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## SERVICE BULLETIN

**Ride Manufacturer:** Eli Bridge Company    **Affected Production Dates:** All    **Affected Serial Nos:** All

**Ride Names:** Scrambler®, Trailer-Mounted Scrambler (TMS), Retro-Fitted Scrambler (RS)

**Abstract of Issue:** Scrambler Seat Repair- Acceptable Blind Fasteners/ Rivets.

It has come to our attention that

- 1) Some Scrambler seats are regularly being run with loose or missing rivets and
- 2) Occasionally when seat repairs are being done, it is difficult to find a Huck Rivet Gun to replace Huck Rivets.

The seat design is similar to an aircraft wing design utilizing inner ribs with bent flanges riveted to outer aluminum skins. The strength is therefore an overall integral unit assembly. If rivets are missing or loose, forces cannot be transmitted properly throughout the assembly to spread the loads. And, if several rivets in a row are missing or loose, the rivets on each side may also become damaged due to the "sawing" action of the skins moving against the rivet shafts. When seats are allowed to operate under these circumstances, the remaining structure is flexing and straining, which results in structural fatigue of the skins and the rivets.

**Reason for Release:** 1) BIG ELI Scrambler Seats should not be operated if rivets are missing or loose, and 2) To address acceptable rivet fasteners for use on Eli Bridge Co. Scrambler seats.

**Action to be taken:** In the assembly of the scrambler seat, the main rivet used is a 5/32" (#56) aluminum pop rivet installed in a hole which has been made with a #20 drill of .1610" diameter. Loose rivets should be drilled out, then look through the hole to see the position of the rib flange. If it is in close position to the skin, then a new aluminum pop rivet of appropriate gauge and length can be used to clamp the assembly tight again. Note that in some places there may be more than 2 layers of aluminum or different thickness. The skin is .040" thick so be sure to use an appropriate gauge rivet. Do not use steel/steel or aluminum/steel pop rivets due to rusting and therefore corroding the aluminum skin. Only reuse existing holes, do not drill new holes in the flange. Use an awl or ice pick to align holes if necessary.

Also note that in some corners, a 3/16" all aluminum huck rivet is used. Since these rivets require a special swagger to install, which can often be unavailable, an all stainless steel pop rivet of appropriate gauge can be used. The stainless steel will not rust and has superior grip and sheer strength than the aluminum. The proper drill size for this replacement is a #11 or .1910" diameter. These are the points of higher stress that need to be handled properly. All seats shall be inspected weekly for portable rides and monthly for stationary rides.

If three or more rivets in a row are missing or loose, replace the three rivets on each side of the missing rivets to maintain the integrity of the design because typically these will be become exceeding worn as well.

For additional information not found in this bulletin or consultation about your SCRAMBLER® seats, please contact Eli Bridge Company at the phone number or email listed above.