

JANITROL AERO

COLUMBUS, OHIO

MAINTENANCE INSTRUCTIONS FOR:

AIRCRAFT HEATER
ASSEMBLY
PART NO. 07E02-1
B3040

HEAT TRANSFER AND CONTROL PRODUCTS FOR THE AEROSPACE INDUSTRY

Table I. Leading Particulars

| | |
|---|-------------------|
| Rated Output (BTU/hr) | 40,000-50,000 |
| Jacket diameter (inches) | 6.25 |
| Jacket length (inches) | 24.25 |
| Weight (pounds) | 17 |
| Combustion air connection OD (inches) | 1.50 |
| Exhaust flue connection OD (inches) | ¼ in. fuel tube |
| Spray nozzle marking | (D08D09) |
| Fuel required | aviation gasoline |
| Operating voltage | 24 VDC nom. |

1. GENERAL.

2. These instructions provide maintenance information for 07E02-1 Business Aircraft Heaters, manufactured by Janitrol Aero Division, Midland-Ross Corporation, Columbus, Ohio. These heaters are designed for operation in pressurized aircraft. The heaters are FAA TSO-C20 approved.

3. Table I gives the principal specifications of the aircraft heater assembly.

4. DESCRIPTION. (See figure 1.)

5. The heater is cylindrical in shape and is fabricated of heat-resistant alloy steel. A combustion chamber and radiator assembly, known as the combustion tube, forms the principal part of the heater. It is of gastight welded construction. At one end of the combustion tube are located the fuel inlet, the combustion air inlet, and the combustion head. At the other end is the exhaust outlet.

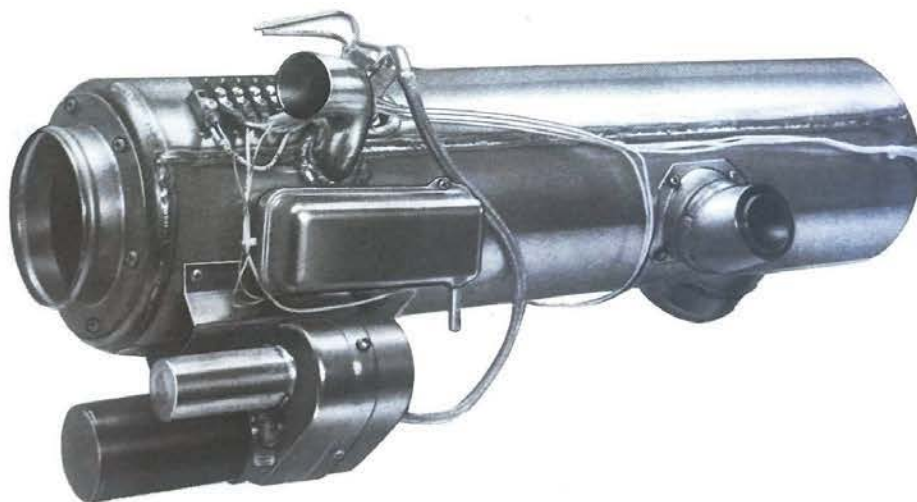


Figure 1. Aircraft Heater Assembly

33130D

OPERATIONAL
Maintenance

TYPE II SYNCHRONIZER SYSTEM

BULLETIN NO. 33130D

FAA APPROVED PER DESIGNATED ENGINEERING REPRESENTATIVE

78-4-1

WOODWARD®

33130D

WOODWARD GOVERNOR COMPANY

AIRCRAFT CONTROLS DIVISION

ROCKFORD, ILLINOIS 61101

U.S.A.

INSTALLATION & REMOVAL PROCEDURES

Electrically Heated Propeller De-Icers For Aluminum Propellers

GENERAL

The instructions herein apply to initial and replacement installations of B.F. Goodrich electrically heated propeller De-Icers. Follow instructions exactly to insure maximum adhesion of De-Icers to propeller blades. Hamilton Standard propellers require different cements and procedures which are optional for other types of propellers. (See Section 12). **READ ALL INSTRUCTIONS BEFORE BEGINNING WORK!**

CAUTION: The condition of the propeller blades and the De-Icer installation must comply with applicable FAA regulations. Inspect prop blades before De-Icer installation. See Section 13.h.

MATERIALS REQUIRED

De-Icers (one for each propeller blade) are supplied in B.F. Goodrich propeller de-icing system kits. Replacement De-Icers may be ordered from The B.F. Goodrich Company by specifying the airplane make and model number or De-Icer part number. The following materials and tools are not supplied in the kit. They should be purchased from local suppliers.

