British Gliding Association - Technical News Sheet

Issue 1-2006	Date: 2 March 2006

Please note new TNS numbering system. The numbers will be sequential throughout the year increasing by 1 each issue. To be advised of new issues please sign up to our free subscription service https://www.gliding.co.uk/subscriptions/

Technical News Sheets will be issued as required and may be more frequent than previously produced if there is airworthiness information to be disseminated and published on the BGA web site. The printed version will be produced at two-month intervals with BGA Engineering News.

Airworthiness Information

1. **Aeromot AMT-100,-200,-300 Xamango** AD 2005-12-01 **(Mandatory)**
   Replacement of self locking nuts subject to rotational loads.
   AD attached or visit http://www.aviacao-civil.ifi.cta.br/da/textos/1106amd.pdf

2. **Grob Astir CS** BGA letter 24/1/06 **(Advisory)**
   Continued problems with Spherical Tailplane mounting ball.
   Please see letter to owners. http://www.gliding.co.uk/bgainfo/technical/news.htm

3. **ALL WOODEN GLIDERS** BGA 047/02/2006 issue 1 **(Mandatory)**
   With the exception of Schleicher wooden gliders (see 042/07/2004 issue 3) all gliders constructed or repaired using Kaurite glue to be inspected as per BGA inspection with a 5 year repeat inspection. See compliance criteria and effective date
   Inspection attached or visit http://www.gliding.co.uk/bgainfo/technical/inspections.htm

4. **Schleicher Wooden Gliders** BGA 042/07/2004 issue 3 **(Mandatory)**
   Ka1, Ka2, Ka2B, Ka3, Rhonlercher II (Ka4), Ka6, K7, K7 conversions, K8 series, K9, K10, ASK 13 series, ASK 14, ASK 16, ASK 18 series and all variants of each type.

   Issue 3 raised to introduce 5 year repeat, a more rigorous trailing edge inspection and remove the “D” box check if other inspections results are satisfactory.
   Gliders exempted due recover date will become eligible 5 years after recover. See compliance criteria and effective date
   Inspection attached or visit http://www.gliding.co.uk/bgainfo/technical/inspections.htm

5. **Permit aircraft** CAA MPD 1995-001 R4 **(Mandatory)**
   At issue and renewal of Permit to Fly, compliance with applicable AD’s must be shown.
   MPD attached or visit http://www.caa.co.uk/docs/33/CAP661.PDF

General Information

6. **Glider Wheel Brakes**
   The Technical Committee has made the following statement regarding the fitting and serviceability of wheel brakes fitted to gliders with a BGA C of A:

"When any glider has a wheel brake incorporated in the type design or by modification, then that brake system must be fitted and serviceable unless a front skid is also fitted and is of a type that can be lowered onto the ground to provide another means of deceleration and placarded accordingly."

As recorded in Technical Committee minutes 21/1/2006

7. Spinning

Several operators are unclear regarding the rules about spinning of gliders whilst operating in the BGA extended weight category. The Technical Committee has made the following statement:

"The committee confirmed that provided the aircraft was approved for spinning within normal limitations, the choice of spinning of these sailplanes within the published narrower tolerances of the reduced flight limitations was an operational matter. It should be remembered that whilst operating at an increased weights the reserve factors will be reduced and exceeding limitations will be easier."

As recorded in Technical Committee minutes 21/1/2006

8. Repairs to Post 2003 gliders

Gliders imported into the UK after 28/9/03 if requiring repair must be repaired to an approved repair scheme. This will normally be in consultation with the glider manufacturer or directly from a Repair Manual for the type. Failure to comply with this requirement may mean the glider is no longer eligible to the issue of an EASA C of A and the repair may have to be redone to an approved scheme.

9. Selling gliders overseas

It is becoming popular to sell ex BGA gliders overseas. Whilst there is absolutely no problem with this, there are some points to note.
We are constantly asked to provide an Export C of A.
The BGA is unable to issue an Export C of A because the BGA C of A is not an ICAO recognised document and we are not the National Airworthiness Authority of the UK.
The CAA is also unable to issue an Export C of A as they did not certificate the glider.
The BGA can issue a factual letter, on request, stating this and the C of A details of the glider. It will be up to the purchaser to ensure that his local authority will accept the aircraft without an export C of A.
The BGA can issue a certificate of deregistration (apply to the CAA if you are "G" registered).

