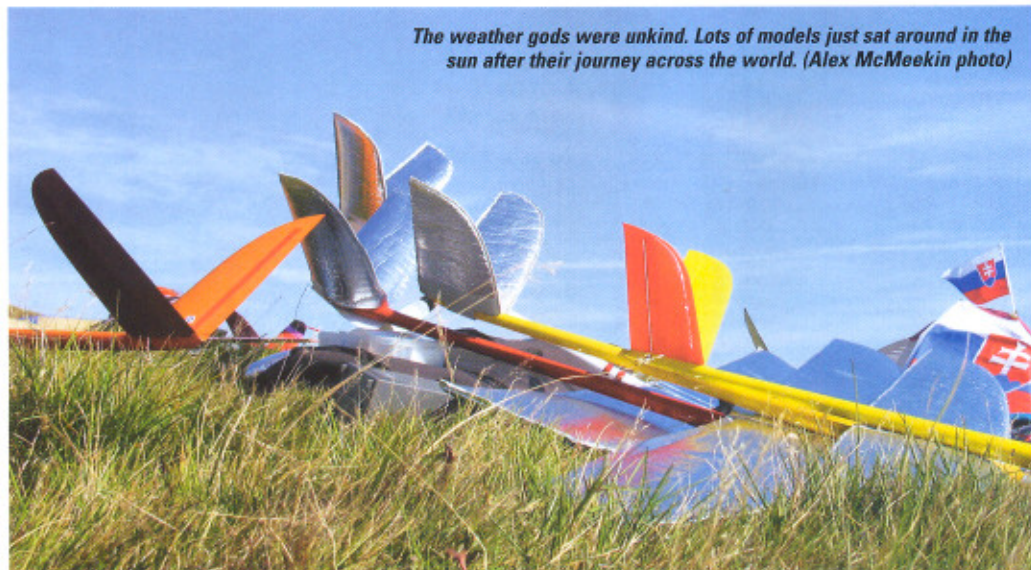


Viking Warriors



The weather gods were unkind. Lots of models just sat around in the sun after their journey across the world. (Alex McMeekin photo)

The event was plagued by uncooperative weather gods, when it did blow the wind direction favoured the Fife Soarers' East Lomond site and not the more challenging Bishops Hill, which had hosted the race before. The fastest time of the event was 39.6 seconds (the only sub-40 flight of the event), set by the overall winner Andreas Herrig. Here's a list of this year's 'top guns':

Individual event

1. Andreas Herrig (Germany 1)
2. Martin Herrig (Germany 1)
3. Kevin Newton (England 1)
4. Helge Borchert (Germany 2)
5. John McCurdy (England 2)

Team event

1. England 1 (Newton-3rd, Bennett-8th, Southall-12th)
2. Germany 1 (Herrig-1st, Herrig-2nd, Demmler-46th)

ANDY ELLISON KICKS OFF ANOTHER SLOPESIDE MISSIVE WITH A BIT OF ENGLISH FLAG-WAVING

The Viking Race 2006 was the biggest ever with over 90 pilots registered to fly. At around £1000 each in the air, there's some money on this hillside! (Ian Mason photo)

The picturesque East Lomond hill. Home of the Fife Soarers in Scotland. (Alex McMeekin photo)

Cue 'Land of Hope and Glory'... a most excellent performance by the England '1' team of Mark Southall, Kevin Newton and John Bennett secured the win over champions Germany and the rest of the world in the biggest Viking Race ever. John especially must be well chuffed to finally pick up a pot... he's been to every VR bar one!

The Fife Soarers of Scotland under the leadership of Ron Russell played hosts to this bi-annual F3F event, a world championship in all but name. The 90 registered entries made it the biggest in VR history, a fact not too



well received by many of the competitors who retrospectively felt that the high entry numbers diminished the quality of the race. Unfortunately the weather didn't co-operate, and at the end of the week only 5 rounds of competitive racing made up the final score. Last year's champion Martin Herrig (Germany) was beaten into 2nd place by his brother Andreas, whilst our own Kevin Newton finished 3rd despite shaving a little too much off the course length in the very last flight of the competition. Cutting the first turn for a 49-second run probably cost him the win.

3. Austria 2 (Gaubats-13th, Kopecny-14th, Frensllich-19th)

No venue has been set for the 2008 Viking Race as yet, but rumours are rife that it could be Wales.

RECORD BREAKER

Finally, after months of trying different hills, models and weather conditions, the UK Dynamic Soaring record has broken the 200mph barrier. Mark Southall was the first man to push it up and over the benchmark speed with a respectable flight-topping 206mph on Pen-Y-Fan in south Wales on 1st October,





followed a few minutes later by a record-equalling flight by Alex McMeekin, designer of the models both men were using.

