

## **ASW 20 BGA Maintenance Sheet**

### **HANDBOOK**

Do read the handbook, it has much useful information for both flight and maintenance.

### **BELLY LANDINGS**

After a wheels up landing never lift the tail to put the wheel down on any glider. On an ASW 20 it will definitely damage the nose. Either get a lot of people to lift it or de-rig it.

After a wheels up landing obviously take the seat out and check that all frames are intact and still glued to the skin. Also apply a very positive side load to the rudder pedals and nose weight as their plywood mounts can come detached from the skin after a "landing" on the nose.

### **HEAVY LANDING DAMAGE**

Check all the usual things but also if the flaps were in "Landing" check very carefully that the TE joint of the flaps has not failed (top and bottom skins no longer joined together). When the wing bends downwards with the flaps down a large load is applied to this joint.

### **STORAGE**

The push rod roller guides in the wings eventually rot and fall apart if they are damp for many years. A dry trailer, preferably with a de-humidifier in winter, seems to prevent this. Leaving a glider outside in the rain is disastrous. Mylar on the wing top surface helps prevent water entering and slightly improves performance.

### **CONTROL SURFACES**

ASW 20B&C's have Kevlar flaps and ailerons. The earlier ones are glass which are flexible and prone to flutter if not sealed exactly as described in the handbook. Tired old cloth tape can shrink and restrict control deflections or get very flexible and cause aileron flutter. The Mylar and PTFE system solves these problems.

### **WINCH HOOK MOUNTING**

TN 17 describes the two thick plywood triangles that reinforce the belly hook front mounting frame. These are mandatory and without them the frame bends and can come unglued.

### **WHEEL BRAKE**

The original drum brakes are notoriously poor, even if kept properly adjusted, which is essential. Fitting soft shoes helps, rather than the hard ones supplied. If the drum isn't perfectly round the brake won't work.

The hydraulic disc brake modification works well but cost over £1000 some years ago.

Hydraulic brakes - Use only aircraft mineral brake fluid Esso Unavis I-13 or Aeroshell fluid 4. Dot 4/5 Motor fluid will wreck the seals. To top up the hydraulic reservoir use a big syringe and a suitable piece of plastic tube attached to the bleed nipple on the bottom of the brake calliper. This is much easier than accessing the reservoir and the simple way to bleed the system.

### **CABLE RELEASE**

The original small round yellow knob can easily slip out of your hand in an emergency, especially a gloved hand. Replace it with a "T" handle. This change is Schleicher approved and a CS 22 requirement for new gliders. Extend the release cable to make it easier to reach if desired but ensure that it can't go down beside the stick and restrict stick travel.

The photo below shows the "T" handle on an extended hard plastic tube so that short pilots can reach it. Ensure that there is the required 12mm of free play in the cable.

### **BRUSH SEAL**

Also shown in the photo is a brush seal that prevents debris, strap ends, pens, mobile phones etc falling down the U/C control slot and possibly jamming controls. A few £ from B&Q riveted onto the underside of the seat. Ensure that the brush can't work its way out of the housing. A tie-wrap around the stick gaiter can also be seen in the photo.



## TAIL WHEEL

A tail wheel makes ground handling much easier and runway take offs in a cross-wind much safer. There is a Schleicher Mod.

## ELEVATOR CONNECTIONS

It is possible to modify the early l'Hotelier connected elevator to the ASW 20B/C type auto connect system. This is Schleicher ASW 20 TN 29. It is a very considerable expense and a lot of work. I recommend connecting the elevator correctly and checking it at least 6 times before flight.

Several people have flown without the tailplane bolt in. It is simple to modify the bolt to the later Schleicher captive system. This is Schleicher ASW 20 TN 40. If the bolt isn't screwed in you can then see it poking out of the top of the TP.

## WATER BALLAST BAGS

Don't take the bags out of the wings to inspect them. Forcing old bags through the small hole in the root rib will almost certainly damage them. If they are leaking replace them. If the water won't all drain out, or comes out very slowly from one wing, it is either because a bag is twisted or because the inner skin is leaking into the gap between the inner and outer skins. I fitted single skin bags 30 years ago and have had no trouble since. Leak check new bags before fitting. Always fill with the wing tip higher than the root to prevent water getting into the vent pipe, it then takes an age to fill.

## HANDLE CONFUSION

Perhaps the worst design feature of the ASW 20 is having 3 identical handles on the cockpit LHS. Some people have put a different shaped handle for the wheel to ease identification.

## NOTES ON FLYING THE ASW 20

Please read the Manual. It has lots of useful advice. The note on using the flaps as a pitch control if the elevator is not connected could save your life, it did mine.

The ASW 20 is still an excellent glider all these years after it was designed. It has a much better tolerance of rain and bugs than its contemporaries. It is prone to dropping a wing on take-off. On aerotow it is often worth starting in flap position 2 and going to 3 or 4 at around 30 knots. Never start in position 1, the roll control is very poor.

The airbrakes are poor. The landing flap is superb, especially the "Jusus" 55 degree setting on the early model. Excellent for field landing but practice at home. It is a bit daunting at first and it is absolutely essential not to run out of speed on the (very steep) approach. With landing flap the ailerons go up so roll control is good even on the ground. There is no need to go to negative flap after landing as on most other flapped gliders.

In landing flap make sure that the flap lever stud is fully engaged in the flap plate hole. If the stud is only partly in it can come out, the flaps then fly to fully negative and, if you are low, the glider dives into the ground. Not good.

Enjoy, it is a superb glider, I have owned mine since it was new in 1980.

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