

The contrasting underside helps with orientation

We take on this re-launched 63 inch span aerobatic V-tail glider kit-build from Phoenix Model Products and venture onto the slopes

# CARIBA MK.2

## Updated Kit

Isn't it strange how things go round in circles; it was about 20 years ago when I first acquired a Cariba. The model was given to me in return for some favours and I spent hours with it off the slopes of East Yorkshire and Devon until I eventually found that I had to concentrate my time on other flying activities and work. The model remained in my shed until last year when it again came out for a ride with me to East Yorkshire in late September for a holiday, but alas family commitments and prevailing winds and hours of light put an end to any flights.

Then as it happened I was in conversation with Stan Yeo of Phoenix Model Products who was telling me about his plans to revise all his kits such as the Vagrant and Vagabond to name just a couple, and update them with CAD plans and laser cut

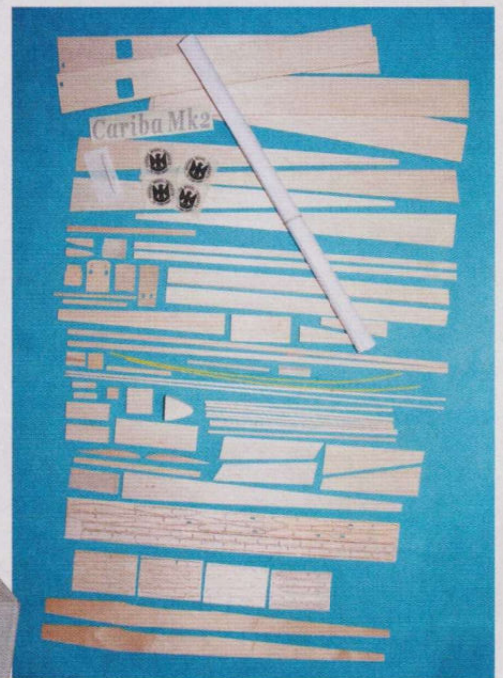


parts. During the conversation I mentioned my old Cariba. Then, to my surprise, a week or so later one of the new Cariba Mk.2 kits arrived at my door and the following is a review of this latest kit off Stan's production line.

Now I must just explain that the kit I received was from the first short run of manufactured kits by Stan, and so it was not only a review but a proof build for him to assist in ironing out any little niggles that I might find with the plan or instructions. Any changes to the instructions (or build) would be dealt with after my assembly. When I had completed the model I had a superb-looking slope soarer and the instructions seemed to be thorough and complete.

## It's All in the Box!

The Cariba Mk.2 is a simple 3/4-channel 63 inch span V-tail aerobatic slope soarer. The Mk.2 kit has been designed to be a more pleasurable building experience with a completely built up airframe, there are no



The slender box contains all this wood, accessories and plan

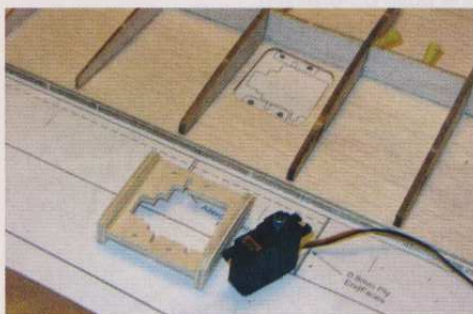




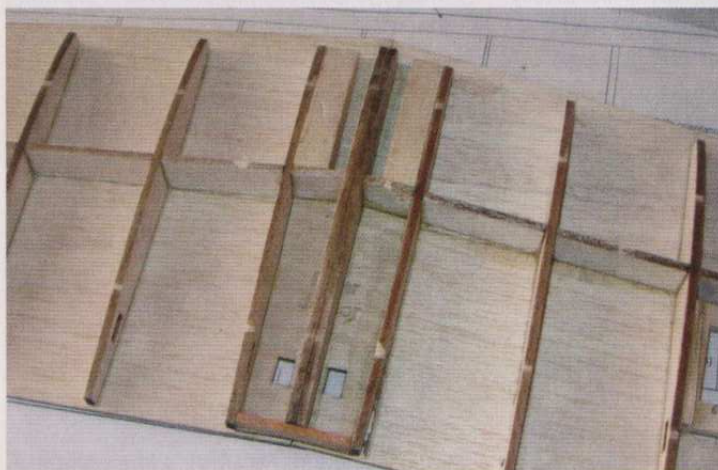
The two accessory packs contain all the small parts



