

THE GLIDING FEDERATION OF AUSTRALIA

GFA AD 544
(ISSUE 1)

GFA AIRWORTHINESS DIRECTIVE

TYPE AFFECTED: Stemme S 10 and S 10-V. Serial Nos as follows -
S 10: 10-03 to 10-63;
S 10-V: 14-002 to 14-030 and 14.012M to 14-063M

SUBJECT:

1. Air brake eye bolts.
2. Air brake sheets.
3. Landing gear door hinges.
4. Landing gear door actuation.

BACKGROUND: Possible flutter of upper covering strap of air brakes, which in one case has led to a sideslip condition, causing one landing gear door to tear off and damage the tailplane. The landing gear doors may have had damaged hinges. Later models of the aircraft have a re-designed door actuation system.

DOCUMENTATION: Luftfahrt-Bundesamt (LBA) Airworthiness Directive 2000-369 and Stemme GmbH Service Bulletin A 31-10-055 form part of this AD.

ACTION REQUIRED: Carry out all actions as required by the LBA AD and Stemme S/B.

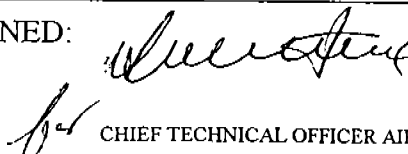
WEIGHT AND BALANCE: Not affected.

IMPLEMENTATION: Actions 1, 2 and 3 of the LBA AD and Stemme S/B - before further flight. Minimum qualification - annual inspections.

Action 4 of the LBA AD and Stemme S/B - optional. Minimum qualification - approved modifications for carrying out the work, owner/operator for amending flight and maintenance manuals.

COMPLIANCE: The requirements of this GFA Airworthiness Directive are mandatory. This Directive is issued pursuant to the Rules and Regulations of the Gliding Federation of Australia.

SIGNED:


CHIEF TECHNICAL OFFICER AIRWORTHINESS



For and on behalf of:

THE GLIDING FEDERATION
OF AUSTRALIA



**Airworthiness
Directive
2000-369**

Luftfahrt-Bundesamt
Airworthiness Directive Section
Hermann-Blenk-Str. 26
38108 Braunschweig
Federal Republic of Germany

Stemme

Effective Date: November 30, 2000

Affected:

Kind of aeronautical product:	Powered Sailplanes
Manufacturer:	Stemme, Berlin, Germany
Type:	Stemme S 10
Models affected:	Stemme S 10 and -V
Serial numbers affected:	S 10: 10-03 up to 10-63 as listed in the Technical Note S 10-V: 14-002 up to 14-030 and 14-012M up to 14063M as listed in the Technical Note
German Type Certificate No.:	846

Subject:

Air brake eye bolts and air brake sheets and Landing gear door hinges and door actuation

Reason:

Air brake eye bolts and air brake sheets

At higher airspeed near V^{NE} there may be fluttering in the upper covering straps on the air brake. Two mounting bolts (eye bolts) of the air brake have a significant effect upon this behaviour.

A low locking force of the air brake covers may also promote fluttering. To produce the necessary locking force, the air brake sheets must not touch the bottom of the GFRP air brake box.

Landing gear door hinges and door actuation

In one case, fluttering on one side of the right air brake cover led to side slipping condition, whereupon the L/G door opened and tore off. The L/G door that was torn off damaged the horizontal stabiliser. The tearing was possibly favoured by L/G door hinges that were already damaged.

For the model S 10-VT the L/G door actuation has been redesigned. This re-design which prevents the opening of the L/G door may be retrofitted also for models S 10 and S 10-V.

Action / Compliance:

Action 1 - before the next flight:

The airspeed V^{NE} must be limited to 220 km/h - mark a „Red Line“ on the airspeed indicator at 220 km/h.

Not later than the next annual inspection: Exchange the eye bolts on the air brake. After this exchange, the „Red Line“-mark shall be removed.

Action 2 - before the next flight:

Check the clearance of the air brake sheets and if necessary, modify them.

Action 3 - before the next flight:

Visual inspection of the Landing Gear doors and area and if necessary exchange of damaged parts.

Action 4 - optional:

The L/G door actuation may be converted to the serial standard of the model S 10-VT.

The action must be done in accordance with the instructions given in the Service Bulletin.

Technical publication of the manufacturer:

Stemme Service Bulletin No. A 31-10-055, Amendment-Index 02.a dated October 09, 2000 which becomes herewith part of this AD and may be obtained from Messrs.

Enquiries regarding this Airworthiness Directive should be referred to Mr. Olaf Schneider, Airworthiness Directive Section at the above address, fax-no. 0049 531/2355-720. Please note, that in case of any difficulty, reference should be made to the German issue!

Stemme GmbH & Co. KG
Am Flugplatz

D-15344 Strausberg
Federal Republic of Germany

Accomplishment and log book entry:

Action to be accomplished by an approved service station and to be checked and entered in the log book by a licensed inspector.

