

SUPPLEMENT S07

TO THE AIRPLANE FLIGHT MANUAL

DA 62

Recirculating Air - Cabin Cooling

Doc. No. : 7.01.25-E

Date of Issue : 01-Nov-2015

Design Change Advisories : OÄM 62-005

This Supplement to the Airplane Flight Manual is EASA approved under the authority of DOA No. EASA.21J.052.

- This Supplement is approved in accordance with 14 CFR 21.29 for U.S. registered
- aircraft, and is approved by the Federal Aviation Administration. This document is
- applicable to the following Airplane Model: DA 62.

0.2 RECORD OF REVISIONS

Rev. No.	Reason	Chapter	Page(s)	Date of Revision	Approval Note	Date of Approval	Date Inserted	Signature
1	FAA Validation	All	All	08 Sep 2016	Rev. 1 to AFM Supplement S07 to AFM Doc. No. 7.01.25-E is approved under the authority of DOA No. EASA 21J.052	20 Sep 2016		

0.3 LIST OF EFFECTIVE PAGES

Chapter	Page	Date
0	9-S07-1	08-Sep-2016
	9-S07-2	08-Sep-2016
	9-S07-3	08-Sep-2016
	9-S07-4	08-Sep-2016
1	9-S07-5	08-Sep-2016
2	EASA approved 9-S07-6	08-Sep-2016
3	9-S07-7	08-Sep-2016
	9-S07-8	08-Sep-2016
4A	9-S07-9	08-Sep-2016
	9-S07-10	08-Sep-2016
	9-S07-11	08-Sep-2016
	9-S07-12	08-Sep-2016
	9-S07-13	08-Sep-2016
4B	9-S07-14	08-Sep-2016
5	9-S07-15	08-Sep-2016
	9-S07-16	08-Sep-2016
6	9-S07-16	08-Sep-2016
7	9-S07-17	08-Sep-2016
	9-S07-18	08-Sep-2016
	9-S07-19	08-Sep-2016
	9-S07-20	08-Sep-2016
8	9-S07-21	08-Sep-2016
	9-S07-22	08-Sep-2016

0.4 TABLE OF CONTENTS

	Page
1. GENERAL	9-S07-5
2. OPERATING LIMITATIONS	9-S07-6
3. EMERGENCY PROCEDURES	9-S07-7
4A NORMAL OPERATING PROCEDURES	9-S07-9
4B ABNORMAL OPERATING PROCEDURES	9-S07-14
5. PERFORMANCE	9-S07-15
6. MASS AND BALANCE / EQUIPMENT LIST	9-S07-16
7. DESCRIPTION OF THE AIRPLANE AND ITS SYSTEMS	9-S07-17
8. AIRPLANE HANDLING, CARE AND MAINTENANCE	9-S07-21

1. GENERAL

This Supplement describes the function of the Recirculating Air - Cabin Cooling System and supplies all information for the safe and efficient operation of the system.

This Supplement is a permanent part of the AFM and must remain in the AFM at all times when the Recirculating Air - Cabin Cooling System is installed.

2. OPERATING LIMITATIONS

2.15 LIMITATION PLACARDS

On the Instrument Panel:

THE AUX POWER SWITCH MUST BE SWITCHED OFF IN ALL EMERGENCIES OR DURING ABNORMAL OPERATING PROCEDURES, AT AIR TEMPERATURES BELOW 10°C (50 °F), AND IF ADF IS IN USE.

2.16 OTHER LIMITATIONS

2.16.10 RECIRCULATING AIR - CABIN COOLING

The AUX POWER switch and the Recirculating Air - Cabin Cooling System must be switched OFF in all Emergencies or during Abnormal Operating Procedures, at outside air temperatures below 10 °C (50 °F) and if ADF is in use.

The Recirculating Air - Cabin Cooling System adversely effects the accuracy of the ADF system (if installed) and the WX 500 stormscope (if installed). The AUX POWER switch must be switched OFF if the ADF system is used for navigation.