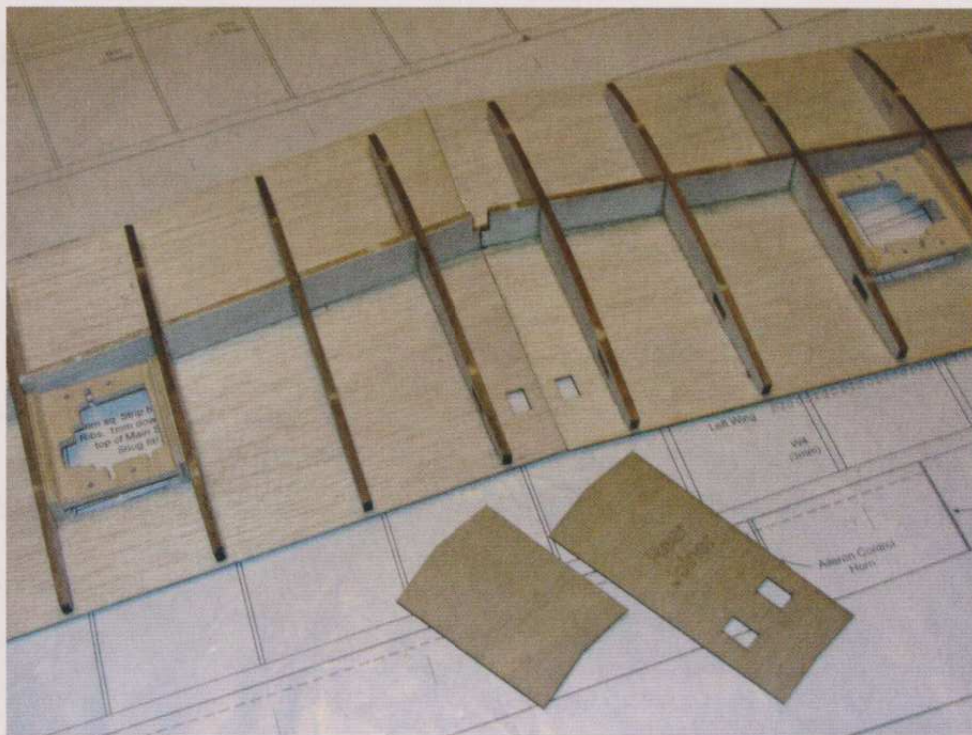
Joined balsa sheet is the base for construction of the wings, and supported with scrap wood at LE and TE while building up



Servo box ready to install between ribs



Wing ribs W1 now fitted and W2 balsa doublers also added to accept brass tube



Front and rear plywood centre strengthening joiners are inserted

mouldings or foam parts included. The easy build construction features a fully sheeted built-up wing with a very strong ply/balsa fuselage and tail.

The kit arrives in a long slender box and on opening it we were staggered to see it bulging with wood parts, accessory bags, and even a full size rolled plan!

**“ the laser cut parts fit so well ”**

The many sheets of wood and laser cut parts were all laid out and a read through of the three A4 sheet instructions to determine the build sequence.

A note here about the instructions; these are not your normal pictorial types, but simply a detailed step-by-step construction order for the fuselage and wings with some

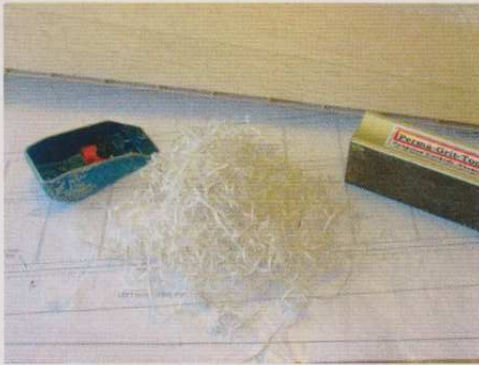
instruction on finishing and setting up and flying, with a couple of B&W images for good measure. Included also in the kit was a decal sheet for adding the final touch.

99% of the construction can be completed using only PVA wood glue. Only a very small amount of 1 hour epoxy and CA (cyano) are used. This is a big plus for modellers who love building but suffer an allergic reaction to these adhesives. The foam veneer wings have been replaced with a fully sheeted built up wing with a self-aligning 'egg-box' construction that is both easy and quick to build. The kit features accurately laser cut and routed (milled) parts including custom designed aileron servo mounts for easy fitment of aileron servos. Covering materials, adhesives and radio control equipment, etc. are not included in the kit.

