

Erwin 5 DS

ANDY ELLISON RUNS TO THE HILLS WITH A HIGH BLING, SUPER-SLIPPERY SLOPER

What's in a name? Not a lot, in this case. 'Erwin 5' is a very plain tag to give such a slippery machine!

Yes, I know it's an unusual name for a model. I suppose the meaning got lost in translation between the Erwin's country of origin (Austria) and the English speaking world. However, look up the term 'man jewellery' in the 2006 *Aeromodellers' Glossary of Youth Lingo for Luddites, Curmudgeons and Fogies* and there'll be a picture of this model just after the purple anodised R/C helicopter parts. Sleek, black, pointy, as high tech as you dare and not a scrap of paint to blemish the pristine, hollow moulded, heavy carbon, twill weave cloth finish. The Erwin looks like it's been stolen from



WANT ONE

I've had my eye on an Erwin since before it had a name. I bumped into a German guy at a DS session at Rushup Edge some years ago and witnessed him piling the prototype into the hillside on purpose to see how easily the wings came off. With its sleek, pointy mainplane and almost stealthy, pre-historic appearance the model instantly went

Pennines from my native Lancashire to collect it under the cover of darkness... so his mates wouldn't see him fraternising with a Red Roser!

With the model safely back in Gods country I set about reading through the not inconsiderable amount of information supplied in the instruction booklet. This is unusual in itself; I've paid lots more for similar models and all I've

Exceptional build quality really shows through the colourless surface.

Unusually the fuselage requires joining just aft of the wing seat. The alignment of the two mouldings makes it difficult to go wrong but you must rig the model fully first.



a secret Formula One car testing laboratory and given control surfaces. There really was no other model for me to choose as my next slopey sportster.

onto my mental wish list. This was bolstered somewhat when German Stefan Sieman turned up to campaign one at the English Open F3F event in 2004.

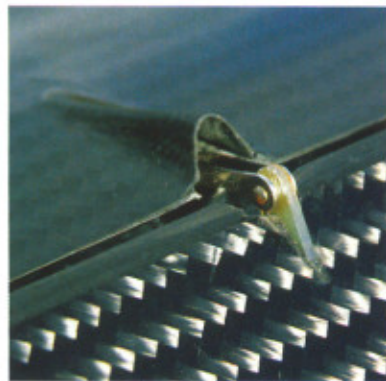
Fast forward to early 2006 and Dave Wright, ex-UK importer of all things glidery and fast, decided to blow the cobwebs off the old business and start up again, this time under the name of T9 Hobbysports. Included in his new range was, surprise, surprise, the Erwin! With the promise of a fairly short waiting time (models like this are usually built to order) I committed a chunk of my wage packet and waited. Six weeks later Dave called to say the model had arrived in Yorkshire and asked if I'd sneak across the

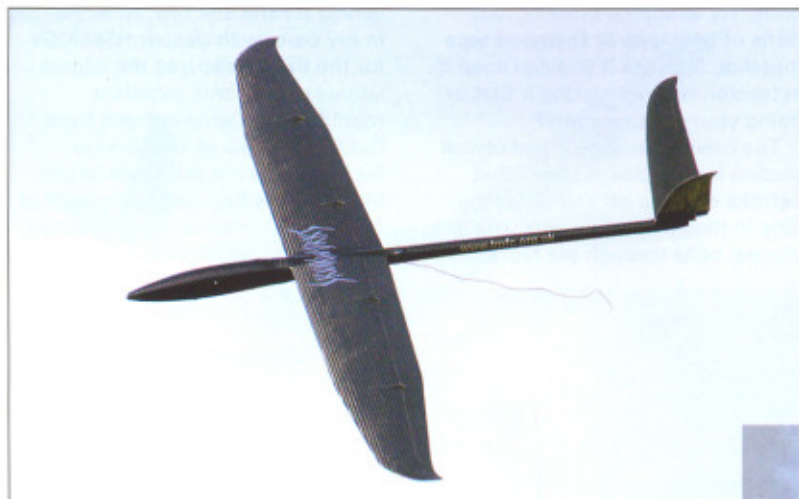
received with the kit is a bit of bubble wrap! Got some of that with this one too, but it's in the form of wing and tailplane covers. The exposed carbon finish gets impressively hot sat on the floor in the sunshine so the bags are a must. Remove the model from these in like-minded company and the reaction is always the same, audible 'oohs' and 'aahs' with a clamber of pilots just wanting to hold it, but concerned by any fingerprints they may add.

