

FULL SERVICE 17 REC

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

Form Approved
Budget Bureau No. 04-R060.1

MAJOR REPAIR AND ALTERATION
(Airframe, Powerplant, Propeller, or Appliance)

*Remove
DEMER
Super Tips*

FOR FAA USE ONLY

OFFICE IDENTIFICATION

INSTRUCTIONS: Print or type all entries. See FAR 43.9, FAR 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form.

1. AIRCRAFT	MAKE Piper	MODEL PA 22-150
	SERIAL NO. 22-5250	NATIONALITY AND REGISTRATION MARK N7522D
2. OWNER	NAME (As shown on registration certificate) Thomas D. Stewart ✓	ADDRESS (As shown on registration certificate) 405 Norman Ave. Cashmere, Wn. 98815

3. FOR FAA USE ONLY

4. UNIT IDENTIFICATION				5. TYPE	
UNIT	MAKE	MODEL	SERIAL NO.	REPAIR	ALTERATION
AIRFRAME	***** (As described in item 1 above) *****			XX	
POWERPLANT					
PROPELLER					
APPLIANCE	TYPE				
	MANUFACTURER				

6. CONFORMITY STATEMENT

A. AGENCY'S NAME AND ADDRESS William C. Markey 1506 Walla Walla St. Wenatchee, Wn. 98801	<input checked="" type="checkbox"/> U.S. CERTIFICATED MECHANIC	C. CERTIFICATE NO. A&P 1740086
	<input type="checkbox"/> FOREIGN CERTIFICATED MECHANIC	
	<input type="checkbox"/> CERTIFICATED REPAIR STATION	
	<input type="checkbox"/> MANUFACTURER	

D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished herein is true and correct to the best of my knowledge.

DATE 3-11-86	SIGNATURE OF AUTHORIZED INDIVIDUAL <i>William C Markey</i>
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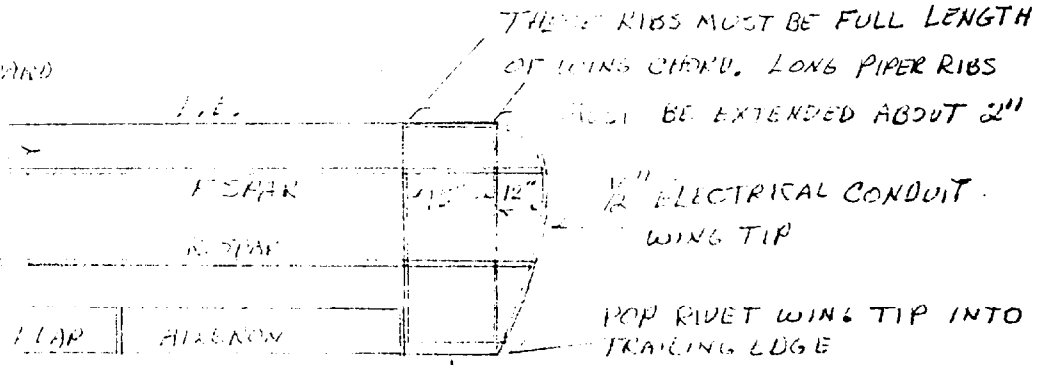
7. APPROVAL FOR RETURN TO SERVICE

Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is APPROVED REJECTED

BY	FAA FLT. STANDARDS INSPECTOR	MANUFACTURER	<input checked="" type="checkbox"/> INSPECTION AUTHORIZATION	OTHER (Specify)
	FAA DESIGNEE	REPAIR STATION	CANADIAN DEPARTMENT OF TRANSPORT INSPECTOR OF AIRCRAFT	
DATE OF APPROVAL OR REJECTION 3-11-86	CERTIFICATE OR DESIGNATION NO. IA 1740086	SIGNATURE OF AUTHORIZED INDIVIDUAL <i>William C Markey</i>		

TOP VIEW OF WING

LEADING EDGE SKIN ON OUTWARD
 F WING IS REPLACED SO IT
 WRAPS ALL THE WAY AROUND
 T.E., THE TOP PART OF T.E.
 SHOULD WRAP BACK TO SPAR
 ALL SPAN.

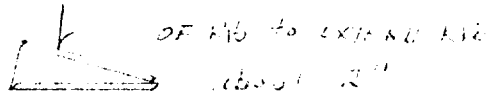


THESE RIBS MUST BE FULL LENGTH
 OF WING CHORD. LONG PIPER RIBS
 MUST BE EXTENDED ABOUT 2"
 1/2" ELECTRICAL CONDUIT
 WING TIP

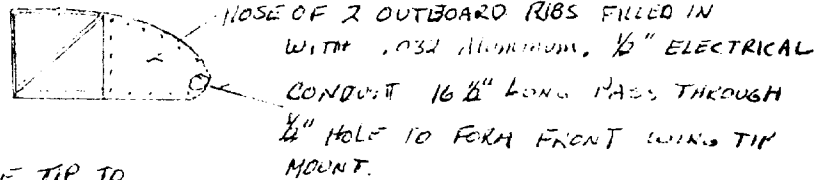
POP RIVET WING TIP INTO
 TRAILING EDGE

ALUM. T.E. EXTENSION WHICH
 CREWS TO T.E. OF RIBS TO
 MAKE THEM LONG ENOUGH.
 PROX. 6" LONG + SEWES OVER LAST 4"

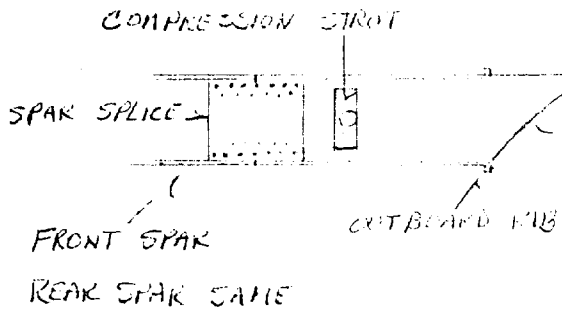
ALUM. T.E. FASTENS TO BOTH FULL LENGTH RIBS
 W/ 3/8" X #4 SCREWS. END OF WING TIP FLATTENED
 + POP RIVETTED INTO END OF WING TIP T.E.



