

When Irvine Engines, the importers for Flying Point cars, offered the new 2wd Probe kit for review, complete with a new Irvine Blue Head .20 side exhaust engine, sporting a slide carb anodised in blue to match, as you can guess, I jumped at the chance!

OK, we have two new products here, so let's start with the car. As one or two of you may remember, when the Probe was first imported into the U.K., I was the first to race the 4wd version, the Probe 21. Then came the Super Probe with its 'Intelligent' wing, well, this 2wd kit is based upon that model, complete with its moving wing. More on that later.

### Let's Do A Little 'Probing...'

The main chassis is a flat 4mm aluminium unit, to which the suspension, transmission, engine etc are bolted, then this is topped off with the now common top deck, giving the chassis considerable strength and rigidity. The 2wd Probe is based on the 4wd model, but is obviously built without the front and centre differentials, although the front end retains the 4wd transmission casing because the wishbones would tend to flop around without it (their pick-up points are on the casing)! Moving to the centre of the chassis, instead of a

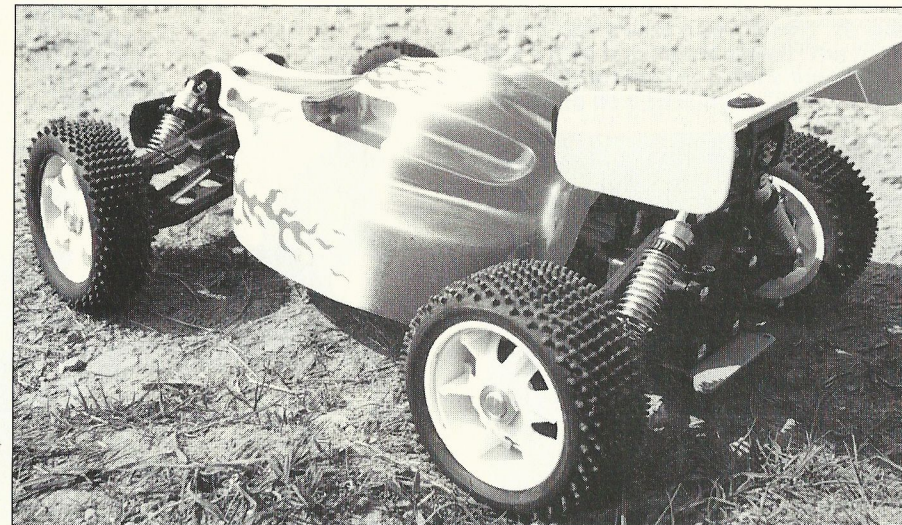
differential we have the mountings on which the spur gear is supported. The disc braking system is also situated here. Instead of a diff casing, the spur gear mounts on an aluminium square section on the steel drive shaft to the rear differential. This is of the 'Spur Gear' type, that is to say straight cut gears, possibly the strongest form of diff available. In fact, I would go so far as to say it's bullet-proof!

Drive to the rear wheels is via dog-bone type drive shafts. The suspension consists of oil filled shock absorbers on each corner of the car, with coil over springs. The shock absorber bodies are serrated to give the spring collar a good 'bite' when it's tightened, thus allowing sure and problem-free adjustment to the car's ride height. Whilst on the subject of suspension, let's take a quick trip to the rear of the car and the wing. Now this car, as I said earlier, has an 'Intelligent' wing. Quite what its I.Q. is, I have yet to determine, but the idea is that its angle changes as the suspension moves. The wing is linked to the rear upper wishbones via ball jointed rods. When the chassis is depressed, as it would when landing off a jump, the wing's angle decreases giving less downforce, whereas if the car lifts off on a jump, the suspension droops to its maximum and the wing's

angle increases, thus increasing the downforce and stability.

