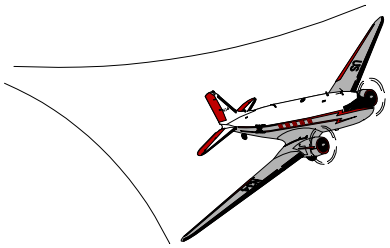
SPECIAL AIRWORTHINESS INFORMATION BULLETIN



U.S. Department
of Transportation
Federal Aviation Administration

AIRCRAFT CERTIFICATION SERVICE
800 INDEPENDENCE AVENUE, S.W.
WASHINGTON, DC 20591

No. ACE-97-04
May 29, 1997

Published by: FAA, AFS-610, P.O. Box 26460, Oklahoma City, OK 73125

The purpose of this Special Airworthiness Information Bulletin (SAIB) is to provide safety information to sailplane/glider owners on the following:

- Modifications affecting weight and balance tables, graphs, and placards
- Applicability of Airworthiness Directives
- L'Hotellier ball and swivel joint quick connectors
- Proper equipment security

The first two subjects may not be applicable to your sailplane, however, if you know another sailplane owner/operators to whom this information may apply, please provide them with a copy of this SAIB.

Modifications affecting Weight and Balance Tables, Graphs, and Placards

Most Sailplane Flight Manuals (SFM) have weight and balance tables or graphs that specify acceptable pilot weights for various configurations. Numerous sailplanes also have placards in the cockpit stating minimum and maximum weights for crewmembers (i.e., minimum forward seat weight for solo flight, etc.). These tables, graphs, and/or placards were initially based on the empty weight and center of gravity of the sailplane when it was manufactured; therefore, when a sailplane has been modified (by a Supplemental Type Certificate or Field Approval), this information may no longer be accurate.

The FAA recently become aware of an accident where this situation may have been a causal factor. A sailplane was modified with a structurally stronger tail wheel assembly. This tail wheel modification increased the weight and shifted the empty weight center of gravity considerably aft. However, the sailplane ballast was not changed to account for the modified weight and balance data. The sailplane took off with a center of gravity aft of the limit and entered a stall/spin. Stall characteristics and spin recovery capability are strongly affected by the center of gravity. Moving the center of gravity aft of the published limit will degrade stall and spin characteristics.

If your sailplane has been modified, the FAA recommends a qualified person (certified mechanic) verify that the weight and balance information (SFM or placards) is accurate.

Applicability of Airworthiness Directives

The FAA has become aware of some confusion regarding the applicability of certain Airworthiness Directives. An AD is issued to address an unsafe condition that is likely to exist or develop in products of the same "type design," which, in general, means products that have a U.S. Type Certificate. Under current certification requirements, an aircraft with an experimental certificate is

not considered to have an approved "type design." This means that an aircraft with an experimental certificate is not required to comply with Airworthiness Directives. If an experimental aircraft has a similar design to a type certificated sailplane, the FAA strongly recommends the owner consider complying with the intent of the AD.

L'Hotellier Ball and Swivel Joint Quick Connectors

The FAA recently issued Airworthiness Directive (AD) 97-08-06 applicable to Louis L'Hotellier, S.A., Ball and Swivel Joint Quick Connectors. Owners of U.S. Type Certificated gliders or sailplanes that have these types of connectors installed are required to comply with this AD. A revision to this AD is currently being considered to clarify the intent and effectivity and also include additional requirements to include the rocker cam type quick connector. The FAA does not have a complete database listing all sailplanes that have these connectors as part of their type design. The "Applicability" paragraph of AD 97-08-06 states in part: "All quick connectors installed in, but not limited to, the following gliders and sailplanes...." SUMMARY: If your sailplane is type certificated and was not listed in the table of AD 97-08-06 (or is not listed in the revision of the AD), compliance is still required if these connectors are installed.

This SAIB may clarify some areas of concern. The FAA is considering including the following information in the revision of AD 97-08-06. The FAA highly recommends that owners of experimental certificated sailplanes, where compliance is not mandatory by AD 97-08-06, also accomplish these or similar actions.

