



# DG-1000

*Cruising the edge on the Long Mynd the DG-1000 looks truly awesome at this close proximity. (Bill Maisey photo)*

**IN 25 YEARS OF FLYING SCALE MODELS, HE'S KNOWN NOTHING LIKE IT - SIMON COCKER FINDS HIS ULTIMATE SLOPER**

**T**he first time I witnessed the Paritech DG-1000 in the air was in Switzerland at a Test and Demo weekend hosted by Ueli and his team from Tun Modellbau. Powered by a JetCat P-160 turbine, the model was being hurled around the sky with such total conviction that it took my breath away. One low-level flypast was clocked at 180mph, later followed by a fast pass with the turbine retracted, at just 160mph!

*Even at rest the model is imposing. You can't deny it has the 'wow' factor.*



Such performance is a testament to the construction method that Paritech have incorporated into all their airframes, and proved beyond doubt that Herex does the business. Herex is a lightweight foam / fibre material that can be combined with glass fibre cloth and carbon to strengthen the stressed areas of a sailplane's structure.

The critical factor with aircraft of this scale and size is weight; not least because Germany has a 25kg (55 lb) limit, but also because it's helpful if an aircraft is light enough to be hand-launched from a slope without the need for a team of guys to do the

honours each time. It's astounding that this material provides so much strength, enabling all three of Paritech's new models to duck under the 25kg weight limit. So, what are the new models? Well, there's the DG-1000 at 8.8m (29') span and 1:2.25 scale, a 1:2 scale Fox at 7m (23') span, and a delicious DG-303 Acro spanning 6.7m (22') and scaled to 1:2.5. It would have been a commendable achievement to bring just one of these sailplanes to market knowing the level of tooling up required to produce a moulding of this quality, but Matthias and his business partner Uwe - with the



The cockpit is fully fitted and even the joy stick is scale, sitting perfectly in the pilots grasp. Attention to detail is imperative when modelling on this scale.

There are two 1/4 scale servos under the ply braces, one for the wheel brake, the other for the retractable wheel assembly. Four 4250 mAh Li-Pos are also installed - enough power to sustain up to 10 hours of flying.

undying support of their team - wanted to make an even greater impact, so they released all three aircraft simultaneously, and wow, were they noticed!

Initially, I was concerned how I would be able to transport an airframe of the DG-1000's size, so before committing to purchasing the model I asked some questions and discovered that the fuselage came apart about 500mm behind the wing trailing edge. At 2.9m the main wing panels are the longest parts by far, although a quick measure-up confirmed they would fit comfortably down the length of my car. The commitment was duly made, the Euros were dispatched and the adventure began.

### BIG BUILD

The whole airframe is finished with a fine but solid coat of two-pack epoxy paint, which doesn't yellow with age and UV penetration. Meanwhile the fuselage top seam has been carefully prepared after moulding and sprayed over, leaving the fuselage looking



pristine and utterly realistic. There are some faint seams on all the flying parts, but careful attention can remove most of the evidence. A substantial Herex structure is moulded into the fin, fin post and sub structures, this having the effect of strengthening the base of the fin and preventing torsional twisting. What's more the tailplane retaining captive nuts are set in place, leaving just the rudder to fit. Careful inspection of the internal structure for the main wing panels reveals a myriad of 6mm Herex ribs at 300mm centres to tie all the wing skins and spars together, again, providing exceptional torsional strength.

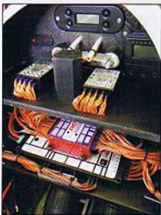
The kit is available in various states of incompleteness depending on how much work you want to do. One of the basic versions (4082 Euros) arrives as an 8m (26') model but you have to fit the canopies and the whopping retractable wheel unit. There are further additional options available such as long tips, cockpit detailing parts, floors, side panels and the exquisite Axel's cockpit instrumentation sets. That's not all though! Custom-made wing bags are

available with fleece linings, beautifully made by Gunther Simen of POP (Pull Over Products) - essential to protect this substantial investment, particularly as the wings can pick up dings so easily. One of the drawbacks of the Herex skins is that they only have a very thin epoxy lay-up on the surface.