Compliance Statement:
All mandatory inspections and modifications have been included up to the following:
CAA CAP 455 Airworthiness Notices, Contents issue: 137
CAA CAP 747 Mandatory Requirements for Aircraft, issue: 2 amendment: 2/2006
State of Design Airworthiness Directives review date: 28 February 2006

For reference:
FAA Summary of Airworthiness Directives. Bi-weekly listing 2006-04
EASA Airworthiness Directives review date: 28 February 2006
CAA CAP 474 Foreign Airworthiness Directives issue: 372
CAA CAP 476 Mandatory Aircraft Modifications and Inspections Summary issue: 287
CAA CAP 661 Mandatory Permit Directives, issue 2006/1

Jim Hammerton
Chief Technical Officer

SERVIÇO PÚBLICO FEDERAL

DEPARTAMENTO DE AVIAÇÃO CIVIL

BRAZILIAN AIRWORTHINESS DIRECTIVE

EFFECTIVE DATE:	AD No.:
17 Jan. 2006	2005-12-01

The following Airworthiness Directive (AD), issued by the Departamento de Aviação Civil (DAC) in accordance with provisions of Chapter IV, Title III of Código Brasileiro de Aeronáutica - Law No. 7,565 dated 19 December 1986 - and Regulamento Brasileiro da Homologação Aeronáutica (RBHA) 39, applies to all aircraft registered in the Registro Aeronáutico Brasileiro. No person may operate an aircraft to which this AD applies, unless it has previously complied with the requirements established herein.

AD No. 2005-12-01 - AEROMOT - Amendment 39-1106.

APPLICABILITY:

This Airworthiness Directive is applicable to all Aeromot AMT-100( ), AMT-200( ) e AMT-300 aircraft models in operation.

CANCELLATION / REVISION:

Not applicable.

REASON:

It has been found the occurrence of incorrect use of the self-locking nuts in bolts subject to rotational loads in bolted fittings of some assemblies of metallic components. Such event may result in disconnection of those fittings, which jeopardizes the structural integrity of the aircraft or its flight controls.

Since this condition may occur in other airplanes of the same type and affects flight safety, a corrective action is required. Thus, sufficient reason exists to request compliance with this AD in the indicated time limit.

REQUIRED ACTION:

Replacement of the washers, nuts and bolts installed in the assemblies identified below by new bolts, washers and castellated nuts with cotter pins.

COMPLIANCE:

Required as indicated below, unless already accomplished.

Within the next 100 flight hours after the effective date of this AD, install new bolts, washers and castellated nuts with cotter pins in both main landing gear legs, in the swivel tail wheel, in the eye-bolt fittings located at firewall inside cabin, in the rudder LH and RH pedals assembly, in the bellcranks of the rudder cables assembly, in the bellcranks of the propeller pitch control assembly and in the LH and RH wings hinge point, in accordance with the detailed instructions and procedures described in the Aromot Service Bulletin Nº 200-20-102 Rev. A, or further revisions approved by the CTA.

NOTE 1: The bolts replacement of the rudder pedals does not apply to the motorgliders, which are not equipped with independent toe brakes.

NOTE 2: The AMT-100( ) and AMT-200( ) motorgliders have cable end fittings of the propeller pitch control assembly with only one bolt.

The detailed instructions and procedures to accomplish this AD are described in the Aeromot Service Bulletin Nº 200-20-102 Rev. A, or further revisions approved by the CTA.

Record compliance with this AD in the applicable maintenance log book.

CONTACT:

For additional technical information, contact:

Centro Técnico Aeroespacial - CTA
Instituto de Fomento e Coordenação Industrial - IFI
Divisão de Certificação de Aviação Civil - CAvC
Praça Mal. Eduardo Gomes, 50 - Vila das Acácias
Caixa Postal 6001
Fax: 55 (12) 3941-4766
12231-970 - São José dos Campos - SP, BRAZIL.
e-mail: pds@ifi.cta.br

For acquisition, contact:

Departamento de Aviação Civil - DAC
Seção de Publicações do DAC (4GAB-4)
R. Santa Luzia, 651, 2º Mezanino, Centro
Fax: 55 (21) 3814-6929
20030-040 - Rio de Janeiro - RJ, BRAZIL.
e-mail: publicacoes@dac.gov.br

APPROVAL:

GERALDO CURCIO NETO Ten Cel Av
Chief of the Civil Aviation Certification Division
IFI/CTA

LUIZ ALBERTO C. MUNARETTO Cel Av
Director of the Industrial Coordination and Fostering Institute
CTA

NOTE: Original in Portuguese language signed and available in the files of the Registro Geral de Aeronavegabilidade (RGA/TE-1/STE) of the Departamento de Aviação Civil.

