FAA APPROVED
ROTORCRAFT FLIGHT MANUAL SUPPLEMENT
for the
EUROCOPTER ASTAR AS350
EQUIPPED WITH LYCOMING LTS-101 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 FDC/aerofilter Engine Filter System is installed in accordance with STC SR01049SE.

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.

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FOR Manager
Seattle Aircraft Certification Office

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LOG OF PAGES

Pages	Rev.	Revision	FAA Approval
ALL	A	• TRANSFERRED ALL TEXT FOR AS350 MODELS EQUIPPED WITH LYCOMING LTS 101 ENGINES TO THIS DOCUMENT FROM RFMS DOC. NO. 1350-1200, REVISION G • ADDED HELI-LYNX MODIFIED ASTAR AS350BA AND AS350B2, POWERED BY LYCOMING LTS-101-600A-3A ENGINES (350FX1 MODEL) OR LTS-101-700D-2 ENGINES (350FX2 MODEL) TO LIST OF APPLICABLE HELICOPTERS IN SECTION 1.	

SECTION 1 - GENERAL INFORMATION

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

Model	Lycoming Engine	Installation
AS350D	LTS-101-600A-2	Factory
AS350D1	LTS-101-600A-2	Factory
AS350D	LTS-101-600A-3	STC SH5815SW (Soloy AS350 Super D)
AS350D	LTS-101-600A-3A	STC SR00772SE (Soloy AS350 Super D)
AS350BA	LTS-101-600A-3A	STC SR00772SE (Soloy AS350 Super D)
AS350BA	LTS-101-600A-3A	STC SR00805SE (Soloy AS350 SD1)
AS350BA	LTS-101-600A-3A	STC SR02295NY (Heli-Lynx 350FX1)
AS350B2	LTS-101-600A-3A	STC SR02295NY (Heli-Lynx 350FX1)
AS350B2	LTS-101-700D-2	STC SR01647SE (Soloy AS350 SD2)
AS350BA	LTS-101-700D-2	STC SR02295NY (Heli-Lynx 350FX2)
AS350B2	LTS-101-700D-2	STC SR02295NY (Heli-Lynx 350FX2)

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 (for standard FDC/aerofilter Panel Assembly, p/n 1350A11-1) and Figure 2 (for Heli-Lynx 350FX1/FX2 installations).

Refer to Section 5 of this Supplement for applicable performance affects due to the filter system installation.

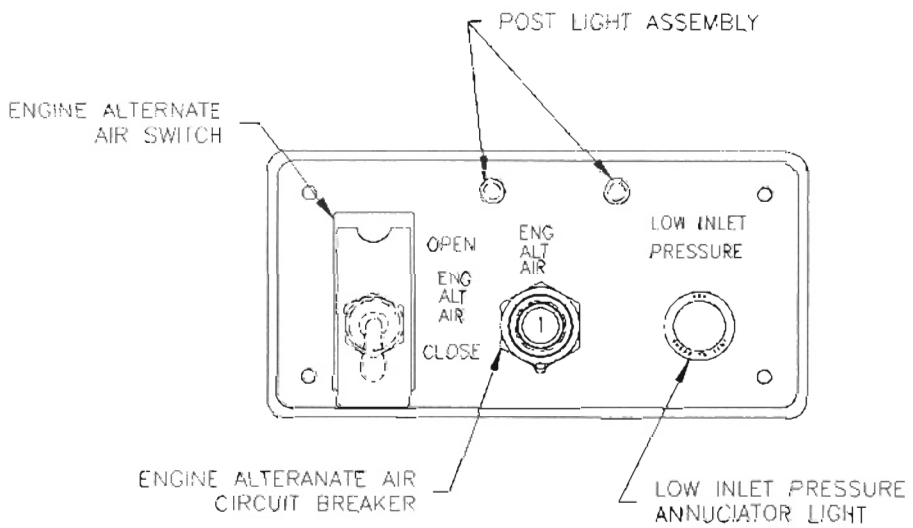

Figure 1. Cockpit Control and Indication Elements for Standard FDC/aerofilter Panel Assy

