



AIRWORTHINESS DIRECTIVE

THE GLIDING FEDERATION OF AUSTRALIA Inc

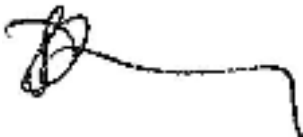
GFA AD 440 Issue 2

Date: 18 Jan 2021

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Note: This Airworthiness Directive is issued by the Gliding Federation of Australia

Type Certificate Holder	Stemme AG
Manufacturer(s)	Stemme AG
Types/Models Affected	Stemme S10
Serial Numbers	Serial Numbers: Model S10 10-12 to 10-60 Model S10-V 14-002 to 14-022 and modified aircraft 14-012M to 14-060M
Subject	Deposits in The Induction Manifold.
Implementation	<p>Inspection of the fuel filters and the valve stems may be performed by Glider Inspectors who have been authorised to complete Annual Inspections on the Stemme S10.</p> <p>If deposits are found then the CTO should be contacted regarding the authorisation to complete this work.</p>
Background	<p>Stemme Service Bulletin A31-10-021 and Limbach Technical Bulletin 47 were issued in 1995 resulting in the initial issue of this Airworthiness Directive. At that time, several aircraft had been found to have deposits in the carburettor, induction manifold and combustion chamber. Two engine failures (sticking intake valves) were probably caused by these deposits.</p> <p>Issue 2 maintains the requirements of the initial issue of this Airworthiness Directive but removes Action 3: 'Until further notice the only fuel approved for use in the Stemme S 10 is AVGAS 100 LL'. Operators are now authorised to use all fuels as approved by the current flight manual.</p>
Documentation	Stemme Service Bulletin A31-10-021 and Limbach Technical Bulletin 47.
Required Action(s)	<ol style="list-style-type: none"> Before Next Flight the instructions of step 2 and 3 of section 5 of the Stemme Service Bulletin A31-10-021 which forms part of this AD must be complied with. If deposits are found then the engine must be striped and

	<p>cleaned in accordance with the procedures in Limbach Technical Bulletin 47 which forms part of this airworthiness directive.</p> <p>If there is any correspondence with Stemme regarding this matter as required by Service Bulletin A31-10-021 then a copy must be emailed to returns@glidingaustralia.org.</p>
Compliance, Compliance Time(s) and Frequency	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.
Effect on Weight and Balance	No effect on W&B.
Issuing Authority	<p>Issued for and on behalf of The Gliding Federation of Australia Inc.</p> <p>Signed:</p>  <p>.....Chief Technical Officer</p>
Effective Date	18 Jan 2021

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2. Completely drain both tanks and the fuel lines. Take a sample of the fuel from each of the two wing tanks (approx. 250 cm³ each, in glass bottles). Safeguard the samples for minimum one year for eventual future verification purposes, send them to STEMME on request for analysis. After emptying the tanks air for minimum three days to allow gases to escape, about two days of this should be upside down.

3. Remove engine and perform further action according to LIMBACH Service Bulletin no. 47 (disassembling, examination of parts and cleaning).

4. Renew the fine fuel filters and send the used ones to STEMME for analysis.

5. After reassembly of the aircraft, re-fuel AVGAS 100 LL and carry out engine ground run.

6. Recommence flight operation. Take care for symptoms like loss of power. If reason cannot easily be found the described inspection (item 1 to 5) is to be repeated immediately.

8. Documents

For the engine inspection: Service Bulletin No. 47 of LIMBACH Company

7. Material:

1. Airframe: Two fuel fine filter and four ear clamps. Available from STEMME or from a car accessory dealer.

2. Engine: please refer to LIMBACH Service Bulletin No. 47

8. Accomplishment and log entry:

Actions described in this Service Bulletin - as far as affecting the airframe - are to be accomplished by an authorized mechanic and entered in the airplane's log book by a licensed inspector. For the actions regarding the engine please refer to the LIMBACH Service Bulletin.

Regulations concerning the continuation of service records are to be observed.

9. Remarks:

This Service Bulletin is sent to every last holder of the affected SIN's known to the manufacturer. If ownership has changed and the new holder cannot be reached in this way, return of this paper and - if possible - notification of his name and address are requested.

Stemme GmbH & Co. KG - Airworthiness Department

prepared:	Sign	checked:	Sign	Date:	Supersedes issue of:
		Freudenberger		28.06.1995	26.06.1995

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This Service Bulletin provides from page 1 to 2 the original version in German, approved by the Luftfahrt-Bundesamt, and from page 3 to 4 a translated version in English. The translation has been performed to the best of our knowledge and judgement.

