

So You Want to Be a Composite RC Sailplane Manufacturer?

Part I: The Road to Perdition Awaits

[James Hammond](#)



A commercially manufactured all-moulded Vector III, owned and flown by LP Hao in New Mexico, USA. (image: LP Hao)

In this new series of articles, I am going to use my experiences to lead you along the crooked path and across the many pitfalls that you are likely to encounter, that are all part and parcel of the frustrating process of realising your own moulded glider potentially suitable for commercial sale.

Let There Be Light

So, you have designed and made a really, really good model glider (guided by my design series, perhaps?) and when I say good, I mean darn good! It's been on your mind for a very long time. You've worked on it for months, maybe a year and now you've turned your ideas into your dream — you have made an actual flying model, the *Kloudblaster*. And not only that — just as you thought, it's amazing in every way and you love it — well you would, wouldn't you? Your friends have all flown it, and they love it too, and all have complimented you on its great looks and stunning performance. It's the light of your life and it's all making you feel really good — just as it should.

Day-um!

Uh Oh

And then comes that fateful day when one of your good flying buddies casually mentions: "Ya know dude...you could turn this beauty into a moulded glider, and sell it...I mean — shoot — I'd buy one." And that's it, the deed is done, the idea goes off in your head like an exploding sun. And that, ladies and gentlemen, is where the real itch starts, gets worse, and eventually takes over your life.



Photo 2: The very first Vector III glass fuselage/vacuum-bagged wings aerobatic sloper. But who is that devastatingly handsome dude holding it? (image: James Hammond)

My First Moulded Model Story — The Vector II

This is how it happened: after making moulded gliders for myself and a few friends at home in the UK for years, I finally realised that I might have something. Something that it was possible not only me, but many people would like. That model was a 2-meter aerobatic model that I called *Vector II*.

First, a Little Credit

Here I have to give a little credit to flying pal Chris Greengrass. Chris and I were avid man-on-man pylon race competitors on the UK racing scene in the early- to mid-

1980s. Chris, like me, designed and made his own designed models at home — there was no alternative because there was nothing commercially available. One of those designs, the *Vector*, turned out to be a really aerobatic and agile model, but at the smaller size Chris framed it (by that time he was in University digs with very limited space) it was not too competitive as a pylon racer. The *Vector* was eventually discarded in favour of the much larger *Sigma* series, again designed by Chris and this time (mostly) made by me which really was competitive — but that's another story for another day.



Photo 3: Ace UK pilot Greg Dakin's Vector III, made by me. (image: Greg Dakin)

The Seed of a New Design

Pondering a small, easily transportable model to fly at the slope and just fool around with — as we all do, I'd liked the smaller *Vector* a lot, especially its aerobatic prowess. So, I got out some paper, an eraser and a ruler, and proceeded to design the *Vector II* using Chris' original *Vector* as the seed, if you will. I intended to make one or two as usual, but as we all know, the best laid plans — it all came to naught as life caught up with me. For various reasons, principal of which was the desire start in a new place with a new, blank sheet of paper I decided to move, and not only around the corner.

I'd always had a strong wanderlust and had spent more time out of the UK for my work than actually at home. So that was it, decision made, I ripped up my roots, gathered up my close belongings, and headed lock, stock, and balsa knife to Taiwan to do a consulting job for the military — and that's all I can say on that part.

Taiwan Ho!

After moving to Taiwan in 1985, I didn't do much modelling for a few years as I was too busy making much bigger models for my job. I was still a bit active and I still had a Greengrass/Hammond *Sigma II* pylon racer that I had carted over with me from the UK, plus I'd discovered a couple of really good slopes not too far away. Here I should mention that when I came to this sub-tropical island, there were no people here slope soaring — zero, nary a one. Powered R/C

models, yes, but no slopers, so I was a bit lonely from time-to-time at the top of my gorgeous slope. Also the *Sigma* — my only model, was getting a little bit familiar. Therefore, was not surprising that I began to feel a strong urge to make the *Vector II* that I'd drawn up by that time over five years before. In actual fact for the most part the design work for the eventual *Vector II* was done in 1985 — and since the model is still in production, that makes it a sprightly 36-year-old!





