following syllabus contains the recommended training for pilots when transitioning from SP to MP operations and vice versa.

1 MP to SP Transition

1.1 Theoretical Training (4 hours)

The transition course should start with theoretical training to address the following subjects:

- SP psychology, decision making, communications and limitations;
- SP task, resource and workload management and personal organization;
- SP operation and management of avionics suite, including charts and ECL, as applicable;
- Differences between MP and SP Abnormal and Emergency procedures;
- Emergency Phraseology; and
- SP operations in icing conditions.

1.2 Practical training, normally using an FFS (4 hours)

The practical training should include the following subjects:

- Use and setup of avionics suite, PFD and MFD, including selection of display;
- Use of Flight Director and Autopilot, monitoring of modes;
- Engine failure after take-off;
- In flight restart of failed engine;
- Operation of TCAS;
- Sequencing of CAS messages regarding subsequent/secondary failures;
- Loss of cabin pressure control and Emergency Descent procedures;
- Instrument flying on standby instruments;
- Failure of trim system;
- Smoke procedures, including smoke removal;
- Approaches/Landing with reduced flap setting;

- Approaches/Landing with failed engine;
- Engine Fire on the Ground;
- Emergency Evacuation; and
- Use of the ECL, if applicable.

2 SP to MP Transition

MCC procedures should be defined in the operations manual and be introduced during the transition training.

2.1 Theoretical Training (4 hours)

The transition course should start with theoretical training to address the following subjects:

- Multi Crew psychology, decision making, communications and limitations;
- Multi Crew task, resource and workload management and organization, MCC procedures;
- MP operation and management of avionics suite, including ECL/ optional and Charts;
- Differences between SP and MP Abnormal and Emergency procedures;
- Emergency Phraseology; and
- MP operations in icing conditions.

2.2 Practical training, normally using an FFS (2 hours as PF and 2 hours as PNF)

The flight training should address the following subjects:

- Use and setup of avionics suite, PFD and MFD, including selection of display;
- Use of FD and AP, monitoring of modes;
- MCC Procedures;
- Operation of TCAS;
- Sequencing of CAS messages regarding subsequent/secondary failures;
- Loss of cabin pressure control and Emergency descent procedures;
- Instrument flying on standby instruments;
- Smoke procedures, including smoke removal;
- Trim failure;

- Engine Fire on the Ground;
- Emergency Evacuation; and
- Use of ECL, if applicable.

3 MIXED SP AND MP OPERATIONS

Training should also address aspects of mixed SP and MP operations by the same pilot.

Appendix 2

PC-24 Type Rating Training Footprint

Day 1	Day 2	Day 3	Day 4	Day 5
Theoretical Training	Theoretical Training	Theoretical Training	Theoretical Training	Theoretical Training
Day 6	Day 7	Day 8	Day 9	Day 10
Theoretical Training	Theoretical Training	Theoretical Training	Theoretical Training	Theoretical knowledge Exam
Day 11	Day 12	Day 13	Day 14	Day 15
FFS 1	FFS 2	FFS 3	FFS 4	FFS 5
Day 16	Day 17	Day 18		
FFS 6	FFS 7	Proficiency check		

Notes:

1. All FFS must be completed in a level C or D qualified flight simulator.
2. System Integration Training should be arranged according Training Schedule.
3. The footprint outlined above reflects the training considered acceptable for PC-24 initial type rating of Brazilian-licensed pilots. An operator or an ATO may develop a variation of this training, provided it is proven that it maintains an equivalent level of safety. Depending on the level of the modification, ANAC may judge necessary an operational evaluation of the proposed training.

Appendix 3

Steep Approach Operations

(AFM Supplement Report 02451)

1 PREREQUISITES

Before starting steep approach training, pilots must be current and qualified on the Pilatus PC-24. Alternatively, steep approach landing training may be integrated in initial type rating training of the Pilatus PC-24.

2 THEORETICAL TRAINING (2.0 HOURS)

Theoretical training must include limitations, operational requirements, system limitations, performance, normal and non-normal procedures, as well as MMEL items, specific to steep approach operations.

- The course should start with theoretical training to address the following subjects:
- System Description
- Limitations
- SAL Normal Operation
- SAL Abnormal Operation
- Performance
- EGLC/ LCY Operation
- Optional LSZA/ LUG Operation

3 PRACTICAL TRAINING, NORMALLY USING A FFS TRAINING (2.0 HOURS AS PF, 2.0 HOURS AS PNF)

Practical training requires a Pilatus PC-24 FFS Level C or D.

