

September 25, 1986



VENDOR SERVICE PUBLICATION

**TO:** All Affected Owners/Operators, Piper Cheyenne Sales Centers, Cheyenne Service Distributors, Factory Direct Dealers, and All Cheyenne Field Service Facilities

**SUBJECT:** Hartzell Propeller Products Division, Service Advisory No. 39, dated August 18, 1986

**MODELS AFFECTED:**

PA-31T Cheyenne/Cheyenne II  
PA-31T1 Cheyenne I/Cheyenne IA  
PA-31T2 Cheyenne IIXL

PA-31T3 T-1040

PA-42 Cheyenne III

PA-42-720 Cheyenne IIIA

**SERIAL NUMBERS AFFECTED:**

31T-7400002 through 31T-8120104  
31T-7804001 through 31T-1104017  
31T-8166001 through 31T-1166006,  
and 31T-1166008  
31T-8275001 through 31T-8475001,  
and 31T-5575001  
42-7800001, 42-7800002, 42-7801003,  
42-7801004, 42-8001001 through  
42-8001106  
42-8301001, 42-8301002, 42-5501003  
through 42-5501023, 42-5501025  
through 42-5501031, and 42-5501033

**PURPOSE:** To distribute the attached Hartzell Propeller Products Division, Service Advisory to all affected Owners/Operators, Piper Cheyenne Sales Centers, Cheyenne Service Distributors, Factory Direct Dealers and All Cheyenne Field Service Facilities.

The attached Publication may affect Hartzell equipment installed on the above listed Piper Airplanes. Refer to the Publication for specific details.

**NOTE:** To obtain B.F. Goodrich Repair Kits, Part Number 65-953 and 65-954 at no charge, or for additional information, contact B.F. Goodrich at:

In Continental U.S. - Phone 1-800-334-2377  
Ohio Residents - Phone 216-374-3706



**Hartzell Propeller  
Products Division**  
TRW Aircraft  
Components Group

1800 Covington Avenue  
Piqua, OH 45356  
513.778.4200  
Telex: 4332032

## SERVICE ADVISORY

---

**SERVICE ADVISORY NO. 39**  
**CODE: H**

**August 18, 1986**

**SUBJECT:**

**Inspection and Reinforcement of B.F. Goodrich  
Propeller De-Ice Terminal Clamp Assembly P/N  
3E1883-2.**

**DISCUSSION:**

**The attached B.F. Goodrich Service Bulletin No.  
E-85-73 should be complied with as described on those  
propellers equipped with the equipment mentioned.**

**The B.F. Goodrich repair kits, P/N 65-953 and 65-954  
are available, if required, through Hartzell  
Propeller Products or B.F. Goodrich.**

SERVICE BULLETIN

NO. - E-85-73  
ISSUED - 6-6-86  
REVISED -

BFGOODRICH  
AEROSPACE AND DEFENSE DIVISION

---

SUBJECT: INSPECTION AND REINFORCEMENT OF BFGOODRICH PROPELLER DE-ICE  
TERMINAL CLAMP ASSEMBLY P/N 3E1883-2.

NOTE: THIS SERVICE BULLETIN SUPERSEDES AND REPLACES BFG SERVICE  
BULLETIN E-85-71.

---

PURPOSE: To request mandatory inspection of the subject terminal  
clamp assembly and comply with the procedures outlined  
in this document regarding inspection and reinforcement of  
the subject terminal clamp assembly.

APPLICABILITY: Aircraft equipped with the following Hartzell propeller  
assemblies that contain BFGoodrich electrothermal propeller  
de-icing utilizing the 3E1883-2 terminal clamp assembly.

Hartzell Propeller Assembly

HC-B3TN-3 Series

HC-B3TN-5 Series

HC-B4TN-3 Series

HC-B4TN-5 Series

NOTE: The specified propeller assemblies are involved only  
if they are equipped with propeller de-icers that  
require the use of a separate de-icer lead harness.  
The specific BFGoodrich propeller de-icer part  
numbers associated with this installation are  
4E1188-5 and 4E1188-6. These de-icers require the  
use of the 3E1883-2 terminal clamp assembly.

DISCUSSION: The 3E1883-2 terminal clamp assembly is a molded terminal  
assembly that is mounted on the blade clamp of Hartzell  
propeller assemblies HC-B3TN and HC-B4TN series.