United Kingdom
Civil Aviation Authority

MPD No: 1995-001 R4

Issue Date: 28 February 2006

MANDATORY PERMIT DIRECTIVE

In accordance with Article 9A(5)(b) of the Air Navigation Order 2000 as amended, the following action required by this Mandatory Permit Directive (MPD) is mandatory for applicable aircraft registered in the United Kingdom operating on a UK CAA Permit to Fly.

MPD: 1995-001 R4 AIRCRAFT OF A TYPE PREVIOUSLY ISSUED WITH A CERTIFICATE OF AIRWORTHINESS BUT NOW OPERATING ON A UK CAA PERMIT TO FLY

Subject: Airworthiness Directives.

Applicability: All aircraft of a type previously issued with a Certificate of Airworthiness but now operating on a UK CAA Permit to Fly.

Compliance: At issue of the Permit to Fly and at each renewal of the Certificate of Validity, compliance must be shown with applicable Airworthiness Directives for airframe, engines, propellers and equipment from the following sources:

CAP 476 – Mandatory Aircraft Modifications and Inspections Summary – Issue 287
CAP 747 – Mandatory Requirements for Airworthiness – Latest Issue
Latest Foreign Airworthiness Directives from the State of Design

The original MPD became effective on 29 December 1995. Revision 1 became effective on 30 January 2004. Revision 2 became effective on 30 January 2005. Revision 3 became effective on 31 July 2005. Revision 4 becomes effective 28 February 2006.

An alternative means of compliance or variation to the compliance time that provides an acceptable level of safety may be be used if approved by the Certification and Approvals Department of the CAA. Applications should be made to the Civil Aviation Authority, Certification and Approvals Department, Safety Regulation Group, Aviation House, Gatwick Airport South, West Sussex, RH6 0YR.

Enquiries regarding this MPD should be referred to the Civil Aviation Authority, Applications and Certification Department, Safety Regulation Group, Aviation House, Gatwick Airport South, West Sussex, RH6 0YR. Phone: +44 (0) 1293 573153/3238 Fax: +44 (0)1293 573993 E-mail: ad.unit@srg.caa.co.uk

Grob Astir CS Owners

Applicable to CS models with Spherical bolt mounted tailplanes only.

24 January 2006

Dear Sir or Madam,

ASTIR CS TAILPLANE FITTINGS

As you are probably aware there is a mandatory inspection of the Tailplane/Stabiliser attachment spherical bolt thread be repeated at annual intervals as specified in Airworthiness Directive D-2004-168 and Grob Service Bulletin MSB306-38.

During recent months the BGA has received two reports of these attachments being found cracked with a very high possibility that, had they not been found, the airworthiness of the glider could have been seriously compromised.
The BGA has received information that there will be a mandatory replacement of the Tailplane attachment fittings by June 2006 for all Astir CS gliders worldwide with spherical bolts and it is with EASA now for approval. No further details are available at this time.

However there are some aspects that should be considered by Astir CS owners.

1. To avoid lengthy lead times and grounding whilst waiting for spares, it may be prudent to order a replacement fitting sooner rather than later. Please take note of the information required to order a replacement. (MSB306-38, Diameter “D”).
2. To enable the glider to fly safely up until the replacement is carried out it would be wise to consult with your inspector to ensure the mandatory annual inspection was carried out and advise that the cracked threads are very difficult to spot. Reports the BGA has received show one with a crack at the root of the thread above the locking nut and the other with the crack at the end of the thread where the plain section begins.
3. The Tailplane mounting ball appears to be plated. This may help mask any cracks. The reported cracks have appeared since the previous inspection.
4. The cracks appear to be fatigue, as the bolts do not appear bent. The instructions and advice in MSB306-38 should be followed carefully.
5. It is strongly recommended that AD D-2004-168, MSB306-38 inspection be repeated immediately (unless inspected recently)

Yours sincerely

Jim Hammerton
Chief Technical Officer.

