

GLIDING FEDERATION OF AUSTRALIA

AIRWORTHINESS ADVICE NOTICE

REF. No. GFA/AN/44 GENERAL 6.

GLIDER TYPES AFFECTED:

All types

BACKGROUND: . There have been a number of wing aileron flutter incidents affecting some of the newer glider types both in Australia and in some overseas countries. Some of these incidents were the result of exceeding the design airspeed limits but others occurred when flying within speed limits. In practically all of the incidents the aircraft involved had exceeded some hundreds of hours in service and none had been affected by flutter when new and flown in similar circumstances.

Test flying for Certification purposes was carried out in gliders in near new condition. In investigation of gliders which have suffered flutter it has been found in most cases that wear in aileron hinges and control linkages had reduced control circuit friction which in turn reduced the damping effect of friction and whereas in some gliders the extent of wear and free play in the control circuits was in excess of the limits set out in the glider's maintenance manual others were within recommended limits.

The ailerons of all gliders affected were not fully mass balanced but depended on friction damping to avoid flutter but as a result of the occurrence of flutter incidents the degree of mass balance has been reviewed and in some cases modified. Where this has occurred Airworthiness Directives detailing these modifications have been or will be issued.

RECOMMENDATIONS:

1. It is essential for reasons of flight safety to ensure that limits of wear and free play in control circuits as detailed in the gliders flight and maintenance manual are not exceeded.
2. It is equally essential that airspeed, weight, and balance limitations are not exceeded.
3. Sealing of control surface hinge lines must be maintained in good condition and care taken that sealing tape folds inwards as in some cases sealing tape bulging outward into the airstream can be a causative effect inducing control surface flutter.
4. Older types of gliders are not immune to flutter and for gliders with cable operated control surfaces attention must be given to correct cable tension at regular intervals. For gliders of wooden construction this is particularly important as the structure changes dimensionally with changes of humidity over relatively short time intervals.
5. Be aware that flutter is not a matter to be treated lightly.

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