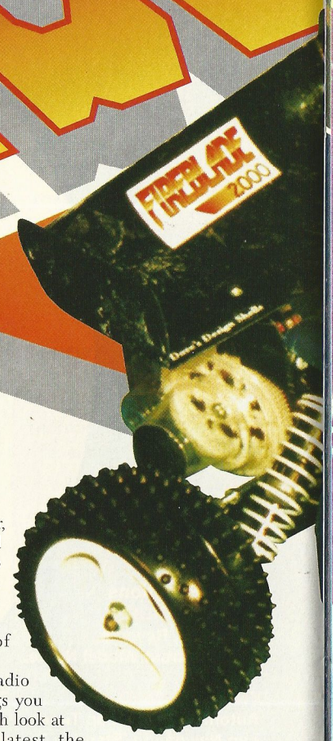
FIREBLADE 2000

21st Century Racer

Schumacher Fireblade Analysis by The Editor



It's all in the design

Whenever Schumacher release a new car, racers all round the world sit up and take note. Well with thanks to Tim Walden, and the rest of Schumacher's R&D. team Radio Race Car brings you the first in depth look at Schumacher's latest, the Fireblade 2000 2WD racer.

In the past years Schumacher have tended to update cars, rather than producing a new design. The Fireblade breaks this tradition completely. This is a totally new car, when placed beside the current Cougar 2000 no "family" resemblance can be seen. In fact the Fireblade carries more of a Cat 2000EC look ie:- low and lean, and this is not a mere coincidence.

Low is Good

One major design philosophy runs right through the Fireblade, "Get it low", with every design area, every component "low" is the main goal. As all you avid racers out there know, a car that carries its weight low, that has a low loss transmission will handle well and have the power and duration we all are looking for.

Drive Line

Having got this super transmission how do you get all the power to the wheels without losing it? Schumacher have the answer to this as well. Blades Driveshafts. These driveshafts are yet another 21st Century design. In the normal slots in the output shafts from the differential, a plastic "blade" is located. This connects via a pivot pin to a large diameter yoke on the end of the driveshaft. So firstly no backlash is allowed. The much larger bearing area reduces drag, and the design allows a large range of suspension movement with no increase in friction. Also torque change is limited (a conventional dogbone can "jack-up" a cars suspension under hard acceleration). The other good news is that as the "Blade" wears you can simply replace it by spreading the "Blade" and un-clipping it from the pivot pin. Very cost effective.

The Visco-Drive as fitted to the test car.

The test shell was superbly painted by Dave Applemen of Dave's Design Shells.

The Heart of the Car

The heart of the car is the transmission, this is where Cecil Schumacher's talents come to the fore, Cecil has created a totally new gearbox for the Fireblade. Still of the three-shaft type, the laydown 2:1 internal ratio gearbox has a new pitch for the gears for lower frictional losses and a high torque ball diff. The diff, being mounted as low in the gearbox as is physically possible. Also by using a 2:1 ratio in the gearbox, the diameter of the gears is kept smaller, thus lighter, so less rotating mass. All this added together will give "punch" out of the corners and an amazing top speed. This has got to be good. Also it makes for a simpler car to build and maintain. In addition it will teach a driver to "drive" better, develop a good throttle control, and of course on a very high grip surface no slipper is needed anyway. However if you do feel the need for a slipper or viscous drive these are available in the Speed Secrets List.

Traction Control

When I checked the details of the Fireblade from Schumacher's press release, I was a little dismayed. No form of "Traction Control" was included in the kit, no slipper clutch or viscous drive. This must be a mistake I thought, but I was wrong. In fact Schumacher have been very clever. A 2WD Off-Road car will be many peoples choice for a first racer. By not including a slipper etc. Schumacher can reduce the retail cost of the car.

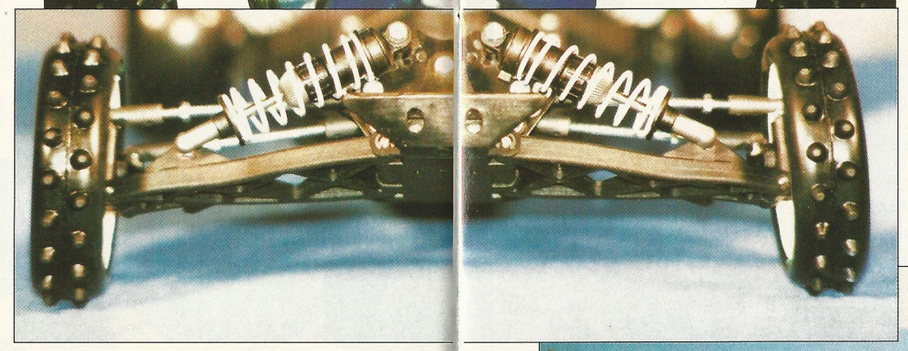
Gripping Time

So all that punch and power is at the wheels. What gives the grip? Following along the route