Cement 1300L or EC1403 (Minnesota Mining & Manufacturing Company, St. Paul, Minn.); 1 pint is required for six blades.

Filler EC801, EC1031 (3M Company); 3 1/2 oz. kit for six blades.

Filler 750 (3M Company); 5 oz. is required for six blades. Sealer 82-076-1, and -2 (B.F. Goodrich Engineered Systems Company, Akron, Ohio); 1/2 pint is required for six blades.

Sealer V66V27, F63B8, and R7K69 (Lowe Bros., Dayton, Ohio); 1/2 pint is required for six blades.

Sealer Kit A-2743 (Hartzell Propeller Co., Piqua, Ohio); 1 qt. kit is provided.

Cleaning Solvent — MEK (Methyl Ethyl Ketone) or Acetone

Tackifying Solvent — Toluol or MEK (see note below)

Cleaning Cloth — any clean, lint-free cloth

1" paint brushes

2" rubber hand roller

1/4" metal hand stitcher

Masking tape

NOTE

MEK may be used instead of Toluol to tackify cement, but it provides approximately 10 seconds working time for De-Icer applications, whereas Toluol provides approximately 40 seconds working time. To increase working time of MEK, add up to 5% by volume of cyclohexanone.

1. BLADE PREPARATION

NOTE

If propeller blades extend into the spinner (see Figure A), the inboard end of the De-Icer should be approximately 1/4" inside the point where the blade emerges from the spinner. If spinner does not cover blade shank, the inboard end of De-Icer should be within 1/4" of the edge of the hub. On non-reverse pitch propellers of Beech Models 85-90, 85-A90, 85-B90, De-Icer should be located 1/4" from hub. **ALL DE-ICERS ON A SINGLE PROPELLER MUST BE LOCATED THE SAME DISTANCE FROM THE HUB FOR ROTATIONAL BALANCE.**

a. Place center mark at hub end of blade in line with blade's leading edge. Determine location by sighting along leading edge. Starting at hub or at point out from hub indicated in preceding note (or in applicable installation manual) center the De-Icer on this center mark and fit De-Icer strap clamp or restrainer on the hub. Compare its position with the position of the strap. Adjust position of the De-Icer, as necessary, to make the lead strap agree with the strap clamp unless more specific details are given in the

applicable de-icing system installation manual. Hand fit edges, and hold De-Icer in this position while masking off an area approximately 1/4" from each side of the De-Icer and 1/4" from the outer end (See Figure B).

b. Remove De-Icer, and remove any paint within the masked-off area down to bare metal. In addition, when rubber restrainer strap is used, remove paint and clean around entire blade from hub out about 2". When paint has been removed, strip off masking tape and clean entire area thoroughly with MEK or acetone. For final cleaning, quickly wipe off solvent with a clean, dry, lint-free cloth to avoid leaving a film. Mask off cleaned area as before.

NOTE

Most Hartzell and McCauley propellers have a special protective coating not easily removed by solvents alone. Use MEK or Toluol and 320 grit (or finer) emery paper to remove the coating down to bare metal. Remove in spanwise direction only. **BE CAREFUL NOT TO SCORE BLADE!**

De-Icers can be bonded to the propeller blades directly on the protective coating if sufficient drying time is allowed before starting the engine. Drying times for applicable propeller types (Ref. Figure H.) are:

| Propeller Type | Minimum Cement Drying Time* |
|--|-----------------------------|
| McCauley or Hartzell standard - with coating | 12 hours |
| Hartzell Compact - with coating | 24 hours |
| Hartzell Compact - coating removed | 12 hours |
| Hartzell Compact - with coating and with De-Icer leads attached to counterweight | 12 hours |

*Drying times before starting engines applicable to 3M 1200L cement (only). Allow an additional 12 hours cement curing time before energizing the De-Icers.

CAUTION: Cleanliness of metal and rubber parts cannot be over emphasized. Only very clean surfaces will assure maximum adhesion.

