

**FAA APPROVED
ROTORCRAFT FLIGHT MANUAL SUPPLEMENT
for the
EUROCOPTER EC120B
EQUIPPED WITH
FDC/aerofilter INLET BARRIER FILTER SYSTEM**

REG. NO. _____

SERIAL NO. _____

This supplement must be attached to the FAA Approved Rotorcraft Flight Manual (RFM), when the FDC/aerofilter Inlet Barrier Filter System is installed in accordance with Supplemental Type Certificate (STC) SR01191SE.

The information contained herein supplements information of the basic Flight Manual. For Limitations, Normal and Emergency Procedures, and Performance information not contained in this supplement, consult the basic Rotorcraft Flight Manual.

FAA APPROVED:



for Manager, Flight Test Branch, ANM160S
FAA Seattle Aircraft Certification Office

DATE: 10/19/11

RECORD OF REVISIONS

When updated, this document is revised in its entirety.

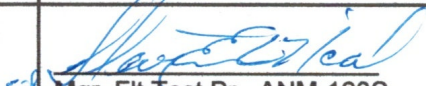
REV	DESCRIPTION	FAA APPROVAL
IR	Initial Release	Jeffrey A. Morfitt for Mgr. Flt Test Br., ANM-160S FAA Seattle ACO Transport Airplane Directorate Date: Mar 17, 2003
A	Incorporated "off load" boundary charts for IGE and OGE performance.	Steven E O'Neal for Mgr. Flt Test Br., ANM-160S FAA Seattle ACO Transport Airplane Directorate Date: Jun 10, 2003
B	Clarified note on VEMD margins and corrected T4 adjustment for manual engine check.	Donald B. Wilson for Mgr. Flt Test Br., ANM-160S FAA Seattle ACO Transport Airplane Directorate Date: Aug 03, 2003
C	Revised Sections 1, 2, 3, and 4 to incorporate 1120IN1-1003 configuration	(Internal Release Only)
D	In Section 4.3.3, added RESET procedure after engine run-up	Shaun Ripple for Mgr. Flt Test Br., ANM-160S FAA Seattle ACO Transport Airplane Directorate Date: Jan 23, 2008
E	<ul style="list-style-type: none"> • Updated and organized layout for ease of use and clarity. • Minor corrections and improvements. • Section 2: Deleted life limits • Section 5: Revised for conditional performance limitations 	 Mgr. Flt Test Br., ANM-160S FAA Seattle ACO Transport Airplane Directorate Date: <u>19 OCT</u> , 2011

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SECTION 1 - GENERAL

This supplement provides the changes in the limitations, normal and emergency procedures, and performance information unique to the Eurocopter EC120B rotorcraft with the FDC/aerofilter Inlet Barrier Filter (IBF) System installed.

The Eurocopter EC120B IBF is available in two (2) configurations:

- P/N 1120IN1-1001 consists of a Filter Housing Assembly, a Filter Element, an Alternate Air Assembly, a Differential Pressure Switch, a “LOW INLET PRESSURE”/”BYP DOOR OPEN” annunciator/push button switch assembly, and minor components to complete the installation.
- P/N 1120IN1-1003 consists of a Filter Housing Assembly, a Filter Element, an Alternate Air Assembly, a Differential Pressure Transducer, a Filter Health Monitor, and minor components to complete the installation.

SECTION 2 - LIMITATIONS**2.1 - FILTER ELEMENT (GROUND AND FLIGHT)**

Engine operations without the filter element installed are **PROHIBITED**.

2.2 - TAKEOFF**1120IN1-1001 System Only:**

Takeoff with "LOW INLET PRESSURE" annunciation illuminated is **PROHIBITED**.

1120IN1-1003 System Only:

Takeoff with any amber annunciations on the Filter Health Monitor illuminated is **PROHIBITED**.