The terminal clamp provides a connecting point for the  
de-icer wire harness and the de-icer, and also serves as a  
mount for propeller balance weights. Improper installation  
of the de-icer terminals may result in over-stressing and  
lead to cracking of the terminal clamp. If cracking occurs  
it generally will be in or around the mounting hole area  
and propagate along the mounting pad area -(Reference:  
Figure 1-b). If the fractured terminal clamp is not  
replaced it may separate from the blade clamp and exit the  
spinner dome, allowing the possibility of striking the  
aircraft fuselage. To help prevent separation, BFGoodrich  
has internally reinforced the assembly. A factory  
reinforced terminalclamp assembly can be identified by one  
of the following methods.

- DISCUSSION: a) If the terminal clamp assembly is black and is identified as  
(CONTINUED) part number 3E1883-2, it is factory reinforced.
- b) If the terminal clamp assembly is lightgray and has the letter K scribed below the part number (Ref. figure 1a), it is factory reinforced.

For lightgray assemblies not identified with 'K' as noted, a reinforcement kit is available to be applied to any undamaged terminal clamp assembly.

Any terminal clamp assembly that shows signs of damage must be replaced and should not be reinforced. To determine if the assembly should be replaced or reinforced a complete inspection of the terminal assembly is mandatory.

## 1.0 INSPECTION REQUIREMENTS

### 1.1 Timeframe (Whichever Is Less)

- a) Within the aircraft manufacturers specified inspection periods; or
- b) Within the propeller manufacturers specified inspection or overhaul periods; or
- c) Within 100 hours after receipt of this Service Bulletin (E-85-73).

### 1.2 Inspection Procedures

All inspections to be done with the spinner removed. All inspection procedures apply to each terminal clamp assembly.

- a) Visually inspect each terminal clamp assembly in the area below the embossed 3E1883-2 part number. If the Letter 'K' is scribed as shown in Figure 1-a or if the terminal clamp is black and identified as part number 3E1883-2 nothing further is required. (Ref: DISCUSSION)
- b) If the Letter "K" is not present and the clamp is lightgray in color, visually inspect the assembly for any noticeable cracks. (Ref. Figure 1-b)

Although apparent cracks can be seen on the top side, it is recommended that the terminal clamp assembly be removed for thorough inspection. Cut the safety wire and remove the two mounting screws. It is not necessary to remove the lead attachment (de-icer and wire harness connection) from the terminal clamp assembly unless the terminal clamp assembly is to be replaced or re-inforced.

1.2 Inspection Procedures (cont.)

If any sign of cracking or separation is present, the terminal assembly must be replaced. If the terminal assembly is sound, i.e. no cracks, it is not necessary to replace the assembly as it can be reinforced using the reinforcement kit.

1.3 Options

There are two options for applying the reinforcement kit.

- a) At inspection time; and
- b) When the propeller is overhauled.

If application is delayed until prop overhaul, inspection of this item must be made during aircraft manufacturer's specified inspection periods or every 100 hours, whichever is less. To re-install the terminal clamp assembly, refer to paragraph 3.0 of this Service Bulletin (E-85-73) for installation procedures.

2.0 REINFORCEMENT PROCEDURES2.1 Identification of Parts

BFGoodrich has 2 kits available (at no charge). Each kit, identified below, contains material to reinforce all terminal clamp assemblies on one propeller assembly.

- a) Kit No. 65-953 - For HC-B3TN (3-Blade) Propellers
- b) Kit No. 65-954 - For HC-B4TN (4-Blade) Propellers

2.2 Procedure (Ref: Figure II)

- a) Remove the terminal clamp assembly, disconnect the de-icer and de-icer wire harness. Remove any balance weights attached to the terminal clamps.

NOTE: Record the quantity of balance weights removed to ensure proper return to the propeller assembly for maintaining prop balance.

- b) Thoroughly clean bonding surfaces. Recommended cleaning agents: Toluol, Isopropyl Alcohol, or MEK (Methyl Ethyl Ketone).
- c) Prepare the epoxy as described on the epoxy packet.
- d) Apply the mixed epoxy to the surface of the reinforcement bar that is to mate with the terminal clamp assembly.

2.2 Procedure (Ref: Figure II) (cont.)

- e) Position the reinforcement bar on the terminal clamp assembly. Ensure that all the holes on the reinforcement bar properly align with those on the terminal clamp assembly. No epoxy is permitted in the tapped holes of the terminal assembly.
- f) Allow 30 minutes for the epoxy to set. The assembly is then ready for reinstallation.