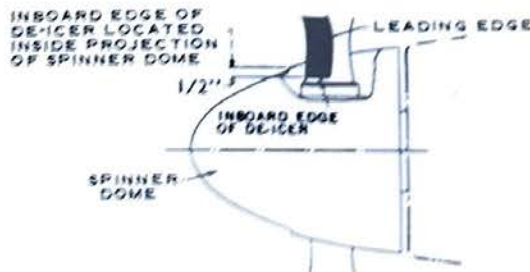


Fig. A — Locating De-Icer on Blade

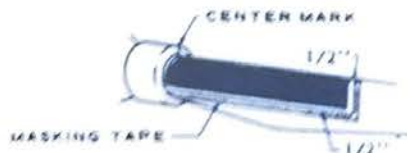


Fig. B — Masking Off De-Icer

2. CEMENT APPLICATION

a. With pencil or pen, mark a center line at the hub of the propeller blade and on the tape at the outboard edge of the masked area.

b. Moisten a clean cloth with MEK or acetone. Clean unglazed (back) surface of the De-Icer and strap. Change



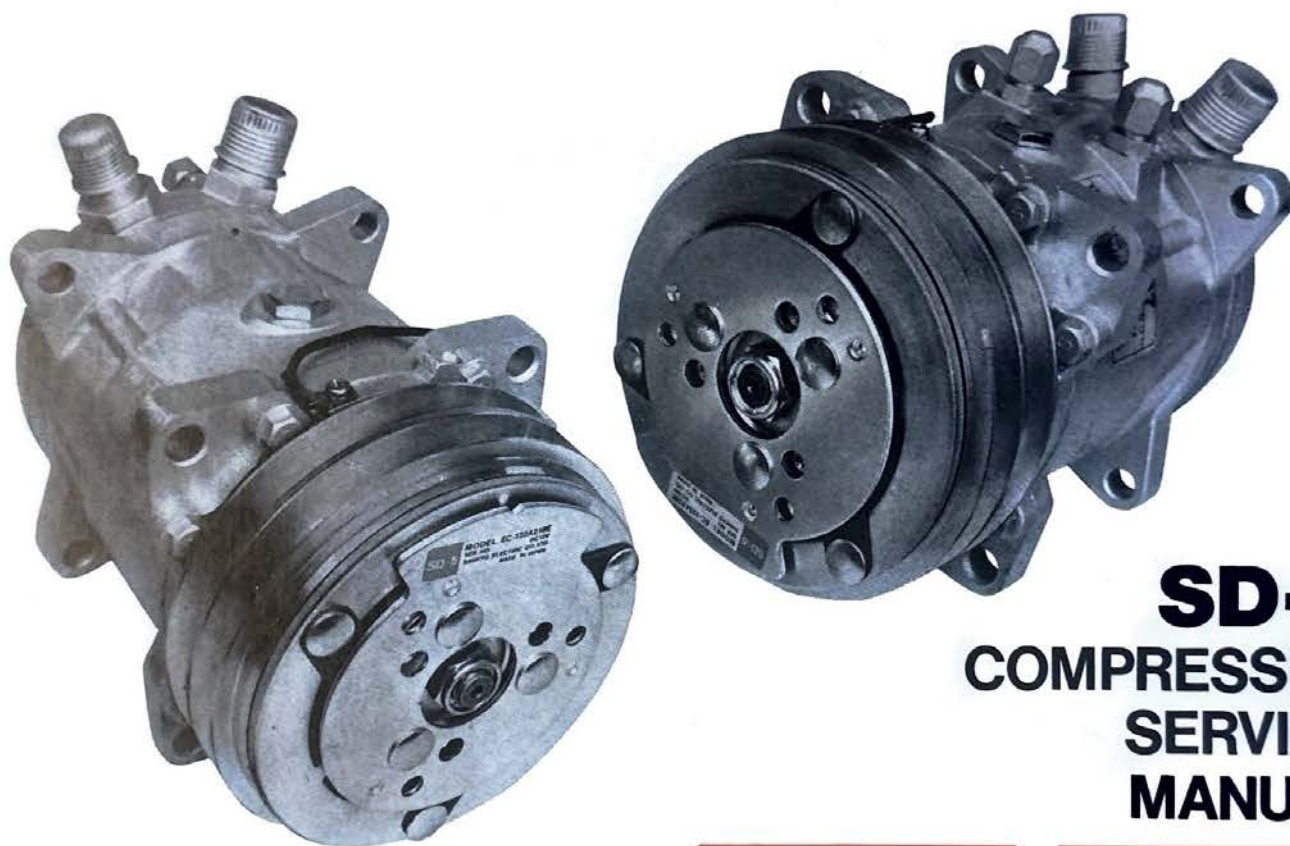
REPORT NO. 68-04-714-H
January 1, 1979

OVERHAUL

BRUSH BLOCK ASSEMBLIES AND MODULAR BRUSH ASSEMBLIES

FOR ELECTROTHERMAL PROPELLER DE-ICING SYSTEMS

**sankyo
international**

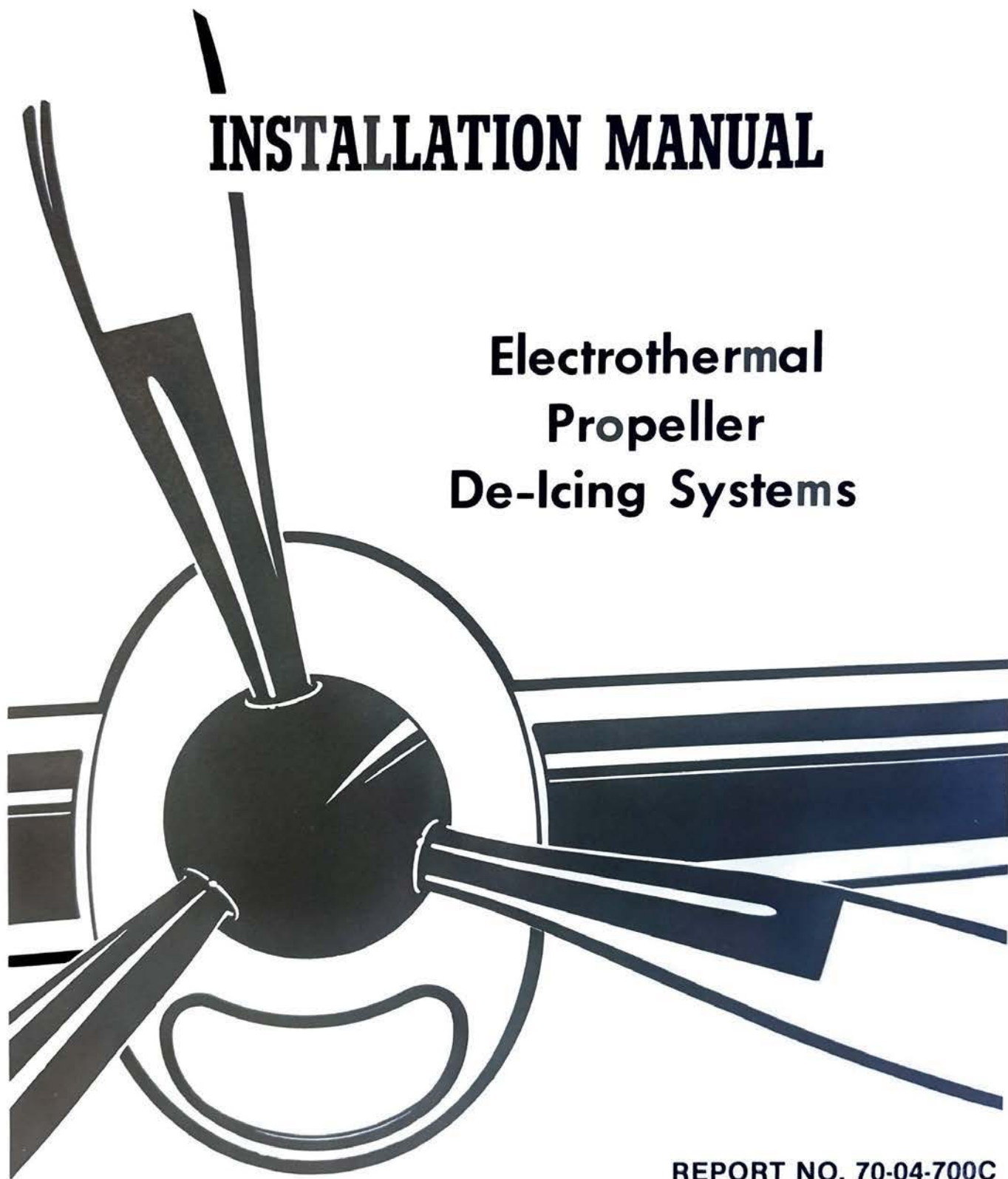


**SD-5
COMPRESSOR
SERVICE
MANUAL**

BF Goodrich

INSTALLATION MANUAL

**Electrothermal
Propeller
De-Icing Systems**



**REPORT NO. 70-04-700C
APRIL 1, 1978**

ENGINEERED SYSTEMS COMPANY

Subject: Ground Checkout of BFGoodrich Electrothermal Propeller De-Icing Systems

Applicability: All aircraft using BFGoodrich P/N 3E1150-7, 3E1150-10 Electronic Timers (except as noted below)

- References:
1. BFGoodrich Report 68-04-712 Maintenance Manual for Electrothermal Propeller De-Icing Systems (Sections 3 and 4)
 2. BFGoodrich Report 70-04-700, Installation Manual Electrothermal Propeller De-Icing Systems (Section 13)

Discussion: Recently, some of the applicable electronic timers have been returned to BFGoodrich for repair. Upon examining these units, no defect was found. We believe the cause of these returns is a misunderstanding about how the units function.