The world record of 301mph is still some way off, much to do with finding the right hill and having a model capable of doing it! It's not that long ago that DS versions of F3F racers with heavy carbon lay ups were exploding at around this speed, so Alex was pleased to report that his models showed little or no sign

239mph set by Patrick Häusler in Italy flying a SRTL.

Alex' contact details can be found at <http://www.falconmodel.co.uk>, though the model is so new it might not be on there yet. Check it out.

60 EPP SLOPE

Another day of epic racing in the BMFA 60 EPP Slope League saw the conclusion of the 60" league for 2006 (one more event to come for F3F), Paul Wright taking the title. The last

knockout final with his old Gulp SR as I cruised to second place following a cut turn, expecting there to be another race. Only when I landed did I realise that I'd just flown the final... that'll teach me!

Alex McMeekin (yes, him again) looked good all day with his own-design Banjax 2, and entering the race with the same points total as eventual league winner Paul ensured some good solid racing. Sadly Alex suffered at the hands of other traffic and eventually folded a spar, which

Teams from Hong Kong and Taiwan attended their second ever VR. L to R, Stanley Chan, Ping Sang Lee, Wan-Kin Cheung, Chi-fai Au, Angus Lee. (Ian Mason photo)



of stress or flex, with more speed obviously in reserve.

Alex designed the model, the 2 metre span Falcon DS, specifically for this type of flight. No floaty lightweight lay-ups here; this is a seriously high speed, bullet-proof DS tool. Cross Alex' palm with a chunk of silver and you can have your very own! Even if you never DS it, the chances of you exploding the model on the front side of the hill are 'slim to none' as it's hellishly strong. Could it do 300mph? We'll soon see, I'm sure. First the lads will set their sights on securing the European DS record of

race on the famous Bwlch Mountain in South Wales saw conditions topping 30mph up the awesome 'Crest' slope, producing racing speeds rivalling that of the Nationals in June. This time the Halfpipe 60s were out in force, carefully crafted by their owners for such windy conditions. The massive rotor and daunting cliff site had no respect for these young upstarts though, dashing many models to the deck in a race of high attrition. Whilst I managed to secure yet another overall win for the current favoured toy, young Nigel Potter sneaked the top podium place from me in the

The victorious England 1 team. L to R, Mark Southall, Kevin Newton and John Bennett.



Reigning champion Andreas Herrig had to settle for second place this year flying yet another tweaked version of the established Shocker design. (Ian Mason photo)

Wild Card entry Ken Woodhouse puts some body English into England 2 team member Greg Dakins classic Acacia 2. (Ian Mason photo)

easily cost him the league title. There were five HP60's at the event but none seemed really as happy as my prototype, their owners clearly needing more airtime to get used to this thoroughbred. The set-up is fairly critical and must be 'just right' to get the best from it.

A plethora of other models were left floundering in the lower rankings, demonstrating the superiority of these highly developed machines over our domestic designs. Being a fiercely patriotic person I'd love to fly British, but in my opinion we don't yet have a comparable, commercially



John Bennett about to 'pat' for 2006 EPP Pylon League winner Paul Wright.

The Crest of the Wrecker saw the conclusion of the BMFA EPP Pylon League. The most awesome slope in the UK? There are people flying in this photo!

My 48" Halfpipe was the first in the country and a benchmark for high quality EPP kits.

The guys that make it all happen and their little home from home. On the left, chief designer Harris Nelson with Derek Choice alongside. The NCFM workshop is in the background.



available airframe. That said, Stan Yeo of Phoenix Model Products 'phoned me recently, taking umbrage with some of the comments I'd made about his range of kits in my previous column. We had a long discussion about carbon sparring, torsional rigidity, racing finishing versus stock kit building and all that sort of stuff, and Stan promised great things from his next machine, which is currently under development. Perhaps this could be the one... who knows? I've asked him for more details as the model develops and will keep you posted.

NCFM

I've been planning for ages to show you some of the faces behind the toys that we fly, and I thought I'd start this month with a couple of likely lads from 'across the pond'.

