

**FAA APPROVED
ROTORCRAFT FLIGHT MANUAL SUPPLEMENT
for the
EUROCOPTER ASTAR AS350
EQUIPPED WITH TURBOMECA ARRIEL ENGINES**

REG. NO. _____
SERIAL NO. _____

This supplement must be attached to the FAA Approved Rotorcraft Flight Manual (RFM) appropriate to the specific model, when the INTEC Engine Filter System is installed in accordance with STC SR00811SE.

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

FAA APPROVED:


FOR Manager
Seattle Aircraft Certification Office

DATE: 15 MAY 2008

LOG OF PAGES

Pages	Rev.	Revision	FAA Approval
ALL	A	ADDED ASTAR AS350 B3 TO LIST OF APPLICABLE HELICOPTERS IN SECTION 1. RENUMBERS SECTIONS TO MATCH BASIC FLIGHT MANUALS.	Dec 12, 2000
ALL	B	ADDED ASTAR AS350D, D1 AND BA MODELS, POWERED BY LYCOMING LTS-101 ENGINES, TO LIST OF APPLICABLE HELICOPTERS IN SECTION 1. REVISED PERFORMANCE SECTION TO COVER ALL MODELS.	Feb 15, 2002
1 thru 8	C	<ul style="list-style-type: none"> • ADDED ENGINE ALTERNATE AIR ELECTRICAL FUSE TO SYSTEM DESCRIPTION. • INCLUDED ENGINE TREND MONITORING INFORMATION FOR VEMD EQUIPPED B3 HELICOPTERS. • REVISED PERFORMANCE SECTION TO CLARIFY PERFORMANCE EFFECTS DUE TO FILTER SYSTEM. 	Oct. 21, 2002
ALL	D	INCORPORATED "OFF LOAD" BOUNDARY CHARTS FOR IGE AND OGE PERFORMANCE.	June 10, 2003
ALL	E	REVISED ENGINE POWER CHECK PROCEDURES FOR MODELS AS350B3 TO USE FLIGHT MANUAL PERFORMANCE CHARTS ONLY.	Mar. 15, 2004
ALL	F	REMOVED LIMITATIONS FOR OPERATIONS IN FALLING AND BLOWING SNOW.	Mar. 17, 2005
ALL	G	ADDED SOLOY MODIFIED ASTAR AS350SD2, POWERED BY LYCOMING LTS-101-700D-2 ENGINES, TO LIST OF APPLICABLE HELICOPTERS IN SECTION 1. ADDED FIGURE FOR COCKPIT CONTROL PANEL.	June 30, 2006
ALL	H	<ul style="list-style-type: none"> • UPDATED FORMAT. • REMOVED TEXT FOR AS350 MODELS EQUIPPED WITH LYCOMING LTS-101 ENGINES (REFER TO RFMS DOC NO. 1350-2200 FOR THOSE MODELS). 	MAY 15 2008

SECTION 1 - GENERAL INFORMATION

This supplement provides the changes in the normal operating procedures unique to the Eurocopter Astar AS350 rotorcraft with the INTEC Engine Filter System installed. Eligible AStar models for the installation of the Filter System:

<u>Model</u>	<u>Engine</u>	<u>Installation</u>
B, B1, B2, BA, B3	Turbomeca Arriel	Factory

The Engine Filter System consists of a filter element, housing assembly, alternate air doors, an Engine Alternate Air switch, a Low Inlet Pressure annunciator light, an Engine Alternate Air circuit breaker, Engine Alternate Air Power fuse and hardware required to complete the installation. Cockpit control and indication elements are shown in Figure 1.