SECTION 3 - EMERGENCY PROCEDURES**3.1 - 1120IN1-1001 SYSTEM ONLY****3.1.1 - LOW INLET PRESSURE****SYMPTOM:**

- “LOW INLET PRESSURE” annunciation **ILLUMINATED**, and/or
- Unexplained increase in engine T4.

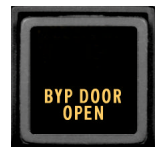
**PROBABLE FAULT:**

Filter blockage has reached the maximum allowable level.

ACTION:

Annunciator / Push Button Switch – **PUSH**
 (“BYP DOOR OPEN” annunciation will illuminate)

- a. If “LOW INLET PRESSURE” annunciation extinguishes, continue the mission and service filter prior to the next flight.
- b. If “LOW INLET PRESSURE” annunciation remains **ILLUMINATED**, monitor engine instruments to ensure full power can be attained within engine limits (red lines).
 - i. If power can be achieved and maintained within engine limits, continue the mission. Service the filter before the next flight, and conduct an engine health check during the next flight.
 - ii. If power cannot be achieved and maintained within engine limits, land as soon as possible. Service the filter before the next flight, and conduct an engine health check during the next flight.

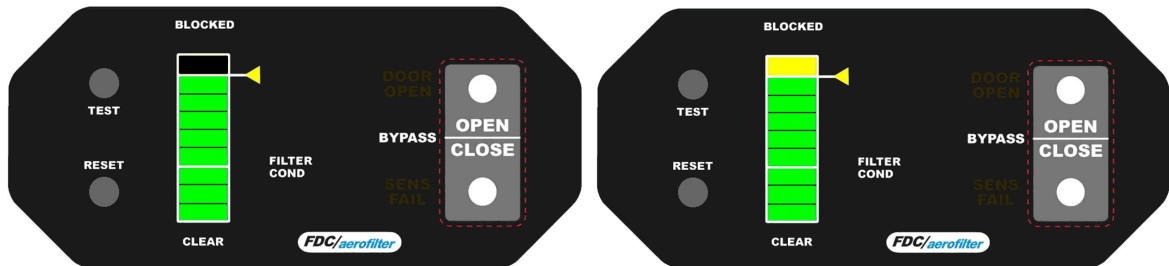


3.2 - 1120IN1-1003 SYSTEM ONLY

3.2.1 - LOW INLET PRESSURE

SYMPTOM:

- Amber bar segment and/or amber triangle advisory flag on Filter Health Monitor are **ILLUMINATED**, and/or
- Unexplained increase in engine T4.

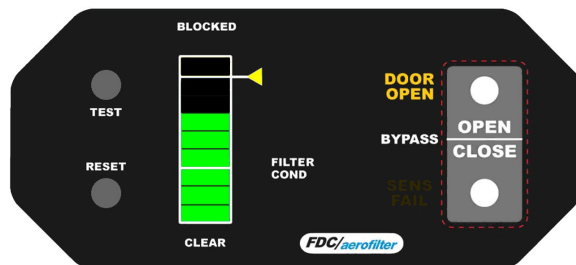


PROBABLE FAULT:

Filter blockage has reached the maximum allowable level.

ACTION:

Filter Health Monitor “OPEN” Button – **PUSH**
 (“DOOR OPEN” annunciation will illuminate)



NOTE

Once illuminated, the amber triangle advisory flag will not extinguish until the filter health monitor is reset.

- If amber bar segment extinguishes, and the number of illuminated green bar segments decreases, continue mission and service the filter before the next flight.

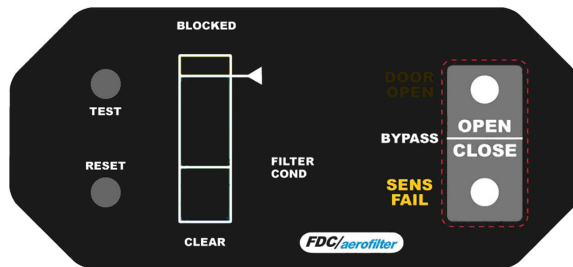
EUROCOPTER EC120B**1120-1200**

- b. If amber bar segment remains illuminated and/or the number of illuminated green bar segments does not decrease, monitor engine instruments to ensure full power can be attained within engine limits (red lines).
- i. If power can be achieved and maintained within engine limits, continue the mission. Service the filter before the next flight, and conduct an engine health check during the next flight.
- ii. If power cannot be achieved and maintained within engine limits, land as soon as possible. Service the filter before the next flight, and conduct an engine health check during the next flight.