BENDY SISTER

Now the Erwin 5 DS has a bendier sister, the Erwin 5. The only difference between the two is in the lay-up of the main spar and, accordingly, the slight weight

The whole model is very tidily finished. The upper surface linkage outlets are just further examples of the attention to detail PCM have put in on our behalf.





difference. Outwardly the versions are identical. Both are supplied with a two-piece, tape-on wing, a one-piece V-tail and a two-piece fuselage that has to be joined by the builder. The Quabeck HQW/1,5/7 (modified) section wing spans exactly 2 metres and is braced across the middle by two steel wing joiners (or one steel and one carbon if you want to save a bit of weight). The decision to supply the kit without colour (top surface colour is available at a small extra cost) showcases the quality of the build. Anything that lets the buyer view the intricacies of the completed biased carbon cloth lay-up must have a little attention paid to the detail, and in this respect the Erwin is truly exceptional. It also makes for an extremely lightweight airframe.

More unusual is the physical lay-up of the wing. Balsa or Herex is usually sandwiched between the innermost and outermost layers of the wing skin to provide some torsional strength. This has long been the established way to produce a hollow moulded wing, but from a manufacturing point of view can be quite a pain. However the Erwin, following a modern trend,

uses no such material. The lay-up of the wing skins is simply fibreglass and carbon pressed together in the mould with a liberal dose of epoxy. The increased torsional rigidity is provided by both the 45° lay-up of the cloth and the inclusion of additional sub spars and shear webs into the wing. The resultant panel is very stiff and very resistant to twisting. Also with the absence of the 'filling' it should be much easier to repair if damaged.

Span-wise, the slender section means that there's some spring in the spar. More so than my other DS models and somewhat removed from the current trend to build impressively bullet-proof DS aircraft with many heavy layers of carbon in the wing. Maybe it's a DS 'Lite' model without the frills. That said, the guy on Rushup was 'giving it rice' as we say up 'ere, and the model didn't look so bendy there. There's also a little noticeable flex in the skin when it's compressed between finger and

thumb, but this is hardly a force you'd expect to experience in the air.

The wing control surfaces are all bottom hinged and top driven to promote slop-free movement, with gap seals and wipers that produce a nice whine on a fast fly-by and can accent the breaks in a multi-point roll. The ailerons are fairly small, with extra 'flicky up' bits at the tips. These are hinged at an angle, taking the hinge line to the wing t.e. and into the wing tip area, thus eliminating an additional drag-inducing vortex from the aileron end. This additional

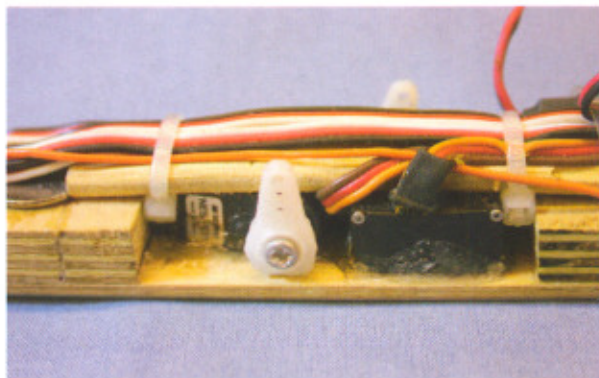
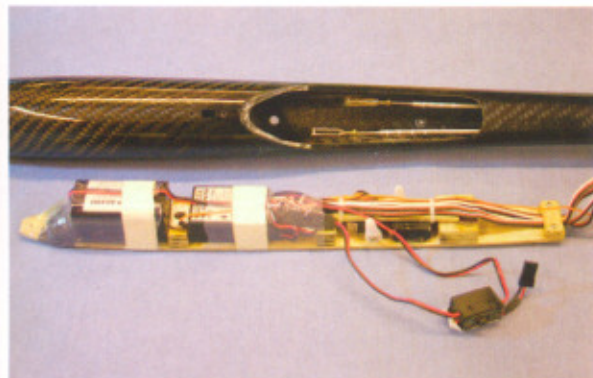
Away from the slope, there's no doubt that the Erwin is a very slippery ship! Easy to hold and launch solo, in even quite strong winds.