The actual build up time of the car was; one evening to achieve a rolling chassis, another evening to install the engine and radio gear, then a third evening to mask off and paint the bodyshell. So, with the first evening over, my next task was to install the radio and engine, Irvine's revamped Irvine .20 that has proved itself a most reliable unit. This engine has a new larger head for better cooling, a very important factor, and a slide carb for improved response and more efficient operation. It slotted into the car with the greatest of ease, using the Probe flywheel and excellent 3 shoe clutch. The Probe kit includes a tuned pipe, for which Irvine have produced an excellent manifold to mate together. Once the engine was installed in the car and the clutch bell's pinion correctly meshed with the spur gear, I got on with the radio installation. The steering servo sits forward in a plastic tray, with the battery pack then strapped in immediately behind it, with the throttle servo, which also operates the

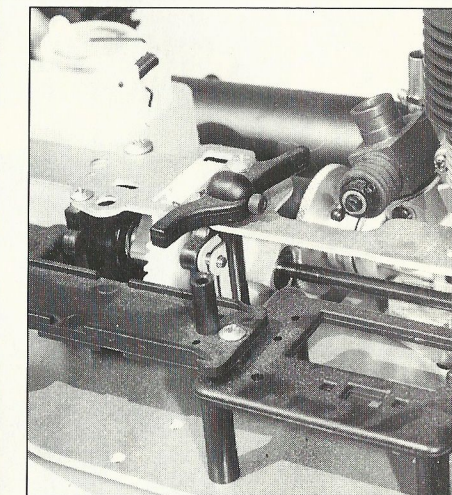
brake



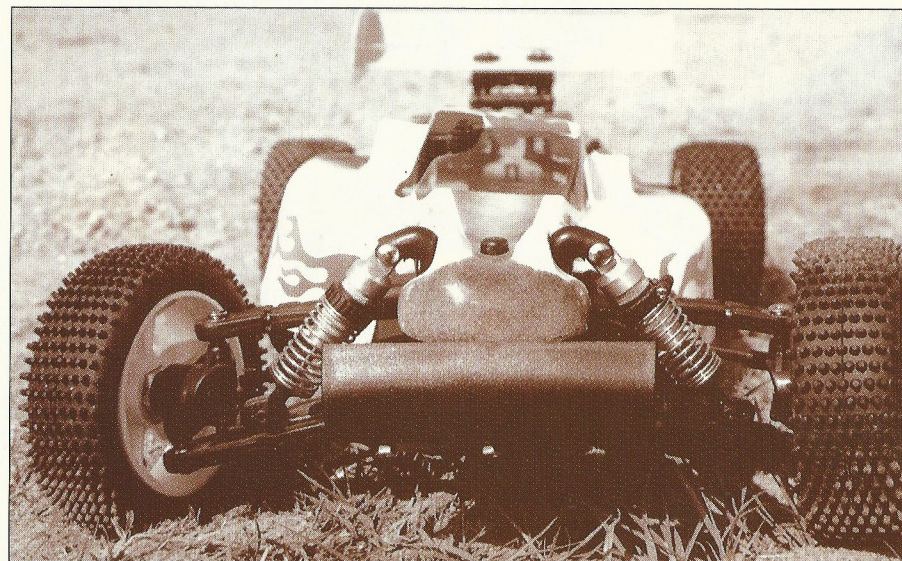
cam, situated at the rear. All of the necessary linkage components are supplied in the kit to finish the installation properly, which was nice, because some IC kits on the market can be, shall we say, a little lacking in this department...