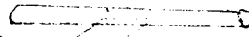
FABRIC LINE - L.E. OR
 T.E. VIEW OF WING TIP



BRAZE TIP TO
 MOUNT



WING TIP
 TOP OF TIP SHOULD
 BE SAME HEIGHT AS
 TOP OF RIB

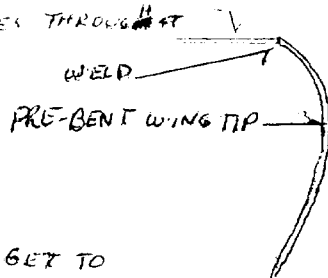


WING TIP MOUNT WHICH
 FASTENS TO FRONT + REAR
 SPAR TO MOUNT WING TIP.

RELIEVE THIS AREA
 SO FABRIC WILL
 NOT CONTACT IT

SIZE TO FIT SPAR FLANGE

THIS PIECE IS WELDED
 TO WING TIP AND PASSES THROUGH
 FRONT PLATE IN 2
 FULL LENGTH RIBS
 1/2" CONDUIT APPROX
 16 1/2" LONG



THIS PIECE FASTENS TO TOP END OF
 WING SPAR + WHEN TIP AND EVERY-
 THING LIKE OF THE TIP IS BRAZED
 TO THIS MOUNT. (1 ON EACH SPAR)
 WITH THE TIP FASTENED TO EACH
 SPAR AND AT THE T.E. AS SHOWN
 AND THE 16 1/2" STRAIGHT PIECE OF
 1/2" CONDUIT THAT IS WELDED TO THE
 WING TIP PASSES THROUGH THE
 MODIFIED NOSE OF BOTH RIBS THE
 TIP IS VERY SECURELY ANCHORED.

THE 1/2" CONDUIT THAT GOES THROUGH
 THE NOSE OF RIBS DOES NOT HAVE TO
 BE FASTENED TO THESE RIBS. WHEN
 IT IS ATTACHED AS DESCRIBED IT
 WILL NOT MOVE

I HAD TO SPLICE MY SPARS TO GET TO
 ORIGINAL SPAN AS THEY WERE CUT OFF
 WHERE CENTER WEB ENDED FOR INSTALLATION OF
 DEMER SUPER TIPS. THIS WOULD NOT HAVE TO BE
 DONE ON A STOCK WING AS YOU COULD PUT A WEB
 IN BETWEEN THE TOP + BOTTOM CAP STRIPS +
 THEN CUT THE LOWER ONE OFF AS REQUIRED

re; Piper wingtip mods on N7522D

I wanted my wing tips to follow the upper curvature of the wing. By doing this and maintaining full chord width to within about 12" of end of wing I was able to not exceed factory wing span and still increase effective lifting area by about 14 sq. ft. (7 sq ft per wing)

I thought it would be a real problem to figure out what the proper bend would be to get the pipe bow to follow the top curvature of the wing, but this was easily solved as follows.

With the 2 full length ribs in proper location on spars take a large piece of cardboard, (a refrigerator shipping box etc.) and lay it over the top of wing with stiff part of cardboard running span wise. Let the cardboard stick out past the end of wing about 18". Tie the cardboard to the 2 ribs so it follows the curvature of ribs from front to back. You will notice this curvature will be followed in cardboard and look like an 18" extension to the wing. On the bottom side of cardboard measure from rib out to where you want the pipe tip to be located and put a mark on cardboard. (this location should put the wing tip in proper location to make the wing the same length as original. If the outboard full length rib is 12" from tip this will be 12" if 14" it will have to be 14" etc.. This length is not critical but will effect how the tip will look. The shorter the distance the more squared off and blunt the tip) Now take a straight edge and hold one end of it on the mark and swing it towards the bottom of the rib until it is in contact with the bottom of the rib. This gives you the angle of wing tip from bottom of rib to tip bow. What you want to do is maintain this angle while you mark the cardboard from LE to TE. This will give the tip a nice tear drop shape. I made a piece that would slide along the bottom of the 2 ribs which had a angle guide glued to it. I then took a straight piece of wood (yard stick etc.) and taped a pencil to the end of it and as I sled the guide piece along the bottom of the ribs it kept the marking stick at the same angle as the pencil followed the curvature of the cardboard. Once the cardboard is marked ~~mark~~ bend the $\frac{1}{2}$ " conduit to follow the marked line. When it is bent prefit it to wing and line it up with the straight piece that goes thru nose of ribs and weld bow to straight piece as well as to spar mounts. TE should be flattened so it will fit into TE of wing right next to the end of last rib.

The aileron is squaired off so it will match the extended TE. Also none of the Piper ribs are quite long enough to reach all the way back to the new TE which extends on a straight line outboard from the TE of the aileron so the 2 long ribs will have to be fabricated or Piper ribs modified. I schrounged up 4 of the long Piper ribs and bent up an aluminum extension which I fastened to the ribs with 3/8 X #4 screws. If I remember right these ribs had to be extended about 2".

Hopefully these instructions are only semi confusing. If you decide to make this mod. I'm sure you will be happy with the results.

Good Luck;
Doug Stewart #1248