3. EMERGENCY PROCEDURES

3.1 INTRODUCTION

3.1.1 GENERAL

CAUTION

The AUX POWER switch and the Recirculating Air - Cabin Cooling System must be switched OFF in all Emergencies, or during Abnormal Operating Procedures, at Outside Air Temperatures below 10 °C (50 °F) and if ADF is in use.

AUX POWER switch OFF

3.7 ONE ENGINE INOPERATIVE PROCEDURES

CAUTION

The AUX POWER switch and the Recirculating Air - Cabin Cooling System must be switched OFF in all Emergencies, or during Abnormal Operating Procedures, at Outside Air Temperatures below 10 °C (50 °F) and if ADF is in use.

3.13 OTHER EMERGENCIES

3.13.10 RECIRCULATING AIR - CABIN COOLING SYSTEM FAILURES

Smoke and Fire

AUX POWER switch OFF

Continue with 3.12 - SMOKE AND FIRE.

Excessive Noise or Vibration

AUX POWER switch OFF

4A NORMAL OPERATING PROCEDURES

4A.6 CHECKLISTS FOR NORMAL OPERATING PROCEDURES

CAUTION

The AUX POWER switch and the Recirculating Air - Cabin Cooling System must be switched OFF in all Emergencies, or during Abnormal Operating Procedures, at Outside Air Temperatures below 10 °C (50 °F) and if ADF is in use.

4A.6.1 PRE-FLIGHT INSPECTION

I. Cabin check

Item a1) is added:

In front of the central headliner device unit:

a1) AUX POWER switch check OFF

II. Walk-around check, visual Inspection

4. Fuselage, left side, underside:

Item c1) is added:

c1) Cabin cooling air outlet visual inspection

6. Fuselage, right side, underside:

Item a1) is added:

a1) Cabin cooling air inlet visual inspection

4A.6.2 BEFORE STARTING ENGINE

Item 10A is added:

10A. AUX POWER switch check OFF

4A.6.14 SHUT-DOWN

Item 4A is added:

4A. AUX POWER switch check OFF

**4A.6.22 RECIRCULATING AIR - CABIN COOLING SYSTEM GROUND
OPERATION**

Ground Operation with External Power Unit

NOTE

The External Power Unit must be capable to supply a minimum of 100 A at 28 V DC to operate the RACC - System.

1. POWER lever check IDLE
2. Parking brake set
3. AVIONIC MASTER check OFF
4. AUX POWER check OFF
5. ELECT. MASTER check OFF
6. ENGINE MASTER check OFF

CAUTION

When switching the External Power Unit ON, the electrically driven hydraulic gear pump may activate itself for 5 to 20 seconds in order to restore the system pressure. Should the pump continue to operate continuously or periodically, terminate flight preparation. There is a malfunction in the landing gear system.

NOTE

When switching the External Power Unit ON, all electrical equipment, connected to the LH and RH main buses is powered.

CONTINUED

Doc. # 7.01.25-E	Rev.1	08-Sep-2016	Page 9-S07-11
------------------	-------	-------------	---------------

7. External power connect
8. Recirculating Air - Cabin Cooling switch ON
9. ELECT. MASTER ON

Ground Operation with Engine Running

1. AUX POWER switch ON
2. Recirculating Air - Cabin Cooling switch ON

Power Off

1. Recirculating Air - Cabin Cooling switch OFF
2. AUX POWER switch OFF

END OF CHECKLIST

4A.6.23 RECIRCULATING AIR - CABIN COOLING SYSTEM OPERATION IN FLIGHT

CAUTION

The AUX POWER switch and the Recirculating Air - Cabin Cooling System must be switched OFF in all Emergencies, or during Abnormal Operating Procedures, at Outside Air Temperatures below 10 °C (50 °F) and if ADF is in use.

