

Scale Soaring UK

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4.5:1 ASH-25

<https://scalesoaring.co.uk/phpBB3/viewtopic.php?f=12&t=2151>

Re: 4.5:1 ASH-25

by **Pete Marsden**

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Posted: **13 Aug 2018, 12:34**

Peter,

That's very good of you but I think I'm OK(ish).

I have a large plan view (A1) which confirms the chords shown on the drawing that came with the fuz., but the sweeps are completely different. Hopefully this won't be too far out.

Re: 4.5:1 ASH-25

by **Peter Balcombe**

Posted: **13 Aug 2018, 10:12**

Pete,

The Martin Simon's Sailplanes 1965-2000 has a 3 view of the ASH25.

I could scan & send if you get stuck.

His drawing shows a root chord of 850mm, chord of 340mm at end of outer aileron (without winglets).

By eye, it looks as if the LE has a slight sweep back from just inboard of the airbrake (outboard end of inner control surface), whilst the TE sweeps forward from the same point.

Re: 4.5:1 ASH-25

by **Pete Marsden**

Posted: **13 Aug 2018, 09:44**

Talk about measure twice, cut once!

I've just cut the first pass at the wing using the dimension written on the plan in scrap foam (fortunately!) - they bare no resemblance whatsoever to the ASH wing.

No matter how I interpret the written figures or the dimensions shown in plan view, the L.E. sweep + chord sections gives a rearwards sweep at the tip.

I've had a Mate carry out a cold-eyes review in case I'm truly going barmy but he came up with the same results.

Fortunately I do have the catalogue of the full size so I'm going to use their plan view. Although this can in no way be perfectly accurate the numbers I came up with do look right in the STEP-4, pity I didn't study the STEP-4 more carefully before cutting! (this showed the T.E. error).



Re: 4.5:1 ASH-25

by **John Vella**

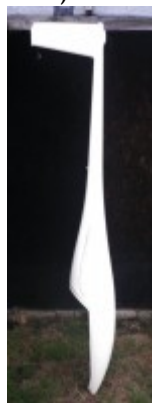
Posted: **12 Aug 2018, 22:52**

Pete, that fuselage is a DG600. It is slimmer than the 800 . Regards John.

Re: 4.5:1 ASH-25by **Pete Marsden**Posted: **12 Aug 2018, 11:24**

Could be, I used to go every other year up to the turn of the century.

Could even be a 600? I've no plan. (DG's aren't my cup of tea - bad experience with the Robbe-'100)

**Re: 4.5:1 ASH-25**by **roo Hawkins**Posted: **29 Jul 2018, 20:31**

Just looked at my DG 800 'part kit', 1/3rd scale with epoxy fuz and foam cores that I bought in Germany in the late '80s

I think the dg 800 was only built in 1993

Re: 4.5:1 ASH-25by **Pete Marsden**Posted: **29 Jul 2018, 15:20**

Hi Terry,

Not bumped into you this year as yet. Trust all's well.

As an interesting reference for this topic I like the Glider Handbook - ([https://www.faa.gov/regulations_policie ... h_ch03.pdf](https://www.faa.gov/regulations_policie...h_ch03.pdf)) - which gives some interesting comments on washout - see 'tapered wings'.

Just looked at my DG 800 'part kit', 1/3rd scale with epoxy fuz and foam cores that I bought in Germany in the late '80s (never built it but probably will in the near future).

Anyway, this employs both the change in section and 2' washout in the wing.

As I say, I have a bin liner on standby!

Cheers

Pete.

Re: 4.5:1 ASH-25by **terry white**Posted: **22 Jul 2018, 14:16**

Hi Robbie and Peter,

I don't understand that following at all, unless you are only talking of aircraft of yester year when wind tunnels and computer programs were not available and trial and error was the way.

In relation to today's modern glass the wings of these aircraft were short low aspect ratio with a thick under cambered section which is far removed from today's modern quick semi aerobatic sections. We not only try to make the whole wing to stall at the same time while flying straight and level but when we are circling as in a thermal. Considering that a tip on the inside of a circle will be flying at a greatly slower air speed than the outside tip, we could expect that tip to stall first especially if a down going aileron is initiated. Therefore a change in the tip section which will cope with the slower speed should be selected if wash out is not to be employed.

Also we have a great deal of turbulence going on at and around the tip.increasing more as the AOA increases but also with aileron movement. This not only makes the tip lift less effective but increases the drag which all goes to help induce the dreaded stall, Again that is why we carefully select either the correct sections layed out by NASA or RG or HQ all who have done extensive wind tunnel tests for our befit.

These test results are readily available easy to understand and most designers would not think of straying too far away from them.Why would we the work of the designers is already done for us .You will read from these reports that on modern glass ships such as the high aspect ratio of the ASH-25 that wash out should not be the preferred choice.However if it should be employed no more than 1-1.5 degrees nose down.

You will also find many discussions on this very subject on YouTube. Ter

Re: 4.5:1 ASH-25 - Correction!

by **RobbieB**

Posted: **12 Jul 2018, 10:37**

Pete Marsden wrote: ↑12 Jul 2018, 08:45

'.....Correction: My wings increase in under camber at the tip BUT do have 2 - 3' washout as well - why?

My conclusion from testing is that as the AOA is increased for slow flying or landing the inboard wing starts to 'sag' (approaching stall) first, but the tips keep flying.....'

Pete, this strategy has been the mantra in the full size gliding world for many years (not sure if it still is today) and the thinking behind it is, the increase in camber at the tip is offset by the washout which is set at the difference between the zero lift angles of the root and tip sections - or a touch more. Doing it this way both the root and tip reach their respective stall angles at the same time so you don't get a tip stall and the tips don't bend down at speed.

Being doing this for a while now on my my models and it works well for me.

Re: 4.5:1 ASH-25 - Correction!

by **Pete Marsden**

Posted: **12 Jul 2018, 08:45**

I don't know what's happened to the 'little grey cells' since I retired but I'm glad my former work colleagues won't see these scribblings elst they'd be reviewing all my work over the last several decades!

Correction: My wings increase in under camber at the tip BUT do have 2 - 3' washout as well - why?

My conclusion from testing is that as the AOA is increased for slow flying or landing the inboard wing starts to 'sag' (approaching stall) first, but the tips keep flying.

The wash out is intended to ensure that at high speed the tips do not deflect upwards too much - I'm trying to get the whole wing to share the load.

As to 'crow' braking, I wasn't aware the full size gliders employed this - certainly the ASW-17 didn't - the last true scale model I built (well before computer radios) and fitted with mechanical full length flaps with the outboard section doubling as ailerons (and lots of slop!).

I've not had the advantage of owning any advanced ARTFs or high-end kits so suspect I'm way behind the times! However, since my moulds are adjustable, i.e. I can twist them during the laying up of the skins, I'll be able to run some more tests on the ASH.

I've already got the bin liner ready!

Cheers

Pete.