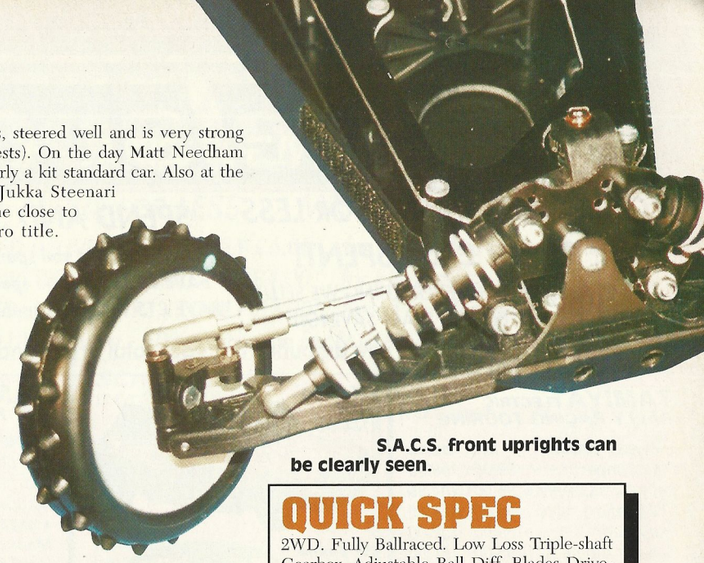
The laydown front shock absorbers allow a very low bodyline.

The blade of the drive shaft can just be seen in the slot in of the diff's output-shaft.

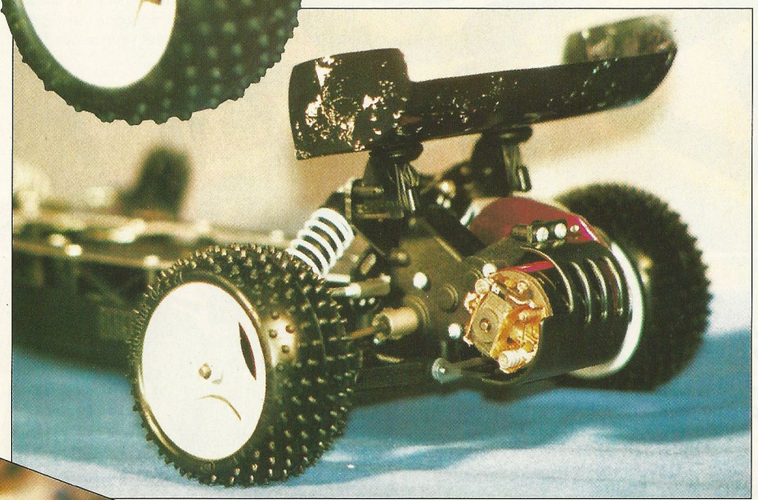
A low drag rear wing tops off the Fireblade.



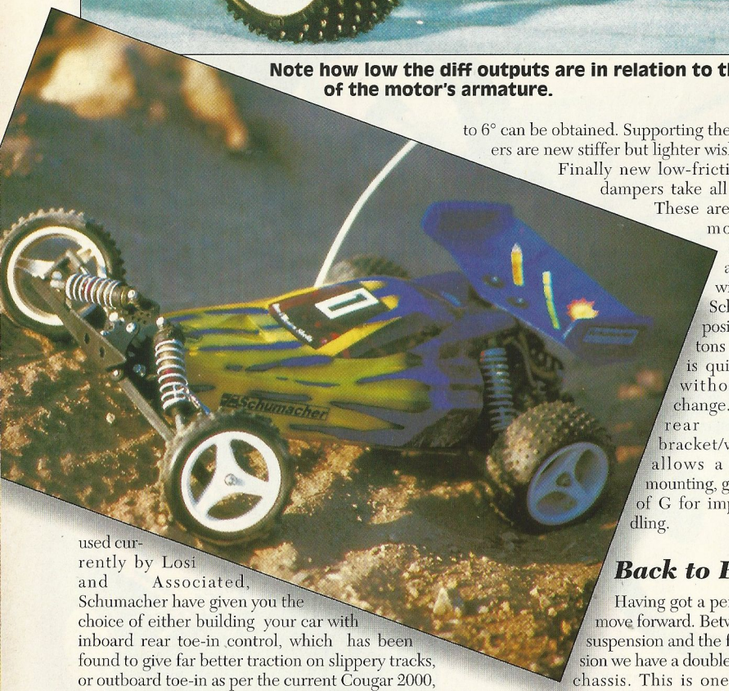
The double deck chassis and moulded gates give a very rigid base for all the other components to mount to.