The applicable timers do not contain mechanical stepping (cycling) devices. As such, the changing of cycles occurs very quickly. When energized, this switching may or may not be detectable as a flicker of the system ammeter needle depending on how fast the individual unit involved switches.

Also, since the switching device is electronic, the timers cannot be manually stepped through all four cycles by alternately energizing and de-energizing the system on/off switch.

Following is a recommended ground checkout procedure to assure that all De-Icer heating elements and all timer circuits are functioning properly:

Caution: This procedure does not apply to aircraft in which the engine inlet De-Icer is cycled by the propeller de-icing system timer; example, Piper PA-31T.

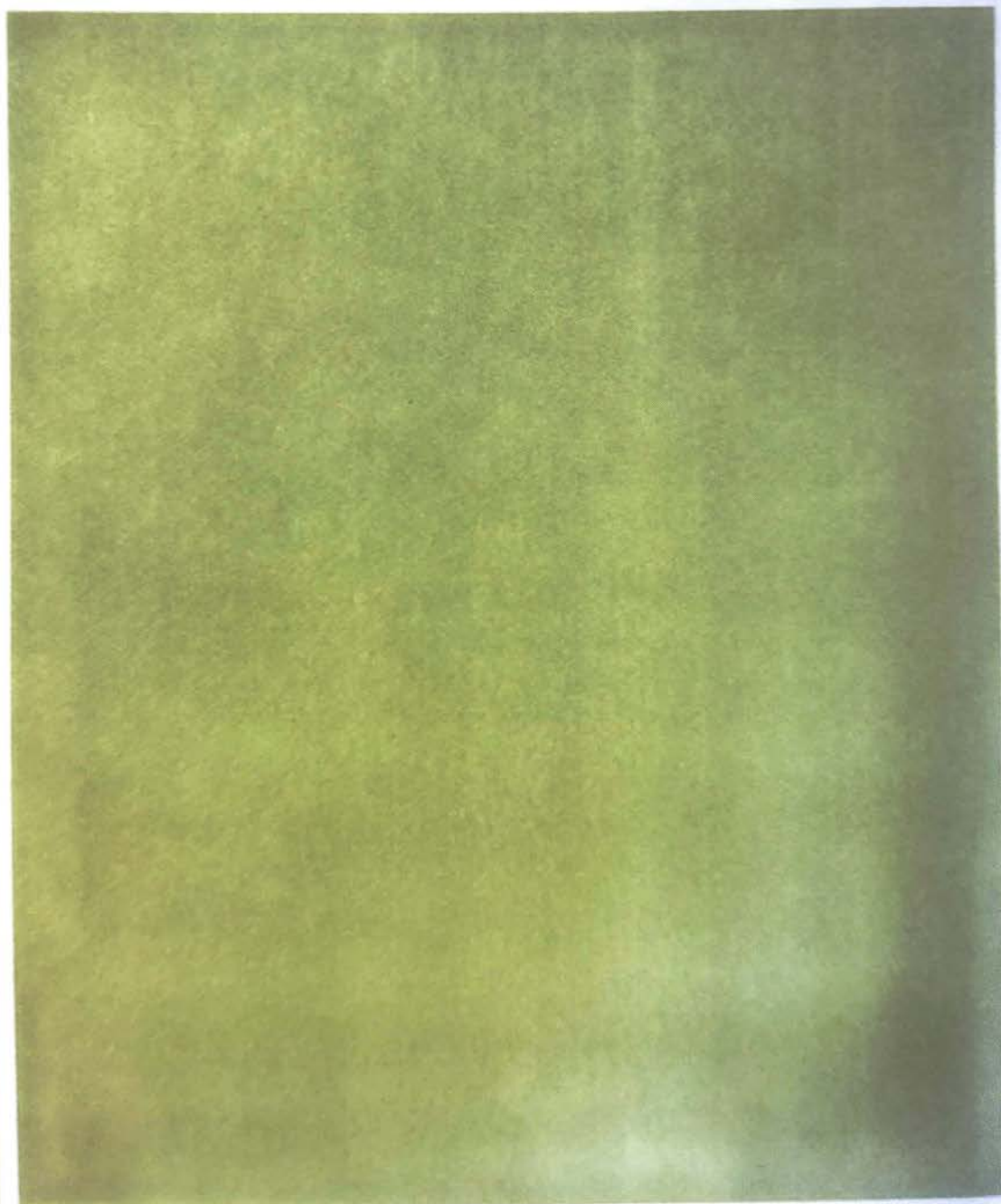
Note: The following test requires the use of an ammeter. If an ammeter is not included in the system, install one temporarily just ahead of where the (white) wire enters the "B" pin of the timer receptacle. Make sure the meter is rated for the system current. (For applicable current rating see Table 4-1 in BFGoodrich Report 68-04-712) A current probe type ammeter (DC) may be used. Make sure sufficient cement cure time has elapsed before heating the prop De-Icers (ref. BFGoodrich Report 59-728).