Holders of affected aircraft registered in Germany have to observe the following:

As a result of the a.m. deficiencies, the airworthiness of the aircraft is affected to such an extent that after the expiry of the a.m. dates the aircraft may be operated only after proper accomplishment of the prescribed actions. In the interest of aviation safety outweighing the interest of the receiver in a postponement of the prescribed actions, the immediate compliance with this AD is to be directed

Instructions about Available Legal Remedies:

An appeal to this notice may be raised within a period of one month following notification. Appeals must be submitted in writing or registered at the Luftfahrt-Bundesamt, Hermann-Blenk-Str. 26, 38108 Braunschweig.

STEMME GmbH & Co. KG Design Org. No. EB 11	Service Bulletin		Documentnumber:
	- Air Brake Control -		A31-10-055
			Am.-Index: 02.a
			Page 5 (of 8)

This Service Bulletin provides from page 1 to 4 the original version in German, approved by the Luftfahrt-Bundesamt, and from page 5 to 8 a translated version in English. The translation has been performed to the best of our knowledge and judgement.

1 Subject:

- Action 1: The air brake eye bolts 12TI-DB, a „RED LINE“ on the airspeed indicator.
- Action 2: The air brake sheets, upper (12TI-RDO), bottom (12TI-RDU).
- Action 3: The landing gear (L/G) door hinges.
- Action 4: L/G door actuation.

2 Powered Sailplanes affected:

STEMME S10, models S10 and S10-V / LBA Data Sheet Number 846 / FAA Type Certificate G58EU.

Serial numbers affected:

- Action 1: **S10:** 10-03 through 10-63 if they are still equipped with eye bolts (12TI-DB)
- S10-V:** 14-002 through 14-030 and 14-012M through 14-063M if they are still equipped with eye bolts (12TI-DB).
- Action 2+3: **S10:** 10-03 through 10-63
- S10-V:** 14-002 through 14-030 and 14-012M through 14-063M
- Action 4: **S10:** 10-12 and subsequent
- S10-V:** 14-002 and subsequent, and 14-012M and subsequent

3 Time of Compliance:

- Action 1: „Red Line“ at 220 km/h (119 kts): before the next flight.
- replace eye bolts: not later than at the next annual inspection.
- Action 2: Check of the air brake sheets: before the next flight.
- Action 3: Check of the L/G doors hinges: before the next flight.
- Action 4: Conversion of the L/G doors: None. An optional retrofitting is possible.

4 Background Information:

- Action 1: At higher airspeeds near V_{NE} there may be fluttering in the upper covering straps on the air brake (air brake cover). The two mounting bolts (eye bolts) of the air brake have a significant effect upon this behaviour.
- Action 2: A low locking force of the air brake covers may also favour fluttering. To ensure the necessary locking force the air brake sheets must not touch the bottom of the GFRP air brake box.
- Action 3: In one case, fluttering on one side of the right air brake cover led to a side slipping condition (yawing), whereupon the LH L/G door opened and tore off. The L/G door that was torn off damaged the horizontal stabiliser. The tearing was possibly favoured by L/G door hinges that were already damaged.
- Action 4: For the model S10-VT the L/G door actuation which prevents the opening of the LH L/G door has been redesigned. This re-design may be retrofitted for models S10 and S10-V.

prepared:	Sign	checked:	Sign	Date:	Supersedes issue of:
Montag		Dalldorff		09.10.2000	18.08.2000

STEMME GmbH & Co. KG Design Org. No. EB 11	Service Bulletin		Documentnumber:
	- Air Brake Control -		A31-10-055
			Am.-Index: 02.a
			Page 6 (of 8)

5 Actions:

5.1 Constructional Modifications to the Aircraft:

Action 1:

The feature that makes it possible to recognise these eye bolts (12TI-RD) based upon this Service Bulletin is a distance sleeve in the area of the screwing in the air brake lever and a square head. The "old" version has a ball head (refer to figure 1 and 2).

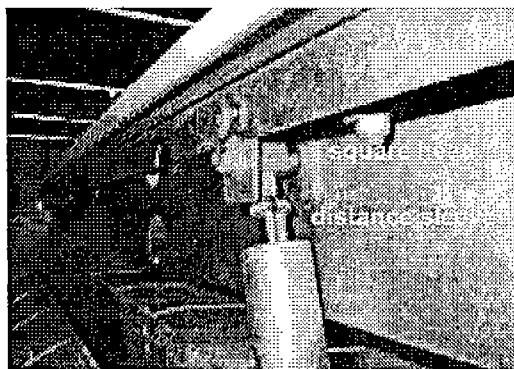


Figure 1: New version 12TI-RD

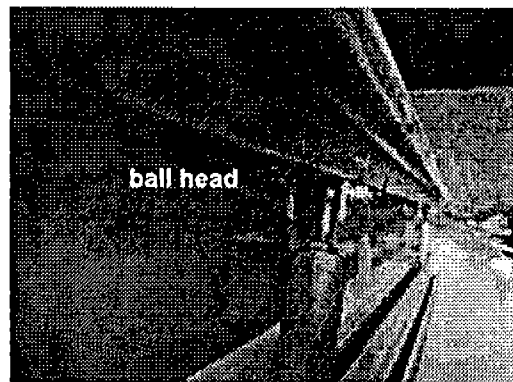


Figure 2: Old version 12TI-DB

With the affected S/N s of action 1, the airspeed V_{NE} must be limited to 220 km/h (119 kts) until action 1 has been carried out. For this purpose, a „RED LINE“ shall be placed on the airspeed indicator at 220 km/h (119 kts).