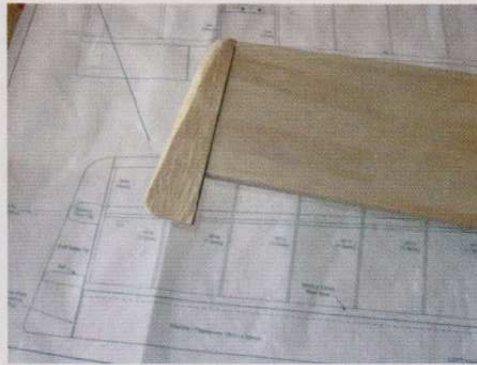
Servos recommended will fit the layout and cut-outs provided by the manufacturer



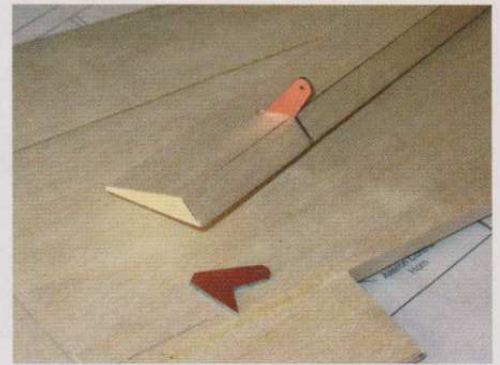
6 mm sq balsa strips were fitted 1 mm down from top of spar between ribs



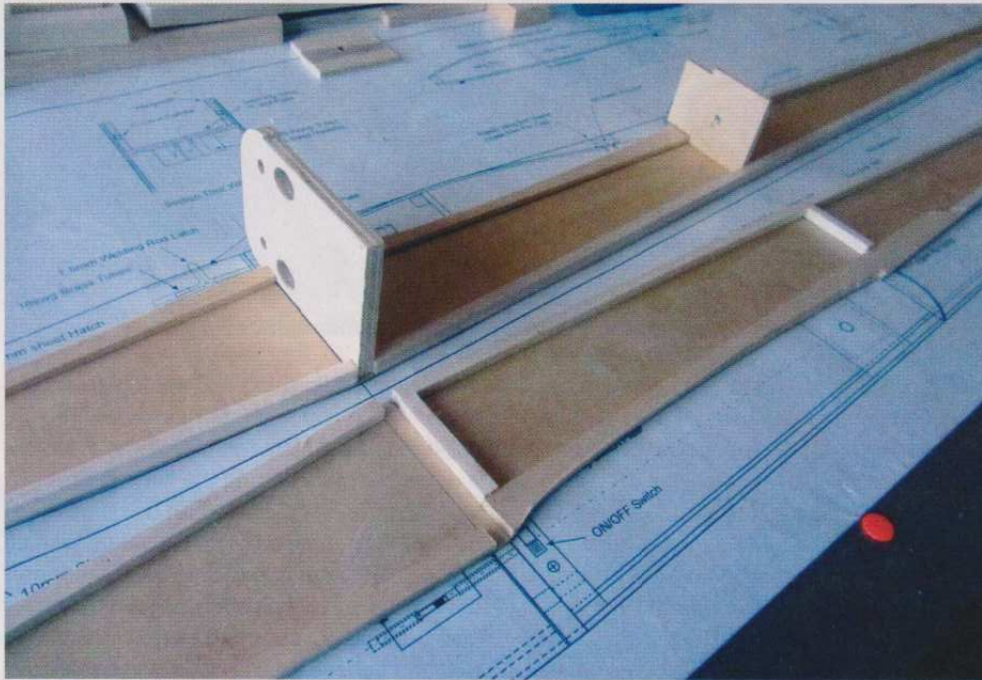
*With the top balsa sheeting fitted the LE is razor-planed and sanded flush to the ribs*



*Balsa block tips are rough shaped before gluing in place and given a final sanding*



*PCB horns are glued into slots cut into the strip ailerons*



*Make up two opposite fuselage sides with former, longerons and doublers as a guide*

and I chose to use the recommended Hitec HS-82MG mini servos for ailerons, and a pair of Spektrum DS821 servos, but any standard size servos will fit for the fuselage (rudder/elevator) positions.