SAL SPO requires an additional training module on the aircraft.

- 1 SAL to Missed Approach.
- 1 SAL to Landing (on any airfield with or without GS guidance, can be simulated with FMSvertical path).

Practical training should include:

- a briefing prior to the training sessions, to include limitations, normal and non-normal procedures, and performance with special emphasis on landing distances and brake cooling; and
- phases of the steep approach to include the stabilized approach concept as a key success for steep approach landing, appropriate slats / flaps configuration, approach speed and flare initiation.

Practical training should consist of 4.0 hours in an FFS and should be divided evenly between time as PF and as PNF.

For SPO Operation the practical training can be reduced, whereas a min of 2 hours without briefing has to be considered.

3.1 INITIAL PRACTICAL TRAINING

The initial practical training for steep approach operations shall be comprised of steep approaches under different conditions, such as day / night, crosswind / dry / wet runway, ILS / LPV / visual approach.

The following approaches shall be included in the above, following a 5.5 up to 6,65 degree approach path angle:

- one approach to a full stop landing with normal procedures;
- one approach with a go-around/abandoned approach with normal procedures;
- one approach in turbulent and gusty wind conditions, including speed adders as necessary;
- one approach with an abuse in speed and not complying with 1000ft stabilization criteria, managed by the crew; and
- one approach with an engine failure after commencement of steep approach, followed by a full stop landing or a go-around at pilot discretion.

Training module on the aircraft for SPO only: 1 SAL to Missed Approach and 1 SAL to Landing (on any airfield with or without GS guidance, can be simulated with FMS vertical path).

Initial practical training should include basic requirements concerning short runway operations, including TDZ requirements.

3.2 RECURRENT PRACTICAL TRAINING

Recurrent training shall be performed every 12 months.

Recurrent training shall comprise, as a minimum, three steep approaches following a 5.5 or up to 6.65-degree approach path angle, as pilot flying, including:

- one approach to a full stop landing with normal procedures; and
- two approaches with the introduction of a non-normal situation during the approach.

4 TRAINING AREAS OF SPECIAL EMPHASIS (TASE)

The following items must receive special emphasis as specified, during theoretical (GT) and practical training (PT) for steep approach landing operations:

- Aircraft operating, navigation and system limitations, applicable to steep approach (GT;PT)
- Limiting Weights (GT)
- Automatic flight control system (GT)
- Flight management system (GT; PT)
- Approach speed (GT)
- Approach gradient (GT)
- Landing speed (GT)
- Landing gradient (GT)
- Visual Approaches (GT;PT)
- Crosswind conditions (GT;PT)
- Minimum decision heights (GT;PT)
- Landing aerodrome limits including day and night scenes (GT; PT)
- FMS / Landing Data (GT;PT)
- Before Landing considerations (GT;PT)
- Required flare technique (GT:PT)
- Go-around considerations (GT;PT)
- Non-Normal Procedures (GT;PT)
- Configuration (GT; PT)
- Steep approach mode (GT; PT)
- Fluctuation of speed and pilot action (GT;PT)
- Landing field length and landing speed (GT)
- Stopping Distance (GT;PT)

- AEO and OEI approaches following a go-around or landing (GT;PT)
- Application of approach speed adders considering the criticality of flying above or below Vref (GT;PT)
- Management of approach speed in turbulence and gusty wind conditions (PT)

5 CHECKING

There is no specific requirement for checking following Pilatus PC-24 steep approach training. A certificate of completion steep approach training is sufficient to demonstrate qualification.

Appendix 4

Unpaved Runway Operations

(AFM Supplement Report 02444)

1 PREREQUISITES

Before starting training to operate on unpaved runways, pilots must be current and qualified on the Pilatus PC-24.

Alternatively, unpaved runway operation may be integrated in initial type rating training of the Pilatus PC-24.

Operations on unpaved runways are unique for jet powered aircraft and should emphasize:

- the importance of the assessment of the runway surface conditions,
- the differences in performance, and
- the handling characteristics on unpaved surfaces during taxiing, takeoff, and landing.

2 THEORETICAL TRAINING (1.5 HOURS)

The course should start with theoretical training to address the following subjects:

- AFM Supplement 02444 Review of every chapter
- Hardware changes (Gravel Kit)
- PC-24 AFM Section 5
- Performance Calculation
- Quick Reference Handbook
- Review of Information Unpaved Surfaces
- Review of Visual Material for Pilots Runway Assessment

3 PRACTICAL TRAINING (0.5 HOURS AS PF)

A minimum of 2 Take off and landings on unpaved runways and taxiing on unpaved surface should be addressed during training.