Important : Further reductions in the highest flight speed permissible such as in high altitudes or if there is strong turbulence shall remain unaffected by this.

The eye bolts of air brakes 12TI-DB (Figure 2) and all of the fastening components belonging to it shall be exchanged with eye bolts of the 12TI-RD design (Figure 1) and their fastening components.

After carrying out action 1, the „RED LINE“ (at 220 km/h) shall be removed again.

Action 2:

Check of the air brake sheets: When the air brake is locked each air brake sheet (upper and bottom) should have a clearance to the bottom of the GFRP air brake box of at least 1.5 mm (0.06 inch). If necessary the sheets have to be shortened at their bottom side. The clearance may be detected by using modelling clay (plasticine®) which is put into the air brake box.

Action 3:

It is possible to discover whether the door hinges (4 pieces altogether) are still intact by making a visual inspection (note any white cracks or delamination) and by loading the L/G door slightly in the area of the suspension points (note any softness). If you discover damage, the appropriate door hinge must be replaced.

Action 4:

Optional: The L/G door actuation may be converted to the serial standard of the model S10-VT.

Dismantling of the old gear door drive, fitting of a new LH gear door and installation of the new LH door actuation.

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STEMME GmbH & Co. KG Design Org. No. EB 11	Service Bulletin		Documentnumber:
	- Air Brake Control -		A31-10-055
			Am.-Index: 02.a Page 7 (of 8)

5.2 Modifications to the Manuals:

Modifications to the manuals will take place only in case of action 4 has been carried out.

5.2.1 Flight Manual:

A Flight Manual Supplement A36-10-055 "Fahrwerksklappen-Betätigung, gültig für Baureihen S10 und S10-V" has been issued for all German-language manuals and a Flight Manual Supplement A36-10-055-E " E „Landing Gear Door Actuation, valid for models S10 and S10-V" for all English-language Flight Manuals (JAA, FAA).

5.2.2 Maintenance Manual:

A Maintenance Instruction A35-10-055 "Fahrwerksklappen-Betätigung, gültig für Baureihen S10 und S10-V" has been issued for all German-language manuals and a Maintenance Instruction A35-10-055-E "Landing Gear Door Actuation, valid for models S10 and S10-V" for all English-language manuals (JAA, FAA).

6 Mass and Balance:

Not affected because the mass difference is negligible.

7 Material:

- Action 1: The entire set of parts for re-equipping may be ordered from STEMME GmbH & Co. KG stating the number (A31-10-055) of the present Service Bulletin.
- Action 2: Standard modelling clay (plasticine®).
- Action 3: If required, replacement hinges may be ordered from STEMME GmbH & Co. KG stating the Service Bulletin number. (A31-10-055).
- Action 4: The optional conversion may be carried out by the manufacturer only.

8 Associated Documents:

The following documents are required for re-equipping and checking and they are included in the re-equipping set:

Action 1:

Item	document number	type of document	title of document
1	A12-12TI-RD	assembly drawing	air brake control mechanism in the inner wing
2	A34-10-055	installation instructions	eye bolts air brake
3	A17-10SB	adjustment instructions	adjustment air brake control mechanism STEMME S10, all models

Action 2: None.

Action 3: None. If there are any problems, please get into contact with the Service Department of STEMME GmbH&Co.KG.

Action 4: The optional conversion may be carried out by the manufacturer only.

9 Accomplishment and Log Entry:

Implementation:

An authorised mechanic may carry out the actions 1 through 3 described in this Service Bulletin.

Certification:

The holder must enter the log book that the „RED LINE" was mounted (refer to action 1) or an authorised mechanic on behalf of the holder.

Completion of action 1 must be checked and entered in the airplane's log book by a licensed inspector.

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STEMME GmbH & Co. KG Design Org. No. EB 11	Service Bulletin		Documentnumber:
	- Air Brake Control -		A31-10-055
			Am.-Index: 02.a
			Page 8 (of 8)

The holder must enter in the log book that action 2 and 3 (checking the air brake sheets as well as the L/G door hinges) has been carried out or an authorised mechanic on behalf of the holder.

The optional action 4 will be entered in the log book by the manufacturer.

Operational Recordings:

In general, the regulations on the keeping of the service records must be adhered to.

10 Remarks:

The action 4 requires extensive adapting work wherefore this work should be carried out at the factory in general.

For flights above 3000 m (10.000 ft) AMSL as well as for a temperature (seasonal) independent adjusting of the air brake locking force, the retrofitting of aluminium air brake push rods with CFRP push rods in compliance with SB A31-10-054 is recommended (affected a/c: S10-V: S/N 14-004 trough 14-030).

Stemme GmbH & Co. KG - Airworthiness Department / LBA approved

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