### **Kit Construction**

With my workshop temporarily out of action I was going to build this model on the dining room table (with special permission from my 'Domestic Engineer'!). To detail every step of the build would be

a duplication of the instructions, so I'll give that a miss and just detail some points of interest and observations along the way.

If you have built a model from a plan before then you will not have any problems with this, but if this is your first kit (plan) build then I would suggest that before gluing any parts it is best to read the instructions through thoroughly and make sure you fully understand each stage, then dry fit first to fully understand the progressive stages in order with no omissions before adding any glue.

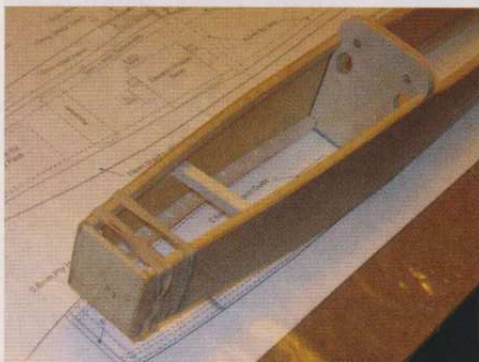
The instructions include a short introduction followed by a paragraph on the recommended radio equipment required; this is followed by a range of tools and adhesives required. Before building starts it is advisable to lay a sheet of clear plastic over the plan for protection.

To make fitment of the wing to the fuselage easier I chose to build the wings first; this is out of order from the instructions but nevertheless the step-by-step guidelines are easy to follow and fall back on later for the fuselage build.

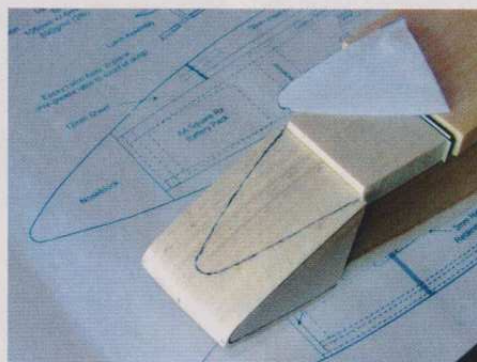
The wing panels are built on the bottom balsa sheeting provided, having joined them first. It is interesting to note that no parts are identified in the kit except for the wing ribs, so take time to identify each individual part first from the plan and lay out in order. I separated the wing parts from the fuselage components to make things a little easier as the build progressed.

### **TOP TIP:**

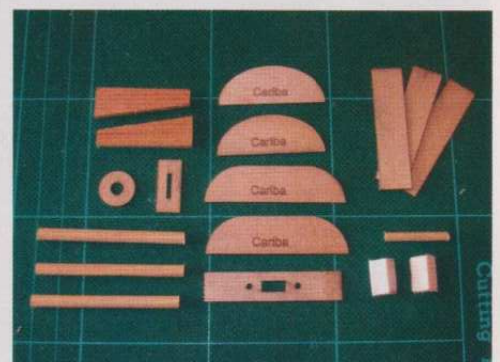
When joining flat sheet balsa edge-to-edge it is advisable to first make sure the join lines are a perfect fit and to use sticking tape (Sellotape is best) to hold the parts together along its full length. Open up the join to place PVA glue in the join and then lay the parts flat and put aside with weights on until dry. Carefully remove the tape and you should have a clean strong join.



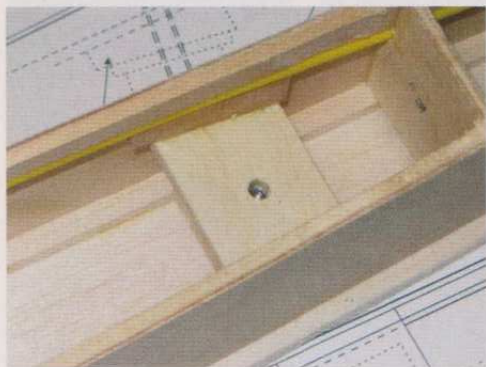
*Small saw cuts were made in the longerons to aid bending of the nose together; note the short temporary spacer to maintain shape*



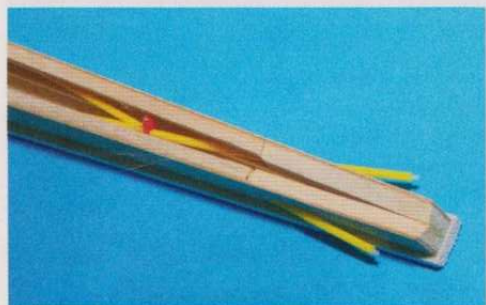
*Construction of the nose block and front decking block; the paper template is to shape the nose*



