

FLIGHT STANDARDIZATION BOARD
EUROCOPTER FRANCE EC-130B4
NORMAL CATEGORY

APPROVED: Edward L. Hinch 12-19-02
EDWARD L. HINCH, CHAIRMAN DATE

CONCUR: Manuel F. Perez 12-19-02
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ACTING MANAGER, FORT WORTH AIRCRAFT EVALUATION GROUP

CONCUR: JK Soule 9/5/05
MANAGER, AIR TRANSPORTATION DIVISION, DATE
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CONCUR: John M. Weneel 9/9/03
for MANAGER, GENERAL AVIATION & DATE
COMMERCIAL DIVISION, AFS-800

EUROCOPTER EC-130B4

EUROCOPTER EC-130B4
PART I

1. Purpose and applicability:

The purpose of this report is to insure complete coverage and documentation of all Flight Standards responsibility regarding the type certification of the Eurocopter EC-130B4, a three bladed, single engine turbine powered, 6 passenger, Normal Category Helicopter.

This aircraft is presently DGAC certificated under JAR 27 Normal Category, and is approved for Day/Night VFR. This aircraft is being presented for Type Validation as a derivative of the Eurocopter AS-350B3.

This aircraft is capable of being utilized for scheduled Commuter Operations and On-demand Operations under Part 135, pilot training under Part 61, and Private carriage under Part 91. Other possible uses include operations under Part 137, and Part 133.

Pilot Type Rating Requirements:

This aircraft is to be certificated as a Part 27 Normal Category Rotorcraft and does not require exceptional pilot skill to fly under VFR conditions therefore no type rating is required.

Master Common Requirements (MCR's):

N/A

Master Differences Requirements (MDR's):

N/A

Acceptable Operator Difference requirements table:

N/A

FSB Specifications for Training:

This aircraft requires aircraft specific training to meet the requirements of FAR 135.293(a) & (b), 135.345, and 135.347.

FSB Specifications for Checking

There are no variants for the EC-130B4, therefore all checks required by 14 CFR Part 135 must be accomplished in make and model. Flight checks are conducted in accordance with the instruction, guidance, and requirements contained in the appropriate

Practical Test Standards and supplemented by guidance in FAA Orders 8700.1, 8400.10 and/or 8710.3.

FSB Specifications for Currency

The provisions of FAR 61.57 apply to this helicopter.

Aircraft regulatory compliance checklist

N/A

FSB Specifications for Devices and Simulators

Advisory Circular 120-63 outlines specifications for Helicopter simulators. Criteria for flight training devices have not yet been developed.

Application of FSB Report

All Operators

Alternate means of compliance

N/A

Miscellaneous

EUROCOPTER EC-130B4

PART II

Background:

This aircraft is presently DGAC certificated under JAR 27 Normal Category , and is approved for Day/Night VFR. This aircraft is being presented for Type Validation as a derivative of the Eurocopter AS-350B3.

This aircraft is capable of being utilized for scheduled Commuter Operations and On-demand Operations under Part 135, pilot training under Part 61, and Private carriage under Part 91. Other possible uses include operations under Part 137, and Part 133.

FSB Composition:

Chairman – Edward L. Hinch, Operations Inspector, Fort Worth Aircraft Evaluation Group.

Eurocopter submitted no proposals for training and there are no Aircraft Evaluation Group issue papers.

Type Ratings and Crew Qualification Tests, and FSB Determinations: This aircraft is to be certificated as a Part 27 Normal Category Rotorcraft and does not require exceptional pilot skill to fly under VFR conditions therefore no type rating is required.

Public Meeting Record and Resolution of Comments: N/A

Summary and Conclusions: I completed 3 days of ground school on the aircraft and systems prior to flying. The maneuvers required by the Practical Test Standards for Airline Transport Pilot and Aircraft Type Rating for Helicopter were evaluated during flight and no unusual flight characteristics were noted.

Although this aircraft is being certificated as a derivative of the Eurocopter France AS-350B3, the aircraft contains features/components of three different aircraft. The basic fuselage has been enlarged and utilizes some EC-120B components. The rotorhead is an AS-350"Starflex", and the antitorque system is an EC-135 "Fenestron". The hydraulic system was derived from the AS355N (dual hydraulics) except for the Yaw control servo, which was removed. A second hydraulic pump was added. The gross weight of the aircraft has been increased to 5291 lbs.

The cockpit configuration contains a display system consisting of a Vehicle and Engine

Management Display (VEMD) . The primary power depiction is derived from the engine parameters, which are electronically monitored and the critical engine limit is displayed on a “FLI”, first limit indicator. The VEMD module computes the FLI from the N1, TRQ, and TOT parameters. The FLI pointer always indicates the parameter with the closest value to a limitation.

The Arriel2B1 engine is controlled by a dual channel FADEC which provide the following functions:

- Automatic starting
- NG governing in idle mode
- Nf (free turbine speed) governing in flight mode
- Limitations calculation and bleed air management
- Engine health checking
- Cycles counting
- Failure detecting and reporting

The FADEC additionally calculates the Nf as a function of rudder pedal position and altitude. The goal is to reduce the noise created by the main rotor by reducing mainrotor RPM at lower altitudes in cruise flight, with pedal position of approximately 40%, and high RPM in a hover, pedal position approximately 60%. In case of failure of the rudder pedal anticipator in flight, the FADEC switches to a constant Nf, approximately 102%.

Flight checks are to be conducted in accordance with the instruction, guidance, and requirements contained in the appropriate Practical Test Standards and supplemented by guidance in FAA Orders 8700.1, 8400.10 and/or 8710.3.

There are no variants for the EC-130B4 therefore all checks required by 14 CFR Part 135 or Part 61 must be accomplished in make and model.