For gliders and sailplanes that are equipped with the L'Hotellier ball and swivel joint quick connectors and that are not equipped with a "Uerling" sleeve or an LS-Safety sleeve (or other similar locking device), the FAA encourages the accomplishment of the following:

For ball and swivel joint quick connectors with lock plates:

> If these connectors have a safety pin guide hole, the hole may be enlarged to a maximum of 1.2mm (0.05 in) to accommodate an appropriate aviation locking device (i.e., safety wire, pin, etc.) If the locking device already fits the guide hole, then this hole enlargement is not necessary (reference Figure 1). Because of the various locations, accessibility to the fittings, etc., the appropriate type of aviation locking device is at the discretion of the certified mechanic. However, the FAA recommends that the owner/operators use the locking devices that are supplied by their respective glider/sailplane manufacturer.

For ball and swivel joints quick connectors with locking cams:

> If the locking cam does not have a safety pin guide hole, the hole may be drilled to a maximum diameter of 1.3mm with the ball correctly inserted so that one edge of the hole would be level with the main body of the joint and at least 1.5mm of material is left on the other side. When the ball is seated correctly, the hole is located aft of the centerline of the cam pivot point (as noted by the dashed line on Figure 2). It is important to have the ball seated correctly in the joint when the hole is marked and the ball and swivel connected when the hole is drilled (reference Figure 2). Suitable locking devices have been identified by the manufacturers with respect to their specific type design features. Contact the U.S. sailplane company representative or manufacturer for any technical information.

Owners and operators may also consider a cockpit placard similar to that required by AD 97-08-06 which states:

> **"All L'Hotellier control system connectors must be secured with safety wire, pins, or safety sleeves, as applicable, prior to operation."**

The FAA further recommends that owner/operators inspect these connectors per L'Hotellier's "Instruction for the Maintenance L'Hotellier Ball and Swivel Joints." This Technical data may be obtained from your U.S. sailplane company representative or from:

L'HOTELLIER S.A.
93, Avenue Charles De Gaulle
92270 Bois Colombes
FRANCE

Again, the *safety intent* of AD 97-08-06 applies to many sailplanes that have experimental type certificates and have the L'Hotellier type of connector. The FAA highly recommends owner/operators of experimental sailplanes comply with the intent of this AD--Safe Soaring is everyone's primary goal.

Equipment Security

As an additional safety tip, the FAA recommends that each owner/operator ensure that all equipment be properly secured prior to flight. An example is proper security of seat belts in a two seat sailplane prior to solo flight.

For Further Information Contact:

Mike Kiesov, Aerospace Engineer/Pilot, FAA, Small Airplane Directorate, 1201 Walnut, Kansas City, Missouri, 64106; telephone (816) 426-6934; Facsimile (816) 426-2169.

