

CANCELLED
AIRWORTHINESS DIRECTIVE GLIDERS

29 NOV 2021

REF. NO. GFA/AD/178 GENERAL 4.

REFER BSE CHAPTER 28

GLIDER TYPES AFFECTED.

All gliders fitted with ball joint type quick connectors in their control circuits including Grob Astir series, LS-1, LS-3, LS-3A, IS-28B2, IS-29, Schleicher ASW-15, 17, 19, 20. Schempp-Hirth Standard Cirrus, Nimbus. DG-100, DG.200.

BACKGROUND.

Further to the incident which led to the issue of GFA/AD 177, General 3, investigation has revealed that a number of gliders were fitted with the incorrect type of couplings which accentuated the likelihood of failure resulting from wear.

There are two basic forms of ball joint coupling in use. One type is designed for a side connection where a push rod connects to a lever. The other type of coupling is designed for an in line connection such as where one push rod connects with another push rod and the push rod operating forces are more or less in line.

The female part of the coupling of the first mentioned type has a closed end and it cannot be used as an in line coupling.

The female part of the coupling of the second mentioned type has an open end and it is possible to use this type of coupling as an in line or as a side connection type, however when used as a side connection coupling the ball part of the coupling is subjected to more rapid wear due to the reduced bearing surface at the open end of the female part of the coupling. The resulting wear pattern can lead to the female part of the coupling obtaining a clamping grip on the ball part of the coupling and any rotary movement can lead to failure of the ball shank.

Tests have shown that approximately two degrees of twist between the ball and its shank can cause failure.

REQUIRED ACTIONS.

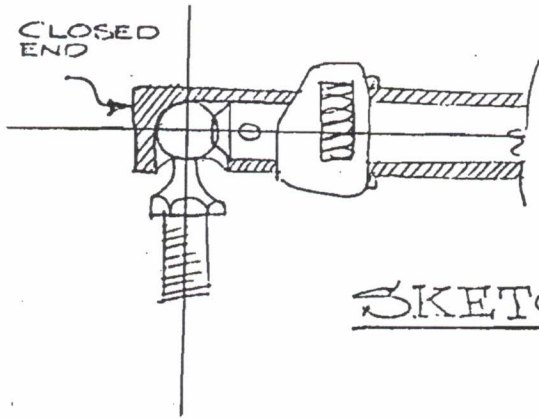
All gliders fitted with ball joint couplings with side connections are to be inspected before further flight, to ensure the correct type of female connection is fitted. If an open ended type female coupling is fitted it is to be replaced with a closed end type. If any discernable wear marking is evident on the mating ball component, the ball and female part of the coupling are both to be replaced before further flight.

Alternatively the ball part only may be replaced but the female part of the coupling must be replaced within twenty five further hours in service.

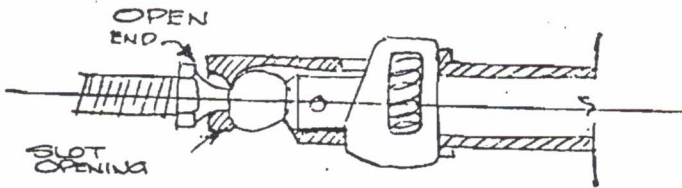
Sketches 1 and 2 illustrate the two types of coupling.

COMPLIANCE.

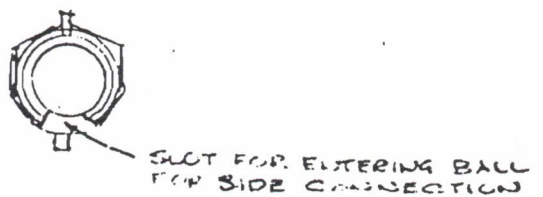
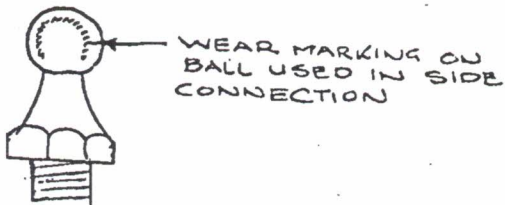
The requirements of this directive are mandatory. This Directive is issued pursuant to Air Navigation Regulations under delegated authority of the Secretary of the Department of Transport.



SKETCH 1



SKETCH 2.



END ON VIEW OF COUPLING.