North County Flying Machines (NCFM) EPP models have featured many times in On The Edge, with their Bluto, Moth 60 and Halfpipes (both 48" and 60") being particular favourites of mine. NCFM began in earnest in 2001, created by two long-time friends Derek Choice and Harris Nelson, R/C zealots with a great

appreciation for the beauty of efficient, silent flight. Harris, the chief designer of NCFM's aircraft, scratch-built his first free-flight model whilst still at school during the 1940s and has been immersed in the aerodynamic realm ever since. Derek, on the other hand, plunged headfirst into R/C in the early 1980s as an intermittent, peaceful escape from the 'seedy, shark-infested world of

to their first million, and go the extra mile to bring the best product they can to the customer. This includes weight-matching balsa elevons to within a few grams, checking the basswood drag spars / balsa elevons for straightness and cutting some of the best EPP foam cores I've ever seen (precise and clean with no slag, no wire lag, no chatter, no excessive melt-out etc). All the aircraft are



designed for maximum performance, efficiency and versatility, and all are well-proven before being released into the hands of the consumer.

Harris is officially retired but is still designing models and personally handles the installation of the spars for the new HP60 as well as its moulded tail mounts and a few other kit parts. In addition to experimentation with new techniques he hopes to re-introduce many of the forgotten and not-so-common building techniques that were taught to him by his mentor, 'Speed' Wilson, almost 60 years ago. Pride of place in the NCFM workshop is given to a suite of sanding blocks of all shapes, grades and sizes; oft-maligned and overlooked accessories in which NCFM put a lot of conviction.

The company continually strive to push the limits of innovation for slope soaring gliders, and as a consequence a good level of build and flight skills are required to get the best from their range. The models really are exemplary, bettered only by the guys' philosophy towards customer care. The following is a snippet (written by Derek) that I robbed from their 'news page' on the NCFM website, which perfectly illustrates what sets these guys apart from some of the traders you might have had to deal with. Reflect on this a for moment:

recording and performing music'. In 1990 the two met at their local Carlsbad coastal slope in California, Derek being attracted to the unusual models that Harris was flinging around at high speed.

NCFM recently moved into a brand spanking new workshop located in the northern portion of San Diego County (usually referred to as 'North County', giving rise to the company name). In a short space of time the two business partners have built quite a reputation world-wide for producing very high quality, high performance kits, developed from Harris' designs on the Carlsbad slopes. They both see their business more as a labour of love than a way



"I communicate with everyone individually, either by email or in person, and hand-pack every single order with one thought in mind: I do not know how long / how hard this flyer worked to either afford this kit, or research others on the market. The simple fact is, faith and hard-earned \$ were put with us when that order button was clicked and whilst I may look at dozens of wings and parts lying around the shop on a regular basis, typically only one is visible to the person opening that box. It damn well better be a good one, with a lot of respect and thanks behind it and I say that with the greatest of sincerity. I order a lot of things online, both personally and for NCFM, often scraping pennies together to do it. Every once in awhile, it is very apparent that, whoever squished my loot into that cardboard cube, understood that... you can just tell... not sure how, really, but you just can. Hopefully we convey that same sentiment with everyone who comes our way."

As to the future, NCFM are still avidly working on several hybrid prototypes including a modular wingeron, which could be in production soon. Dynamic Soaring has pushed their innovation still further; their recent J8 prototype (see their website), which was received with great interest, was a precursor to this new direction. Derek tells me it's now just a matter of finding the time to really develop it in kit form. They also have an eye on the tempting prize of producing the 'fastest glider in the world'.

With new and increasing interest growing in the Uber-Moth, a conglomerate model based around their own EPP Moth wings with a

fuselage designed and distributed by close friend Martin Taraz (www.ubercraft.com), one thing's for sure, there's much more to come from NCFM. Keep an eye on the latest developments at www.northcountyflyingmachines.com

SAFETY MATTERS

Around this time last year there were a number of high profile crashes out on the slopes, all



attributed to Rx battery pack failure due to reduced winter temperatures. These crashes had a number of things in common: all the models were using Nickel Metal Hydride Rx packs that were charged more than 24 hours before the incident, the operating temperature was well below 0°C, and all the crashes occurred on the first flight of the day... suspicious, eh? Well no, not really. When armed with the facts it's clear to see that NiMH cells are a poor choice for use in these conditions compared to Nickel Cadmium batteries.

The original HP60 is a stretched version of the 48" rather than a fully scaled up model.

NCFM's workshop is as tidy as the models they produce. Clearly, it's a mind-set.



Since the chemical reactions inside rechargeable batteries become weaker when temperatures are extremely low, the batteries won't provide their usual performance. This is a common characteristic related to the cell's polarisation, i.e. its ability to move ions within the electrodes. Take a look at Fig.1 and Fig.2, which relate available discharge capacity of both NiCads and NiMHs to ambient discharge temperature.

Whilst both graphs display a run down of capacity to -20°C ambient (batteries are unaffected by wind chill) I accept that it's unlikely you'll be subjected to these temperatures

Harris personally fits and spackle finishes all the spars on the current version of the HP60. He likes to keep his hand in!