3.0 REINSTALLATION PROCEDURE

- a) Thoroughly clean top of prop blade clamp mounting surface to remove any foreign materials.
- b) Connect de-icer leads and wire harness leads as shown in Figure II and position terminal assembly on prop blade clamp. Care should be taken to avoid crossing any leads.
- c) Install attaching screws and washers. (When re-installing terminal clamp assemblies that have not been reinforced use the original mounting screws and washers.) Longer screws are provided in the reinforcement kits and must be used to attach any terminal clamp assembly that has been reinforced per this Service Bulletin. The original washers can be used. Check to see that the leads are not pinched between the terminal assembly and blade clamp. (Ref: Figure III) Tighten screws. Torque to 15-20 in./lbs. and safety wire.

**CAUTION:** DO NOT PLACE WASHERS OR PROP BALANCE WEIGHTS BETWEEN THE PAD OF THE TERMINAL CLAMP ASSEMBLY AND PROP BLADE CLAMP.

**NOTE:** If prop balance weights were present on the original terminal clamp assembly, they must be reinstalled on the new assembly in the same manner in which they were removed. The ends of the screws securing these balance weights must not protrude through the terminal assembly and contact the leads or the blade clamp. If balance weights are not required install two screws MS35275-40 or equivalent (Ref: Figure II) to secure reinforcement bar. Safety wire after installation.

