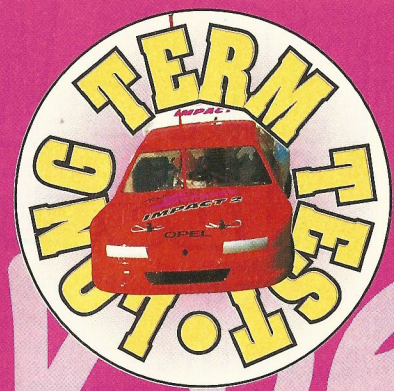


Serpent



Impact 2

Why Change A Winner?

The original .12 powered Serpent Impact, little more than a very underpowered 'toy' built from 1/8 scale Sprint parts, quickly evolved into the '93 EuroChamps winning 8000 Series car. Thereafter Serpent stayed pretty much on top, but despite the 8000 Series Impact's adjustable kingpins and shock absorbers, the somewhat flexible suspension arms and lack of real adjustability in terms of the geometry, which, after all, was originally designed for use with a simple to set-up 4wd car, saw it caught and even surpassed by the end of the '94 season by some of its competitors.

Something was afoot in Holland though, and through the Winter of '94/'95, stories abounded about the 'new car' that was being designed and developed by Serpent's 'Super Star' driver and R&D man.

Michael Salven. Apparently Michael experimented with some really radical F1 style layouts for the shocks etc., but for the production version settled on a rising rate 'laydown' rear shock set-up, similar to that used on the 1/10 electric Cat 2000 and Laro Rush 1/8 RallyCross cars.

4wd Too!

Another new feature was that the car was easily convertible from the accepted European 2wd format to 4wd, to cater for the enormous 1/10 'Gas' racing market in Japan and the Far East, and America, where the majority of the racing is held on empty 'parking lots' where the grip is therefore rather low.

Starting With A Clean Sheet...

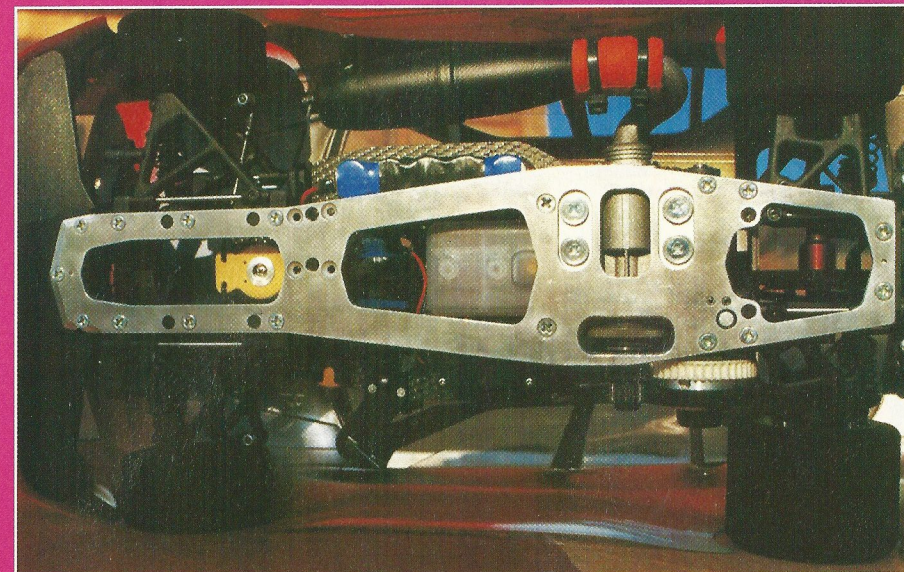
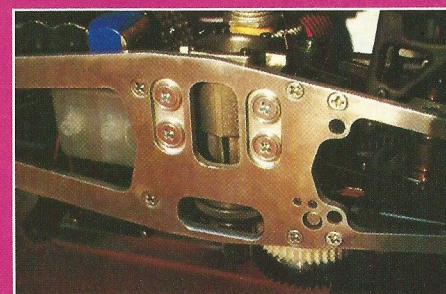
The Impact 2 was the result of starting with basically a clean sheet of paper. The design brief was to improve the rigidity of the suspension mouldings and the chassis itself, lower the C of G, and to incorporate enough scope for suspension geometry adjustment to suit all driving styles and track conditions.

On its release, the Serpent Impact 2 really set the cat amongst the pigeons, as it was immediately right on the pace. Since then, the Impact 2 has won the British National Championships and the '95 EFRA European title, as well as countless other races Worldwide. Prior to the Mk 2's release, Michael Salven took his 2wd car, fitted with a 'standard' spec SX15 motor, to a large meeting in Japan where it was pitted against 4wd competition using the 8 port Turbo engine. Michael obviously got his sums right, as he won...