S.A.C.S. front uprights can be clearly seen.



Note how low the diff outputs are in relation to the centre of the motor's armature.



with the bumps, steered well and is very strong (lots of crash tests). On the day Matt Needham TQ'ed with nearly a kit standard car. Also at the recent Euro's Jukka Steenari TQ'ed and came close to taking the Euro title. Quite a start.

Nicad position is in line and as low as they can be in the main chassis plate. Between the top and bottom plates are mounted moulded composite gates which gives a light but very rigid chassis.

Into the SACS

Finally we came to the front, with the rear gripping and delivering the power, a little directional control would be nice. Once again Schumacher's R&D team have the answer, S.A.C.S. This is an Active Caster system. Let me explain. A car with a large static caster angle will be very stable in a straight line, but will not "turn-in" well, but will have good "power-on " steering out of a corner. A car with a small static caster angle will have very positive, almost twitchy steering, but will "turn in" sharply, but understeer coming out of the corner. By off-setting the mounting points in the bottom wishbone for the steering blocks/ kingpin S.A.C.S. gives the best of both worlds. Also as the car rides the bumps the caster angle increases giving greatly improved stability. This enhances the steering response, which reduces lap times.

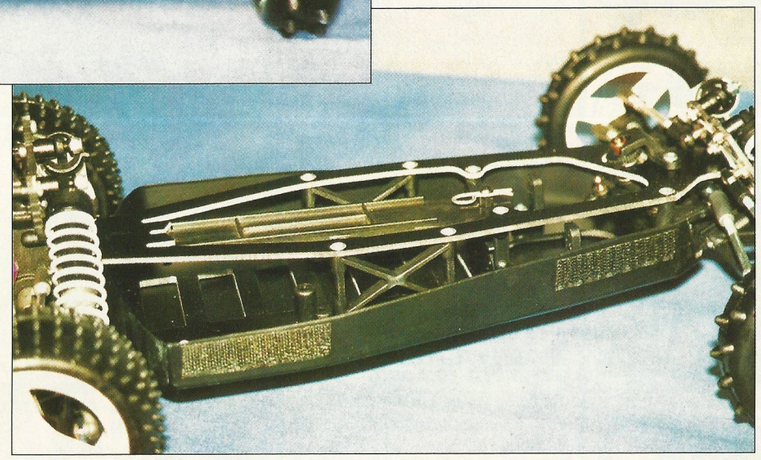
Also at the front the Fireblade has new stronger and lighter wishbones and the lay-down polymer shock absorbers.

Topped Off

The last part of the package is the new ultra sleek body. I must say this shell really does look the part, Stealth Bomber comes to mind. You only really appreciate just how low this car is when you put it side by side with an older car. The icing on the cake being the low drag wing and undertray.

How Does It Go

Again with thanks to Schumacher, R.R.C. was loaned one of the factory prototypes for me to test. As the finals of R.R.C.'s own 2WD Off-Road Series was happening at Kidderminster I took the plunge and entered, in retrospect this was probably like climbing Everest in "T" shirt, shorts and trainers. Get the picture. Anyway on with the tale.



Due to the tight time scale, I had no practice with the Fireblade before the meeting, and as Schumacher had a database of information on the Fireblade one or two options were fitted to the test car, the main one being the Visco Drive unit. This was fitted because of the high grip, but bumpy track at Kiddy.

I'm not going to go through a blow by blow diary of the day, but I will say the car performed far better than the driver. All the things that Schumacher said the car would do, it did. The Fireblade was quick in a straight line (a very mild motor being fitted),it was very stable, once the shocks had been tuned to cope with the bumps, steered well and is very strong (lots of crash tests). On the day Matt Needham TQ'ed with nearly a kit standard car. Also at the recent Euro's Jukka Steenari TQ'ed and came close to taking the Euro title. Quite a start.

Conclusion

The Fireblade is a car for the 21st Century. In standard kit form a beginner to our sport will have a good package to grow with and the Fireblade will make the learning curve simple and smooth. A seasoned racer will find all the power and handling he or she needs, plus all the adjustments they may be looking for.

Schumacher have another winner in their stable.