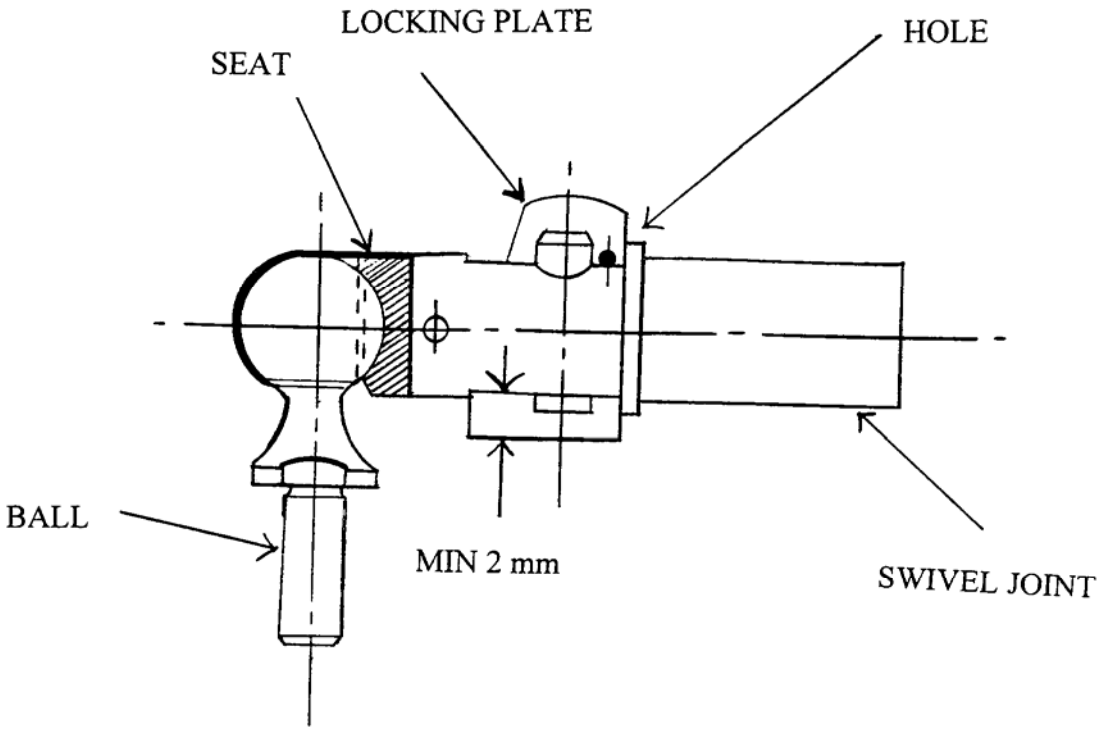


FIGURE 1

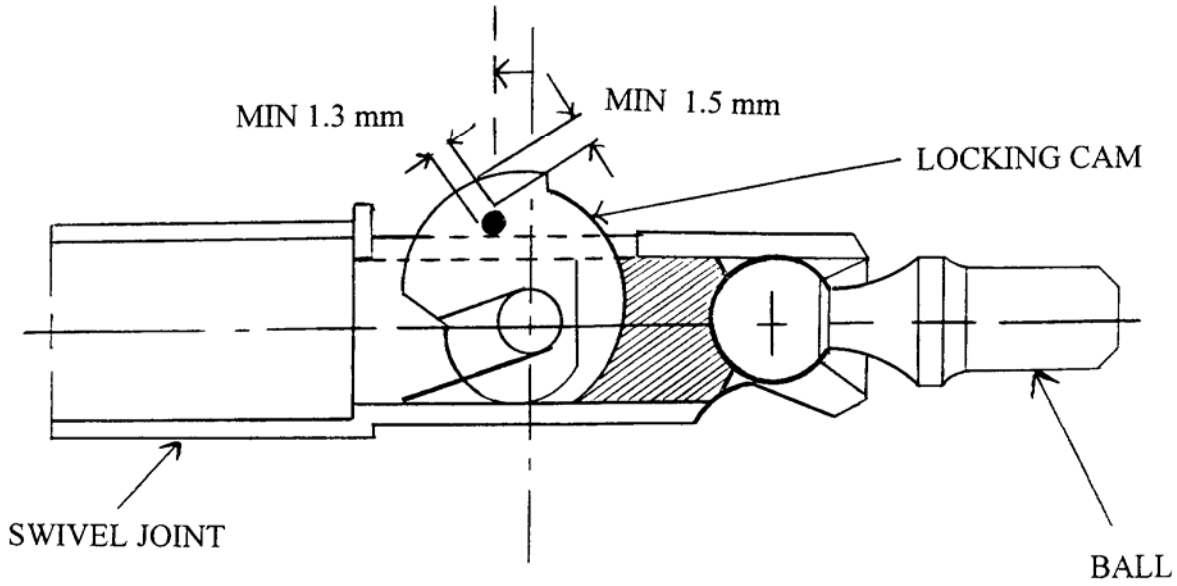


FIGURE 2