The flight training should address the following subjects:

- Normal Procedures according to AFM section 4
- Flyover Tactics Recco
- Landing Flaps 33 Normal or Maximum Braking
- Landing Flaps 15 Normal or Maximum Braking
- Normal Take off Flaps 15

4 TRAINING AREAS OF SPECIAL EMPHASIS (TASE)

- Handling during ground operation on unpaved RWY
- Performance and W&B according to AFM for unpaved RWY operation
- Importance of surface condition

5 RECURRENT TRAINING

If a pilot has not performed any flights to an unpaved surface within 6 months, he/she shall review the theoretical training to ensure that he is aware of the specifics of this operation as described in the AFM supplement.

If a pilot operates into an unpaved surface, he/she shall perform the airport/runway assessment before each flight according to the AFM supplement and in close contact with the local airport operator.

Appendix 5

Difference Training variants PC-24 AYT, PC-24 TF & PC-24 AYT/TF

1 PREREQUISITES

For Difference training: PC-24 Type Rating Course MPO completed. Optional PC-24 Type Rating Course SPO completed.

For Initial training: General Pilot prerequisites according to paragraph 7 SPECIFICATIONS FOR PILOT TRAINING of this report.

2 THEORETICAL TRAINING

Theoretical training must include limitations, operational requirements, system description and limitations, performance, normal and abnormal procedures, as well as MMEL items, specific to the PC-24 AYT/TF.

For initial training PC-24 equipped with Auto-Yaw Trim (AYT), Tactile Feedback (TF) and/or Touch Screen Controller (TSC). The content below has to be covered in the initial training.

Theoretical classroom training for standard equipment should be a minimum of 2 hours. Suggested timing per element can be provided by Pilatus upon request.

System/ Elements	System Description	Limitations	Normal & Abnormal Procedures	Application Exercises
Auto Yaw Trim (1)	x	x	x	
Automatic Speed Protection & Tactile Feedback (1)	x	x	x	
TSC (2)	x	x	x	x
UMS 8.0 changes (1)	x			
TOLD (3)	x	x	x	x
RDR7000 (3)	x	x	x	
PDVA (1)	x	x		
FANS 1/A+ (3)	x	x	x	
Updated INAV	x			
SATCOM (3)	x	x	x	

(1) optional for MSN 101-211, standard for MSN 212-up

(2) optional for MSN 185-211, standard for MSN 212-up

(3) optional

3 PRACTICAL TRAINING

Practical initial training requires a Pilatus PC-24 FFS Level D.

Practical difference training is recommended to be done using respective PC-24 variant FFS Level D.

Practical training should consist of at least 0.5 hours as PF pilot flying from PC-24 to PC-24 AYT.

Practical training should consist of at least 0.2 hours as PF pilot flying from PC-24 to PC-24 TF.

Practical training should consist of at least 1.0 hours as PF pilot flying from PC-24 to PC-24 AYT/TF.

Practical training should consist of at least 0.5 hours as PF pilot flying from PC-24 AYT to PC-24 TF.

Practical training should consist of at least 0.2 hours as PF pilot flying from PC-24 AYT to PC-24 AYT/TF.

Practical training should consist of at least 0.5 hours as PF pilot flying from PC-24 TF to PC-24 AYT.

Practical training should consist of at least 0.5 hours as PF pilot flying from PC-24 TF to PC-24 AYT/TF.

3.1 TRAINING AREAS OF SPECIAL EMPHASIS (TASE)

The following items must receive special emphasis as specified, during theoretical and practical training for normal & abnormal operation:

- Yaw Damper YD with and without Auto Yaw Trim AYT function.
- Normal Take Off with emphasis on Auto Yaw Trim Functionality
- Take Off with simulated Engine Failure after V1 and OEI Climb
- Missed Approach OEI simulated with Autopilot and manually flown

3.2 ADDITIONAL ITEMS

The following items should be trained for normal & abnormal operation:

- Automatic Speed Protection. Overspeed and Underspeed conditions with and without Autopilot with emphasis on Autothrottle and Tactile Feedback (TF) Elevator Speed Protection.
- Tactile Feedback (TF). Unusual attitudes with an emphasis on TF Roll.
- Touch Screen Controller (TSC) or Multi-Function Controller (MFC) as applicable. Routine systems interface.
- TOLD as applicable. Takeoff Performance Calculations using TOLD in the Aircraft, Landing Performance Calculations using TOLD inflight, Difference between preflight performance planning using AFM or certified Software (e.g. GURU) considering obstacles and terrain data and the use of TOLD system inflight not considering obstacles or terrain must be emphasized.
- RADAR7000 as applicable. WX Radar operational status awareness, Vertical Profile, Secondary Weather, REACT and HAZARD modes.
- PDVA as applicable. PDVA Pilot Defined Visual Approach programmed inflight and actually flown adhering to AFCS limitations.
- INAV as applicable e.g. SAR patterns.