All that then remained to be done was to paint

**The single disc brake operating mechanism. The black nylon lever rotates the cam against the adjacent metal brake 'pad', squeezing the free floating fibre disc against the opposite 'pad'. The throttle servo mounts right next to the engine and brake system, so the linkages are short and rigid.**



**The outer hubs feature quite unusual geometry. The 'live' front axles rotate in substantial ballraces intended for 4wd operation. The top wishbone allows adjustment to be made to the camber angle, with a secondary grub screw giving a positive means of locking the desired camber angle.**



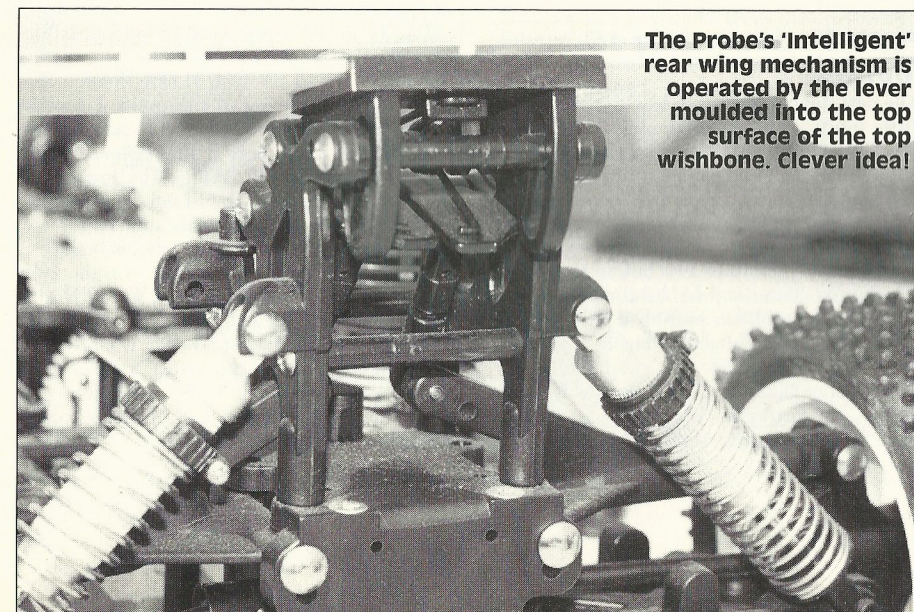
# PROBE 1/18 IC 2WD RALLYCROSSER



**Reviewed By  
Kevin 'Killer' Griffin**

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**The Probe's 'Intelligent' rear wing mechanism is operated by the lever moulded into the top surface of the top wishbone. Clever idea!**



the bodyshell. Personally, I always trim the shell first, as it is much easier to mark out the access holes for the engine and the fuel tank when the shell is still clear. Always leave plenty of room around the tank's top to allow for full opening of the flip-top lid. As a finishing touch, it's always a good idea to connect a tie wrap to the lid of the tank, to give something to grab hold of to open the lid quickly at pit stop time.

### Don't Forget To Glue The Tyres On...

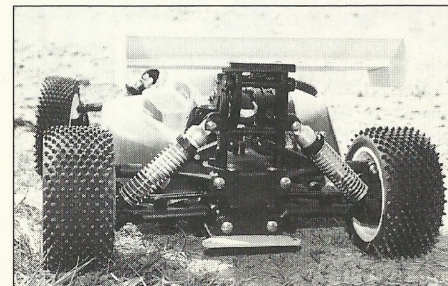
Oh, there's one thing I did forget to mention earlier, which must be done before we start the engine and run the beastie, and that is to glue the four tyres to the rims with a good quality, thin superglue. This can be a messy job so always do it

in the workshop, outside or at least over some old newspapers to allow for the almost inevitable spillage of glue.

Here is a list of accessories that you will need to get your 2wd Probe kit up and running: Glow plug, glow plug supply, 2 channel radio gear, starter and fuel (16 to 25% Nitro). Make sure the fuel used is specifically mixed for car use, as the percentage and type of oil used is usually different to that in model aeroplane fuel.