The 'Total' Car Kit?

Virtually everything needed to build the car was supplied in the RRC review kit, a 2wd Impact 2 Pro, from the basic components right through to the NovaRossi produced SX15 engine and Serpent 50wt silicone shock oil. The tuned pipe, manifold and silicone joiner are in the box, plus a set of Ellegi ready glued and trued TipSystem tyres, the grades supplied (40° front and 30° rear) absolutely perfect for dry weather use. The Mk 2

All screws are countersunk into the chassis keeping the heads well clear of potential damage.



The heart of the Serpent! The chassis is very rigid, being manufactured from 4mm alloy, giving the suspension system something with real beef to work with.

Moving to the suspension and its mountings, literally every moulding is new (actually, the only things on the car that aren't are the rear radio plate supports, the belt, differential and 1/8 type alloy cased 2 speed 'box, and this came from the 1/8 Excel car).

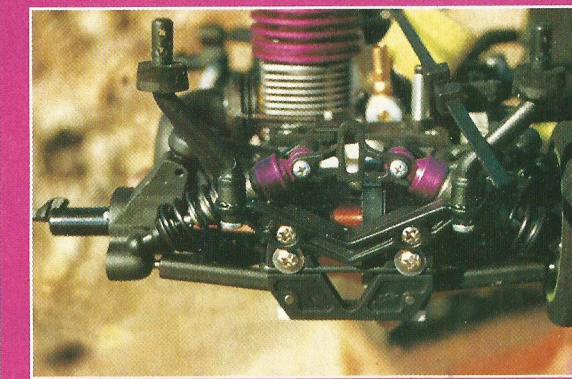
Serpent have totally changed the material used for the car's moulded parts, and the composite now in use is extremely rigid, quite unlike the earlier car's. The front and rear arms are now very strong indeed, and are in fact quite resilient to the hard knocks received when travelling at over 50mph!

The scope for adjustment to the suspension geometry, both front and rear, is now very wide. If the car was built by a beginner, here's an area where mistakes can be made, so constant referral to the 'Set Up' supplement is advised in the instructions. I'll deal with actual settings later on.

The camber and castor angles at the front end are easily 'tweaked.' The castor angle is set by



The power train from clutch right back to the driven wheels has been completely updated even down to steel drive shafts and quick release facilities on the hubs.



The Impact 2 is basically an all-new car and almost every moulding has been produced especially for it.

also uses a new spoked wheel design, which I think is very smart indeed. They look great when the car's standing still! The only items left for the purchaser to obtain are the radio gear, bodyshell and paint, plus a starter and 16% nitro fuel.

The instruction booklet is very comprehensive and incredibly well illustrated, so newcomers to 'Gas' cars shouldn't have any problems, and Serpent have taken a real step in the right direction by also producing a 'Setting Up' supplement which goes into great detail regarding different set-ups for different conditions etc. This is as big as the actual instructions themselves!

The Chassis And Suspension

Every car racer knows that if a chassis isn't rigid, that the car's suspension won't work as it should, and that a reasonably heavy crash will twist it out of alignment. This problem doesn't exist with the Mk 2, the chassis now being nicely



There is plenty of provision for setting this Impact 2 up to exactly suit the conditions - camber, castor, camber and toe-in adjustment is all available.

turned out in 4mm thick alloy, with small lightening holes leaving as much strength in the plate as possible. The countersinking left none of the screws proud of the underside, and the machined portions under the engine mounts for the mounting block retaining bolts, these of the countersunk variety housed in cup washers, means that these very important bolts are kept out of harm's way, so riding over kerbs etc. doesn't damage the Philips/PoziDrive type heads.

three 'clip on' spacers of varying thicknesses that can be used in different combinations on either side of the upper wishbone. A small 'tag' on each spacer is easily gripped with pliers to facilitate removal. For camber adjustment, Serpent have adopted the captive ball joint method (ask Ian Litley of Penn Models about the earlier adjustable kingpins!), which also means the front track width can be altered. This actually has a profound effect upon the car's handling - again, more later. Each ball joint is placed in the outer upright, then a small nylon pad, then the alloy retaining insert. This neat idea prevents excess wear and allows smooth movement. An Allen key inserted through each alloy insert allows the ball joints to be screwed in and out to arrive at the correct camber angles and track width.