*Small fuselage parts supplied in the kit mainly for front hatch plus wing bolt washer and support rails*



Wing bolt plate mounted to the support rails

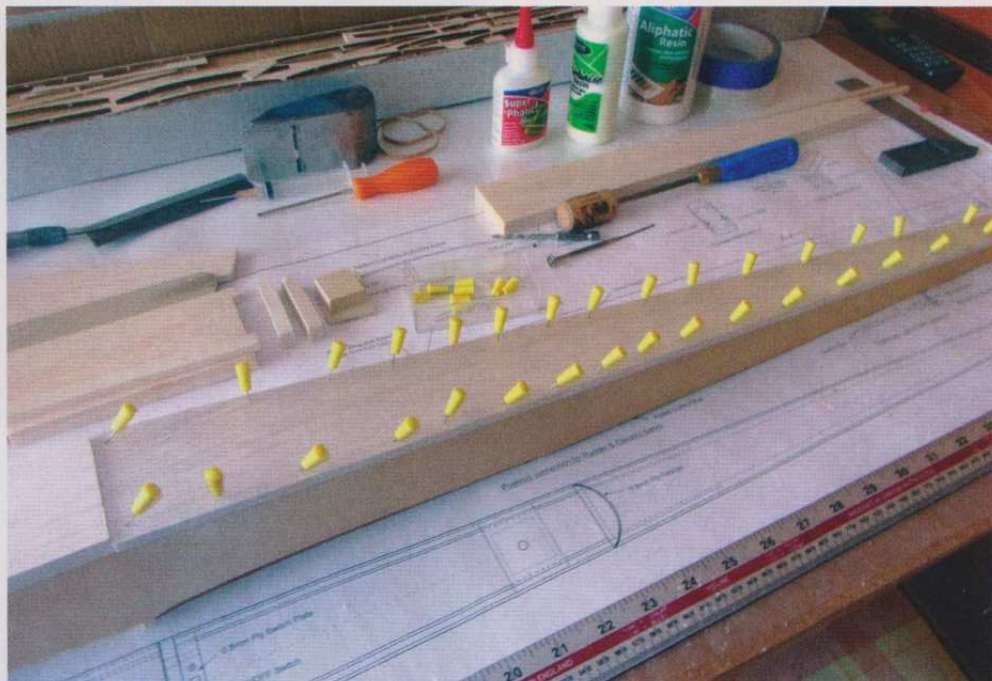


Snakes are tied together and cross over to ease bend; note angled balsa V-tail seats

In order to obtain the correct curve of the bottom sheet I placed scrap pieces of balsa under the leading and trailing edges. This allowed the ribs to sit neatly on the balsa sheet over the spruce spar. A second spar was fitted to the top of the ribs when all were in place, with the aileron servo hatch fixing support plates. The second wing



Servos in place and hatch fits neatly before a final sanding; note the wing bolt hole is lined with part of an old pen top (inset)



The underside balsa sheet is glued in place

panel was built noting the sweepback of the wing indicated at 38 mm at the trailing edge. The full length ailerons are inset into the wing TE and adequate detail is shown on how to fit these. Following the 28 steps of construction the wings are soon completed and put aside while the fuselage is next.

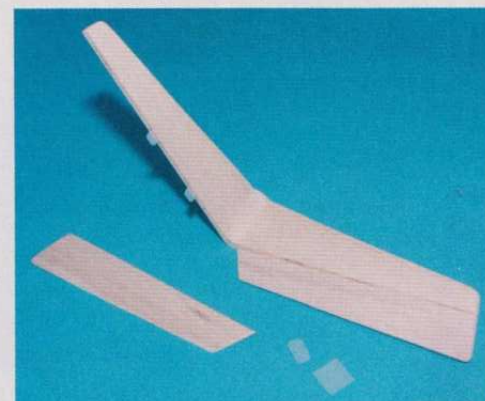
My instructions revealed one or two duplicated construction stages here, but nothing that couldn't be easily overcome. This was probably due to the instructions being added to rather than totally re-written, but careful reading will see the build make easy progress. (Stan has now made the necessary amendments.)

