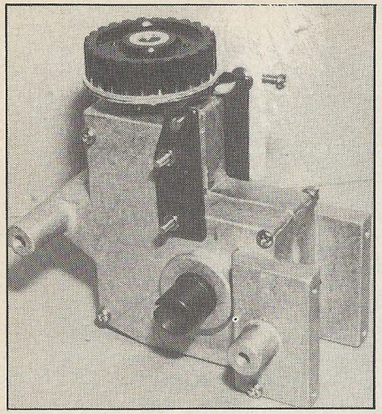
Porsche bodyshell painted and trimmed. Rear window cut out for ventilation and access. Do not expect too high a performance from the Fuji — car weighs 8¾lbs! Change to a hotter engine when you can cope!

RALLY BUGGY

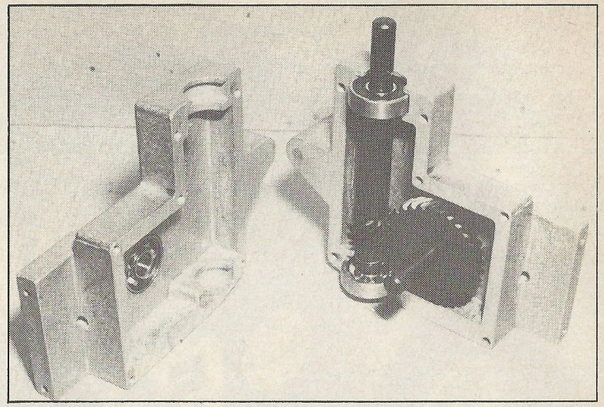
AFTER ALL THE RICH ASSORTMENT of i.c. powered buggies on display at the Toy Fair it is really no surprise to find myself temped into an unpremeditated purchase of Hobby Products Rally Buggy in 1/8th scale for .19 - .21 engines. I settled for this size since there is a better range of silencers and heat sink heads for the larger engines. They are also often less fussy to start and more controllable through their speed range than some of the smaller sizes now installed in the second generation rally/buggy entry. The HP car, distributed by Ripmax in the UK, comes in two versions, either a Texas Wild Baja body or the more elegant Porsche 930 Turbo shell. I took the latter, perhaps because the Watford model shop where I got my car already had one built up in the window with unpainted body in place and it proved irresistible!

But to work! For the experienced model car builder who might be becoming a little blasé this is a really new experience. The greater part of the kit contents is in metal — Mazek such as is used for carburettor bodies and the like on fullsize cars, or a similar alloy of medium weight that moulds very cleanly. It also has the fashionable feature of being fully sprung all round at two thirds the going rate of i.c. racing cars in the scale. Of course construction is not quite so sophisticated verging on the rugged side.

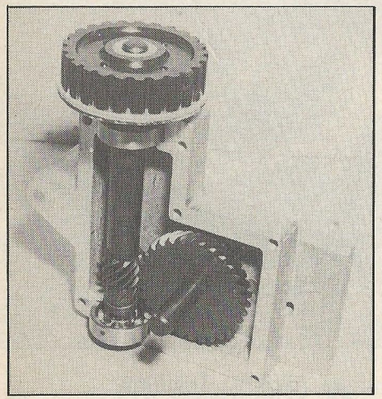
Tyres are all moulded, ribbed for the



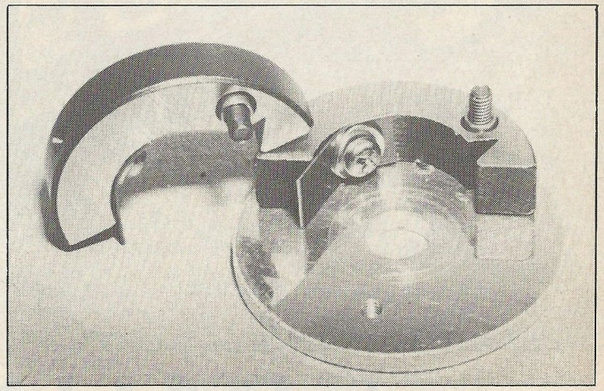
Gear box castings with bevel gears in place ▶



Bevels with toothed spur gear attached ◀



◀ *Gearbox siliconed and bolted up. Note the rod type brake scheme which swings up on to lining attached to spur gear base.*