Power On

1. AUX POWER switch ON
2. Recirculating Air - Cabin Cooling switch . . ON

Power Off

1. Recirculating Air - Cabin Cooling switch . . OFF
2. AUX POWER switch OFF

END OF CHECKLIST

4B ABNORMAL OPERATING PROCEDURES

CAUTION

The AUX POWER switch and the Recirculating Air - Cabin Cooling System must be switched OFF in all emergencies, or during Abnormal Operating Procedures, at Outside Air Temperatures below 10 °C (50 °F) and if ADF is in use.

5. PERFORMANCE

CAUTION

The AUX POWER switch and the Recirculating Air - Cabin Cooling System must be switched OFF in all Emergencies, or during Abnormal Operating Procedures, at Outside Air Temperatures below 10 °C (50 °F) and if ADF is in use.

5.3.6 TAKE-OFF DISTANCE

NOTE

With the Recirculating Air - Cabin Cooling System switched ON the Ground Roll Distance is increased by 60 m and the Take-Off Distance is increased by 100 m.

5.3.7 CLIMB PERFORMANCE - TAKE-OFF CLIMB

NOTE

The Rate of Climb with the Recirculating Air - Cabin Cooling System switched ON is reduced by 70 ft/min.

5.3.9 ONE ENGINE INOPERATIVE CLIMB PERFORMANCE

CAUTION

The AUX POWER switch and the Recirculating Air - Cabin Cooling System must be switched OFF in all Emergencies, or during Abnormal Operating Procedures, at Outside Air Temperatures below 10 °C (50 °F) and if ADF is in use.

5.3.10 TIME, FUEL AND DISTANCE TO CLIMB

NOTE

The Time, Fuel and Distance to Climb with the Recirculating Air - Cabin Cooling System switched ON is increased by 6%.

5.3.11 CRUISE PERFORMANCE

NOTE

The Cruise Speed with the Recirculating Air - Cabin Cooling System switched ON is reduced by 10 kts.

5.3.14 APPROVED NOISE DATA

- ICAO Annex 16 Chapter X, App.6 78.6 dB(A)
I 14 CFR Part 36, App. G 78.6 dB(A)
- I No determination has been made by the Federal Aviation Administration that the
I noise levels of this aircraft are or should be acceptable or unacceptable for operation
I at, into, or out of, any airport.

6. MASS AND BALANCE / EQUIPMENT LIST

No change.

Doc. # 7.01.25-E	Rev. 1	08-Sep-2016	Page 9-S07-16
------------------	--------	-------------	---------------

7. DESCRIPTION OF THE AIRPLANE AND ITS SYSTEMS

7.16 RECIRCULATING AIR - CABIN COOLING SYSTEM

The Recirculating Air - Cabin Cooling System consists of the following main parts:

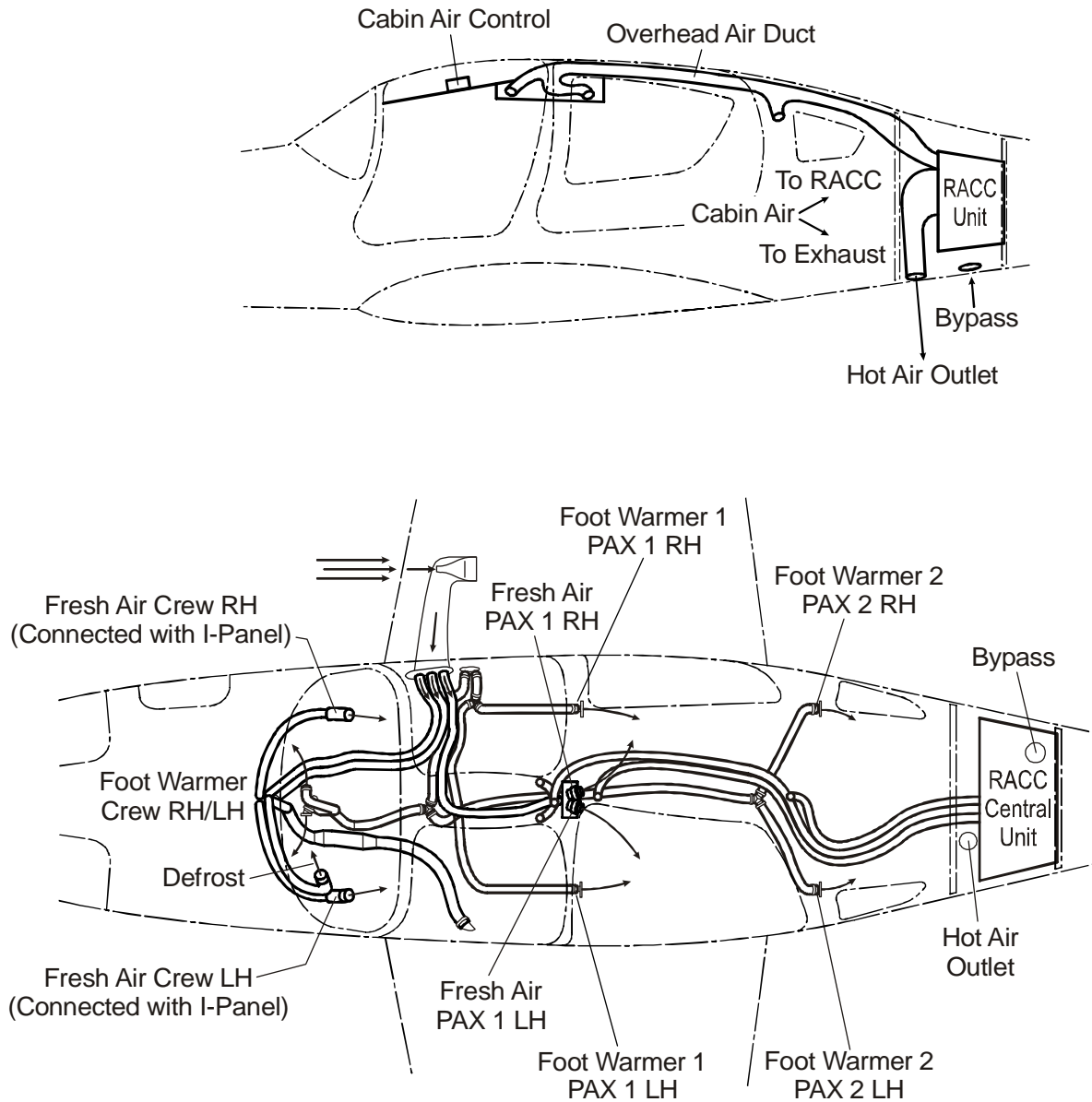
- AUX POWER switch and control panel (in front of central headliner device unit)
- Central unit (aft of the baggage compartment cover)
- Additional alternator (on the LH engine)

The Recirculating Air - Cabin Cooling System is not connected to the electrical system of the airplane. The additional alternator provides the electrical power to operate the Recirculating Air - Cabin Cooling System independently.

NOTE

The Recirculating Air - Cabin Cooling System effects the performance of the airplane. Refer to Chapter 5 of this Supplement.