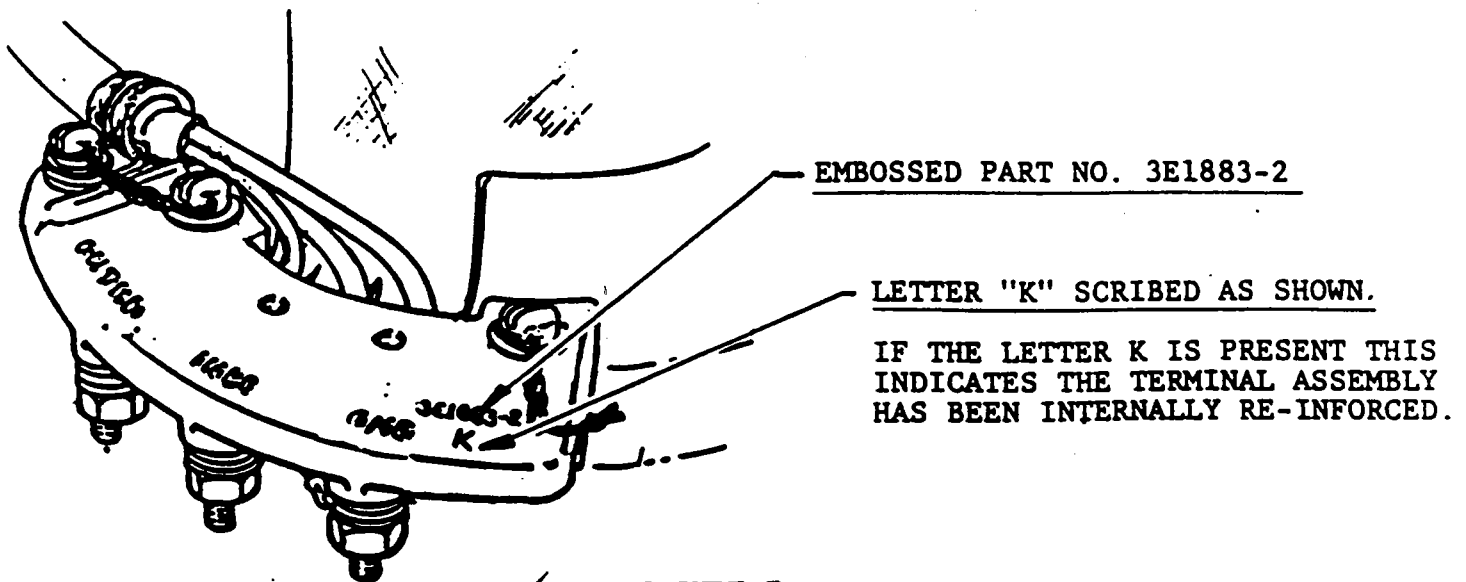


FIGURE 1a

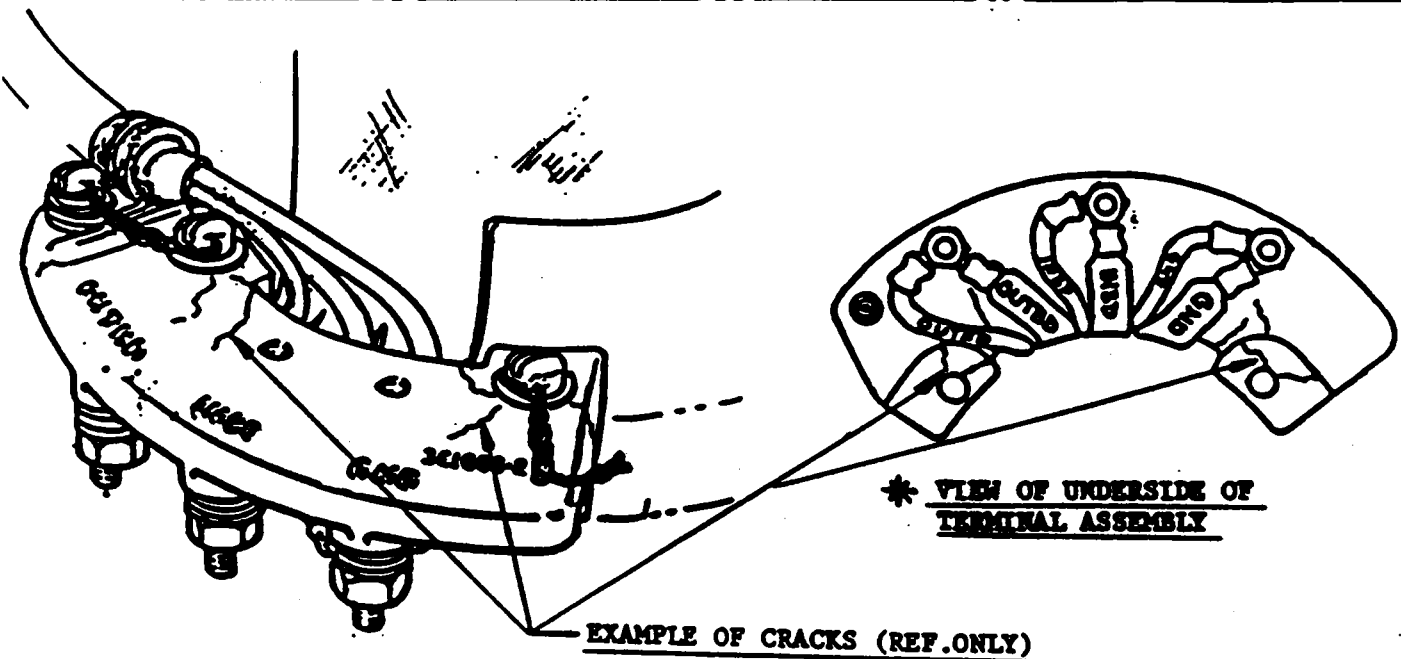
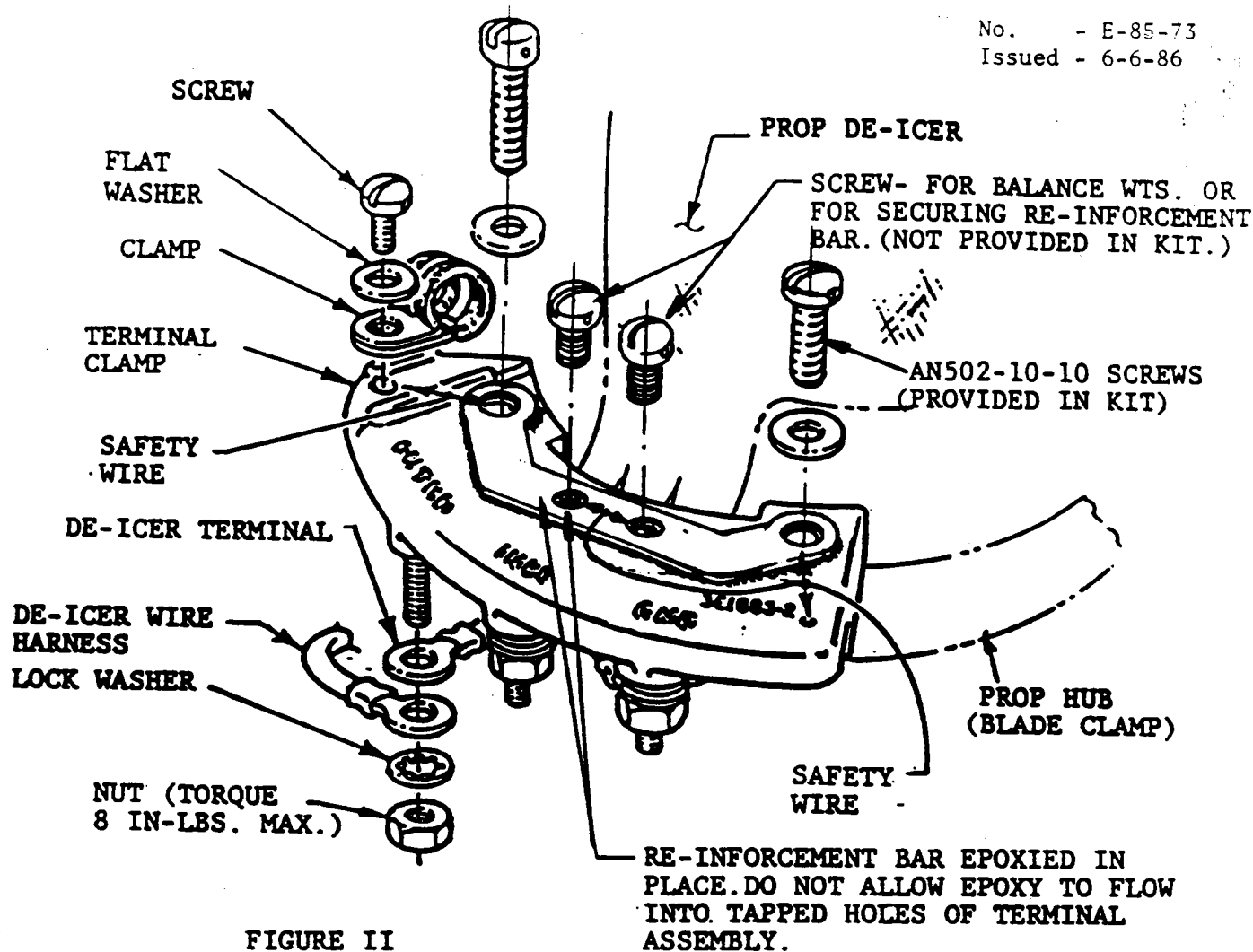