### Let's Fire It Up! (plus a little advice to beginners...)

Bolting the wheels onto the axles left me with nothing else to do but to start the engine. A hand held electric starter with a hard rubber starter ring is the least the beginner can get away with, but a starter box, with the electric starter motor inside the box and the starter wheel protruding through the lid, allowing it to come into contact with the flywheel of the engine, is an even better idea. To start the engine, initially set the main jet about 3 turns open, and the bottom end jet to a similar setting. The engine must now be primed with fuel, and if you have plumped for the exhaust pressurised system, this is quickly done by just spinning the engine over on the starter. The fuel should then be seen travelling up the pipe into the carburettor, but if not, then possibly a little tap of a finger over the exhaust outlet will increase the pressure and do the trick. Hold the throttle at just above tick-over, apply the glow plug supply and press the flywheel against the starter ring. The engine should start almost straight away. If it doesn't, check that fuel is getting through and check the glow plug is glowing, and try again. If it still fails to start, there's a possibility that the initial mixture setting is too rich, and that the engine feels 'juicy'. Weaken it by 1/4 of a turn and try again. Once the engine fires, run a tank of fuel through at the rich setting, driving the car around gently at no more than 1/4 throttle with the body off, then weaken it again by a fraction of a turn, until after something like 6 tankfuls the engine will peak out under load. Don't try and carry out these



The 2wd Probe kit includes extremely usable tyres for both the front and rear. The fact that the wheels don't feature a rib against which to settle the tyres means that gluing them together can be a trifle awkward.

adjustments off load, i.e. revving the engine to its maximum while holding the car in your hands. You're likely to blow the engine up! Only carry out these adjustments while driving the car up and down on a track or large clear area.

### Probing Its Capabilities..

My home Club is a 1/10 electric Club, but we have plenty of ground available, so there was no problem in laying out a large track to test the Probe!

I decided on a tight and twisty infield to explore the handling, with a long straight to get the engine on full song. You can't beat the gorgeous smell of exhaust fumes wafting past your nostrils!

After a few cautious laps to make sure nothing fell off, all seemed fine. The

Irvine .20 was still a little rich, but

I decided to leave well alone as the newness was still wearing off. When building the car, I used 30 weight oil all round in the shocks. The rear end seemed OK, but the front was 'dipping' into the corners, so off came the front shocks, to be filled with 40 weight oil. The car immediately felt a lot better, handling the tighter sections with ease. Any 2wd car needs to be set up to understeer slightly for ease of handling, and certainly the heavier oil gave an improvement. Possibly fitting the front anti-roll bar kit available for the 4wd version is a good idea?

