

TO: ALL BIG ELI HY-5 II, Eagle 16 and Double Eagle Wheel Owners

There was an incident on a Double Load BIG ELI Eagle #16 where a drive-rim removable bolt broke during operation. With the cooperation of the owner, the Ohio State Inspection Department, and the other Wheel owners in Ohio, there has been an investigation as to the cause of the break.

The crack started at the end of the threads closest to the shank of the removable bolt and proceeded to break into the shank. By design, there should be no bending load on the threads of the removable drive-rim bolt. But, if the nut and bolt are not sufficiently tightened, the aluminum drive rim and the steel spoke tab which are being held together by the nut and bolt will be allowed to move against each other and eventually wear the holes onto ovals. This looseness lets the pin move and the result is that a load is put on the nut by the tab. This load is transferred to the threads as a bending load, thus eventually cracking the thread until ultimate failure occurs as a break.

Eli Bridge Company feels it has determined the cause and believes it is prudent to recommend to all of the above owners that:

- 1) Both the drive-rim removable bolts and pivot bolts should be NDT'd using ultrasound or X-ray testing. Any bolts found to have cracks should be replaced immediately.
- 3) After testing or replacement, all pivot bolts must be lubricated with never-seize on the large shoulder and this should be added to the annual maintenance list/log.
- 4) The next time the Wheel is folded, the "hub bolts" (the bolts holding the spoke tenons to the bananas which wind around the hub for operation) and the holes in the bananas need to be measured for wear. If there is 1/16" or more total wear in any one connection, then any wear 1/32" or more requires replacement of the piece, by the following tear-down. For instance, if there is 3/64" wear in the bolt and 1/64" wear in the banana, then the bolt must be replaced.
- 5) The replaceable drive-rim bolt must be torqued to 100 foot/pounds each time the drive rim is installed in the operating position. If the nut is bottoming out on the threads before it reaches proper torque, add a flat washer with enough thickness to allow proper torquing. Do not use a split or lock washer.

If any HY-5 II owner has experienced a removable bolt breaking, please contact Eli Bridge Company immediately.

More information will be forthcoming, but this addresses the main issues of safety in the meantime. Thank you for your help and continued support in the Safety Improvement of the Industry.

PLEASE forward this to anyone you know who can help get it to the Wheel owners. Thank You!

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