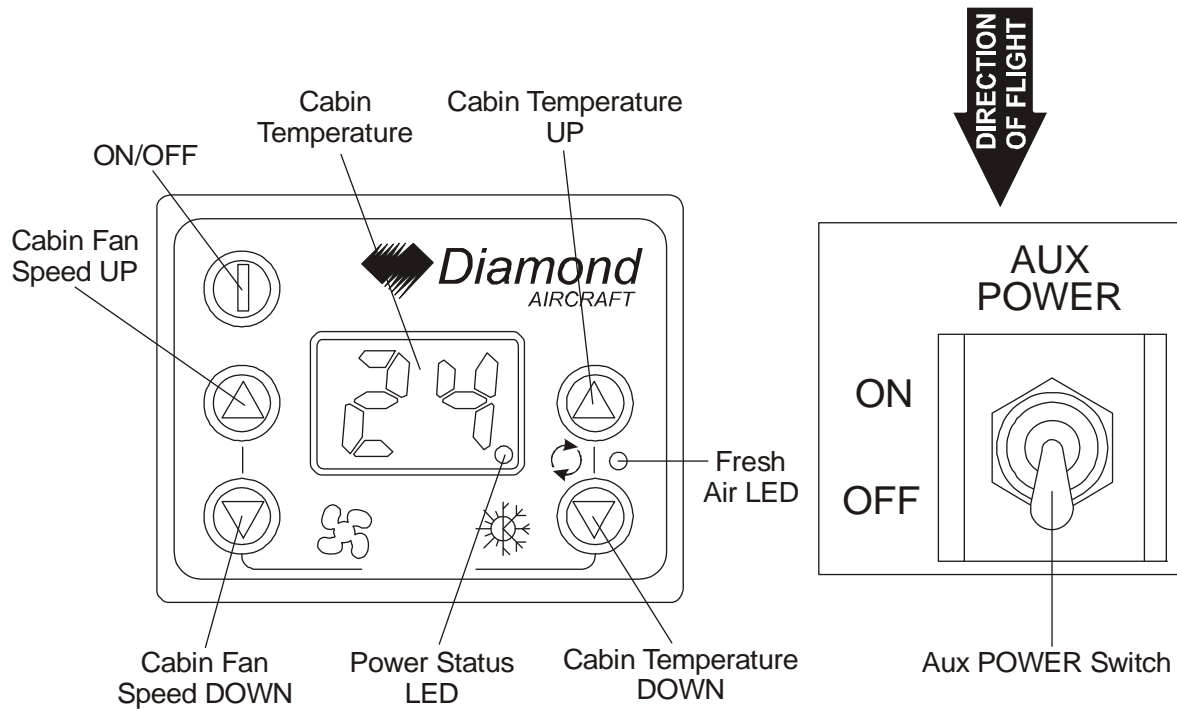
Recirculating Air - Cabin Cooling Schematic



RACC System Schematic

Control Panel

The AUX POWER switch and the control panel are located in front of the central headliner device unit. If the AUX POWER switch is set to ON, the Recirculating Air - Cabin Cooling System is electrically connected to the additional alternator which provides the electrical power for the system and the Power Status LED is flashing. To operate the Recirculating Air - Cabin Cooling System press the ON/OFF button once and wait until the display is permanently illuminated. The fan speed (three speed settings) is controlled with the UP and DOWN buttons to the left of the temperature display. The temperature preset buttons are located to the right of the temperature display. The preset cabin air temperature is shown on the temperature display in °C.



Central Unit

The central unit is located behind the passenger seats and the baggage rear cover. It takes cabin air from the aft portion of the fuselage and recirculates it through the central unit and via the overhead air duct to the cooling air nozzles in the overhead panel. The central unit consists of an electrically driven compressor, heat exchangers, air inlets, air outlets and a control box. According to the preset cabin air temperature on the control panel, the control box operates the compressor and all essential control elements of the central unit in order to achieve the preset cabin air temperature.

Additional Alternator

The additional alternator is located at the front RH side of the LH engine next to the gearbox. The additional alternator is mounted to the engine via a single bolt at the bottom (this allows to rotate the alternator to tension the drive belt) and two bolts at the top which are connected to the engine gearbox via a bracket. A pulley is installed on a drive disc at the propeller shaft which drives the additional alternator via a V-belt. Connected to the propeller drive disc is an axial fan to provide engine gearbox cooling.

If the AUX POWER switch is set to ON, the additional alternator provides the electrical power for the Recirculating Air - Cabin Cooling System.

8. AIRPLANE HANDLING, CARE AND MAINTENANCE

No change.

Intentionally left blank.