

GLIDING FEDERATION OF AUSTRALIA

AIRWORTHINESS ADVICE NOTICE GLIDERS:

GFA/AN 38

SUBJECT: Glider control surface movement checks.

GLIDER TYPE AFFECTED: Glasflugel H-201B "Libelle", but generally applicable to all types.

BACKGROUND:

During a recent G.F.A. Form 2 inspection of a H201 B Libelle, the aileron actuating mechanisms were dismantled and on reassembly the right and left actuators were interchanged inadvertently. The C. of A. inspector checked that the ailerons moved when the control column moved and the Daily Inspector and pilot for the test flight also checked that the ailerons moved when the control column moved but all failed to observe that the ailerons moved IN THE CORRECT SENSE; in fact the action was reversed.

As a result on take-off this control surface movement reversal resulted in a pilot amplified wing drop which led to a serious ground loop and damage to the glider.

SUMMARY:

This incident emphasises the dangers of complacency; we have come to expect things to operate correctly and therefore assume that if something works, it works correctly. However in this incident, as is quite common, the unfortunate effect was not the result of one error but of a string of errors.

1. In dismantling the control actuators, components of each actuator were not kept segregated and the order of assembly noted.

The Libelle actuator is an ingenious mechanism and the geometry of its action is not obvious; to fit the right actuator into the left wing and vice-versa the actuator must be inverted but then its action is reversed.

2. Movement in the correct sense was not checked.
3. Correct angular movement of the aileron was not checked, hence the fact that aileron differential movement was incorrect in so far as "down" movement was greater than "up" movement was not observed.
4. The "Dual" control system check and subsequent Daily Inspection and pre-flight control movement check did not take into account "correct sense" of control surface movement.

This incident substantiates one of "Finagles Laws" - that for any mechanism which cannot be assembled incorrectly, someone will find a way.

It also emphasises the need to apply proper procedures for dismantling, reassembly and checking of all work carried out and the folly of assuming that all preceding work carried out by others has been correctly carried out.

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"THIS AIRWORTHINESS ADVICE NOTICE IS TO BE BROUGHT TO THE ATTENTION OF YOUR AIRWORTHINESS PERSONNEL AND ALL SYNDICATE AIRCRAFT IN YOUR CLUB."