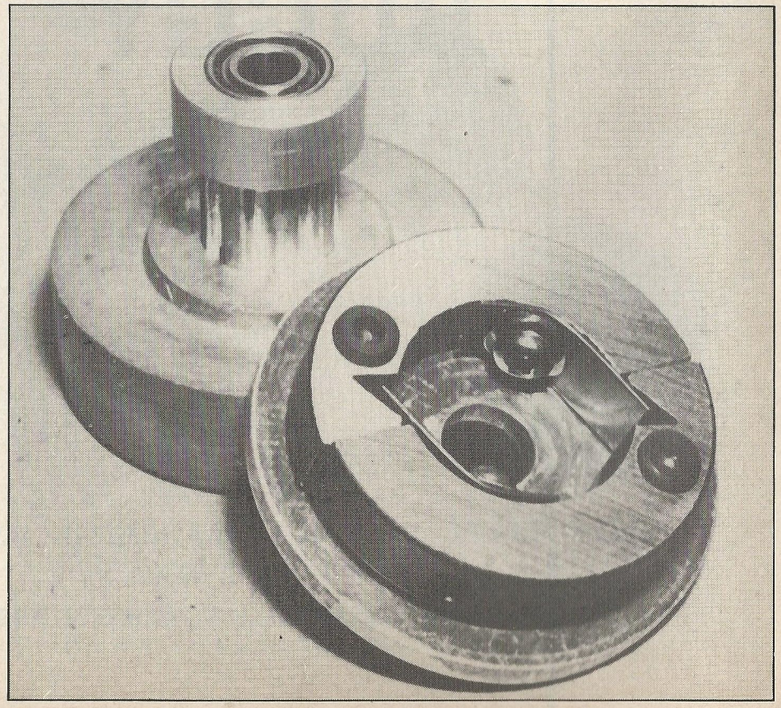


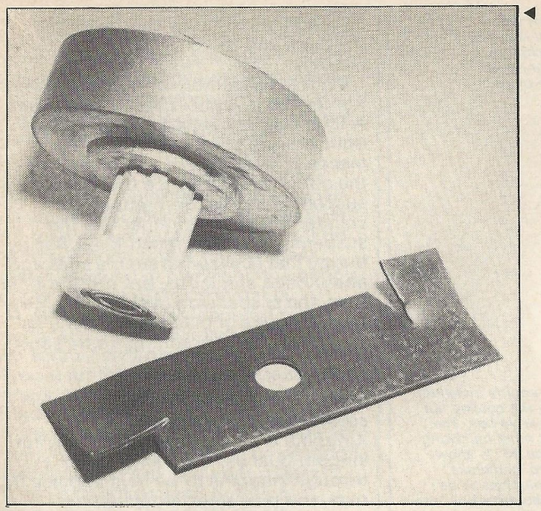
Clutch shoes and flywheel ▶

front and knobblies for the rear. They are not solid but more like tubeless fullsize tyres in design. Lack of pumped in air seems no disadvantage as the walls are quite robust. Hubs are metal and tyres, or rather tyre edges, are attached with cyanoacrilate superglue, Zap or similar, with the care associated with superglues. Engine lies flat at the rear with the crankshaft pointing upwards and driving by a belt through a simple enclosed gearbox. Construction should follow the rather sparse instructions provided in the order given as assembled sections fit up as you go along. Illustrations are good, though parts numbers not helpful as no "bit list" is enclosed.

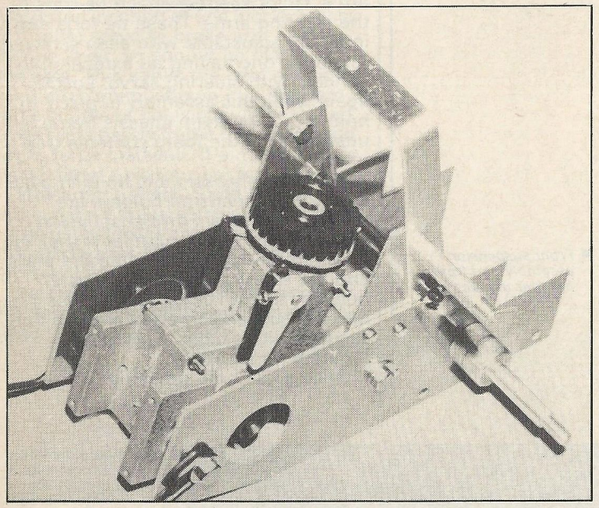
Stages 1-4 deal with assembly of gearbox and brake parts. Gears and gear shafts are beautifully machined; attachment is very sound. A push fit pin goes through gear boss and shaft and is then retained in place with a C-clip which goes neatly into the groove provided. It is therefore a simple job to take down again to change ratios, or for any other service job. Gear box is in two halves. Gear shafts and gears go into their machined places, together with the ballraced driving dogs. A tube of grease is included in the kit and should be used on the gears before sealing up the box. Gear case edges must be coated with silicone (not included in kit)

