

Wing Tip Service Bulletin

Date: Friday November 19, 2004

To: All Super Rebel/Moose series owners

Re: Wing tip rib/rear spar

INFO: Cracking has occurred on a number of Super Rebel series aircraft on the rear spar of the wing at the tip end near the hinge bracket. This cracking is caused by the aileron balance weights stressing the tip rib flange. This adds stress to the hinge bracket and hinge bracket bolts.

An immediate inspection of said area is absolutely necessary on BOTH wings for ALL Super Rebel/Moose series.

The aircraft can still safely be flown if there is no evidence of cracking but it is HIGHLY RECOMMENDED you do this mod BEFORE damage occurs.

ACTION: Remove wing tip and inspect the trailing edge of the tip rib where it is riveted to the rear spar along the bottom flange radius on the rear spar. If cracks are evident you must install the modification we will be sending out to you A.S.A.P. You will also need a spar doubler to repair cracked area. The number of rivets removed and size of doubler needed depends on the severity of the crack. The mod consists of a piece of 6061-T6 aluminum and a piece of bent stainless to do both wings and Avex rivets at no charge. The piece of stainless is for your wings AND your horizontal stabilizer mod to be specified in another bulletin.

Cover Letter for the Super Rebel/Moose Modifications

The repair modifications specified are very similar in nature and require immediate attention.

This applies to ALL Super Rebel/Moose series owners. In the mod kits we will provide you with a raw stock piece of stainless steel with a bent flange that will replace the old rib flange. This piece of stainless that is provided is enough material to fix both wings and both tips of your horizontal stabilizer.

You need to carefully read instructions and mark out each doubler piece before cutting to ensure you have enough for all!

The aluminum piece that is provided is for the wing tip mod only!

This aluminum piece provides stiffness as well as strength to the tip end of your wings.

This piece may come to you in one piece but it is for BOTH wings so cut it carefully.

Ensure that your inspection of the areas mentioned is well looked at possibly with a second pair of eyes present [it never hurts]. It is very important that if your spar is cracked, you contact us and we will inform you of the procedures necessary on how big of a doubler you will need to repair your spar.

Note: If your spar is not cracked you will not need a spar doubler, the provided mod kit parts will be more than enough. Do not rivet up your mod if you have a cracked spar as you will have to drill stop the crack and install a spar doubler first.

WING SPAR PARTS LIST

| <u>PART #</u> | <u>DESCRIPTION</u> | <u>QUANTITY</u> |
|---------------|---------------------------|-----------------|
| W-1030 | TIP RIB DOUBLER | 2 |
| W-1031 | REAR SPAR BRACE | 2 |
| RV-1410 | RIVET 1/8 X 3/16 AVEX | 110 |
| RV-4412 | RIVET 1/8 X 3/16 CSK AVEX | 70 |

3500 WING TIP MOD

1/ This modification is for the tip rib/rear spar doubler repair. After you have removed the wing tips drill out the rib rivets that connect the skin to the rib. CAREFUL WHEN DRILLING AVEX RIVETS AS THEY HAVE A STEEL STEM AND MUST BE PUNCHED OUT! You only have to remove two flanges of rivets on the bottom and three on the top [of the wing] to allow the rib to be flexed out to help install the STEEL DOUBLER.

If your spar is cracked you will have to drill stop the crack with a #30 and will require a doubler to be placed on your rear spar. The number of rivets that need to be removed and size of doubler depends on the severity of the crack.

2/ Remove the hinge bracket and the rivets that are now accessible on the rear spar. Cut the existing flange off of your tip rib to make room for the new STEEL DOUBLER flange.

3/ Trim the ALUMINUM DOUBLER to fit one eighth of an inch inside the radius of the rib flanges to prevent cracking along the flanges. Make sure you cut out the stringer slots and LATER you will trim the trailing edge for the STEEL DOUBLER fitting. The ALUMINUM DOUBLER must be fit on the flat side of the rib because everything sits flat this way. [this means that on your left wing the mod will be on the outside and on the right wing it will be on the inside!]



4/ Once the ALUMINUM DOUBLER is trimmed layout a rivet pattern similar to the drawings provided. **IMPORTANT:** as you can see from the photos the STEEL DOUBLER is incorporated with the ALUMINUM DOUBLER so you must be very careful when laying the rivet pattern out. The rivets used in this mod are a one eighth rivet so you need a quarter of an inch edge distance for EVERYTHING! Start by drilling #40's and leave it at that for now.

5/ Now pick up the STEEL DOUBLER and trim it to fit as the new rib flange. Trim it so it stays clear of the rear spar radiuses but if you trim too much you will have no edge distance for your hinge bracket bolts! Cleco the skin [top and bottom] back onto the tip rib to ensure great alignment. Next fit the STEEL DOUBLER to the ALUMINUM DOUBLER making sure the new rib flange has a perfect fit to the rear spar and finish drilling to #40. You can now drill all doubler holes to #30. With everything still clecoed in place drill into the new steel flange in between the hinge bracket holes at #40 to create pilot holes to simplify drilling the steel. Cleco each hole as you go. Drill the hinge bracket holes next to #40 and when all holes are drilled finish the hinge bracket with #11 holes and the holes in between are #30.



6/ Take both doublers off and deburr. **TO PREVENT CORROSION PROBLEMS YOU MUST ZINC CHROMATE BOTH DOUBLER PIECES AS WELL AS DIP EACH RIVET IN CHROMATE BEFORE INSTALLATION!!** Re-cleco the doublers back onto the rib and rivet together using the ZINC CHROMATE method specified earlier. You can then reinstall the rivets in between the hinge bracket holes first, then reinstall the hinge bracket. You can now finish by riveting the skin back to the rib. Do not rivet any of this together if you have a cracked spar! Please contact us when you get to this stage for further instructions. Repeat ALL steps for other wing!