

Type:

DG-100 TN 301/16
DG-200 TN 323/7
DG-400 TN 826/28

SUBJECT : Securing of L'HOTELLIER quick-connectors according to LBA AD 93-001 issued March 3. 1994

EFFECTIVITY : DG-100, DG-200 and DG-400 all serial no's on choice

ACCOMPLISHMENT: none, on choice as a replacement for safety pins so far recommended by GLASER-DIRKS

REASON : Securing of L'HOTELLIER connectors with safety pins is a safe, but not very comfortable method. The securing with the so called "WEDEKIND-SICHERUNG" is an equivalent means of safety and was LBA approved on MAY 18.1994

INSTRUCTIONS : A L'HOTELLIER connector with adjustable rod end (RM 9.41, aileron and elevator control)
For the assembly of the safety sleeve V (for adjustable rod end) follow the instructions of the general technical note for "WEDEKIND-SICHERUNG", LBA approved June 10. 1994 page 1 and 2.
In addition the following applies:
After screwing out the L'HOTELLIER connector slide parts 4,3,5,2 and 1 onto the pushrod and screw in the connector again, adjust to correct length.
Now fix bushing 4 by wrapping a tape behind the bushing around the pushrod. Adjust so that bush 4 is 1mm inside sleeve 5. The securing sleeve should overlap the sliding latch of the connector by 2mm in its locking position. In the unlocked position the sliding latch should not interfere with the sleeve. If this is not the case, you have to shorten bush 2 accordingly or to file off the sleeve. Then fasten bush 4 with roll pin 6.

The green marking mentioned on page 2 of the TN "WEDEKIND SICHERUNG" must not be installed.

B L'Hotellier connector non adjustable type (MZ 9.41 (airbrake control)
For installation of the securing sleeve F (non adjustable) follow the above mentioned TN for "WEDEKIND SICHERUNG" page 2 incl. the drawing on the bottom of that page and the following hints:
The L'HOTELLIER connector is riveted and in case of DG-400 glued into the pushrod with 4 3mm rivets. The rivets must be drilled out with a 3.1mm drill. As it is likely, that the holes will be enlarged during this work, drill the holes again with a 4.1mm drill and use 4mm pop rivets to fasten the connector to the pushrod after installing the safety device.

The green marking mentioned on page 2 of the TN "WEDEKIND SICHERUNG" must not be installed.

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Caution: If the WEDEKIND-SICHERUNG is installed at the elevator control connector, check if the max. elevator control deflection is still possible and for enough free play between the securing sleeve and the structure.

MATERIAL : 4 pieces WEDEKIND-SICHERUNGEN see page 1 of the respective TN (enclosed)
or 5 pieces if the elevator has no automatic hook up 8 pop rivets dia. 4mm ALMG3 with steel pin (must stay in the rivet) for the airbrake control connectors

Note for DG-400: The airbrake control connectors are glued into the aluminium pushrods. It is not possible to remove the connectors without damage. The complete pushrod must be exchanged against a new one with WEDEKIND-SICHERUNG installed. To order these pushrods the following data is needed:
a) the length of the pushrods (only aluminium tube)
b) if the insert is with 6mm or 8mm thread

WEIGHT AND BALANCE : influence negligible

REMARKS : Instructions can be executed by the owner. Instructions must be inspected by a licensed inspector and are to be entered in the aircraft logs.

Bruchsal 4, date Jan. 2.1995

Author: Klaus Wedekind

LBA - approved:
The German original of this TN has been approved by LBA under the date of March 17. 1994 signed by Mr. Fendt. The translation into English has been done by best knowledge and judgement.

Type certification inspector:

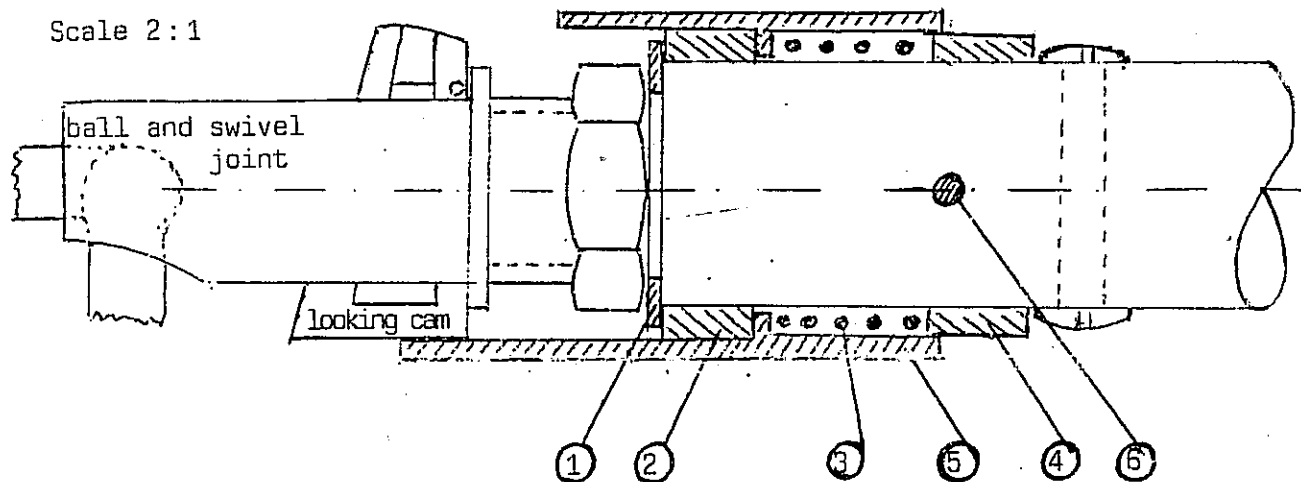


Dipl.-Ing. Wilhelm Dirks



10. Juni 1994

Scale 2:1



Description

The automatic WEDEKIND safety sleeve is an alternative to the other safety devices for "L'Hotellier" ball and swivel joint connectors listed in the LBA Airworthiness Directive No. 93-001 L'HOTELLIER.

Only the coupling ball fully home in the swivel joint, the WEDEKIND safety sleeve (5) will slide over the lower end by the wedge-shaped locking cam and secures the latter from being released unintentionally. The safety sleeve is held in the "secured" position by a compression spring (3) with a force of 1,5 N.

The WEDEKIND safety sleeve is also a protection against improper control connections as it will not slide over the lower end of the wedge-shaped locking cam if the coupling ball is not fully home in the swivel joint.

The WEDEKIND safety sleeve may be used for all sizes of "L'Hotellier" couplings, whether straight or vertical control rod connections are concerned.

Retro-fitting of the safety sleeve must comply with the relevant Technical Note issued by the aircraft manufacturer - its proper accomplishment is to be entered in the log book by a licensed inspector.

Maintenance and inspection

The materials used for the fabrication of the WEDEKIND safety sleeve are weather resistant. Under normal operation conditions corrosion will not occur. The safety sleeve therefore is maintenance-free. Lubrication with grease or oil will normally lead to fouling and gumming - so this should better be avoided. With the control rods connected, the safety sleeve is to be checked for correct function by verifying that it has slid properly and automatically over the end of the wedge-shaped locking cam.

The WEDEKIND safety sleeve consists of the following parts (shown cross-hatched in the above sketch):

1 off washer, ϕ 20 x ϕ 12,5 x 1,0 mm	Part 1
1 off bushing, ϕ 20 x 1,8 mm, length 6 mm	Part 2
1 off compression spring, ϕ 19 x 0,8 mm, length 20 mm	Part 3
1 off bushing, ϕ 20 x 1,8 mm, length 7 mm	Part 4
1 off safety sleeve, ϕ 23 mm, length 36 mm	Part 5
1 off roll pin, DIN 1481, ϕ 2 x 22 mm	Part 6



10. Juni 1994

Hints for retro-fitting

With the "L'Hotellier" swivel joint unscrewed from the control rod (be sure to measure the length of engagement reach of its threaded shaft in the rod as otherwise a re-adjustment of the control surface is required), slide the components of the safety sleeve on the free end of the rod in the following order: ④, ③, ⑤ and ②. Re-install the swivel joint - with lock washer No. ① fitted to the threaded portion of the shaft - and screw it into the control rod until the correct length of engagement is obtained, then tighten lock nut.

Slide bushing No. ② 2 mm into the safety sleeve No. ⑤. Hold the bushing No. ④ in the position by fixing with an adhesive compound, e.g. Cyanoacrylate. Drill a 2 mm hole through the bushing and body of the "L'Hotellier" connector at 90 deg. relative to the wedge-shaped locking cam and 19 mm from hole center to outer face of washer No. ①, as shown in the drawing. Drive the roll pin No. ⑥ into the hole to secure bushing No. ④ in position, leaving 1 mm protruding on either side. This 19 mm distance ensures that projection ends of the roll pin are situated between the cut-outs of the safety sleeve with the latter in "looked" position - thus preventing the sleeve from rotating and becoming dislocated.

In case of a rotating movement of sleeve, even though it is pushed forward by the spring No. ③, the wedge-shaped locking cam of the "L'Hotellier" coupling will not be secured.

To secure the wedge-shaped locking cam properly, an overlap of the safety sleeve of 3 mm relative to the lower end of the slide is sufficient.

Should the travel of the safety sleeve be more, its front end can be shortened (by filing). This might be required in the case of swivel joints being screwed deeply into a control rod, allowing the sleeve - the travel of which is only limited by the length of the channel for the compression spring - to move too far forward.

The protruding portion of bushing No. ④ - visible when sleeve No. ⑤ is in the "looked" position - must be marked GREEN (width approx. 4 mm).

If, after having connected the "L'Hotellier" coupling, the full width of this green ring is not visible, but only 1 or 2 mm, the safety sleeve No. ⑤ has not fully moved over the lower end of the locking cam, so the "L'Hotellier" coupling is not secured. The cause (a broken compression spring, for instance) must be resolved before the next flight.

Hints concerning non-adjustable "L'Hotellier" control rod coupling No. RZ 9.41

For retro-fitting the WEDEKIND safety sleeve, the "L'Hotellier" swivel joint must be drilled out from the control rod and re-riveted as per the aircraft manufacturer's relevant Technical Note.

Lock washer No. ① is omitted.