I used a building jig for the fuselage, but to be honest it isn't really necessary as the laser cut parts fit so well. When it came to fitting the stabiliser parts into the recessed

'V' in the fuselage rear end I found that there was not much information available on the plan or in the instructions, and as this is a very critical part of the construction I had to measure more than once to make sure the cut was accurate for the correct level of seating and tailplane incidence. Checking with the plan eventually showed that the tailplane seat blocks are sloped to the correct angle, which is not clearly evident on first assembly.

I was surprised to see the control linkages for the elevators are both fitted with the adjustable threaded part and the pushrod ball link swivel outside of the fuselage, which may cause a hook up during a long grass landing. The reason given for using this method is to allow for 3D movement on the ball link. I built my model according to the plan so it will be interesting to see later how this withstands the wear and tear of grass landings.

Moving to the front and the hatch is made up from a number of parts and sanded to fit the fuselage shape. Small plywood templates are provided for this. The hatch latch is a simple mechanism made from parts supplied and works well. I chose not to use the copper wire pushrod ends as



The V-tail assembly

the diameter was far too big for the holes in the servo arms and I didn't want to weaken them by drilling out the holes, so I replaced the copper rods with piano wire, but still used the brass tube for making the final rod length and soldering all together when in place. The rods fit neatly in plastic snakes and run down the fuselage sides to avoid unnecessary contact with the internals. I attached the snakes down the fuselage length at short intervals to prevent sloppiness and blowback of the control surface.

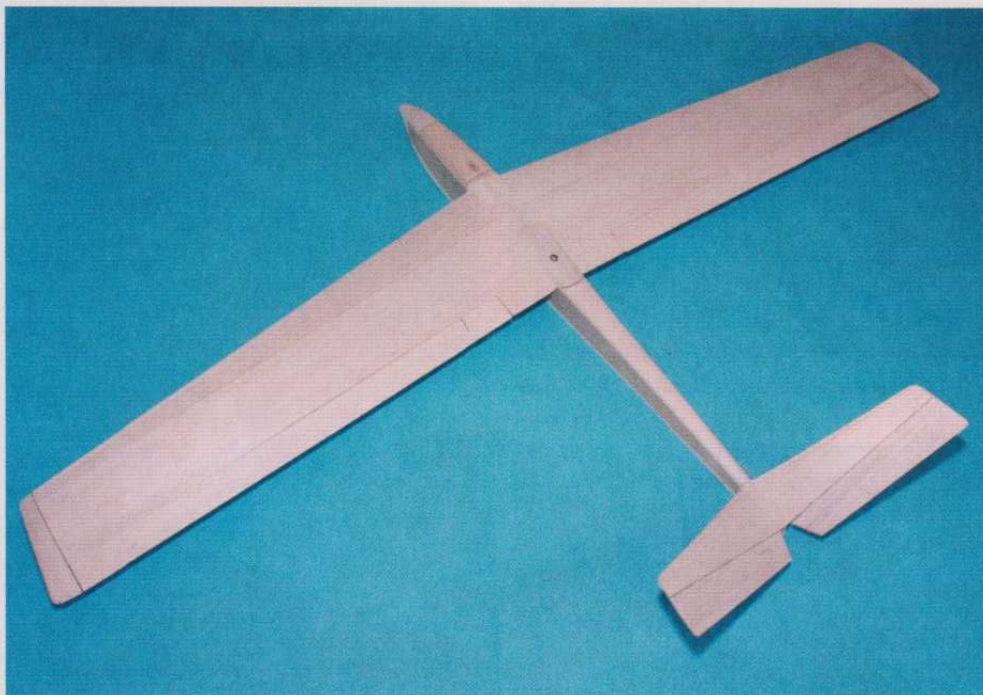
I covered the model with white Profilm. This is a tough heat-shrink film and goes on easily and can be reheated and lifted if necessary without tearing or separating from the colour pigment. The trim is from Trimfilm, and I made sure that I could easily view the orientation by adding heavy red stripes underneath.

With a 600 mA Rx battery and servos in place the C of G was smack bang in the middle of the suggested position on the plan. I set the rates on my Tx to 70% with 30% expo, and set the flaps to 12 mm with a flick of a switch – I was now ready to rock and roll!

## Flying

I waited a long time to test fly for several reasons, being mainly work and other family commitments, and the fact that my nearest slope is over 50 miles away so I needed to rely on the weather as it was a long way to go to find out it was too windy or raining.