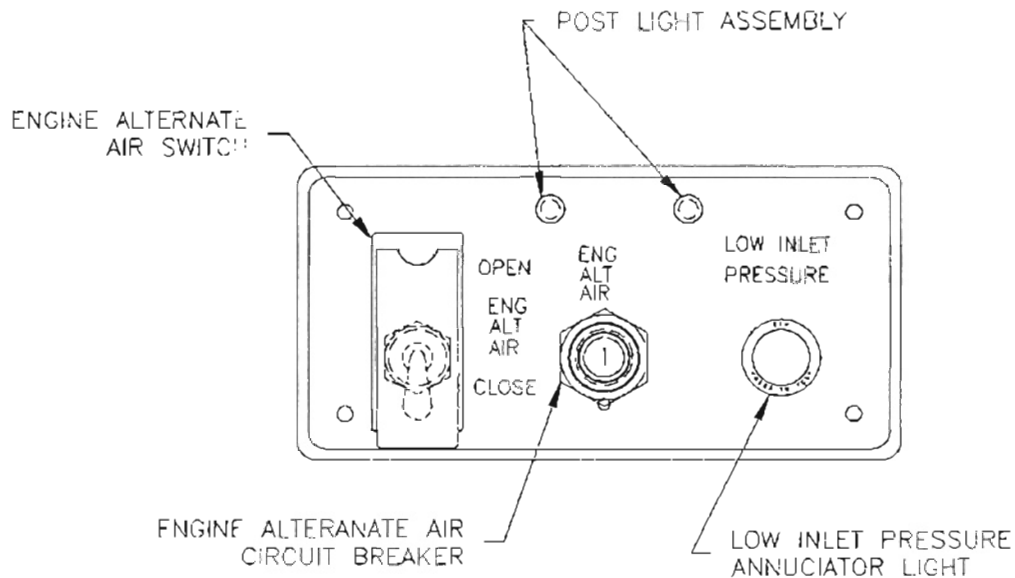


Figure 1. Cockpit Control and Indication Elements

SECTION 1 – GENERAL INFORMATION (continued)

- Reference the applicable Eurocopter AStar Rotorcraft Flight Manual Supplement as listed below and refer to Section 5 of this Supplement for applicable performance affects due to the filter system installation:

Model	RFMS	Title
AS350B	SUP 9	Sand Filter
AS350B1	SUP 10.4	Sand Filters
AS350B2	SUP 14	Sand Filter
AS350BA	SUP 14	Sand Filter
AS350B3	SUP 14	Sand Filter

For AStar AS350B3 helicopters equipped with VEMD systems, the proper pin connections must be grounded to simulate the sand filter installation. However, performance limits indicated by the VEMD for the sand filter operating are not valid for the FDC/aerofilter barrier filter system installed. Use the graphs published in the "Sand Filter" Supplement of the basic AS350B3 Rotorcraft Flight Manual to determine the torque and temperature margins.

MAY 15 2008

SECTION 2 - LIMITATIONS

GENERAL

The Life Limit on the filter elements is 1500 hr. of engine operating time or when the fabric is significantly penetrated.

FLIGHT IN FALLING SNOW

- Operation of the alternate air doors in falling snow is prohibited.

The limitations laid out in the basic flight manual remain applicable with exception of the following specific limitation:

- The flight envelope restrictions in case of falling snow are cancelled.

TAKEOFF

Takeoff with LOW INLET PRESSURE annunciator light illuminated... **PROHIBITED**

SECTION 3 - EMERGENCY PROCEDURES**CAUTION LIGHT (AMBER)**

LOW INLET PRESSURE annunciator **ON** and/or unexplained increase in Engine TOT.

PROBABLE FAULTS: FILTER DIRTY/BLOCKED, ENGINE BLEED VALVE FAILURE, LOW EFFICIENCY ENGINE POWER TURBINE

ACTION: ENGINE ALTERNATE AIR SWITCH - **OPEN**

- a. If Low Inlet Pressure light goes out, continue mission and service filter prior to next flight. Likely fault is a partially blocked filter.
- b. If Low Inlet Pressure light remains **ON**, monitor engine instruments to assure full power can be attained within engine limits (red lines). If power can be achieved within the red lines, continue the mission. Service the filter and conduct a power assurance check on the next flight. Likely cause of the caution is a leaking bleed valve or low efficiency power turbine. Repair as required.
- c. If Low Inlet Pressure light remains **ON**, monitor engine instruments and if power cannot be maintained within the red lines, land as soon as practicable. Service the filter and conduct a power assurance check on the next flight. Likely cause of the caution is a low efficiency power turbine. Repair as required.

OPERATION IN FALLING OR BLOWING SNOW

LOW INLET PRESSURE annunciator **ON** and/or unexplained increase in Engine TOT.

NOTE

Operation of the alternate air doors in falling and blowing snow is prohibited.

ACTION: Reduce engine power

- a. If Low Inlet Pressure light goes out, land as soon as practicable.
- b. If Low Inlet Pressure light remains **ON**, monitor engine instruments and land as soon as possible.

CAUTION

Inspect and/or service the filter prior to next flight. Possible cause of low inlet pressure indication is accumulation of snow and/or ice on the filter. Remove any accumulation of ice, snow, slush, etc. before next flight. Verify rotor blades are free of ice accumulation.

SECTION 4 - NORMAL PROCEDURES**EXTERIOR CHECK**

Thoroughly check the filter surface and alternate air door system for damage and security. These surfaces, surrounding areas and alternate air screens, duct and doors must be free of accumulated debris, snow, ice, slush, etc., before each flight. Verify filter material is in good condition. Verify filter alternate air doors are closed and sealed. Open engine cowling and check that the air intake is free of snow, ice or water, particularly under filter.

