



**KEITH PRODUCTS, L.P.**

**ENVIRONMENTAL SYSTEMS**

**CERTIFICATION REPORT NO. CR-400-9**

**AIR CONDITIONING/HEATING SYSTEM INSTALLATION**

**FLIGHT MANUAL SUPPLEMENT**

**FOR**

**CESSNA MODELS:**

**401& 401A all S/N's; 402, 402A & 402B thru S/N 0300;  
411 & 411A all S/N's; 414 thru S/N 0350; 421,  
421A & 421B thru S/N 0300**

**STC NO. SA2091WE**

**Date:** February 5, 1971  
**Rev:** B  
**Rev. Date:** February 4, 1981

FAA APPROVED  
AIRPLANE FLIGHT MANUAL SUPPLEMENT  
FOR

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Registration No. \_\_\_\_\_

Serial No. \_\_\_\_\_

This supplement is part of the FAA approved Airplane Flight Manual and must be carried in the aircraft when an airconditioning system is installed in accordance with STC SA2091WE. The information contained herein supplements or supersedes the basic data only in those areas specified. For limitations, procedures, and performance information not contained in this supplement, consult the approved basic Airplane Flight Manual.

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FAA APPROVED: Gerald E. Goodblood  
GERALD E. GOODBLOOD, Chief  
Engineering and Manufacturing Branch  
ARM-210  
Revision B

DATED February 5, 1971

I. LIMITATIONS:

Placard on Instrument Panel:

DO NOT USE AIRCONDITIONER WITH ONE ALTERNATOR INOPERATIVE.

MAG. COMPASS DEVIATION MAY BE EXCESSIVE WITH AIRCONDITIONER ON.

II. EMERGENCY PROCEDURES:

In event of alternator or engine failure, turn off airconditioner.

III. NORMAL PROCEDURES:

Airconditioning system operation. The airconditioning switch is located on the pilot's instrument panel.

To turn airconditioner ON - move switch to "AIRCONDITIONER".

To turn airconditioner OFF - move switch to "OFF".

For circulation without cooling - move switch to "FAN ONLY".

To set DG to MDI - turn airconditioner "OFF".

To battery start engines - turn airconditioner "OFF".

IV. PERFORMANCE:

No change.

FAA APPROVED: H. E. Woodblond

DATED 2/5/71

REVISION B

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REVISION NUMBER	PAGES		DESCRIPTION	FAA APPROVED
	NO.	DATE		
A	ALL	12/20/79	Added S/N's and changed to new format.	<i>H. E. Goodblood</i> CHIEF ENGR. & MFG. BR. ARM-210
B	ALL	2/4/81	Revised company name. Updated S/N callouts.	<i>J. P. Chidley</i>

FAA APPROVAL

*H. E. Goodblood*DATED 2/5/71

REVISION

B

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### PRESSURIZED AIRCRAFT CONDENSATE DRAIN VALVE OPERATION

One result of an aircraft air conditioning system operating is the removal of moisture from the warm air in the cabin as the system circulates the air over the evaporator coil. Because of this, the evaporator has a drain pan and drain tube to allow the accumulated moisture to run overboard. Non-pressurized aircraft normally have an open drain system functioning all the time.

All pressurized aircraft equipped with Keith Products air conditioning systems are equipped with a condensate drain valve in the line with an instrument panel mounted switch.

The purpose of the valve is to allow the pilot to control the outflow of water from the evaporator pan. Any momentary application of the drain switch allows a small amount of pressurization air to escape through the drain tube and valve. However, past experience has shown that the aircraft pressurization systems have more than adequate capacity to handle even inadvertently leaving the switch on for extended periods of time.

Aircraft operated in high humidity areas can generate a large amount of water in the evaporator in a short period of time from takeoff to cruise altitude.

The condensate drain switch should be put in the "ON" position for two (2) to three (3) minutes after reaching cruise altitude to drain off the excess water. The switch should then be returned to the "OFF" position.

Since the capacity of the drain pan is not necessarily large, continued operation in a high humidity environment could result in a spillage of water out of the evaporator box into the interior of the aircraft, if the system is not drained.

Good practice would be to drain the line for a moment or two before shutting the aircraft down at the destination airport, thus assuring drain pan capacity at the next takeoff.