British Gliding Association

Aircraft Inspection

Mandatory

Number:	Issue:
042/07/2004	3

Date: 28 February 2006

Subject: Structural inspections

Applicability: Schleicher Ka 1, Ka 2, Ka 2B, Ka 3, Rhönlercher II (Ka 4), Ka 6 series, K7, K7 conversions, K8 series, K9, K10, ASK 13 series, ASK 14, ASK 16, ASK 18 series and all variants of each type.
(This inspection is strongly recommended for the motor glider types listed above)

Effective date 31st March 2006

Accomplishment: At the next annual inspection after the effective date these instructions must be carried out unless they have been carried within the past 5 years or the glider has had a complete recover and structural inspection during that period, in that case the inspection becomes due 5 years from the previous inspection or recover.

Repeat at 5 year intervals

Reason After an in-flight wing failure inspections were carried out on all BGA registered Schleicher wooden gliders. Kaurit adhesive had been used on all these gliders and had sometimes suffered from failure, apparently due to a combination of age and damp conditions. Glued joint deterioration has been found in sufficient numbers of these gliders to warrant an on going inspection programme.

Revisions: Issue 2 clarifies the access methods for single seat aircraft and inspection requirements for Jubi built aircraft.
Issue 2 supersedes issue 1, however full compliance with issue 1 satisfies the requirements of issue 2.
Issue 3 makes this an ongoing 5 yearly inspection, introduces a more rigorous inspection of trailing edges, to be accomplished at the next inspection, as a result of problems found in that area and removes the requirement to inspect inside “D” boxes if the TE structure is found to be undamaged.

Instructions: (a) <u>General inspection</u>
Carry out a thorough general external inspection of the entire aircraft. Pay particular attention to creases in the fabric or paint cracks, which may indicate an underlying or internal structural problem. Pay particular attention to the wing lower surfaces if a heavy landing or other ground incident may have occurred. Carefully examine the wing and elevator trailing edges.

If there is any doubt as to their integrity remove sufficient fabric to carry out a detailed internal inspection. Wing TE glue failure is a particularly common problem.

(b) Wing Structural Inspection

Make 4 access holes in the fabric approximately 2" (50mm) square (2 upper surface and 2 lower surface) at the following locations:
Single seat aircraft: Adjacent to the rear face of the main spar immediately inboard and outboard of the air brake box. See fig 1.
Two seat aircraft: Adjacent to the rear face of the main spar immediately outboard of the air brake box and at the drag spar intersection with the main spar. See fig 1.

Through the inspection holes, inspect the internal structure of the wing trailing edge using a torch and mirror or suitable inspection equipment. Pay particular attention to the air brake box and drag spar attachment to the main spar.
Check the integrity of all visible glue joints. Check the adhesion of the D box and other ply skin as accessible, visually and by the following method.
Using a 005/010" (0.12/0.25mm) feeler gauge, try to insert into the glue joint parallel to the wing top surface. See fig 2.
Check for cracks running into the spar booms by trying to insert the feeler at 45° to the spar. Apply a force of approximately 1 lb. (1/2 Kg) See fig 2.
It may be necessary to locally remove some glue spill to access the joints. On some aircraft (Jubi) it may not be possible to carry out the feeler test due to the extended ply skin. On these aircraft only, a close visual examination will suffice.

If the feeler gauge can be entered more than 3/16" (4mm) or any evidence of glue failure is observed the aircraft must not be flown. All the fabric must be removed and a complete aircraft structural survey carried out. An inspection report must be submitted to the CTO for further instructions.

Wing trailing edge aft of the spar, Inspect secondary structure as visible. This will include wing ribs, trailing edge structure, reinforcing segments, bracing struts, gussets, and intercostals etc. for signs of glue failure or deterioration. Apply slight pressure to confirm integrity remembering that many of these items are very light structure. Make use of all existing and new access points.

(c) D box Leading Edge inspection - If no faults are found during the inspections listed above (parts a & b) the following inspection need not be carried out. If faults have been found then carry out the following inspections.