4 OPERATOR DIFFERENCE REQUIREMENT (ODR)

Base aircraft: PC-24 Difference aircraft: PC-24 equipped with Auto-Yaw Trim (AYT), Tactile Feedback (TF) and/or Touch Screen Controller (TSC)				COMPLIANCE METHOD			
				Training		Checking/ currency	
SYSTEM	DIFFERENCES	FLT CHAR	PROC CHNG	LEVEL	DOC/ DEVICE	FLT CHK	CURR
Auto Yaw Trim (1)	The Automatic Yaw Trim (AYT) function will be activated upon engagement of the Yaw Damper. Large lateral acceleration inputs are automatically counteracted through the rudder servo, i.e., engine out condition.	Yes	Yes	D	AFM FCOM FFS/ACFT	B	B
Automatic Speed Protection & Tactile Feedback (1)	Automatic Speed Protection (ASP) New function to automatically manage speed to prevent a speed violation Tactile Feedback (TF) introduced in the Pitch and Roll Axis	Yes	No	D	FCOM FFS/ACFT	A	A
TSC (2)	Touch Screen Controller (TSC) replacing Multifunction Controller (MFC), Interface to Datalink, SATCOM, WXRAD7000	No	No	B	FCOM HW PG	B	A

UMS 8.0 changes (1)	Pitch Trim CAS, Changes to CAS for UMS Databus Failures, Engine Fuel Temp Indication (4), Auto Yaw Trim functional improvement (5)	No	Yes	A	AFM FCOM QRH	A	A
TOLD (3)	Take Off & Landing Data Computation	No	No	B	HW PG	A	A
RDR7000 (3)	Solid state auto-scanning 3D Weather Radar	No	No	B	HW PG	A	A
PDVA (1)	Pilot defined visual approach FMS function	No	No	B	HW PG	A	A
FANS1/A+ (3)	Pilot interface for CPDLC & ADS-C	No	No	A	HW PG	A	A
Updated INAV	Core INAV enhancements	No	No	A	HW PG	A	A
SATCOM (3)	Aspire 300 fully integrated system	No	No	A	HW PG	A	A

(1) optional for MSN 101-211, standard for MSN 212-up

(2) optional for MSN 185-211, standard for MSN 212-up (see Sec. 7.3.3)

(3) optional

(4) optional for 212 MSN-up

(5) Auto Yaw Trim functional improvement optional for MSN 101-211

Appendix 6

Low Visibility Operations

(AFM Supplement Report 02498)

The low visibility operations concept (including CAT II landing) has the objective to provide a level of safety when landing in lower than Standard CAT I visibility conditions equivalent to that of normal operating conditions. Lower than Standard CAT I constitutes the main part of All Weather Operations (AWO), which also consists of take-off and taxiing in low visibility conditions.

Although ICAO and Civil Aviation Authorities Air Operations regulations are slightly different, all refer to the same concepts for CAT II operations. In order to maintain the required level of safety, the approval for CAT II landing operations is dependent on the four elements: Aeroplane, Aerodrome, Operator and Flight Crew. The present document focuses on the Flight Crew training requirements.

CAT II	ICAO	ANAC/ EASA	FAA
DH	100ft ≤ DH < 200ft	100ft ≤ DH < 200ft	100ft ≤ DH < 200ft
RVR	350m ≤ RVR	300m ≤ RVR	350m ≤ RVR < 800m
	1200ft ≤ RVR	1000ft ≤ RVR	1200ft ≤ RVR < 2400m

1 PREREQUISITES

Before starting training to perform low visibility operations (including CAT II landing), pilots must be current and qualified on the Pilatus PC-24.

For CAT II & LVTO Capability Training the PC-24 Type Rating Course MPO must be completed. PC-24 LVO CAT II and LVTO (below 400m RVR) operations are restricted to MPO.