Shoes in place and ballraced bellhousing ▼

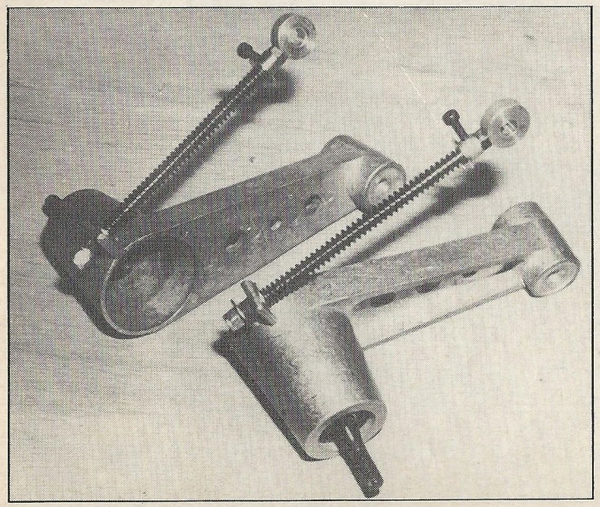




◀ *Bellhousing and the cooling fan — which frightens me!*



◀ *Gearbox installed in rear chassis, with body fixing bar and suspension attachments*



◀ *Suspension arms assembly*

and the whole job bolted up with nuts and bolts, which should be made fast with your favourite strength of Loctite. Note again the neat pin and C-clip fittings, particularly that the clip comes in several sizes to fit the diameters they encircle.

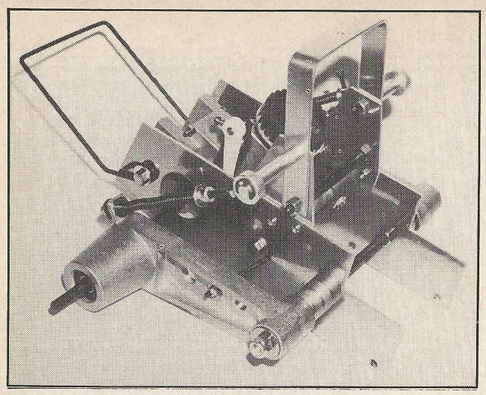
Now comes the assembly of clutch, bellhousing and the other etceteras. I chose my Fuji engine to power the Buggy since it comes with a pleasant silencer, which, though not good enough to be quiet down to 80dB, should serve in the wilds where off-road might be run. Those thinking of running where sound requirements are enforced (as yet there are no agreed rules for i.c. buggies) could very well attach a pipe silencer to the sub chassis (which we come to later).

Bellhousing is provided with a lining strip which fits exactly and is glued in with Evostik or epoxy glue. Clutch shoes are a little unusual (old-fashioned?) as a spring must be screwed to each and the end of it goes into a V-cut at the rear of the other shoe. Good solid stuff to last a lifetime. Gear on bellhousing is toothed to take a belt. On top of the usual adaptor (there were two in my kit I imagine to cover both customary threads but were identical) goes a starting cone. This means that when using your electric starter you will need the rubber ring as for pressing on an aircraft spinner in place of the hard rubber wheel.