For aircraft with diagonal drag spar attached to the rear of the main spar (Dual seat aircraft)
Cut approximately 1½" (40mm) diameter hole in the centre of the leading edge root closure rib, taking care not to damage any internal members. Ensure that the inspection holes are free from sharp edges and splinters.

Note: On K7 low wing conversions (K7/13) it will be necessary to cut the inspection hole in the outer and original inner angular closure rib. Only the outer closure rib will require closing after the inspection.

For aircraft with reinforced "D" box inboard section and no drag spar (Single seat aircraft)
Cut a small hole in the lower "D" box ply skin forward of the spar approximately mid span forward of the air brake. If boroscope equipment is available the hole need only be large enough to accept the probe. The pressure on the "biscuits" and "sticks" may be applied with a stiff wire. If the hole is 3/8" or 10mm diameter or less, it may be repaired with tape otherwise a permanent ply repair must be carried out.

Through the inspection holes, inspect the internal structure of the wing leading edge using a torch and mirror or suitable inspection equipment. Look for signs of any degradation of the structure or glued joints.
Using suitable mechanical fingers or lightweight rod, apply gentle pressure to the rib "biscuits" and "sticks"
CAUTION: do not apply too much force, as the "biscuits" are only 1mm ply.

If any evidence of glue failure or degradation is observed, additional access into the D box must be made and a complete aircraft structural survey carried out. An inspection report must be submitted to the CTO for further instructions.

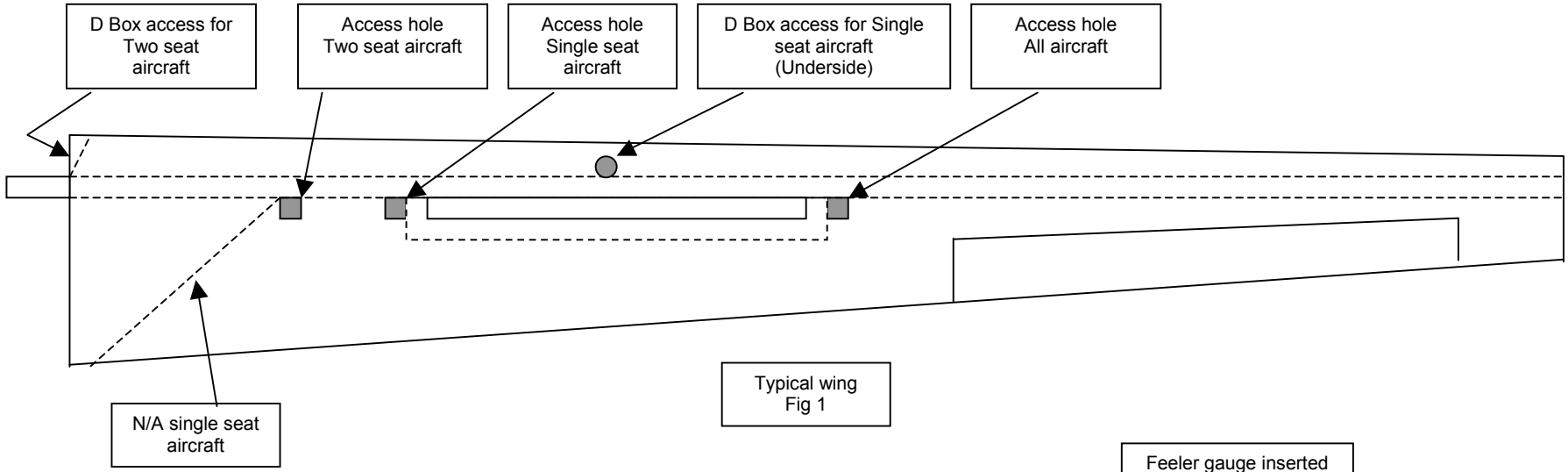
On aircraft with access made in the inboard closure rib. The inspection holes may be closed with ply or fabric as desired to prevent moisture ingress.

Record compliance and findings in the glider log book.