The (non scale) flaps can also be built in for you at the manufacturing stage for an extra 450 Euros. Bear in mind, however, that the flaps require a special lay-up and aren't just added to the standard wing after moulding is completed. Paritech also offer a neat internal nose cone, moulded in carbon fibre and filled with ballast. This unit can also be fitted with the aero-tow nose release unit, so the whole assembly will slide inside the fuselage and make this aspect of the installation almost instantaneous.

I paid to have the canopies and wheel assembly fitted to cut down on the build time, nevertheless there's still much effort and cost needed to complete this model - radio equipment, power management systems, batteries, scale pilots, wiring, quick links and all the usual

There's plenty of Emcotec kit in there, too. The twin receiver system sits on top of the RCV unit, whilst two IPD Multiplex receivers are wired to handle each side of the model independently. At the top (centre) is an electronic switch and battery monitor unit, whilst the little display on the right tells me the signal strength to each receiver.



Final checks at home in the garden were given a second opinion by Colin Bond, who also used the wing as a sun shade.



Without these two guys the model just looks like a ghost machine. Each one comes complete with full harnesses, Rayban sunglasses, hat, Rolex watch and Gucci shoes.

In the tail of the DG-1000 is a series of metal ballast weights. If you fly without a second person you must take out some weight to achieve the correct centre of gravity. The same applies to this airframe. Take off the Perspex cover and remove the top three weights!

ancillaries need to be paid for! Talking of paying for things, the scale sticker set is another optional item available at extra cost.

Getting down to business, there are no instructions to work from, at all. The only information available, via the Paritech website, is the basic set-up menu for the C of G and control surface movements. There are some photos of the model, which are helpful, but other than that you're on your own. It's rightly assumed that anyone undertaking a project of this size knows what they're doing.

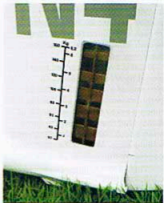
Standard-size servos seemingly disappear into the wings, secured using SolidTech servo mounts that allow the unit to be quickly removed for servicing / replacement if needed. I used Hitec HS-5985 digital metal geared servos on all the flying surfaces (two for the elevator, one for the rudder) save the flaps, which each use two HS-5955 titanium geared servos. Meanwhile, the wheel and the wheel brake each use an HS-755 quarter scale servo, the nose release a further 5985 and the airbrakes a pair of 591 standard servos. All-in-all my DG-1000 has consumed 30m of servo wire and 18 servos, including two in the short wing tip option.

To control this servo array I've used Emcotec's RCV 2 and their dual receiver unit for two Multiplex 12 channel IPD receivers. Supplied by two pairs of FlightPower EvoLite 4250mAh Li-Po packs, this gives redundancy for the power system.

I reinforced the entire front section of the fuselage with carbon cloth, particularly around the wing joiner-to-wheel assembly as there's no former there to brace the loads coming down between the two. As 2.7kg (6 lb) of nose weight was needed to achieve the C of G, there was no point in my sparing the carbon and epoxy!

The fuselage joins using three metal locating / anchor pins and two 8mm retaining bolts, fitted from the underside. Plenty of lightweight Herex structures in this area ensure this is a strong arrangement. It would have been a great idea to incorporate a Herex former in the fuselage to bind the wing joiner top plate all around the retractable wheel, and some shallow formers in the front fuselage areas to offer more rigidity in this cavernous, unsupported section. This would have saved some of that expensive carbon, of course. Perhaps you could pay Paritech to have this done for you? Oh, and whilst you're at it, ask for some guide supports either side of the retractable wheel assembly. There's nothing to stop it wobbling sideways under oblique impact loads.

I used Maplin RS connectors for both the wing-to-fuselage hook-up and the two fuselage sections. These 24-pin connectors swallowed up the five servos from each wing half. A Multiplex 6-pin green connector block was hard-mounted in the tailplane with its mate firmly fitted in the top of



the fin, the tailplane / fin ensemble being held in place with two 6mm steel retaining bolts. A 9-pin connector picks up the two elevator servos and the rudder. With these connectors installed the airframe can be assembled with the minimum of fuss and can be flight-ready in about 20 minutes.