Not the quietest model on the slope, with those top-mounted wipers.

control surface is actuated by the main surface via a floating wire in the t.e.; the wire actuator is fairly easy to fit and can be subsequently engaged / disengaged with the control linkage disconnected and the surfaces drooped to their travel extremities.

Small ailerons mean that the flaps must be slaved via a Tx mix to



The most complicated part of the Erwin build is the fitting out of the radio tray. The instructions are a bit vague in this respect but good sound modelling skills will get you through.



One's trusty helper, Frank Hulton, gets the Erwin away for a spot of photography.

Attachment of the radio tray to the fuselage is not clear from the instructions. I copied the installation of another glider and held the tray in with 5mm nylon bolts. Works just fine.

In a more traditional style (and a modification from earlier models) the V tail is now attached by steel cap head screws.

I couldn't resist adding a 'Skunkworks' sticker across the wing.

facilitate a faster roll, and tiny elevators mean that nothing special is required in the servo department. Just as well, because the R/C has to be mounted to a 'skid' that slips into the nose of the fuselage, and this leaves little room for high specification gear. In fact the limited space in the nose means that in practice you have to plan your installation way ahead.

The back end of the DS version is driven by tubular aluminium pushrods supported at the mid-point by a simple balsa former that has to be installed before joining the fuselage halves. The tailplane is attached with steel Allen bolts, whilst at the front you'll note there's no removable nose cone. Some ballast provision is available with a little work on the wing between the joiner tubes.

GOT IT TAPED

I mentioned earlier that the wing is taped on... maybe not such an absurd idea, if you think about it.

Most in-flight forces follow the wing, and any mounting method is really just designed to keep the fuselage attached. These forces are increased a little when g is applied, of course, but you're still only really holding the weight of the gear in the

body. Try wrapping three or four turns of Sellotape or Diamond tape together, then see if you can snap it in tension without nicking it first or doing yourself a mischief?

The Erwin's wing seat and centre section is moulded in a way that permits it to slip off and shear the tape in the event of a crash. The lack of steel bolts through the fabric of

servos for the ailerons, Hitec HS125s in my case, with deeper HS85MGs for the flaps. I secured the aileron servos using some excellent moulded GRP wing mounts from Cubitt's models of Trowbridge. Sadly there's not the room to use these for the flap servos because of the unusual internal wing structure, and I had to resort to the old



the wing means that there's no chance of leaving any of it behind as it parts company. If a shear force is applied the tape does indeed give way readily and the wing pops off nicely, disconnecting the wiring loom as it goes.

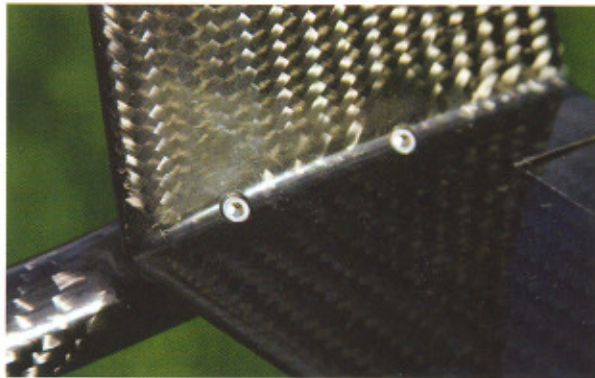
RADIO CHOICE

Choice of radio gear is very much a matter of finding something that will fit. The skinny wings demand 10mm

method of gluing the servos in with epoxy and microballoons.