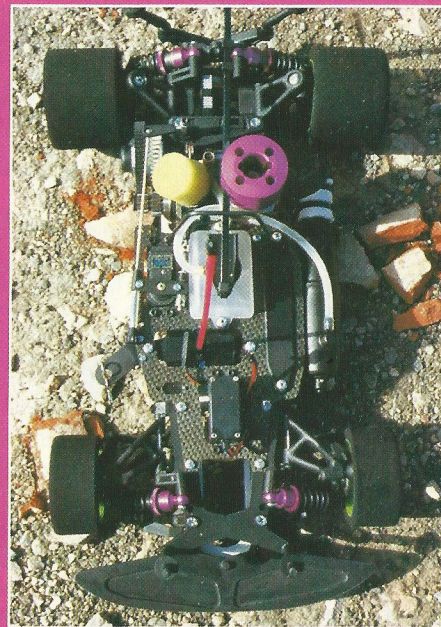
At the rear, very much the same principle is applied to the two lower ball joints, allowing camber and toe-in adjustment to suit all conditions.

The Power Train

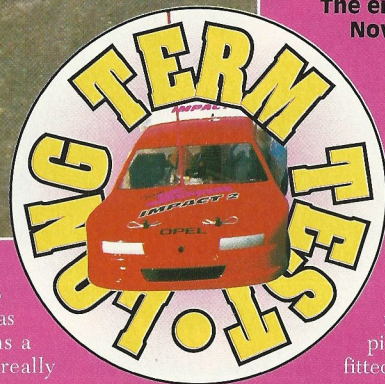
The Pro versions of the Impact 2 include a Centax 'cone type' clutch within their comprehensive specification, probably one of the

The Latest 1/10 Gas Rocket from Holland Is A Hard Act To Follow...

Making and Impact! On the track, Serpent's latest monster is an excellent performer, giving the driver every opportunity to show his own skills at their very best.



The engine installed here was the NovaRossi produced SX15.



conditions, simply tightening it up slightly will suffice, as in slippery conditions a solid axle doesn't really help matters!

The Pro's drive shafts are from steel, a great improvement on the earlier car's alloy items which used to break and bend at will, and at the outer ends of the hubs, we now find moulded quick release wheel mechanisms. What a great help these are!

Whoa There!

The brakes are simply the best I've yet tried. The layshaft mounted floating metal disc is squeezed between Serpent's long life and fade-free plastic pads, having first glued the pads to their metal backing plates using 2 part epoxy (score the plates to achieve a better joint). The brake cam locates in the chassis, and is then prevented from moving around at the top by the rear suspension mount cross brace.

Getting It Together...

Assembling the car took about 4 or 5 hours, and really was simplicity itself, the suspension arms being ready tapped to accept the ball joints etc., so it really was a doddle to put together. Simply following the instructions leaves you with a ready to run machine, so the only suggestion I can make concerns the shocks.

Options?

The Pro version reviewed was very comprehensive, but Serpent also supplied a quick release kit for the front wheels (as used on

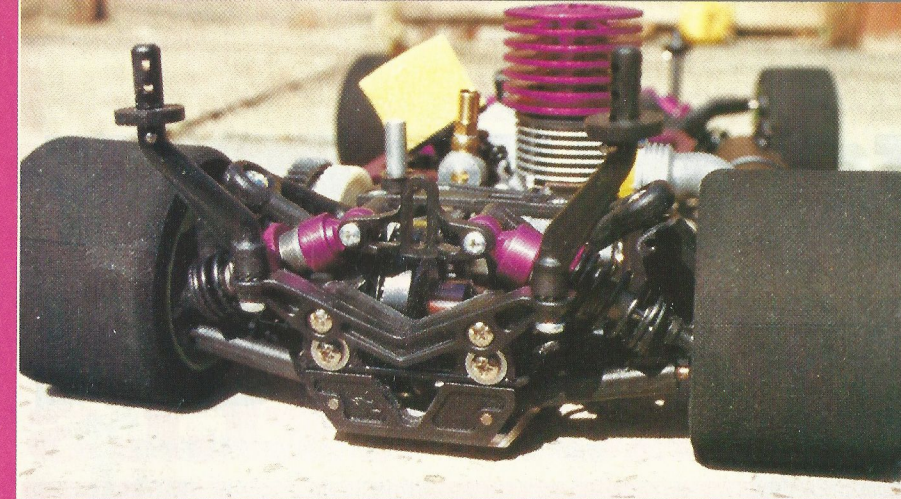
the 4wd version), and a carbon fibre radio plate. I therefore assembled the car using these parts from the outset. Neither actually make the car any faster, but the quick release front end comes in useful during practice (Julius Kolff also changed all 4 wheels on his way to winning the '95 Euro's), whilst the 3mm graphite radio plate is very rigid and definitely 'the business' for pit posing. The car looks superb when fitted with one!