I've run an additional set of leads to each servo throughout the airframe

I can tell you that the DG-1000 flies so smoothly and predictably it's a truly unique experience. (Bill Maisey photo)





to ensure that they receive a clean supply signal from the Emcotec system and ample current; particularly important given that Hitec 5985s are power hungry beasts.

### FUSELAGE FIT-OUT

The fuselage is so big that you can sit a small child in each of the cockpit seats, so finding room for the radio gear is really easy. I'd noticed on other DG examples that the radio had been located under the cockpit floor pans, spread out all over the place and trapped by all the cockpit fittings. I opted instead to build a two-tier shelf from 6mm liteply; the top shelf supports the two Multiplex receivers, the aeriels of which are routed down two plastic conduits positioned along the top of the fuselage away from the servo cables running up from the tail. This also ensures that the aeriels are well away from all the carbon cloth laid around the underside of the wing joiner area. The Emcotec battery monitor, the LCD receiver signal display and power switch fit neatly into the infill panel above the wing joiner outer tube.

Finally, the lower liteply shelf carries the RCV 2 unit, to which all the servo leads plug in easily and neatly. The dual receiver unit sits immediately on top of this, keeping servo lead length to a minimum. There's now an RCV unit available that also incorporates the dual receiving / monitoring facility, making life simpler and neater should you go this route. As for the two pairs of Li-Po packs, these sit securely fitted to the side of the fuselage, just below the back of the rear pilot's position.

Fitting the cockpit out was time consuming, but definitely good fun. The Axel's instruments are worth every Euro - they bring the cockpit to life in such a convincing manner.

Likewise the two 1:2 scale pilots made for me by Axel's Scale Pilots fit in perfectly; pretty cosy, but that's the way it is in the full-size. The scale detail lavished on these two big guys is second to none; they're the pinnacle of their type and really do fill up the cockpit to provide a most solid, handsome look. Applying the array of vinyl stickers brought the DG-1000 to life in this final, utterly satisfying stage.

Sitting her on the scales, the all-up weight came to 32kg (70.5 lb) with the carbon wing joiner fitted, 36.5kg (80.5 lb) with the steel wing joiner which, incidentally, weighs almost 6kg (13.2 lb) on its own!

With the C of G determined by rigging the model without the wings and hanging it from a point 290mm (11.4") back from the l.e., the time had come. Eight months after opening the packaging (well, I was seduced by other projects along the way...), my DG-1000 was finally ready to go.

### LOAD UP AND FLY

The intention was always to slope soar the DG-1000 from the Long Mynd in Shropshire, a Mecca for full-size gliders and hang gliders as well as model flying. At this picturesque location there's an abundance of smooth slope lift, given a healthy helping of westerly wind mass. There's an inordinate amount of space in which to fly and land, or even land out if need be.

Many disbelieved that a model of such mammoth proportions and colossal weight could be hand-launched successfully, and the launching became all the more challenging on the day due to a mere 20kmh of breeze heading up the 275m slope. In the end I had to take responsibility for the launch, as the two big fellas previously elected to do



*Close in passes are delightful because you get to feel the model's energy as she displaces a massive volume of air. It sends a shiver up your spine and I love it to bits! (Bill Maisey photo)*

*The launch proved to be easier than I predicted, indeed the DG-1000 got underway without a flinch. It was a carefully choreographed movement however and I don't propose to try it on my own! (Bill Maisey photo)*

so took fright - one hid behind a camera, the other, would you believe, behind my transmitter!