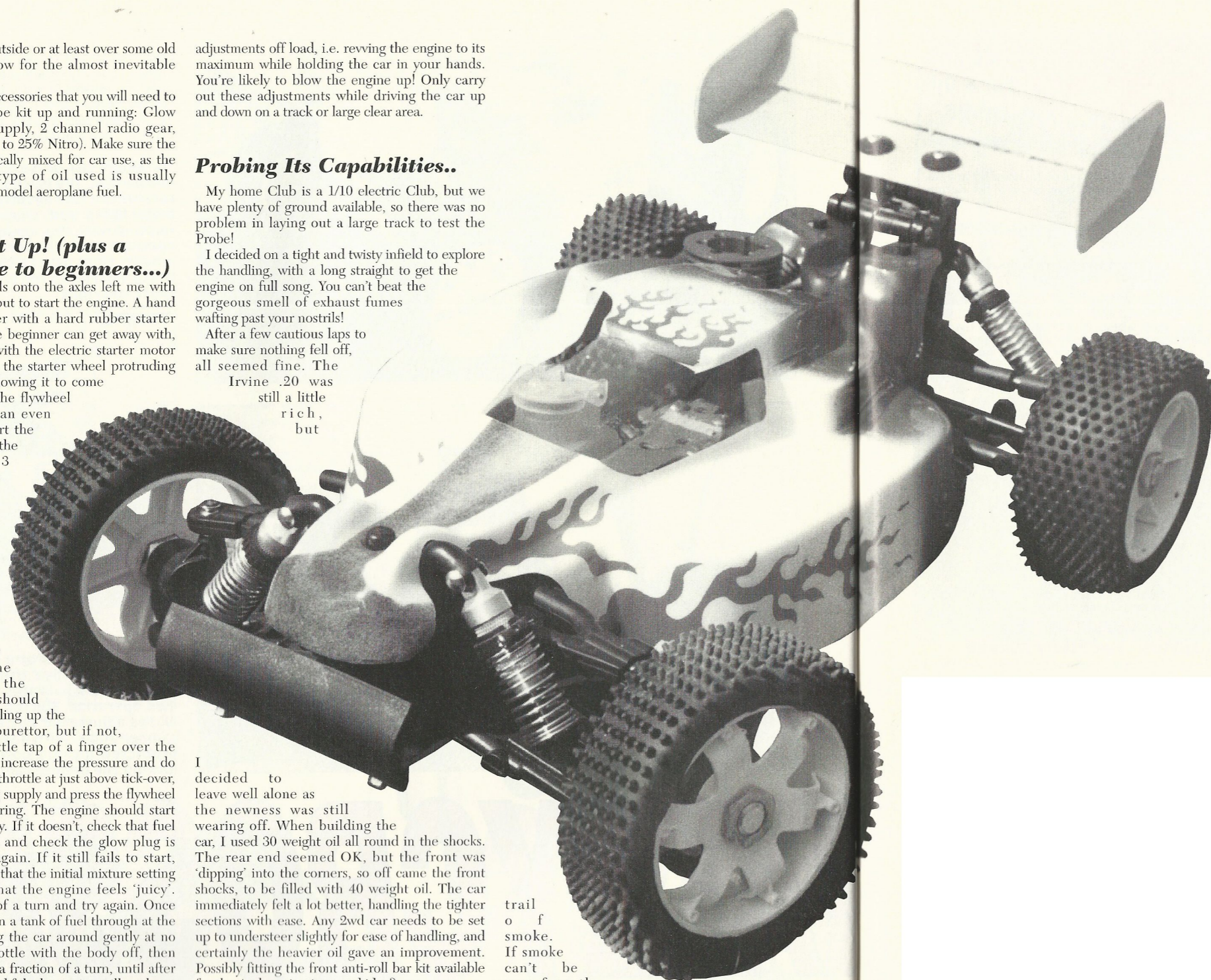
### Don't Be Scared Of IC Engines!

The next thing to do was to lean the engine out a little more, as it was beginning to rev more freely. The Blue Head .20 was an excellent mate for the Probe. As I said earlier, it fitted in the car nicely, and also starts very easily. There seems to be a train of thought amongst electric racers that IC engines are difficult to start, and when started, only run for a minute or two before they stop. With absolute sincerity folks, hand on heart, this is a load of rubbish! It is possibly a little difficult to master the art of initially setting an engine up, but once it's done, they give good service for some considerable time. The trick is to lean the mixture out until the engine will accelerate cleanly to its maximum, whilst still leaving a thin

trail of smoke. If smoke can't be seen from the exhaust whilst on it's full song down the straight, then it is too lean, leading to overheating, cutting, and possible damage!

Anyway, back to the test. Having leaned the engine out to achieve the maximum, I gave it some real stick, and wow, does this car go! The Irvine .20 gave a top speed in the region of Mach 2 (well, it certainly felt like it!). The Probe was now ready to be pitted against any competition, and as I said before, it's certainly a match for any other 2wd car on the market at National level.

If you're interested in 1/8 racing, give the 2wd Probe some serious thought, it's well built, competitively priced, and is available now from your nearest Irvine stockist. The car is more than capable of competing in the BRCA National 2wd Rallycross Championship, so get out there - get hold of one - and get out racing! 1/8 RallyCross is brilliant!



The latest Irvine side exhaust .20 was used to power the Probe, an application for which it's ideally suited. The Irvine manifold matches the kit's tuned pipe well. Note that the engine mounting blocks are actually slotted to cater for differing bolt spacings.