Bubbled servo covers are neatly moulded from yet more carbon cloth, as are the exits for the simple straight pushrods on the upper wing surface. The pushrods run diagonally up through the wing from the servo arms. All very tight, with extra holes drilled towards the hub of the servo arm and clevises duly ground away to clear both the hub and the control surface. The fibreglass plate control horns require trimming to fit into the surfaces via slots which you must cut yourself, and with a simple two-piece wiring loom made from basic extension leads you can have the wings ready in record time.

The choice of servos for the back end gave much more cause for





model fully dialled into my Graupner MX22 transmitter.

Now, as nice as an all-carbon finish is, I still felt it needed a decent decal to help orientation. Enamoured with the similar colour scheme on my 60" Halfpipe prototype I went for a large, glinty, vinyl, chrome finish 'Skunkworks' sticker rather than put 'Erwin' across the wing. OK... ready!

SLOPING ORF

The Erwin is billed as a bit of an all-rounder. More of a top-end sport model than a racer or full-on heavy DS tool, and it fulfils this role very well. However, rigging the model on

Pretty quick in a straight line, the Erwin's good through the turns as well.

concern. The instructions recommend tiny Hitec HS55s! Heck, I've got stronger servos than those in some of my shock fliers. The torque might well be up to the job but I don't think I'd like to dive into the DS backside with that gearbox or tiny servo arm. I found some JR 331s that have a reasonably robust gearbox, but more importantly use a stock JR servo arm and are much the same physical size overall as the recommended Hitecs. My battery pack is a square Sanyo 1100mAh NiCad and, since we're playing with a solid carbon model here, I used a fully synthesised Multiplex 7-channel IPD Rx. I've found nothing better in these situations and hate the disadvantages of PCM. The Rx aerial needs to dangle away from the shielding properties of the carbon fuselage too, so don't be running it down the inside of the boom unless you really only want one short flight from your Erwin!

The fuselage is joined by simply mounting the wings and tail and aligning the two whilst the joint at the midpoint is soaked in 24-hour thickened epoxy (use colloidal silica). The shape of the moulding between the two pieces of fuselage eliminates all but a small chance of error so it's not a difficult task, even if you do have to fully rig the model to achieve success.

The skid-mounted radio gear can then be shoved up the nose and retained. The instructions aren't clear how, but don't glue it whatever you do! I mounted my tray with 5mm nylon bolts through the bottom of the fuselage into captive nuts on the skid. Once this awkward bit is out of the way it's just a matter of getting the pushrods to the right length and



With huge flaps it's no surprise that the crow braking ability of the relatively lightweight Erwin is exceptionally good.



connecting them up to the back end with ball joints. You need to fit the elevator torque rods, and here I replaced the supplied tubular items with 2mm piano wire with a solder-on ball, which felt altogether stiffer. The whole lot is then hidden by a small, tape-on moulded carbon fairing to finish off the sleek lines of the fuselage. Job done.

The instruction booklet gives the most comprehensive set of radio programming details I've ever seen on a model. Throws in both directions for all six control surfaces are recommended for launch, landing, speed, thermal and aerobatic modes and it took a good couple of hours with a digital vernier and incidence gauge to get the

your own in a blustery car park on the side of the hill isn't easy! The wing sits quite precisely onto the seat, but managing to hold all this together whilst looking for the end of the Sellotape and successfully wrapping it 6 times around the fuselage to hold the wing on is frustrating at best. Try asking one of your mates for assistance after they've stopped laughing at your attempts to do it alone.

The turbulent 'all blow and no go' conditions of the day saw even well-sorted models scraping slowly around tail down, and I threw the model out of desperation rather than common sense. Still I did manage to tweak the CROW mix a little and discovered that the C of G was slightly too far forwards. Here's the procedure for removing a little nose weight:

Un-tape the wing, disconnect the wiring loom and set the wing aside. Remove the taped-on linkage cover at rear of fuselage and set aside. Disconnect the pushrod ball links from the elevator horns. Unscrew the two 5mm nylon bolts from servo tray and set aside. Remove the

Tighter than a gnats chuff in there. Careful thought must be given to every stage of the installation, especially loose wiring.



