

**FAA APPROVED  
ROTORCRAFT FLIGHT MANUAL  
SUPPLEMENT  
TO THE  
AIRBUS HELICOPTERS SA-365N, SA-365N1,  
AS-365N2 AND AS 365 N3  
ROTORCRAFT FLIGHT MANUAL  
WHEN EQUIPPED WITH THE  
INTEGRATED FLIGHT SYSTEMS, INC.  
AIR CONDITIONING SYSTEM**

REGISTRATION #: \_\_\_\_\_ SERIAL #: \_\_\_\_\_

The information in this supplement is FAA approved and must be attached to the appropriate DGAC or EASA approved Airbus Model SA-365N, SA-365N1, AS-365N2, and AS 365 N3 Rotorcraft Flight Manual when the Integrated Flight Systems, Inc. Air Conditioning System is installed in accordance with:

**STC No. SH 5832 SW**

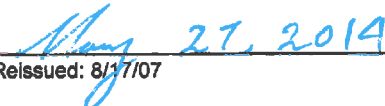
The information contained in this document supplements or supersedes the basic manual only in those areas listed herein. For limitations, emergency procedures, normal procedures, and performance information not contained in this supplement, consult the basic FAA Approved Rotorcraft Flight Manual.

FAA Approved \_\_\_\_\_




Manager, Flight Test Branch, ANM-160L  
Federal Aviation Administration  
Los Angeles Aircraft Certification Office  
Transport Airplane Directorate

FAA Approved Date \_\_\_\_\_



Originally Signed: 11/28/84, Reissued: 8/17/07

**RECORD OF REVISIONS**

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Org	Title Log Cont 1-7	11/28/1984	Initial Release	<p><u>James Erickson</u>, for            Manager, Aircraft Cert. Div.            Federal Aviation Administration            Southwest Region            Fort Worth, Texas 76101</p> <p>Date: <u>Nov. 28, 1984</u></p>
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## SECTION I GENERAL

The installation consists of a belt driven vapor-cycle air conditioning system driven at the transmission. For further description, refer to Section 7, Systems and Description.

## SECTION II LIMITATIONS

- The air conditioning system must be "OFF" during engine start
- Operation of the air conditioning system is prohibited on one generator if the total electrical load will exceed 160 amps (100% indicated)
  - "MAG compass deviation may be excessive with air conditioning fan – ON".
  - The "override" switch must be "OFF" when both DC generators are operating.

## SECTION III EMERGENCY PROCEDURES

### Engine Failure

- Air Conditioner "OFF".

### DC Generator Failure

#### Note

Load shedding of the air conditioning system occurs if one or both generators are not on-line. Automatic load shedding is provided.

- Override switch – checked – "OFF"
- Air conditioning – "OFF"
- Ammeter to operating system – "Monitor"
- Ammeter 88 amps or less (55% indicated)

- Reduce electrical load – “As Required”
- Override switch – “ON”
- Observe “amber” override light “ON”
- Air conditioning – “ON”, as desired.
- Ammeter – Monitor (160 amps maximum continuous (100%))

## **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 belt and compressor – general condition and security.
- Hoses and tubing - condition and security.
- Heat Exchanger – clear of obstructions.

#### **Interior Checks**

- Prior to engine start – Air Conditioner – “OFF”

### **Ground Operation – One Engine – One Generator**

- Ammeter of operating generator - Monitor
- If 88 amps or less (55% indicated) – override – “ON”
- Air conditioning control switch – “ON”
- Fan control switch – As desired
- Thermostat – As desired (365N-00-1 only)

## Pre-Taxi Check List

- Air conditioning control switch – As desired
- Air conditioning fan control speed switch – HI/LOW, as desired

## 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)
- Thermostat – As desired (365N-00-1 only)

### Note

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

## SECTION V PERFORMANCE DATA

### Performance Degradation

#### 365N-00-1 only:

When the air conditioning system is “ON”, enter the hover (both in and out of ground effect) and the climb performance charts at the helicopters current gross weight plus 55 lbs.

#### 365N-00-2 only:

When the air conditioning system is “ON”, enter the hover (both in and out of ground effect) and the climb performance charts at the helicopters current gross weight plus 67 lbs.

## SECTION VI WEIGHT & BALANCE

Weight and Balance must be updated to show the air conditioning system installation. Approximate weight is 109 lbs for 365N-00-1 and 125 lbs for 365N-

00-2. See Installation Instructions (Document No. INST-365N) supplied with kit for actual weights and moment information.

## 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 switch is labeled "HIGH", "LOW", and controls the evaporator fan speed for the forward cockpit, on 365N-00-1 only. On 365N-00-2, the second switch is "HIGH", "LOW" evaporator fan speed selection for both the forward and aft evaporators. A third switch is "OVERRIDE". It is used for ground operation or servicing when only one engine is in operation. It may also be used in flight if a generator fails as long as the total DC amperage does not exceed 160 amps or 100%. The aft evaporator has a separate 2 position switch, labeled "HI/LOW", located in aft cabin and used to control the aft fan speed, for the 365N-00-1 only.