2 THEORETICAL TRAINING

Ground school elements or e-learning module (2.0 hours) should include:

- Airport & Airplane LVO / LVP equipment / requirements
- Weather conditions (fog & visual references)

- Flight crew qualification & training / pilot requirements for CAT II and LVTO.
- Company /operator organization & CAT II authorization including customer operation manual.
- LVO Approach Minima, Visibility conversion, Approach considerations, occurrences.
- Additionally, if LVTO RVR < 400m but ≥ 125m: The characteristics of the visual aids, characteristics of fog, effects of precipitations, ice accretion, low level wind shear and turbulence, effects of specific airplane malfunctions, the use and limitations of RVR assessment systems, the principles of obstacle clearance requirements, importance of correct seating and eye position, procedures and precautions to be followed with regard to surface movement during LVO.

Note: Completion of the above is a prerequisite to continue the LVO Training.

Aircraft specific instruction (1.5 hours) must include:

- General introduction to PC-24 CAT II AFM supplement 02498: Review of every chapter.
- Operating procedures & limitations including CAT II indications and system call outs.
- CAT II flight profile including wordings, crew call outs & monitoring task and responsibilities.
- CAT II manuals used during training must be either:
 - Flight Training providers generic SOP adopted by customer's OM approved by the ANAC, or
 - The customer's own ANAC approved CAT II OM SOP whereby the instructor must have received training beforehand on the relevant SOP.

Theoretical training recommended duration is 3.5 hours.

3 PRACTICAL TRAINING (2 HOURS)

A minimum of 2 hours (1 hour as PF and/or 1 hour as PM) shall be trained on a type specific Category II approved Pilatus PC-24 simulator.

Simulator CAT II training will be conducted on CAT II Airports.

Training must be divided into phases covering normal operation with no aeroplane or equipment failures but including all weather conditions which may

be encountered and detailed scenarios of aeroplane and equipment failure which could affect AWO operations.

Simulator curriculum should include:

- CAT II required equipment including system use, checks and RAD ALT test.
- CAT II approach phases with the relevant indications CAT II white / green.
- CAT II training of full normal approach including flying and monitoring pilots task.
- Demonstration of excessive deviation inclusive CAT II amber / red indication.
- Abnormal procedures including decision making in different phases of the approach.
- Red CAT II indication below 200ft AGL in IMC inclusive missed approach.
- Engine failure during final approach.
- Demonstration of visual characteristics at 100ft AGL for various RVR's.
- Approaches conducted according to customer's operation manual or the training providers SOP.
- Effects on minima caused by changes in the status of ground installations.
- Actions to be taken in the event of system failures and engine failure resulting in continued as well as rejected take-offs.

Additionally if LVTO RVR < 150m but ≥125m: normal take-off in minimum RVR conditions, Take-off in minimum authorized RVR conditions with an engine failure between V1 and V2, or as soon as safety considerations permit, Take-off in minimum authorized RVR conditions with an engine failure before V1 resulting in a rejected Take-off.

4 TRAINING AREAS OF SPECIAL EMPHASIS (TASE)

- The training must emphasize proper crew coordination and workload management.
- Special emphasis shall be laid on critical phases such as the transition from non-visual to visual conditions.
- Difference between a standard coupled missed approach at or above DH and a non-standard manual missed approach below DH shall be discussed with appropriate illustration according to AFM-S note.

5 RECURRENT TRAINING AND CHECKING

LVO / LVP Recurrent Training Curriculum

- Ground school (minimum 1.0 hours).
- Simulator 1 hour (0.5 hours as PF and / or 0.5 hours as PM).

The recurrent course provides a review of the ground school and simulator items listed in the initial course, including specified TASE items.

The operator and the assigned training organization should define a recurrent program according to the operator's certification by ANAC.

LVO Recurrent Checking

The examiner should define a recurrent check program according to the operator's certification by ANAC.

If the operator is authorized to conduct take-off with RVR less than 150m but ≥ 125 m, at least one LVTO to the lowest applicable minima shall be performed during the conduct of the proficiency check.

An operator should ensure that in conjunction with the normal recurrent training and operator proficiency checks, a pilot's knowledge and ability to perform the tasks associated with the particular operation, for which he/she is authorized is checked.

Completion Standards

- The pilot can briefly explain the system installed and knows the corresponding limitations.
- The pilot passes the theoretical test.
- The pilot correctly applies all relevant procedures and conducts relevant FFS lessons within limitations.
- The Crewmember shall be enabled to evaluate meteorological conditions and available aircraft and ground equipment and to take appropriate decisions regarding commencement and continuation of an approach.
- During recurrent training and proficiency checks a pilot's knowledge and ability to perform the particular category of operation for which he/she is authorized should be checked to the satisfaction of the standard of performance assessed by the involved Instructor (qualified on Type and AWO) and Examiner.