Totally blingtastic, mate! If ever there was some male soaring jewellery...

switch harness from the inner fuselage nose section, being careful not to lose the screws. Release the Rx aerial wire from fuselage side and partially withdraw the servo tray. Remove the elevator pushrod clevises from the servo arms. Withdraw the pushrods to the rear of the model to permit removal of the servo tray. Take out the servo tray and extract the lead as required. Partially replace the tray and re-attach the pushrod ends to the servos. Fully install the tray and secure with 5mm nylon bolts. Re-route the aerial wire, replace the switch and re-attach the ball links to the elevator horns. Nearly there now! Replace the outer linkage fairing with tape, re-connect the wing wiring loom and, finally, re-tape the wing to the fuselage. Nice job on a cold, wet hillside! Of course, you can add lead to the tail and make it good on the bench later, but you get my point?

Fiddling aside, the Erwin is a very slippery ship. Easy to hold and launch on your own in even quite strong winds and quite pacy. With that efficient Quabeck aerofoil the model responds exceptionally well to camber, reflex and snap-flap with minimal trim change at the back end. Even unballasted, she penetrates strong winds very quickly with the wing t.e. flicked up slightly.

It can't half crack a turn, too. Very grippy, but beware of too much elevator throw or it will let go. In fact in consecutive loops the elevator

does feel sluggish compared to the 'ping' available for a racing turn.

In lighter air the Erwin soars very well. Once again the camber plays an important role in keeping the wing working. It's not the happiest thermal soarer I have and you do need to rudder-balance the turns somewhat when locked into lift, but overall it's none too shabby. With 14oz of ballast squeezed between the wing joiners the model really comes alive, and the very best can then be extracted from the slippery airframe. The massive flaps stop it dead in its tracks under CROW braking, even with full lead on board.

SPORTING DS

My assumptions were correct about dynamic soaring. Here the Erwin is fairly stable but you always have the impression that it's not strong enough for serious speeds. Not the wing as such, more the fuselage and tailplane. The elevators with their lack of gap seals squeal in agony when the model starts to push 130mph. Sounds great mind you, and it's not the quietest model on the hillside with the wipers on the top. A pretty good sporting DS toy, but far too pretty to bounce off the hillside just for a speed buzz.

The recommended coupling of the flaps to the ailerons for increased roll control is well founded. The ailerons alone are fine in fast DS but sluggish on the front side. With the flaps kicked in, roll rate is much more along the

lines of a quick 60" model and I actually had to introduce some exponential to be happy with my course corrections.

WATCH OUT

Visually the model is unnerving. The flat wing takes on an air of anhedronal at some angles and the lack of colour is fine above the horizon, but drop below and you start to struggle. Get the model against a dark field or dry stone wall on a murky day and you might get a little twitchy over its whereabouts. If you're easily distracted as you fly there's nothing to stop you adding a bit of girlie pink trim to the upper tips, especially if paying extra for a full top colour irks you. If you don't get on with it after that, you can always hang it on the wall at home for decoration! It really does do it for me, all that visible carbon. The Erwin's definitely a boy's toy, in the greatest sense.

ORDER UP

Dave's drafted in the 'Yorkshire Mafia' to help him cope with the rush of orders, so you'll no doubt end up speaking to Richard Bago when you phone to get yours.

The Erwin 5 DS is available in the UK only from T9Hobbysports at www.t9hobbysport.com priced at £355 for a standard carbon version or £375 for the DS version. Both are full carbon. Extra colour on the top surface only will be an additional £35, and shiny heat reflective wing bags are also available for £35.

DATAFILE

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| Name: | Erwin 5 DS |
| Aircraft type: | High performance slope soarer |
| Manufactured by: | Erwin |
| UK distributor: | T9 Hobbysports Tel. 07957 190845 Email: richard@t9hobbysport.com www.t9hobbysport.com |
| RRP: | £355 (standard carbon) £375 (DS carbon) |
| Wingspan: | 78 3/4" (2m) |
| Airfoil: | HQW/1,5/7 modified |
| Aspect ratio: | 13.54:1 |
| Fuselage length: | 44" (1120mm) |
| All-up weight: | 2.75 - 3.2 lb (1.25 - 1.45kg) depending on version |
| No. of servos: | Six |
| Control functions: | Aileron, rudder, elevator, flap |