



# THE GLIDING FEDERATION OF AUSTRALIA INC

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## Airworthiness Alert 2020-2 Jantar Rudder Cable Guide Tube

### Overview

A Service Difficulty Report has been received detailing a disbond of the rudder cable guide tubes on a Std Jantar 2. The defect if not identified could lead to a total loss of rudder control.

### Investigation

It is known that Jantar types of similar vintage are subject to partial disbonding of the rudder guide tube from the fuselage. The guide tubes are originally anchored by pressing tube into the wet resin during manufacture. The rudder cables can place large side loads on the guide tube where it forms an S shape. Once disbonded in this area, the rudder cables will try and cut the corners of the S and the guide tubes are not stiff enough to prevent this. This allows rudder pedal movement without the rudder moving.

The most recent defect report states both left and right cable guide tubes were found totally disbonded in the centre fuselage resulting in a complete loss of rudder control authority. It was found that if the rudder was held in the neutral position, the rudder pedals could be cycled through the full range without resistance.

### Recommendation/Action

**Daily Inspection:** The daily inspectors must be aware that the type is subject to this failure mode. The daily inspector must use inspection methods to ensure the rudder system is fully serviceable, full travel is available at the rudder pedal and at the rudder. Apply a small load at the rudder pedals whilst the rudder is held in the neutral position to test the systems serviceability.

**Note:** The rudder may appear functional if the pedals are pressed during a DI with no rudder restraint (with fully failed tubes) and yet there would be no rudder authority when flying. It is necessary to restrain the rudder while pressing the pedals. When the tubes are partially failed the rudder authority gradually reduces and can be detected by feeling spongy.

**Annual Inspection:** The GFA annual inspector when performing annual maintenance on any Jantar type must also be aware of the control systems potential defect failure. The anchoring of the both cable guide tubes to the fuselage interior, particularly the centre fuselage, must be ascertained by both visual and functional means using the above technique. Any disbonds relating to the rudder cable guide tube must be repaired before returning the glider back to service.

It is recommended that inspection of both left and right cable guide tubes be carried out within the next 90 days. Any rectification action as a result of this inspection is to be performed by an inspector holding a Form 2 Maintenance Authority. Record any defects identified in the aircrafts records.



**Figure 1:** The above photo taken of the centre fuselage from a Jantar wreck shows a secured or well bonded cable guide tube at left and a disbonded tube section sagging slightly at right. Partial debonding still allows the control to work but as the disbond gets longer, the control on the rudder gets softer and less effective. Experience suggests the tube should be able to be pushed back into position by compressing the tube and bonding it back to the FRP fuselage shell. Ensure the FRP surface is well prepared prior to rebonding.

### **Reporting**

Notify the GFA in the usual manner by submitting an online SDR or Defect Report if maintenance action is required.

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