3.2.2 - SENSOR FAILURE

SYMPTOM:

- Amber “SENS FAIL” annunciation on Filter Health Monitor is illuminated, regardless of illumination of bar-graph segments.



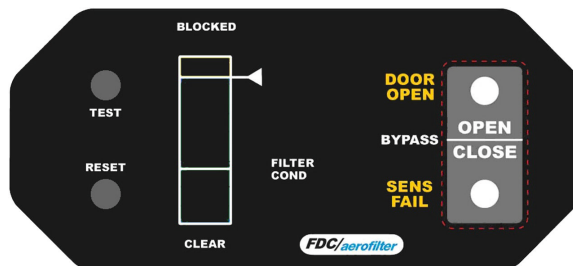
PROBABLE FAULT:

Differential pressure transducer is disconnected or has failed.

ACTION:

Monitor engine instruments to ensure full power can be attained within engine limits (red lines).

- If power can be achieved within the red lines, no action is required.
- If power cannot be maintained within the red lines, **PUSH** “OPEN” button on Filter Health Monitor (“DOOR OPEN” will illuminate).



- If power can be achieved and maintained within engine limits, continue the mission.
- If power cannot be achieved and maintained within engine limits, land as soon as possible.

NOTE

Service filter system before next flight. Only maintenance action can reset the “SENS FAIL” annunciation.

SECTION 4 - NORMAL PROCEDURES**4.1 - EXTERIOR CHECK**

Perform the following checks prior to the first flight of the day or each flight if snow or freezing rain has fallen:

Filter Element	– Check for damage and security. Verify filter material is in good condition.
Filter Element Surface	– Must be free of accumulated debris, snow, ice, slush, etc
Area Surrounding Filter System	– Must be free of accumulated debris, snow, ice, slush, etc
Alternate Air Door System	– Check for damage and security. Verify door is closed.
Differential Pressure Transducer Filter (1120IN1-1003 System only)	– Check for damage and security. Must be free of accumulated debris, snow, ice, slush, etc.

4.2 - ENGINE PRESTART CHECK

Perform the following checks prior to each flight:

4.2.1 - 1120IN1-1001 SYSTEM ONLY

“ENG ALT AIR” Circuit Breaker	– SET
“ENG ALT AIR” Push Button Switch	– Verify “BYP DOOR OPEN” annunciation is not illuminated

4.2.2 - 1120IN1-1003 SYSTEM ONLY**NOTE**

If Filter Health Monitor amber triangle advisory flag is illuminated, ensure filter element was cleaned or replaced.

NOTE

If any Filter Health Monitor amber bar segment and/or amber triangle advisory flag illuminated during the last flight, ensure filter element was cleaned or replaced.

“ENG ALT AIR” Circuit Breaker – **SET**

Filter Health Monitor “TEST” Button – **PUSH and HOLD**

Verify all monitor annunciators illuminate – Release “TEST” button

Filter Health Monitor “RESET” Button – **PUSH and HOLD (5 seconds)**

Verify all monitor annunciators extinguish – Release “RESET” button

NOTE

If the pressure sensor becomes disconnected (possibly through an engine area maintenance action, shorted cable, or other means), the Filter Health Monitor amber “SENS FAIL” advisory indication will illuminate and cannot be reset by pilot action.

4.3 - ENGINE RUNUP**4.3.1 - 1120IN1-1001 SYSTEM ONLY**

During engine run up, ensure “LOW INLET PRESSURE” annunciation does not illuminate.