1. Subject:

Project number: 10-266 / Deposits in the induction manifold.

2. Effectivity:

Powered sailplane model STEMME S10 / Original Type Certificate Data Sheet no. 846 (LBA), serial nos.:

• Model S10: 10-12 to 10-60

• Model S10-V: 14-002 to 14-022 and transformed aircraft 14-012M bis 14-050M

3. Time of compliance:

Before the next flight.

4. Background information:

Several aircraft found with deposits in the engine induction manifold covering any parts between carburetor and combustion chamber with a tarry brown substance, origin and causes of which are not known for the time being. It is probable that its build-up depends on the grade and quality of fuel used.

Two engine failures (sticking of intake valve) were probably caused by these deposits.

5. Instructions:

1. Until the chain of effects is definitely cleared and specific countermeasures can be taken, all affected aircraft are to be fuelled with AVGAS 100 LL only, since for car fuels one can expect considerable differences in chemical composition (high percentage of aggressive, oxygenated constituents can be encountered) and in the quality of used additives.

Note: The information given in the Flight Manual regarding the rated fuel grades is hereby temporarily overruled.

2. Inspection of the fine fuel filters for possible accumulation of chopped cotton fibres (filler material of tank glueing resin). If positive finding: exchange the filters and send the old ones to STEMME for analysis purposes.

3. Inspection of the engine according to the Service Bulletin no. 47 of the LIMBACH company, aiming to identify those machines which are at immediate risk of engine failure due to such deposits. Furthermore, gaining better information on the causes by taking stock of the whole fleet is indispensable to define specific countermeasures.

If deposits, as described, are found in the induction manifold or in the carburetor it can be assumed that they also are present on the valve stem.

In case of positive finding in item 3, the following actions are required:

1. Inform STEMME (Dept. QA or MPL (airworthiness)) thoroughly, as far as possible, with regard to the operating conditions: fuel types and grades used, if MOGAS - from which producer or retailer? Were there longer periods when MOGAS was left in the tanks? More frequent, occasional or never change between AVGAS and MOGAS? Has the aircraft been exposed to higher OAT for longer periods recently? Have cotton fibres been found in the fuel filters? Operating hours of the engine etc.

prepared:	Sign	checked:	Sign	Date:	Supersedes issue of:
		Freudenberger		28.06.1995	26.06.1995


 LIMBACH Flugmotoren

Technical Bulletin

47

Subject: Sticking intake valves

Affected engine models: All engine models:

L 2400 EB1.D
L 2400 EB1.AD

Background Information:

Engine of the types mentioned above have recently experienced 2 engine failures due to intake valves sticking in the valve guides. Sticky deposits were found in parts of the induction system on the inside walls of the intake manifolds, as well as on the throttle shaft. A subsequent analysis of the deposits leave no doubt, that the deposits are formed by foreign materials dissolved in the fuel, which have caused sticking of the intake valves under the temperatures involved.

Priority: Before next flight

- Compliance:**
1. Visual inspection of the valve shafts. To do so:
 - Unscrew high tension leads from spark plugs.
 - Remove valve covers, inspect valve shafts through the spring windings visually. If any deposits (dark brown to black, lacquer-like hard to gum-like sticky) are apparent, continue with step 2.
 - Unscrew spark plugs.
 - Turn crankshaft until the piston in the cylinder to be inspected is at half stroke (can be verified with a piece of wire through the spark plug hole)
 - Remove rocker arm shaft.
 - Disassemble valve springs from the intake valves with spring tensioning tool.
 - Inspect valve shafts through the spark plug thread with an endoscope for deposits.
 To do so push valve into the valve guide to a maximum depth of 35 mm, measured from the end of the shaft to the top of the valve guide (if the pistons are at half-stroke, the valve cannot fall into the engine) If deposits are found, continue with step 2.
 2. If the deposits are found on the valve stems, the engine must be removed and the following components must be cleaned in the disassembled state: carburetor, induction system, cylinder head, pistons, piston rings, cylinders, mechanical fuel pump and fuel lines.
 If no deposits are found on the valve stems, the engine may be reassembled and put back into service.
 For instructions see service literature (Maintenance Instructions No.: 9, 10 and 12 in the valid issue, Repair Manual)

Remarks: The measures for compliance can only be carried out by the engine manufacturer or organisations authorized by the engine manufacturer. For airframe-related parts of the fuel system see Technical Bulletin No.: A31-10-021 from the Stemme company

This document has been translated to the best of our knowledge. In case of doubt however only the german original shall be considered authoritative.

LBA approved:

Bearb.: Stolinski

Replaces Edition from:

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