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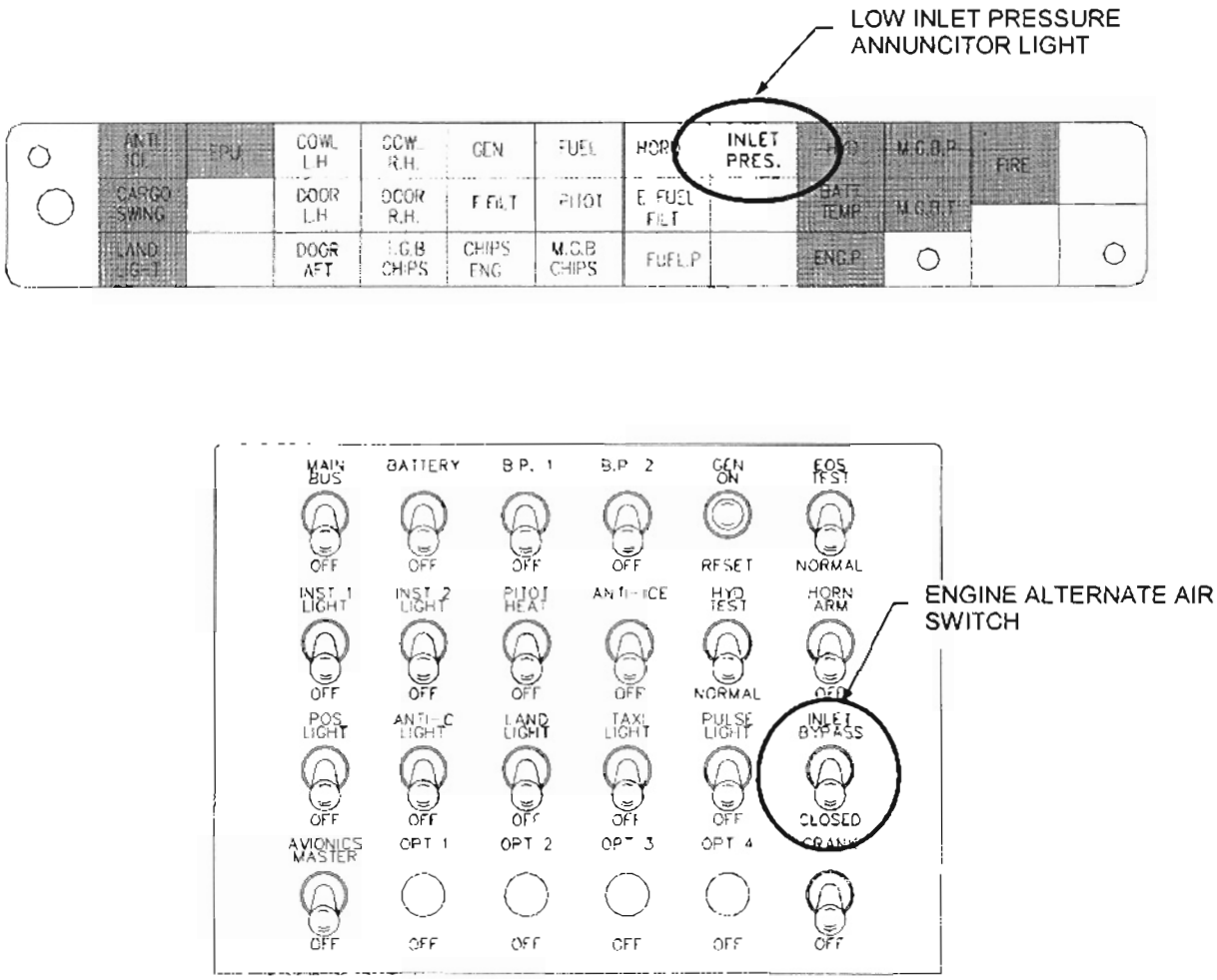

Figure 2. Cockpit Control and Indication Elements for Heli-Lynx 350FX1/FX2 Installations

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 (INLET PRES annunciator light for Heli-Lynx installations) illuminated

... **PROHIBITED**

SECTION 3 - EMERGENCY PROCEDURES

CAUTION LIGHT (AMBER)

LOW INLET PRESSURE annunciator (INLET PRES annunciator for Heli-Lynx installations) **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
(INLET BYPASS Switch for Heli-Lynx installations) - **OPEN**

a. If LOW INLET PRESSURE light (INLET PRES light for Heli-Lynx installations) goes out, continue mission and service filter prior to next flight. Likely fault is a partially blocked filter.

b. If LOW INLET PRESSURE light (INLET PRES light for Heli-Lynx installations) 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 (INLET PRES light for Heli-Lynx installations) 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.

SECTION 3 - EMERGENCY PROCEDURES (continued)

OPERATION IN FALLING OR BLOWING SNOW

LOW INLET PRESSURE annunciator (INLET PRES annunciator for Heli-Lynx installations) **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 (INLET PRES light for Heli-Lynx installations) goes out, land as soon as practicable.

b. If LOW INLET PRESSURE light (INLET PRES light for Heli-Lynx installations) 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.

For Heli-Lynx installations only, verify INLET BYPASS circuit breaker is engaged (located in aft baggage compartment CB panel).

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
(INLET BYPASS Switch in the **CLOSED** position for Heli-Lynx installations)

Verify ENGINE ALTERNATE AIR circuit breaker **SET**

ENGINE ALTERNATE AIR power fuse **FITTED**

ENGINE RUNUP

During engine run up, assure **"LOW INLET PRESSURE"** light (**"INLET PRES"** light for Heli-Lynx installations) 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 basic Rotorcraft Flight Manual or appropriate supplement to determine the torque and temperature margins. Enter Power Assurance Check or Torque Margin Check chart with OAT reduced by 4 °C when using the charts to determine engine condition.

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 performance data presented in the basic flight manual or flight manual supplement and allow for the performance effects indicated below:

  Hover Ceiling performance charts:

  For Outside Air Temperature (°C),

Lower Than 5°C	—	Reduce chart Gross Weight by 3.5%
Between 5°C and 35°C	—	Reduce chart Gross Weight by 5.5%
Higher than 35°C	—	Reduce chart Gross Weight by 7.0%

  NOTE
  If reduced weight is above maximum gross weight, no offload is required

  Rate of Climb performance charts:

  Increase Actual Gross Weight prior to entering chart.
  For Outside Air Temperature (°C),

Lower Than 5°C	—	Increase Actual Gross Weight by 3.5%
Between 5°C and 35°C	—	Increase Actual Gross Weight by 5.5%
Higher than 35°C	—	Increase Actual Gross Weight by 7.0%

  NOTE
  Operating with the Engine Filter System can cause T4 temperature to increase by approximately 20°C or can increase Ng by approximately 1.3% compared to an inlet with no protection.

SECTION 5 – PERFORMANCE (continued)

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.

a. 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.

b. 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.