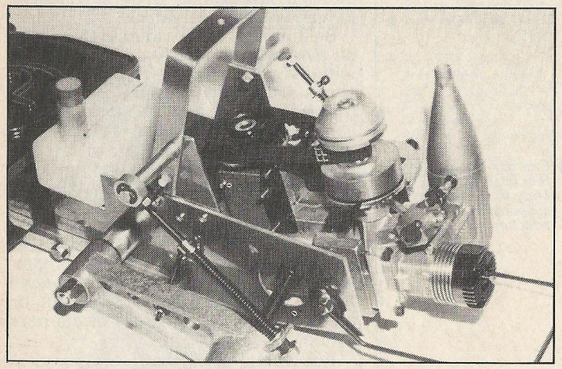
But wait a moment! There is also a fiendish looking cooling fan that should go on below the flywheel. It looks like a miniature of the blade that cuts my grass on the family mower and is described as a cooling fan. Very fairly it says in the instructions "cooling fan is very dangerous when running so please paint the tips of the blades with remarkable red." Remarkable indeed! It also says use fan at high temperatures, which, perhaps, is the letout for these cool parts! I have initially installed mine just to see how it all fits in but do not propose to run with it. Instead I am fitting the usual type of heatsink head. I will in any event have to cut away at least part of the rear window of the Porsche body to get at things which will help, then if engine seems to be running hot I will cut out front windscreen glazing to ensure a good current of air.

I would not recommend anyone to run with this fan in place. You may be careful but what about a casual marshall — it is finger cutting and would probably be banned by any sensible race director anyway.

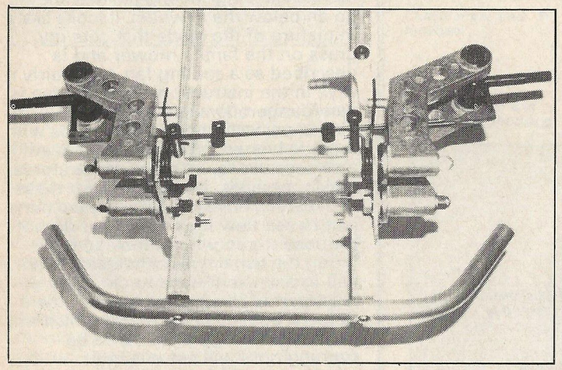
Engine is attached to the gearbox assembly with two metal pads which hold the engine attachment flanges in place, but do not use the fixing holes. As my Fuji adjusts to be just level with the large spur gear so that drive belt will go smoothly in place there are a couple of holes drilled in the holding pads which would enable rear fixing holes of the engine to be used to lock it in place. However, I do not think this is essential since there should be no special reason for movement. If you are super cautious



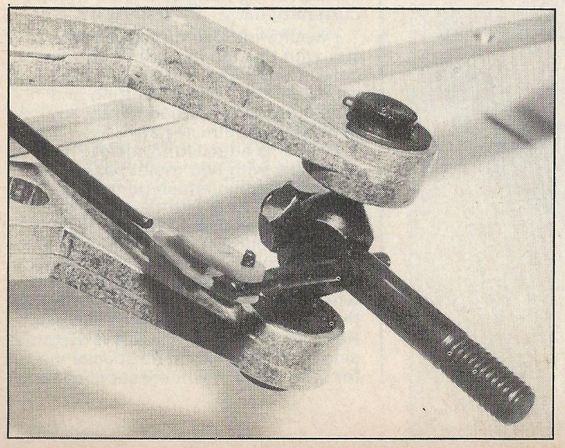
◀ *Suspension arms fitted, with rear stub axles attached to gearbox, and rear bumper in place.*



◀ *Fuji engine installed with the cooling fan and drive belt. Fuel tank must be swung round 90° to allow servo lead/brake connections to be unobstructed.*



◀ *Front suspension assembly and front bumper in place*



◀ *Detail of the ingenious kingpin and stub axle assembly*

then additional holes can be drilled in the pads and the engine fixed in usual way.

With the assembly of the rear chassis frames the layout begins to take shape. A little care is needed to see that the right bracing shafts go in the right places. Grease where shown and fit up the springs that balance the robust rear suspension arms. Remember the Loctite! This part is rather like the suspension of the French MicroRacing buggy that I built what seems ages ago, and indeed similar to, but more robust than, the suspension of stock cars. Rear bumper goes in place at this time as well as the bodymounting frame above.

A quiet moment follows with the sorting out of the steering parts. Kingpins are ballended and press into kingpin bushes. Stub axles slide through kingpins to be held in place by nuts and prevented from sliding through by the pressure of the steering arms. Quick keepers attach tie-rods to the steering arms. These tie rods are infinitely adjustable with allen screwed retainers, one having an extension to connect with steering servo. Loctite again when this assembly in place. But before this the main chassis frame is unstuck from the foam contents tray underside.