4.3.2 - 1120IN1-1003 SYSTEM ONLY

During engine run up, ensure that no amber annunciations on the Filter Health Monitor illuminate.

SECTION 5 - PERFORMANCE

Engine performance is slightly reduced when the FDC/aerofilter Inlet Barrier Filter is installed and may decrease further as the filter becomes contaminated. It is the responsibility of the pilot/operator to conduct engine health checks to determine if the engine, as equipped with the IBF, meets published engine health check criteria and performance. Conduct engine health checks in accordance with appropriate Rotorcraft Flight Manual (RFM) and/or Rotorcraft Flight Manual Supplement (RFMS). Additional engine health checks are at the discretion of the pilot/operator and based on the operating environments.

Except as noted below, engine health check procedures and criteria are unchanged from the basic RFM.

Performance published in the basic RFM is assured if engine health checks result in torque and T4 margins that are "GOOD" or "CORRECT."

If results meet basic RFM engine health check criteria:

- Operate aircraft in accordance with basic RFM performance data.

If results do not meet basic RFM engine health check criteria:

- Refer to appropriate maintenance manual to determine cause of power loss and perform new engine health check. If results still do not meet basic RFM health check criteria:
 - It is recommended that the filter element be serviced and a new engine health check be performed.

and/or

- If the IBF system is determined to be the single reason for power to fall below the limits specified in the basic RFM, it is permissible to continue operating using the performance limitations listed below provided that subsequent engine health check results meet the criteria contained in the basic RFM using the correction factors listed below:

NOTE

Apply all applicable torque and T4 margin correction factors from the basic RFM, RFMS, or conditional revision pages prior to applying the IBF correction factors listed below.

- VEMD Engine Health Check Procedure:

Apply the following corrections to the VEMD calculated torque and T4 margins displayed on the VEMD:

- Torque margin correction....+1.3%

Example 1:

VEMD Displayed "TRQ MARGIN"	-1.0%	
<u>Correction Factor</u>	<u>+1.3%</u>	
Corrected Torque Margin	+0.3%	"GOOD"

Example 2:

VEMD Displayed "TRQ MARGIN"	-2.0%	
<u>Correction Factor</u>	<u>+1.3%</u>	
Corrected Torque Margin	-0.7%	"BAD"

- T4 margin correction.....+10°C

Example 1:

VEMD Displayed "T4 MARGIN"	-15°C	
<u>Correction Factor</u>	<u>+10°C</u>	
Corrected T4 Margin	-5°C	"GOOD"

Example 2:

VEMD Displayed "T4 MARGIN"	-9°C	
<u>Correction Factor</u>	<u>+10°C</u>	
Corrected T4 Margin	+1°C	"BAD"

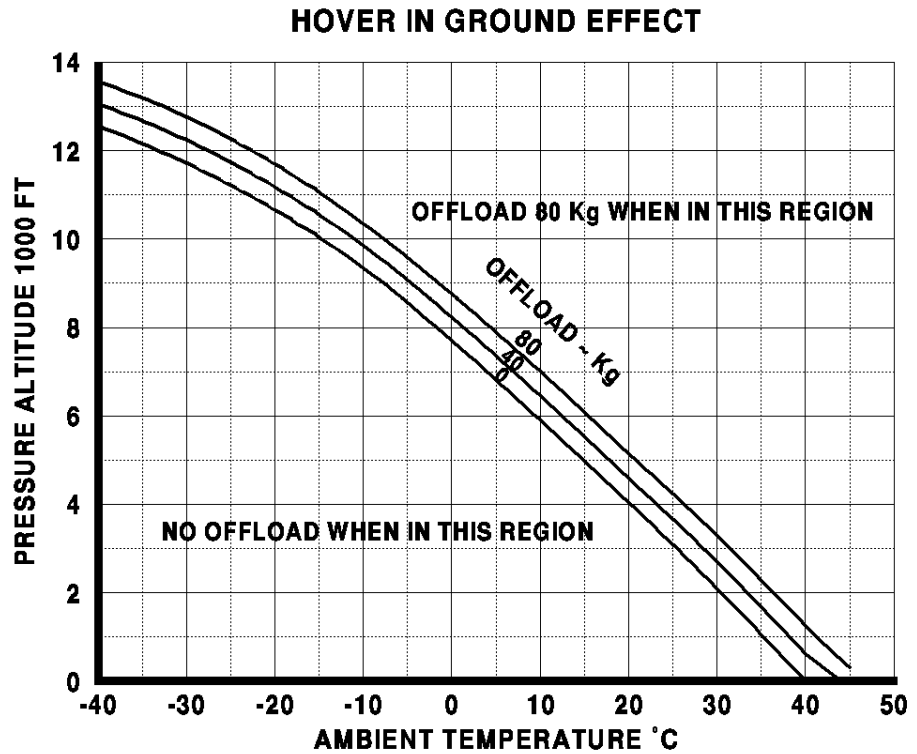
- Manual Engine Health Check Procedure:

Use the graphs and procedures published in the basic RFM and apply the following corrections:

- Torque: Add 6 kW to the final value arrived at (point "P" on the chart).
- Increase indicated T4 by 10°C prior to entering the chart.

- IGE Hover Ceiling Charts

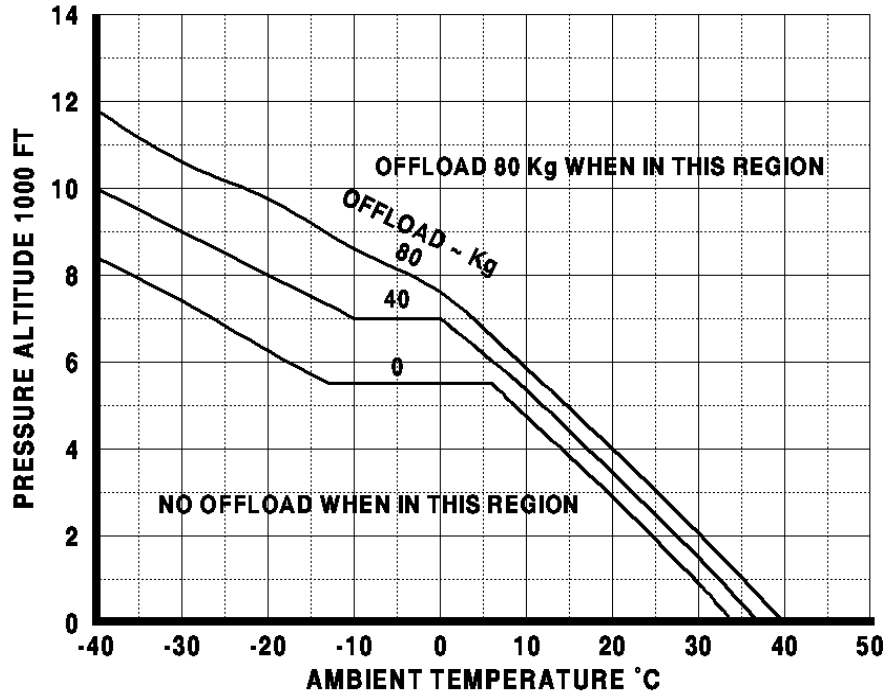
Check chart below for possible reduction in hover ceiling gross weight when using engine health check correction factors listed above. Interpolation between lines for gross weight offload is allowed.



- OGE Hover Ceiling Charts

Check chart below for possible reduction in hover ceiling gross weight when using engine health check correction factors listed above. Interpolation between lines for gross weight offload is allowed.

HOVER OUT OF GROUND EFFECT



- Rate of Climb

When using engine health check correction factors listed above, determine Rate of Climb using chart in basic RFM or RFMS, as appropriate, and reduce by 150 ft/min.