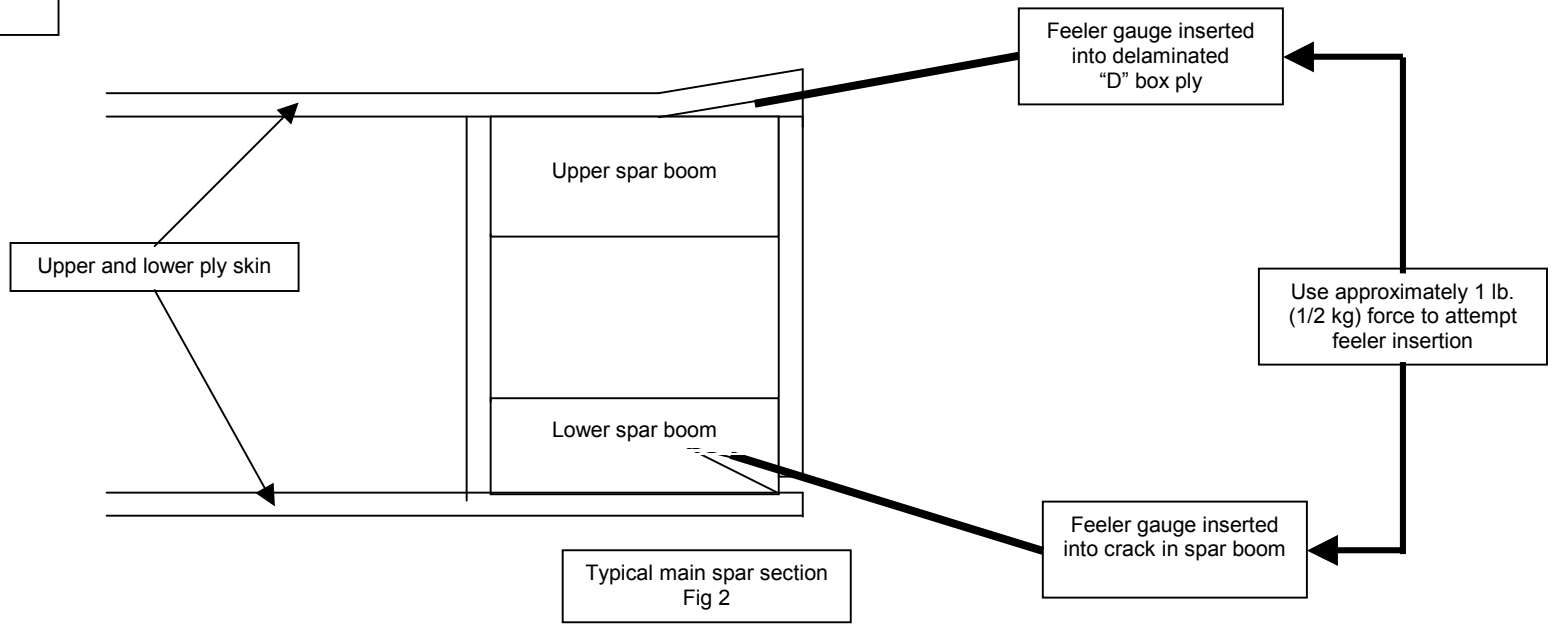
Feedback: In addition to those aircraft reported as failing the inspection for whatever reason, the general condition and any minor defects noted during this inspection should be reported either separately or on the General Comments section of the BGA267 Airworthiness Report form.

Approved By
Jim Hammerton, Chief Technical Officer

BGA 042/07/2004 issue 3



Typical wing
Fig 1



Typical main spar section
Fig 2

DRAWINGS NOT TO SCALE AND ARE GENERAL REPRESENTATION ONLY

British Gliding Association
Aircraft Inspection

Mandatory

Number:	Issue:
047/02/2006	1

Date: 28 February 2006

Subject: Structural inspections

Applicability: All wooden structure gliders, with the exception of Schleicher types that are covered by separate inspection, constructed using Kaurit glue including but not limited to: Scheiber L-Spatz, Bergfalke II, II-55, III & IV, wooden Scheibe gliders
(This inspection is strongly recommended for all similarly constructed motor glider types)

Effective date 31st March 2006

For Schleicher gliders please refer to BGA inspection 042/07/2004 issue 3

Accomplishment: At the next annual inspection after the effective date, these instructions must be carried out unless they have been carried within the past 5 years or the glider has had a complete recover and structural inspection during that period, in that case the inspection becomes due 5 years from the previous inspection or recover.

