FAA APPROVED

ROTORCRAFT FLIGHT MANUAL SUPPLEMENT

TO THE EUROCOPTER MODEL

AS355E, AS355F, AS355F1, AS355F2, AS355N & AS355NP

EUROCOPTER APPROVED Rotorcraft Flight Manual when equipped with

Integrated Flight Systems, Inc. Air Conditioning System

REGISTRATION #__________ SERIAL #__________

This supplement must be attached to the Eurocopter Approved Rotorcraft Flight Manual when the rotorcraft is modified by the installation of Integrated Flight Systems, Inc. Air Conditioning System in accordance with

STC No. SH5947SW

The information contained herein supplements or supersedes the basic manual only in those areas listed herein. For limitations, procedures, and performance information not contained in this supplement, consult the basic Rotorcraft Flight Manual.

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Manager, Flight Test Branch, ANM-160L
Federal Aviation Administration
Los Angeles Aircraft Certification Office
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</table>
# TABLE OF CONTENTS

SECTION I  GENERAL ................................................................. 2
SECTION II  LIMITATIONS ......................................................... 2

Compatibility ................................................................. 2

SECTION III  EMERGENCY PROCEDURES .................................... 2

Engine Failure ....................................................................... 2
DC Generator Failure ......................................................... 2
Excessive Temperature, Fire, Smoke ....................................... 3

SECTION IV  NORMAL PROCEDURES ........................................ 3

Preflight Checks .................................................................... 3
Ground Operation – One Engine – One Generator .................... 3
Ground and Flight Operations ............................................... 4

SECTION V  PERFORMANCE DATA ........................................... 4

SECTION VII  MANUFACTURER’S DATA ................................... 4

System and Description ....................................................... 4
Dual 5” Vane Axial Condenser Blowers: ................................. 5
Electrical Loading (Dual 5” Blowers) ..................................... 5
Weight & Balance Data ......................................................... 6
Configurations / Options ....................................................... 6

# TABLE OF FIGURES

Figure 1. Cockpit Layout (Typical) ......................................... 6
SECTION I GENERAL

The installation consists of a belt drive vapor-cycle air conditioning system.

SECTION II LIMITATIONS

Compatibility

- Operation of the air conditioning system is prohibited on one generator if the total electrical load will exceed 150 amps (100amps if AMS 07.1123 has not been incorporated).

- "MAG" compass deviation may be excessive with air conditioner fan – "ON".

SECTION III EMERGENCY PROCEDURES

Engine Failure

- Air Conditioner "OFF".

DC Generator Failure

Note

Load shedding of the air conditioning system does not occur if a generator failure occurs. Automatic load shedding is not provided.

- Air conditioning – "OFF"
- Ammeter to operating system – Monitor.
- Ammeter 129 amps or less (AMS 07.1123 incorporated) or
- Ammeter 69 amps or less w/o AMS 07.1123.
- Reduce electrical load – As required.
Air conditioning – "ON", as desired.
Ammeter – Monitor – 150 amps maximum continuous w/ AMS 07.1123.

Excessive Temperature, Fire, Smoke

Air conditioning – "OFF"

SECTION IV NORMAL PROCEDURES

The Normal Procedures specified in the basic Flight Manual apply with the addition of the following:

Preflight Checks

Exterior Checks

- Air Conditioner belts and compressor – general condition and security.
- Hoses and tubing - condition and security.

Interior Checks

- Prior to engine start – Air Conditioner – "OFF"

Ground Operation – One Engine – One Generator

- Ammeter of operating generator - Monitor
- If 129 amps or less (AMS 07.1123 incorporated) or 69 amps w/o AMS 07.1123
- To turn air conditioner "ON" – Move switch to “A/C”
- To turn air conditioner “OFF” – Move switch to “OFF”
- For air circulation without cooling – Move switch to “FAN”
- Select desired blower speed for cockpit
- Select desired blower speed for cabin

FAA Approved Date: December 31 2008
Ground and Flight Operations

- Ventilation Control – as desired (Close for cockpit cooling)
- Air Conditioning Control Switch – as desired
- Air Conditioning Fan Speed Control Switch – as desired (Cockpit and Cabin)

Note
Turn Air Conditioning – “OFF” to obtain correct
Magnetic Compass heading.

SECTION V PERFORMANCE DATA

- The air conditioning system must be turned “OFF” to obtain FAA approved
  Rotorcraft Flight Manual performance above 7000 feet density altitude.

SECTION VII MANUFACTURER’S DATA

System and Description

The air conditioning installation consists of a belt driven vapor cycle air-conditioning system using R-134A as the refrigerant.

The air conditioning system provides for cabin comfort during all operations both
on the ground and in flight. During ground operations when either engine is
running, cooling may be provided. Controls for the air conditioning system are
located on or near the instrument panel. Three switches are provided. The
Master Control Selector consists of a rocker type switch, labeled “A/C”, “OFF”,
and “FAN”. Selecting the “A/C” position turns on the system’s dual evaporator
fans, and condenser blower, and belt driven compressor. The second rocker
switch is “HIGH”, “MED”, “LOW” evaporator fan speed selection for the forward
cockpit. The aft evaporator has a separate fan speed 2 position switch HI/LOW
located in aft cabin.
Weight & Balance Data

Weight and Balance must update to show air conditioning system installation once installation has been performed. The system weight is 82.2 pounds with an arm of 132.88.

See Instructions supplied with kit for actual weights and moment information.

Configurations / Options

This system may be utilized in multiple applications. See the following possible configurations and application for each specific installation possibility.

Figure 1. Cockpit Layout (Typical)
A high-pressure safety switch, located under the cabin floor, disengages the compressor clutch and stops operation of the system in the event of excessive refrigerant pressures. This can occur due to failure of the condenser blower or restricted air intake. The switch will automatically reset itself, but a 1 amp circuit breaker will open and keep compressor off until reset. A low-pressure safety switch is also located under cabin floor. It opens and stops operation of the compressor clutch in the event refrigerant loss occurs. This switch will automatically reset. Maintenance personnel MUST correct the fault once the aircraft is on the ground. Air circulation is still available, even if a fault occurs. The evaporator fan system may be used anytime air circulation is desired. This is accomplished by placing the selector switch in the “FAN” position. Temperature control is not provided.

**Dual 5” Vane Axial Condenser Blowers:**

System electrical protection is provided by 1 each 15 amp, 3 each 20 amp, and 1 each 1 amp circuit breakers. Labeled EVAP (Fwd), EVAP (Aft), COND, and COND on the Air Condition Electrical Control Panel. This panel is located in the right side baggage compartment above the battery.

**Electrical Loading (Dual 5” Blowers)**

The maximum electrical loads of the air conditioning system components:

- Condenser blower: 2 each @ 11amps = 22 amps
- Compressor clutch coil: 1 each @ 3amps = 3 amps
- Evaporator fan (fwd): 1 each @ 9amps = 9 amps
- Evaporator fan (aft): 1 each @ 11amps = 11 amps

**System Total** = 45 amps

**Note**

During conditions of high DC current use, such as battery recharging after engine start or use of landing lights, it is possible that the electrical load requirements with the air conditioning operating may exceed the rated output of the DC generator system.