FIGURE 1b.

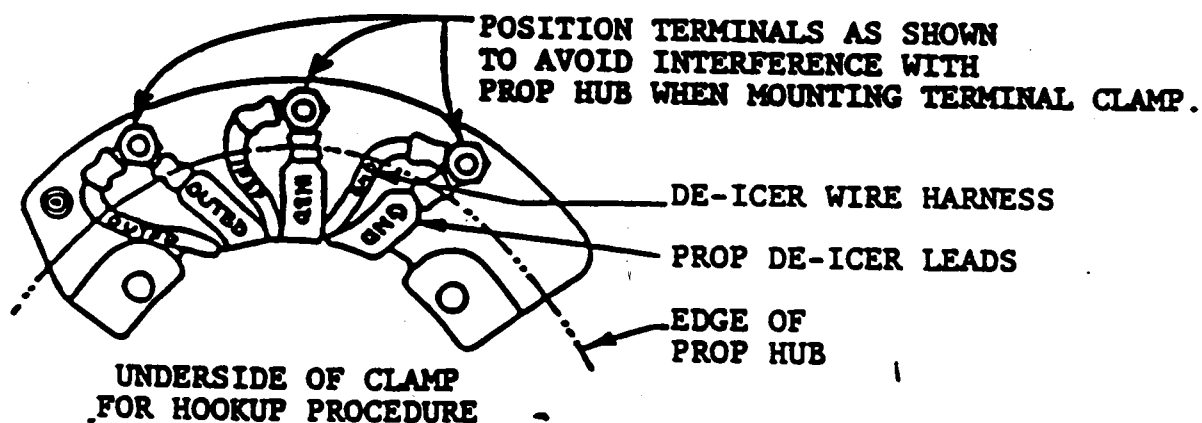
\* TO INSPECT THE UNDERSIDE OF THE TERMINAL ASSEMBLY:

1. REMOVE SAFETY WIRE.
2. LIFT THE ASSEMBLY AND INSPECT AROUND THE ATTACHMENT HOLES AND STANDOFF PADS. IT IS NOT NECESSARY TO REMOVE THE LEADS AT THIS TIME. (FOR REINSTALLATION SEE FIGURES II AND III.)

NOTE: IF THE TERMINAL ASSEMBLY HAS ONE OR MORE CRACKS AS SHOWN IN THE EXAMPLE THE ASSEMBLY MUST BE REPLACED.



**FIGURE II**



**FIGURE III**