Rockwell
International

operating instructions

MICRO LINE





SAFETY INFORMATION

1978 EDITION

Beech Aircraft Corporation  Wichita, Kansas



DO's'n DON'Ts FOR SATISFACTORY
OPERATION AND LONG LIFE OF YOUR
CONTINENTAL AIRCRAFT ENGINE



TELEDYNE
CONTINENTAL MOTORS
Aircraft Products Division

Pilot's Handbook On Engine Operation

OWNER'S MANUAL

Installation and Pilot's Guide

03716-0602

**ELT 10
EMERGENCY
LOCATOR
TRANSMITTER****1. INTRODUCTION**

The NARCO ELT 10 is an automatically activated emergency locator transmitter. The ELT 10 may be manually activated via the unit ON-OFF-ARM switch and/or via the optional remote switch for testing or when an emergency is imminent. When activated, the ELT 10 will radiate an omnidirectional RF signal on the international distress frequencies of 121.5 MHz and 243.0 MHz. The radiated signal is modulated with a "distinctive" audio swept tone.

The NARCO ELT 10 is for "AVIATION EMERGENCY USE ONLY."

The NARCO ELT 10 Emergency Locator Transmitter is designed, manufactured, and tested under the strictest quality control procedures. The ELT 10 is approved under FAA Technical Standard Order, TSO-C91.

CONTINENTAL® AIRCRAFT ENGINE

**MODELS TS10-520-L, -LB
& -WB**

Operator's Manual

FAA APPROVED

FORM NO. X30505

DECEMBER 1978

TELEDYNE INDUSTRIES, INC. 1978



Member of GAMA
General Aviation
Manufacturers Association



TELEDYNE CONTINENTAL MOTORS
Aircraft Products Division

United States of America
Department of Transportation -- Federal Aviation Administration
Supplemental Type Certificate

Number SA02172CH

This certificate issued to

SRS Aviation LLC
8600 Lucerne Blvd.
Lakeville, MN 55044

*certifies that the change in the type design for the following product with the limitations and conditions
therefor as specified herein meets the airworthiness requirements of Part 21 of the Civil Aviation Regulations.*

Original Product - Type Certificate Number:

* See attached FAA Approved Model List (AML) No.
SA02172CH for list of approved airplane models and
Applicable airworthiness regulations

Make:

*

Model:

*

Description of Type Design

Change:

Installation of aluminum elevator skins in place of magnesium elevator skins in accordance with SRS Aviation LLC "Elevator kit
Assembly Manual Doc. No. SRS-B581, Revision int., dated December 27, 2006 or Doc. No. SRS-B551, Revision F, dated
December 27-2006, or later FAA approved revision.

Limitations and Conditions:

- 1) Compatibility of this design change with previously approved modifications must be determined by the installer.
- 2) If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person
written evidence of that permission.

*This certificate and the supporting data which is the basis for approval shall remain in effect until
surrendered, suspended, revoked or a termination date is otherwise established by the Administrator of the
Federal Aviation Administration.*

Date of application: November 29, 2004

Date reissued:

Date of issuance: July 25, 2005

Date amended: January 10, 2005



By direction of the Administrator

Mary Ellen A. Schult

Mary Ellen A. Schult, Manager
Airframe & Administrative Branch
Chicago Aircraft Certification Office