Manx man Derek Cowley's Day-Glo HP60 is fairly unmistakable when airborne.

whilst flying. It's actually impossible to remain still in -20°C for more than a few minutes before the onset of hypothermia! However, you may experience regular temperature drops down to -7°C or -8°C (I have).

You can see that at -8°C and no load, a NiCad (Fig. 1) will give just 70% of its nominal discharge capacity (i.e. a 1000mAh battery will deliver just 700mAh), whilst an equivalent NiMH at the same temperature would supply just over 500mAh (Fig. 2). Of course, with a load applied and with old or rarely cycled batteries these figures drop dramatically, as does the terminal voltage of the cells. At an ambient temperature of around -5°C to -10°C the electronics in the Tx, Rx, or

despondently pack away and head home, leaving the gear in the car overnight to try again on Sunday. Having defrosted the car the next morning you re-trace your steps up the hill, again sitting the model down in the snow whilst you have a brew to warm your mitts up. At around lunchtime you launch your ship into freezing but booming air and let it rip around the slope with some grin-inducing moves at high speed, despite the pain in your fingers from the growing cold. 15 minutes in and everything suddenly goes sluggish very quickly. The model gives one last wave of a wing tip as a fond goodbye before plummeting to its death on the valley floor. You head down to pick up all the bits and

- Charge before flight and intermediately if necessary, warming the cells beforehand.
- Use 5-cell packs if your gear can stand the voltage.
- Use high quality cells.
- Don't leave your gear in the car in freezing temperatures before flying. Keep its ambient temperature above freezing.
- Fly for short periods, checking the cells under load after each flight.
- Keep a very close eye on the quality and condition of your Rx battery pack.

I did some research to try and determine whether Li-Po Rx packs (through a voltage regulator) would be a viable alternative to NiCads

Fig. 1

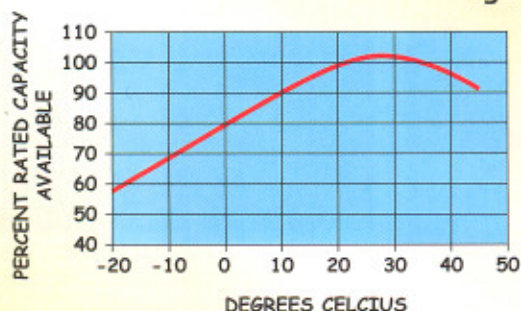
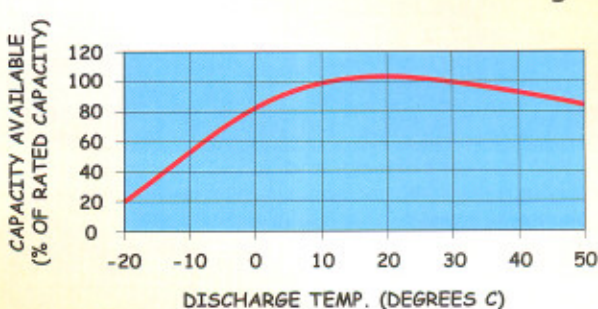


Fig. 2



servos can also stop working reliably. Flying for one hour with a digitally-equipped six-servo sailplane yields a consumption of 0.5 - 0.7A; the typical draw from a full complement of digitals on an F3B model during a winch launch will regularly peak at 3 - 5A, but current draws of up to 8A have been measured. Bind up a surface on the slope or pull some very hard turns and you might be hitting the same values. The prospect of problems, therefore, is very high. Consider this:

Looking forward to a nice weekend up the hill you charge your best slope ships' NiMH pack and load the car on Friday night, ready for an early start on Saturday. The overnight temperature freezes everything and you awake to light snow and a frosty motor. You plod your way up the hill to meet your mates and rig your model. The air is a whiteout and it's obvious that you won't be flying for a while, nevertheless you put the model in the snow and chew the cud with your mates over a flask of hot coffee, giving it an hour or so. With conditions still unflyable you

trudge back to the waiting crash investigation committee. The battery checker appears, and low and behold it shows red. "Well, it's had a full charge," you moan...

If you plan to slope soar in sub-zero conditions this winter, here's some preventative action to take to help ensure the above doesn't happen to you:

- Use NiCads or high capacity NiMH cells (biggest you can fit).

under these conditions. Various manufacturers were unable to provide me with any worthwhile data regarding capacity against temperature, but from what I can gather it would seem that they're no better than NiMH cells in this application. I really need to discharge a pack in the freezer and find out for myself... As if!

That's all from me for now. Until then I'll be thawing out at slopetrashuk@ntlworld.com



You might think about how cold your fingers are but what about your electronics?