Photo 4 (left): Greg Dakin's Hammond-made vector III makes a pass. **Photo 5** (right): Greg Dakin's Hammond-made Vector III gets it head down. (images: Greg Dakin)

Vector II Splashes Into the Picture

Thinking back, that pesky plane was always in my mind. As like old habits, old loves die hard. So after a while — it would have been around 1990 — my fingers started to itch again. The time had come to make the *Vector II*. My decision was made and my brief was set, so after a bit of scurrying around Hsinchu, my town of residence on Taiwan, I managed to find a shop that sold Chinese calligraphy paper rolls — the best I could do for drawing paper in those days. I had brought my drawing kit from the UK as most of it was antique and actually quite valuable. I bought an antique Chinese

calligraphy table from a friend who was returning to the USA, a couple of years before, so that made a good drawing board.

The model was soon drawn up — straight tapered wing, pretty curvy fuselage — it all went quite quickly as I'd had the design idea in my brain for quite a while. Actually, that's one talent I do have — drawing in my head down to the finest detail, and with total recall. No idea why I can do that, but I can. Normally, I'm hard put to remember my own cell phone number.

Starting to Plug Away

Soon I had some nice lengths of jelutong — a close-grained medium soft wood that's easy to carve — a bit like lime wood, laminated up and in no time had a fuselage plug made. When living in the UK I'd done it many times so it was no real difficulty to accomplish, and the project gave me the excuse to buy a few new carving and woodworking tools. I soon had a mould made and then a prototype fuselage done so that part went fast too. Vacuum bagged wings followed along with some 12mm solid carbon joiner rod and some tubes, and within a very short period I had a workable model.

The Pudding is Proved

Flying was really pleasant; highly agile and very responsive

with the SD8020 symmetrical section front and back; I was soon having great fun at the slope carving big aero's all over the sky. Even better, by that time there were a few more slopers showing up and my language skills had progressed a bit, so pretty soon, inevitably the rot set in and they wanted a *Vector II* too. In the end I think I made ten. My own models suffered the usual slope attrition, nothing whatsoever to do with my flying, mind you. I mean, darn it, as you know, sometimes the damn model just won't land properly; I have no idea what gets into them...

Then — Holy Coefficient of Drag, Batman! — a Mouldie Old Idea Re-Emerges

Of course, making models at home soon had me bored, and that time some kind soul had already suggested a fully moulded model. That got me completely hooked. Soon I was striding confidently on the road to perdition. Hell, I was so confident in those days. I was going to make a fully moulded all singing, all dancing, super performing and droolingly good-looking, ultimate slope aerobatics model — or die hideously in the attempt.

You Mean You Are Really Going to Do It?

With a lot of encouragement from SWMBO — yes, I'd got married by this time — I utilised the surprising amount of

information that had begun flowing onto the internet to find contact information for a few potential partners in Europe who might agree to make models for me, or maybe just make my designs and sell them by themselves. I had no idea whatsoever about the commercial possibilities, and worse I really didn't care. I mean I was going to make a flipping fortune — shoot, I already had my Blood Red McLaren 720S on order. (Or maybe not?)

I'll leave you there for now, but just look below...can you imagine?



Photo 6: This is where I wanted to be: the first all-moulded Vector III ever sold. (image: the late and very great Steve Dorling. RIP, Steve.)

Resources

- [James Hammond Sailplane Design Series](#)
- [The Aeroic Sine Wave Spar](#)

The second part of this series coming up in the September issue of the NEW R/C Soaring Digest. Read the [next article](#) in this issue, return to the [previous article](#) in this issue or go to the [table of contents](#). A PDF version of this article, or the entire issue, is available [upon request](#).