Martin Middleton stepped up to take the strain and Chris Morrison kindly acted as tail-end Charlie. Steve Davies did the initial piloting while Bill Maisey took some superb photos of the afternoon's proceedings. The DG-1000 flew out in a very stable manner, Steve keeping her nose down as she was pushed out into the valley. The aircraft felt almost perfect, right from the start. I shared this first flight with Steve and Bill, a flight that lasted for 3 hours and 8 minutes. The feeling of this machine is one of complete relaxation, yet excitement: a synergy between man and machine that's 100% addictive. Once you have control you really don't want to let go, and certainly this proved to be the issue between the three of us. Steve was definitely glued to the Tx! We agreed unanimously that the DG-1000 was absolutely awesome and

*The pinnacle of scale soaring. There's no doubt about it in my mind.*

delightful to fly. The controls are harmonious, smooth, crisp and precise, which obviously sharpens up further in proportion to the increase in air speed.

I didn't push the flight envelope beyond speed runs, wing-overs and chandelles, although I did enjoy lots of low-level passes both across the slope and around the back of the slope for the camera. Great fun! Hearing the energy in the airframe and the sound of the tortured air passing over the model made us realise just how much of an entity this machine really is. It almost feels as though it has a life force of its own, such is the presence and feedback from piloting this beautiful creation. It's certainly an experience that raises the modelling bar to a new and much higher level.

Steve and Bill went on to fly their 1:3 scale sailplanes after piloting my DG-1000; a DG-800S and ASW-15 respectively. They felt they were flying small sports models in comparison, which was most unsettling for them for some time. They did of course adjust to the vastly different feel of their models, but never escaped the overwhelming feeling of euphoria that the DG-1000 has sewn into the very core of their being.

Flying on the slope is such a rewarding experience as the model can be sampled from close proximity, and I was able to enjoy the user-friendly flight characteristics up close and personal. It's a flying style I've always adopted on the Long Mynd, where the topography allows this low-level perpetual motion - an aerial ballet and endorphan rush at the same time, you could say!

In the air the DG-1000 is indistinguishable from the full-size as the natural airspeed is so unharmed, helped by its relatively light wing loading. With full span flying surfaces, the combination of inboard flaps and ailerons provides instant, confidence-inspiring response, and gives this huge sailplane a surprising



agility in the roll. The pitch response seemed a little soft at low speeds so a little more movement was dialled in with less exponential.

The rudder was perfect and remarkably powerful, despite its limited movement. Mixing the rudder into aileron inputs by 25% produces beautifully smooth thermal turns. The DG-1000 is so solid at slow speed in continuous thermal turns, indeed she looks absolutely real, utterly indistinguishable from the full-size

#### ULTIMATE CHOICE

I've never enjoyed flying a model as much; without doubt, over the 25 years that I've been flying scale models, it's the pinnacle of my modelling experiences so far. It's a truly magnificent sailplane, strong yet light, easy to fly and with a wide flight envelope just waiting to be explored. Of course the DG-1000 represents a substantial financial investment, a fact I choose to ignore when I'm flying it.

## The energy that the DG-1000 carries is staggering...

sailplanes that were flying with us all day. The full-size gliding club on top of the Mynd had a healthy level of club members and visitors flying overhead, and some of the local pilots flew across to inspect the DG-1000 to see where it had come from. I think the Swiss colour scheme had them wondering!

The energy that the DG-1000 carries is staggering, and even from a shallow dive the model drives through the air with such grace and purpose that it really feels like a full-size machine.

Landings are most satisfactory and the airspeed can be reduced on the slope to what seems like a walking pace. I used only the air brakes, as the crow braking was not necessary on those long, shallow finals.

Following a low, slow approach the model just settled perfectly into the soft heather. It was all so easy and undramatic - just outstanding.

The Paritech partnership of Uwe and Matthias is reliable, honest and a pleasure to do business with, and they're as crazy about modelling as the rest of us. Rest assured, when you hand over your money to order a Paritech model it will be professionally made to an exacting standard, and will be delivered when promised.

#### WRAPPED

I think the DG-1000 is utterly captivating in almost all respects. The aesthetics are perfect and the performance has taken me to a level far beyond the 1:3 scale sailplanes I've enjoyed so far; this is a model pilot's nirvana! She delivers such a unique, life-changing flying experience, there's no doubt in my mind that this adventure has already been worth it. I look forward to building up my hours and my relationship with this machine as the weather permits.

#### WEB REFERENCES

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