Repeat at 5 year intervals

Reason Following an in flight wing failure, inspections were carried out on all BGA registered Schleicher wooden gliders. Kaurit adhesive had been used on all these gliders and had sometimes suffered from failure, apparently due to a combination of age and damp conditions. Glued joint deterioration has been found in sufficient numbers of these gliders to warrant an on going inspection programme extended to other types constructed using Kaurit glue.

Instructions: Identification of Kaurite glue.
Kaurite glue may be pink or grey in colour, however sometimes it is almost black depending on the filler material used. Aged Kaurite glue has a crystalline structure when a joint is separated (sugar like). It was mainly used on post war German gliders. Slingsby, Schempp-Hirth and PZL have indicated they did not use it, however care must be taken to ensure these types were not repaired using Kaurite glue in the past. If in doubt, carry out the inspection.

(a) General inspection

Carry out a thorough general external inspection of the entire aircraft. Pay particular attention to creases in the fabric or paint cracks, which may indicate an underlying or internal structural problem. Pay particular attention to the wing lower surfaces if a heavy landing or other ground incident may have occurred. Carefully examine the fuselage and the wing and elevator trailing edges. If there is any doubt as to their integrity remove sufficient fabric to carry out a detailed internal inspection. Wing TE glue failure is a particularly common problem.

(b) Wing Structural Inspection

Identify areas of high stress loading concentration such as wing spars, drag spars, air brake box, aileron or flap cut outs structural attachment points and load transfer points.
Inspect the above for any signs of glue deterioration or dis-bonding cracks or other defects.
It will be necessary to gain access by opening up fabric panels if insufficient inspection openings are available. Due to the different designs of gliders, it is not possible to give specific locations for these access points.
Pay particular attention to load transfer points such as where drag spars or air brake cut out boxes attach to main spars.
The use of feeler gauges will assist in determining dis-bonding or grain cracks. Generally if a feeler can be inserted 3 to 4 mm then it should be investigated. The application of appropriate pressure in the direction of normal load may assist in identifying defects.

If the feeler gauge can be entered more than 3/16" (4mm) or any evidence of glue failure is observed the aircraft must not be flown. All the fabric must be removed and a complete aircraft structural survey carried out. An Inspection report must be submitted to the CTO for further instructions.

Wing trailing edge aft of the spar, Inspect secondary structure as visible. This will include wing ribs, trailing edge structure, reinforcing segments, bracing struts, gussets, and intercostals etc. for signs of glue failure or deterioration. Apply slight pressure to confirm integrity remembering that many of these items are very light structure. Make use of all existing and new access points.

Isolated minor failures should be repaired using approved techniques. Extensive failure or deterioration should give cause for concern and further investigation should be carried out, as this may be indicative of general poor condition.

In all cases of defects being found a report must be submitted to the CTO.

(c) D box Leading Edge inspection - If no faults are found during the inspections listed above (parts a & b) the following inspection need not be carried out. If faults have been found then carry out the following inspections.

BGA 047/02/2006 issue 1

The internal structure of the leading edge “D” box should be inspected for any signs of deterioration or glue failure. Access may be by using boroscope inspection equipment. If this is unavailable then access holes should be made.
Access through enlarged drain holes less than 10mm diameter may be repaired with suitable tape. Larger access holes must be repaired using approved techniques.
Stiff wire or hand flexing should be used to verify the integrity of internal structure during visual inspection.

If any evidence of glue failure or deterioration is observed, additional access into the D box must be made and a complete aircraft structural survey carried out. An inspection report must be submitted to the CTO for further instructions.

Record compliance and findings in the glider log book.

Feedback: In addition to those aircraft reported as failing the inspection for whatever reason, the general condition and any minor defects noted during this inspection should be reported either separately or on the General Comments section of the BGA267 Airworthiness Report form.

Sources of Information: To assist in determining the type of structure and assessment of any deterioration found the following publications may be of assistance:
BGA Standard Repairs to Gliders.
CAA CAP 562 Civil Aircraft Airworthiness Information and Procedures, Leaflet 6-1 Inspection of Wooden Structures.
FAA Advisory Circular AC43-13, Chapter 1, Wooden Structures.
Guidance issued by the glider manufacturer.

Approved By
Jim Hammerton, Chief Technical Officer