Phillip Carr

With top speeds of 70 mph and 0-60 times of 2 seconds or less its small wonder that many people consider 1/8th scale circuit racing to be the formula 1 of model car racing.

From its early beginnings in the mid '70s the cars have progressed from the simple home made flat pan chassis to the 4 wheel drive, two speed gearbox, all independent suspension cars raced today. For over 20 years one of the most successful companies to manufacture 1/8th cars has been the Dutch based Serpent Company.

A Fine Pedigree

The Serpent Vector reviewed here was designed by computer using some of the most sophisticated 3-D CAD software, and represents the current state of the art in 1/8th IC racing cars. The Vectors Pedigree is without question, back to back victories in the World Championships by Lamberto Collari in Taiwan in `95 and again in Mexico earlier this year, along with FTD for Michael Salvin ensures that the Vector will compete at the very highest level.

Before reviewing the Vector V series I feel it only fair that I tell you a little about the Carr racing team. John and I started racing together as a team some five years ago when John was nine years old. We initially raced in the now regretfully defunct East Midland League and for the past three seasons have competed in most rounds of the B.R.C.A. National Championships. During that time we have had our fair share of good luck, bad luck, and disappointments. What we always do is to go home, review what we did right during the meeting, and moreover what we did wrong, try to correct what we got wrong and go back to the next meeting to try again. Over the last couple of years we have been getting it right a little more often as this year John finished 7th in the National Championship in Saloon and Group C and won both respective Junior Championships. We therefore both admit to knowing a little about 1/8 racing but neither of us would call ourselves 'experts', we are just good clubman racers who work very hard at being consistent and try to be running at the end of the race.

The Carr Racing Team Vector - Ready to Race

Open the box

The Vector kit arrives in a shining black box who's graphics on the cover leave you in no doubt as to exactly what's inside. On opening the box we had our first surprise, the presentation of the kit is quite stunning, with the part built chassis and engine box down the centre, and all the other components bagged and boxed down each side of the chassis. It is the sort of presentation you have come to expect from many of the well-known Japanese kit manufactures. Along with the kit are two manuals that I would recommend you read thoroughly several times before attempting to build the kit.

The Carrs, Crew Chief and Driver

Superbly presented- it makes you want to get started

The first manual is the construction manual that takes you stage by stage through the cars assembly. Using computer-generated graphics each individual stage of construction is shown, and any items of special interest are highlighted with text referring you to the second manual or Tech book, that offers additional information to assist with the construction. When the car is finished and ready to run the Tech book will be invaluable so mislay it at your peril.

As Serpent had obviously gone to so much trouble in providing such comprehensive instructions, I would advise that you follow them exactly. Referring to the exploded view drawings in the construction manual we identified all the items needed for assembly of the Vectors rear end. Another really helpful feature of the construction manual is the miscellaneous materials page where all the screws, nuts, pins, bearings, etc. can be identified against full size drawings of these components.

Let us begin

We began assembly with the now standard solid rear axle. Once complete we super glued the Ferodo type material friction brake pads to the steel brake plates after roughing both surfaces with emery cloth. The remainder of the stage involved pressing the two ball bearings on to the rear axle. During this assembly sequence we fitted the ventilated rear disc brake. What you are now left with is fitting the layshaft complete with brake, rear axle and drive belt between the two rear bearing blocks, not an impossible task, but three hands would help.

Stage 2

Turning to stage two in the manual we again identified all the parts we needed, upper and lower wishbones, drive shafts and the components for both the rear uprights. Whilst we were assembling these parts what was becoming very obvious was the effort that Serpent had put into the quality control of the various components. The fit of all the parts was absolutely first class, not once did I have to ease or file any of the components to make them fit. Moving on to the final set of instructions for the rear assembly we finished the unit by fitting the anti-roll bar and body support. Having now completed the rear end assembly what we were left with was a unit where left and right suspension units fell freely under their own weight and the rotating components were super free. The whole of the rear assembly had taken some four hours to complete. This had also included some time to strip down some of the assembly to check how easy it would be to change parts if necessary during race conditions. An example of this being that I can remove the rear drive belt and re assemble it completely again in just under ten minutes, a real bonus if you find you have problems just before the start of a heat or final. I should also mention that the four hours I had taken also included the 15-20 minutes I spent on my hands and knees in my workshop searching for one of the rear quick-change springs that had made a dash for freedom on the workshop floor. To add insult to injury my driver found the spring within two minutes of entering the workshop to find out why the 'old man' was on his knees again!

Having completed the rear end of the car we turned our attention to the two-speed gearbox which is now a standard fitment on all 1/8th IC cars. The gearbox is quite straight forward with the two clutch shoes mounted within the second gear carrier and the first gear running on a one way bearing. The design of the Serpent gearbox does allow the use of large bearings to be used in the gearbox, which from our experience should ensure trouble free operation. A tip given to me by Glyn Beal (works Serpent driver) was to paint the two gearbox clutch adjusting screws different colours i.e. one red, one yellow, as these screws have to be adjusted equally as a pair and colour coding stops you adjusting the same screw twice.

Now the sharp end

Turning now to the front end of the car it is here we find the first major difference from other cars. The drive from the rear of the car to the front is usually via a drive belt running down the centre of the car via an intermediate shaft located in the front of the engine. What Serpent has done is to drive from the rear of the car down the outside of the radio-plate to a small intermediate shaft and belt located just behind the front drive assembly. The advantage of this system is two fold, one it means there is no drive belt running under the radio-plate, so that all the components on the radio-plate can be moved inboard and secondly not being restricted by pulleys and belts the radio plate has been lowered considerably.

The advantages of this drive system layout are a lower centre of gravity and low polar force. What this means to you and me is that it makes the car more responsive especially when changing direction quickly, for example in a sharp corner or in a chicane.