On the 365N-00-1, two system condition lights are located on the instrument panel. One blue light for air conditioning system "ON", and one amber light for override switch "ON". On the 365N-00-2, a system condition annunciator is located on the control panel. The top blue light is for the air conditioning system "AC ON" and the bottom amber light is for the override switch "OVRD".

A high-pressure safety switch, located in cabin ceiling, 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.

A low-pressure safety switch is also located in cabin ceiling. 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.

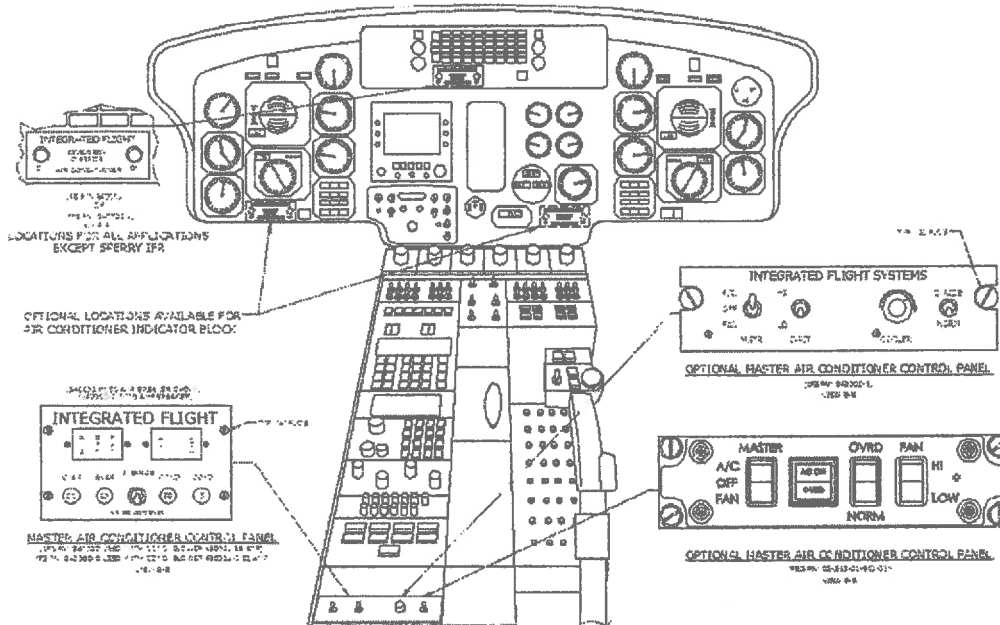


Figure 1. Typical Control Panel Set-Up/Locations

A high-pressure safety switch, located in the cabin overhead, 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 in the cabin overhead. 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.



## 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 power requirements with the air conditioning system ON may exceed the rated output of one DC generator (160 amps), 100% indicated.

## Configurations / Options

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

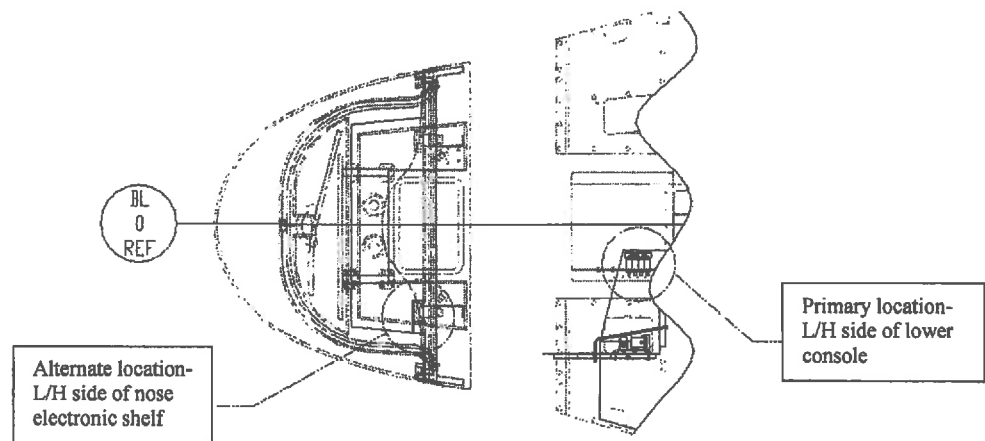


Figure 2. 365N-00-2 Circuit Breaker Locations

## Load Shedding

Automatic electrical load shedding will occur at any time either DC generator is not operating.

For ground operation or in-flight when safe operation of the system can be assured with only one generator operating, the automatic load shedding can be over-ridden by use of the "OVERRIDE" Switch.

## Ventilation, Heating and Demisting

The ventilation box, fitted with a two position air-flow distribution flap and supplied with outside air by a ram air scoop, performs the following functions:

- Position 1 (flap close)
  - water drainage.
  - ventilation for pilots (top aeration).
- Position 2 (flap open)
  - water drainage.
  - ventilation for pilots (top and bottom aerations).
  - ventilation for passengers (bottom aeration).
  - demisting of upper window (ramps)  
(air flow is progressive and depends on flap position)