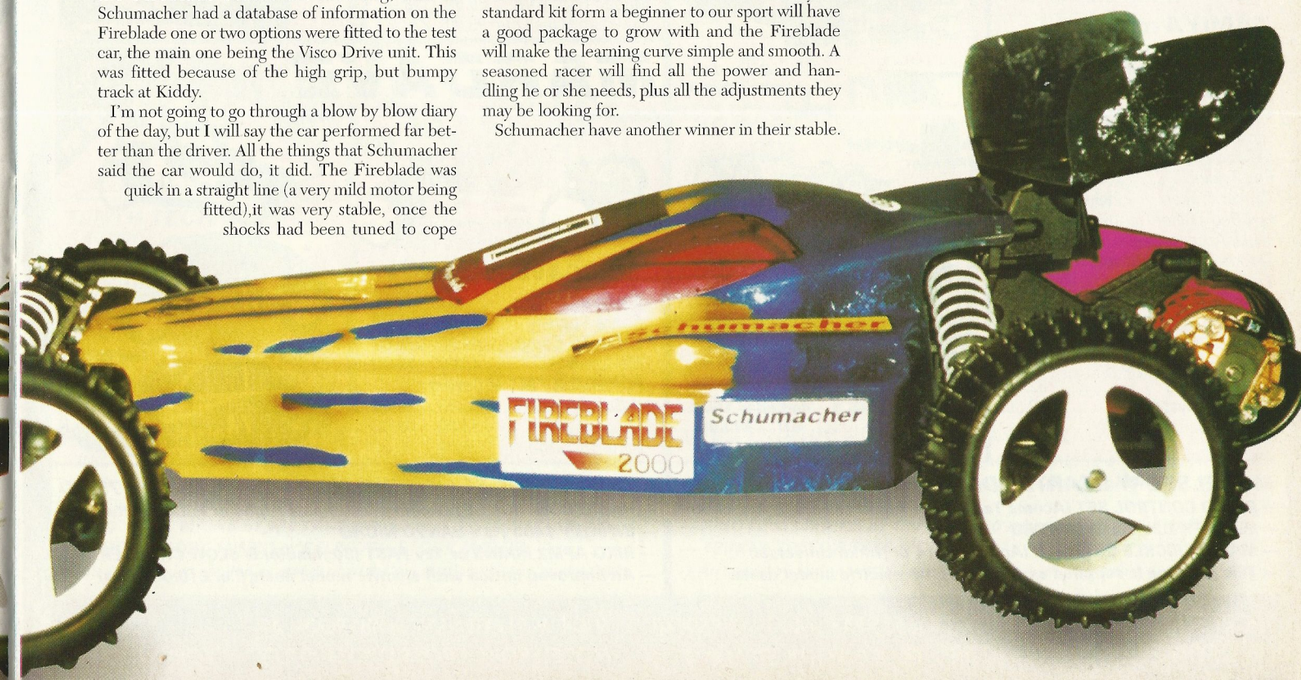
QUICK SPEC

2WD. Fully Ballraced. Low Loss Triple-shaft Gearbox. Adjustable Ball Diff. Blades Driveshafts. W.F.E. Chassis & Top Deck. Independent Suspension. Top Link & Bottom Wishbone. Adjustable Camber Front & Rear. Adjustable Toe-in Front & Rear. Coil Over Oil Filled Shock Absorbers (adjustable internal valveing). Three Spoke Wheels. Blue Compound Front Studs. Blue Compound Mini Spike Rears.

TESTERS KIT

Radio	JR756
Servo	KO 1002
Motor	Reedy Tri-Sonic 2 (14 Double)
Speedo	Novak Tempest
Cells	Orion
Charger	Schumacher CCD-20
Tyres	Kit

The cars photographed here carry prototype parts.



used currently by Losi and Associated, Schumacher have given you the choice of either building your car with inboard rear toe-in control, which has been found to give far better traction on slippery tracks, or outboard toe-in as per the current Cougar 2000, all these parts come as standard in the kit . In standard form the car has 3° of toe-in, but with a range of hub carriers from the Speed Secrets range Zero to 6° can be obtained. Supporting these hub carriers are new stiffer but lighter wishbones.

Finally new low-friction polymer dampers take all the bumps. These are lighter and more crash resistant than alloy. Fitted with Schumacher's positive click pistons , adjustment is quick and easy without an oil change. Finally the rear shock bracket/wing mount allows a "laydown" mounting, giving a low C of G for improved handling.

Back to Front

Having got a perfect rear we move forward. Between the rear suspension and the front suspension we have a double deck W.F.E. chassis. This is one of the few Cougar style parts that have survived the transformation. However the front and rear transmission mounts are much simpler types and also a lot stiffer.