Having previously done a glide test to check the C of G and control throws I was happy that once launched into the clear blue yonder the Cariba would stay up, but the conditions at the slope were more windy than I had anticipated having seen the weather forecast advising 13 to 15



*This is what the bare airframe should look like – ready for covering*

knots, but it was mainly gusting 25 knots. I hesitated at adding additional ballast and came to the conclusion that I needed to test fly it first at the build weight of a tad under 32 oz (895 g) to determine the handling.

With a helping hand from Andy, one of the club members at hand, and Tony King on the camera, a gentle hand launch saw the Cariba float away into the strong wind, being buffeted around but holding quite steady in the turbulence close to the slope face. I had to keep the model facing into wind most of the time as turning saw it gain speed rapidly and would easily disappear off the end of the slope into turbulence and downdrafts.

I initially found the Cariba smooth to fly with a positive response from the controls. The V-tail rudder control was effective in maintaining heading direction into wind while the ailerons and elevator are very

responsive even on low rates.

The slope being flown was westerly, but the wind direction was slowly moving to WNW, which made the flight somewhat challenging due to the turbulence and shifting lift. The smoothest lift was further out over some trees, but even there it was marginal and I was concerned I would fly out of it. However, I was able to gain sufficient height to try a few nervous aerobatics in the strengthening crosswinds, and they looked awesome considering the rough conditions and somewhat easier to fly than I had expected in these conditions. Still on low rates into wind rolls were around two seconds and precise while into wind loops were approximately 30 feet in diameter with a clean exit, although being blown downwind a bit when inverted at the top. I didn't try high rates as it didn't seem



*Maiden hand launch from the top of the hill proved the Cariba to be very stable on a very windy day*



*The Cariba looks sleek and holds a turn well*



“easier to fly than I had expected”

Aerobatics are a breeze

necessary. Looping manoeuvres can be enhanced with coupled flap and elevator, particularly outside loops, as I have since found out on later flights.

Landing on the maiden flight was a challenge, with strong gusts blowing the model back while trying to maintain penetration into wind resulted in downdraft and a heavy landing, but fortunately with no damage due the strong nose construction. On a later (less turbulent) flight I was able to use the flaperons for landing, and the model showed no signs of pitching up, which is very useful for landing in confined spaces.

### Conclusions

I've built more than a few kits from plans before and the best tip I can give is to read the information and understand it before

you add glue. The Cariba Mk.2 is one of the better builds I have undertaken with the kit being manufactured by a long-time experienced modeller for modellers, and therefore we know it will all work. As far as the performance is concerned V-tail aeroplanes always look attractive and usually have a performance to match – and this updated Cariba is no exception; it's fast, efficient and highly manoeuvrable. Cariba Mk.2 is not only an enjoyable build but is easy to fly for an aileron-experienced pilot, but not recommended as a first aileron trainer. If you like building models from a kit with plans then this is one I can fully recommend.

To see the full range of PM Products' kits why not visit their website (see Contacts).

**Q&EFI**



In for a rough landing amongst the turbulent air, but no damage

## Kit Review

Discover how to make building a pleasure with this Perma-Grit® Tools promotional video featuring Ian Richardson, the developer of Perma-Grit Tools. This clip from the DVD



'Perma-Grit Tools' shows just some of the range of superbly effective and very long-lasting tungsten carbide sanding and shaping tools available. See much more in the full 30 minute DVD available at [www.trapletshop.com](http://www.trapletshop.com)  
DVD Ref.: DVVS101  
Price: £7.95/US\$12.95 + p&p/s&h



**NEW!** The full range of Perma-Grit tools are NOW AVAILABLE at [www.trapletshop.com](http://www.trapletshop.com)

## Flight Specification

### MODEL INFORMATION

**Name:** Cariba Mk.2 (product code SK010)

**Manufacturer:** Phoenix Model Products

**Price UK:** £69.95

**Model Type:** Sport Aerobatic Slope Soarer Kit

**Construction:** All balsa and plywood kit

### R/C FUNCTIONS

- 1: Ailerons (two Hitec HS-82MG servos)
- 2: Elevator (Spektrum DS821)
- 3: Rudder (Spektrum DS821)
- 4: Flaperons (optional mixing)

### SPEC.

**Wingspan:** 1600 mm (63")

**Section:** Eppler 374  
(semi-symmetrical)

**Length:** 965 mm (38")

**Average Weight:** 890 g  
(895 g review model)

## Contacts

Phoenix Model Products

[www.phoenixmp.com](http://www.phoenixmp.com)

01626 332287