Rear chassis assembly bolts in place and front suspension holders are screwed in place. Front suspension arms which are tied together in their left and right hand pairs are fitted in place and the steering assembly goes in between them. The kingpin bushes click into the suspension arms and are duly secured with circlips. This all fits together very happily.

Once again note greasing instructions. If front wheels are slipped on amount of toe-in can be judged and the tie-rod length adjusted and Loctited. Note the little springs which go on the centre shaft. These must be bent up when front suspension is in place to act against the lugs on the upper suspension arms. The stout front bumper screws into the ends of the main chassis. Note that the bodyshell will come over this and be hooked on and then secured with a single nut on the upper body frame holder. Rear wheels screwed in place and the buggy is now looking quite formidable.

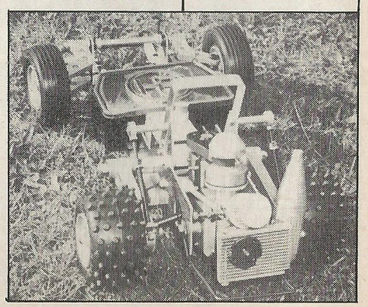
A radio box is provided and fits snugly across the main chassis with two screws securing it. There is plenty of room for the two servos, receiver and battery. With a fairly rough life before it I think these parts should be firmly fixed on a board that goes in the box, with as much foam padding as may be needed. Box lid can be secured with rubber bands, and a little lead out wire attached to the Rx on-off switch.

No fuel tank is supplied, but the suggested location of one blocks access of throttle servo to brake arm and throttle lever, so should be placed at one side. This spoils the neat elastic band attachment shown in a diagram, and a couple of holes should be drilled in the rear chassis frame to enable band hooks to be installed. If a metal tank is used (I fitted a plastic one) then a couple of attachment plates could be bent up and screwed in place for a rigid job.

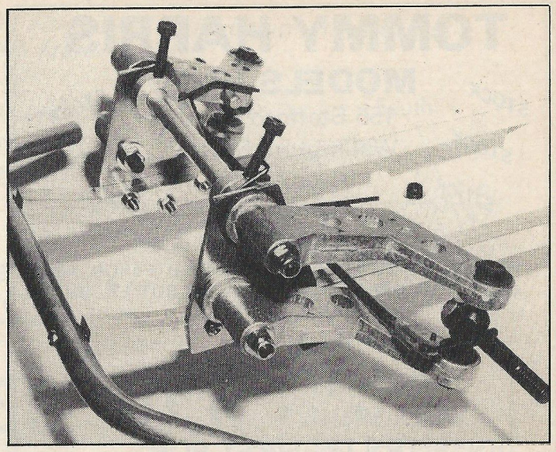
The usual fuel filter and air filter must more than ever be installed on an Off-road car.

The bodyshell presents no special problems. Good bright colours and away to the hills for tests.

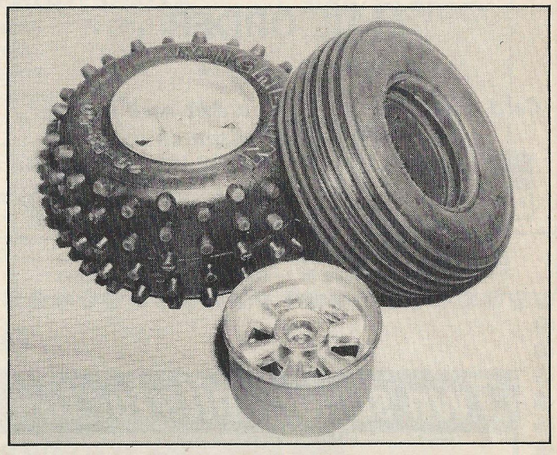
Threequarter rear view. Cooling fan removed and substantial heatsink added to engine. Hopefully the silencer supplied will be silent enough. Otherwise a pipe type can be fitted along rear chassis side ▼



A general view of the front suspension ▶



Front and rear tyres and wheel hubs ▶



Another chassis shot. Fuel tank now in unobstructing place. This and other chassis shot and heading taken on grass to give idea of scale. ▶