NOTE

For operations in cold weather and snow, refer to Supplement 4 "Instructions for Operation in Cold Weather".

INTERIOR & ENGINE PRESTART CHECK

Engine Alternate Air switch in the **CLOSE** position.
Verify Engine Alternate Air circuit breaker **SET** and
Engine Alternate Air Power fuse **FITTED**.

ENGINE RUNUP

During engine run up, assure "**LOW INLET PRESSURE**" light does not illuminate.

OPERATION IN FALLING OR BLOWING SNOW

Operations in falling and blowing snow have been demonstrated in one-quarter mile or greater visibility conditions when the helicopter engine induction system is equipped with the FDC/aerofilter Engine Inlet Filter. Minimize exposure time in ground and IGE hover operations. Snow accumulations on airframe and filter are more probable in these conditions. Exercise caution when operating in snow. Maintain visual contact with ground and any obstacles at all times.

NOTE

Operation of the alternate air doors in falling and blowing snow is prohibited.

SECTION 4 - NORMAL PROCEDURES (continued)**ENGINE POWER CHECK PROCEDURES**

For Engine power check procedures, refer to the appropriate flight manual or flight manual supplement.

- Use the graphs published in the "Sand Filter" Supplement of the basic Rotorcraft Flight Manual to determine the torque and temperature margins. Enter sand filter Power Assurance Check or Torque Margin Check chart with OAT reduced by 4°C when using the charts to determine engine condition. No correction is required for the T4 Margin Check Chart for the AS350B3.
- For AS350B3 aircraft equipped with VEMD systems, performance limits indicated by the VEMD for the sand filter operating are not valid for the FDC/aerofilter barrier filter system installed.

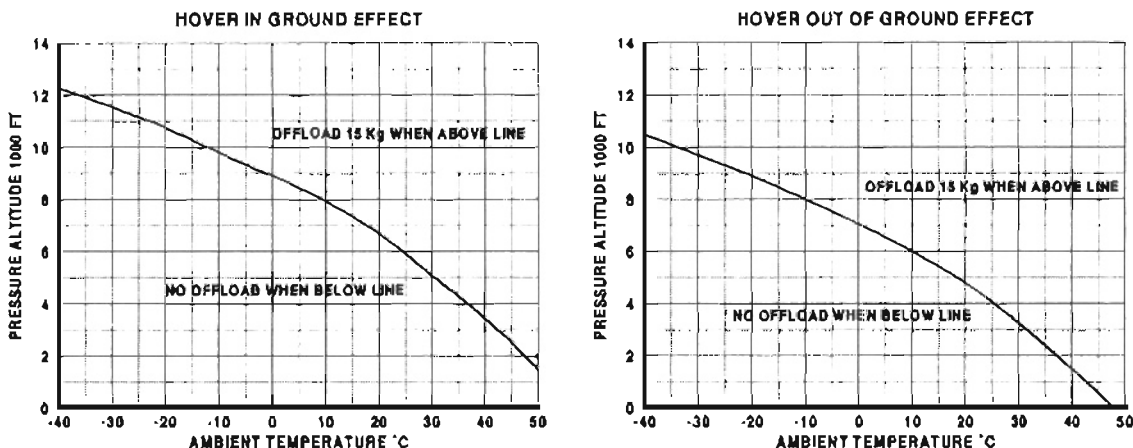
NOTE

Torque and temperature margins will decrease as the filter element collects dirt even if engine condition remains constant. If power assurance check is "INCORRECT" with a clean filter element, refer to appropriate rotorcraft or engine maintenance manual to determine the cause of low power condition.

SECTION 5 - PERFORMANCE

Helicopter performance is slightly reduced with the FDC/aerofilter Engine Filter System installed. This reduction in performance increases as the filter becomes contaminated.

- Refer to the applicable Sand Filter Flight Manual Supplement (Sand Filter Not Operating) for Hover Ceiling. Reduce gross weight as indicated by the charts below:



Rate of Climb:

Increase gross weight by 15 kg prior to entering Rate of Climb performance chart.

ENGINE POWER CHECK

Perform periodic power assurance check as specified in appropriate basic flight manual or flight manual supplement. Reduce OAT by 4°C prior to entering applicable Power Check chart.

NOTE

Clean filter element prior to performing power assurance check.

- If power assurance check is "CORRECT", then engine power equals or exceeds minimum performance specification and performance data contained in the applicable Sand Filter Flight Manual Supplement or basic Flight Manual can be achieved.
- If power assurance check is "INCORRECT", then engine power is less than minimum specification and performance data contained in the applicable Sand Filter Flight Manual Supplement or basic Flight Manual cannot be achieved. If engine power cannot be achieved with a clean filter, refer to appropriate rotorcraft maintenance manual to determine cause of low power.