Absolutely Shocking!

Serpent offer the builder the option of using either fixed pistons, in other words conventional pistons with different numbers of holes in, or their unique adjustable piston design which consists of an 'O' ring sandwiched between two castellated discs, the upper sitting on a threaded portion of the shaft. When the shock shaft is pushed fully upwards, the discs locate in a castellated insert at the top of the shock's bore. Turning the shaft then tightens the upper disc onto the 'O' ring, squeezing it and therefore increasing its diameter, giving the effect of using a piston with smaller or fewer holes in it. A neat idea!

Using the adjustable system, air gets trapped in both the 'O' ring/disc sandwich, and in the castellated insert. Walt Bailey of Elite Models, Serpent's distributor in the UK, suggests filling the shocks with the supplied 50wt silicone oil then leaving them overnight in a warm atmosphere to allow the bubbles to rise to the surface. I usually warm the shock using a hairdryer, which has the same effect.

Take great care when taking the castellated shock inserts off the moulding sprue. Cutting them off with a very sharp scalpel is a good idea - DON'T just yank them off, as this can leave a rough edge or a small nick in the flat top surface, the very surface on which the diaphragm rests. This can lead to oil leaks, and where oil can escape, air can get in. I must admit I had trouble with leaks at first, the oil seeping down the flattened part of the threads, but found that changing the diaphragms to



firmer items, those from the TTech Predator would you believe, cured the problem!

Initial Setting Up

Having built the beast, it's time to set up the suspension. With the shocks and both roll bars disconnected (take off the left side at the front), place the chassis on a flat surface, then adjust the screws on the rear until each outer upright (hub carrier) just touches a 5mm drill or block. At the front, a 1 to 2mm thick shim is about right.

To set up the 'tweakable' front anti-roll bar, a very useful 'cam' is incorporated on the left hand mounting. Replace the left handed portion and rotate the cam slowly in either direction. When holding the left side of the suspension down against the packing mentioned earlier, the right side will be seen to go up and down. The trick is to adjust the cam until both sides are at the same height (i.e. resting on the packing equally), then tighten the clamping screw. It only takes seconds to do this.

Set the shocks to exactly the length suggested in the instructions, start off with Silver springs (as

supplied), with the shocks set reasonably hard on the front (try 3.5 to 4 turns in) and medium on the rear (2.5 to 3 turns in). As for the caster angle, the car handles well with the thick and thin spacers in front of the upper wishbone. A good initial camber set up is 1.5° negative on front and rear, and about 2 or 3° of toe-in on each side.

On The Track

The big impression the Impact 2 has made on me over the past few months is that it feels just like a 1/12 carpet car. Strangely enough, its characteristics when cornering are very similar to a certain 1/12 car also made in Holland, as it carries amazing amounts of speed through each corner without 'scrubbing' off momentum. It also generates so much grip, it is hard to make it 'let go' even in average conditions, so can be considered very 'driver' friendly. A plus point is that it can use quite hard tyres all round without sacrificing grip and stability, so tyre wear is very, very low. Considering the velocity it can turn in to

The adjustable shocks are an exceptionally neat idea but, as with all shocks, do make sure that all the air has been evacuated from the oil before final assembly.

corners at, this is amazing, especially so for the front tyres. If anybody tries to tell you that running a 1/10 Impact is expensive tyre-wise, don't believe a word, 'cos they don't know what they're talking about!

Reliability has been very good, and nothing has broken or bent, despite a trip into the wall at Tibshelf, travelling at heaven only knows what speed, and I've only once had to take up a small amount of wear in the ball joints. I've only made one real change to the car as supplied, fitting a Serpent 1/8 manifold (90mm from the pipe's seam to the rear face of the manifold). This improved the performance to such an extent it felt like a totally different engine! Black springs and firm damping suit fast, smooth tracks, whilst at Ashby, the car is very good on Silver springs and medium damping.

Altogether, the Impact 2 does exactly what's required of it. The set up is fairly easy to come to grips with, it's very stable at high speed yet responsive to steering inputs (it doesn't understeer like the original Mk1 Impact), and, like all 1/10 IC cars, is awesome fun to drive.

The option of 2 or 4wd is useful, and the kit's quality is such that it is a real contender for the title of the 'Rolls-Royce' of the 1/10 IC car market. 'Nuff said?

The Serpent Impact 2 is available from Walt Bailey at Elite Models, 159 Newgate Lane, Mansfield, Notts. NG18 2QD. Tel (01623) 636062.