The advantages offered by the drive train layout will I believe offer such a significant advantage that I fully expect all the other manufacturers to follow suit very quickly and copy the Vectors drive layout.

Turning back to the manual we followed the construction steps shown in stages five and six and soon had the front end of the car completed, screwing the finished unit to the cars chassis with the self tapping screws provided.

Shocks, Clutch and Engine

We next turned our attention to the purple anodised shock absorbers. Knowing just how much the shockers affect the handling of the car I decide to build the adjustable version shocks. I was pleased with the action of the shock absorbers and decided to fit them to the car, despite the latest Internet information available from Serpent advising that after testing they felt that the none adjustable version offered an advantage. We have the parts to convert the shock absorbers back to fixed pistons, and after running the car it is something we will try in testing. (Information from Serpent via the Internet on WWW.SERPENT.NL)

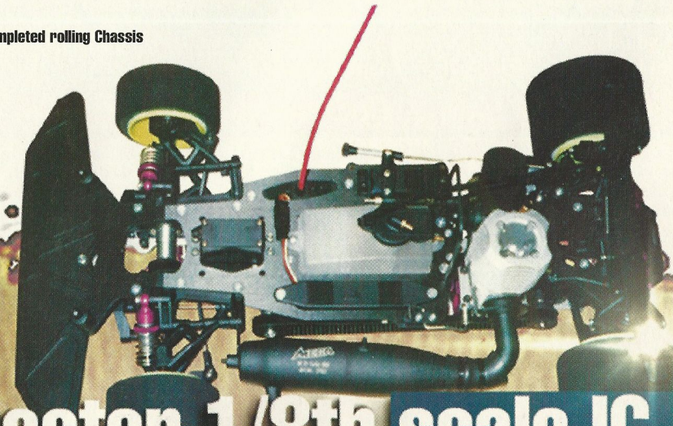
We next fitted the Centax clutch flywheel to the Mega Evo 2 7P-turbo engine adjusting the clearance with the shims provided. A digital vernier gauge is really helpful with setting up the clutch but it can be done with a none digital vernier gauge but this makes finding the

The stout front bumper and front suspension detail

Driving impressions

The Vector pulled away in an almost straight line only requiring one click of right trim and a small reduction of steering lock, both achieved from the transmitter. Considering the very low levels of grip, that were available and the fact we were running kit tyres (35's rear and 40's front) the Vector's turning and steering response were impressive. We ran three or four tanks of fuel through the engine but as we were not learning a great deal about the car (and my pitman was complaining about the cold and damp) we decide to call it a day and went home.

The completed rolling Chassis



clubmans choice the serpent vector 1/8th scale IC

correct setting a little more time consuming. The engine bolted into the car easily and we fitted the Mega pipe and manifold. We spent some time in achieving a neat and tidy radio installation before turning our attention to the throttle and brake linkages, using the parts provided in the kit. The instructions up to this stage have been excellent with drawings and photographs showing you exactly what you were trying to achieve when building the car. I do feel however that the instructions relating to the linkage should give more information on exactly what you are trying to achieve when setting this linkage. I know it is only a small criticism but the instructions to this stage have been so good that correcting this minor oversight would enable anyone who had never ever seen a 1/8th car before to build a car that was ready to run.

Almost finished

Fitting of the bright yellow BBS style racing wheels and pre-glued and trued tires had the Vector sitting on the bench ready to go. The Porsche 962 bodyshell is designed to fit the Vector which makes fitting a straightforward exercise. On advice from Walt Bailey of Elite Models we fitted the 2 self-adhesive foam inserts in the rear sidedams and the 2 lexan stiffeners that support the bodyshell sides. We were left with probably the best quality bodyshell we have come across since we started racing.

All that remains to do now is to set the car up, and it is here we refer back to the second manual or Tech book, to take you stage by stage through the setting up of the Vector. The time spent following and implementing the advice given in the Tech book will pay dividends when you come to run the car. Yet again I can only recommend that you read the instructions and follow them as carefully as possible ensuring you get the car as near to the recommended settings as possible.

In total from opening the box to having the car sat ready to go on the bench John and I spent a total of some 14 hours. I think you could possibly build the car faster than we did, but building the Vector is a pleasure, not a chore and I hope you would regard the construction as part of the pleasure of model car racing.

Looking back on the time spent building the Vector I can honestly say that not once did we have to spend time cleaning or filing any of the parts to make them fit. What Serpent has produced with the Vector is not just a model car kit, but a piece of model engineering, well done Serpent!

First Runs

Having completed the Vector the next stage was to run it. A pre Christmas visit to our home circuit at Wombwell after a week of snow and rain was not the ideal place if you are looking for traction, and we were not disappointed. We could probably have found more traction at our local ice rink! We fired up the engine to check the clutch adjustment and that nothing fell off the car prior to our putting it on the track I will now pass you over to John for his initial thoughts on the car.

Back to the Crew chief

Okay so that's what John and I have found so far with our new Vector. Weather conditions prevented our giving you a true picture of just how the Vector performed, although it's track record suggests that when we find a track with a reasonable level of traction the Vector should go well. As we have not been able to report on exactly how the car handles what we intend doing is throughout the racing season give you reports on how the car is performing. If the car breaks we will tell you about it, if we break anything we will tell you about that, we will tell you exactly how the car performs under racing conditions. If you are driving a Vector this season and you have any thoughts, opinions or tips on the car come and talk to John or myself at any of the race meetings.

We would like to pass our thanks to the following people
Walt Bailey of Elite Models -
Tel 01623 636062
Glyn Beal

And finally to Serpent Model Racing Cars for manufacturing a car kit that has given John and I so much pleasure to build. RRCI