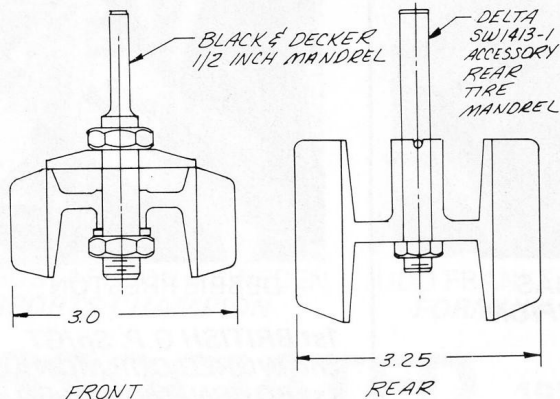


## DOING THE DELTA

"THE Campbells" have been in the r/c model car game — business? — almost since the beginning, their first catalogue appeared in 1969, and they can justly claim to be the oldest firm still going strong (one earlier firm has not lasted). Ken plus wife Gloria and Ken's brother Bill form the triumvirate, hence "Delta" the greek D forming a triangle. But we must not forget that other Delta "great" who have been driving their cars to victories over the years none other than Art Carbonnel, a legend in

his lifetime!

I was therefore specially pleased to hear from Bill, who is the research and products side with details of the company. Looking at the kit drawings provoked an immediate desire to try out a car since not many seem to be operating over here — largely I feel because much of the company's publicity is strictly word of mouth. Sight of the 760JL provided by Ted Longshaw confirmed early interest so here we are.



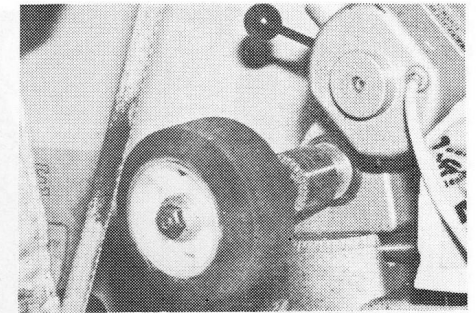
The very latest 1978 Delta on the famous Delta "tweak table." Still basically the 760JL I have made until you discover the numerous refinements.

Detail of mandrels for truing tyres. For less machine equipped people a sort through coachbolts in the junk box will probably find one to fit!

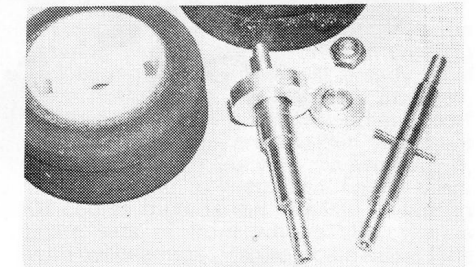
## WHAT A DIFFERENCE

Like other successful American kits Delta have followed a policy of steady improvement over the years, adding, improving or changing parts only as better could be evolved, and race testing had confirmed their views. Many accessories now in general use first had an airing in prototype form in a Delta car . . . so that some parts give one a strange feeling of *deja vue*.

Chassis plate is a single alloy plate the full length of the car. Strength and rigidity is given to the rear end by bolting on two beautifully machined side bearers described respectively as clutch hanger and engine hanger. This introduces a major difference. Recommended engine Veco 19 is **not** supported on conventional engine bearers but bolted to engine hanger through the holes retaining the engine endplate. These holes must be carefully drilled and tapped out (using NC 4-40 taper and 2nd tap; obtainable if you do not already have them from any good tool shop — Buck and Ryan for example. Indeed, to digress, anyone using any amount of American gear should have the more common tap and drill sizes in NC thread) to take 5/8in. cap screws which are longer than those retaining the engine backplate. At the same time two or three thin washers are introduced to permit some manoeuvring space for clutch bellhousing end float (about 015-030).

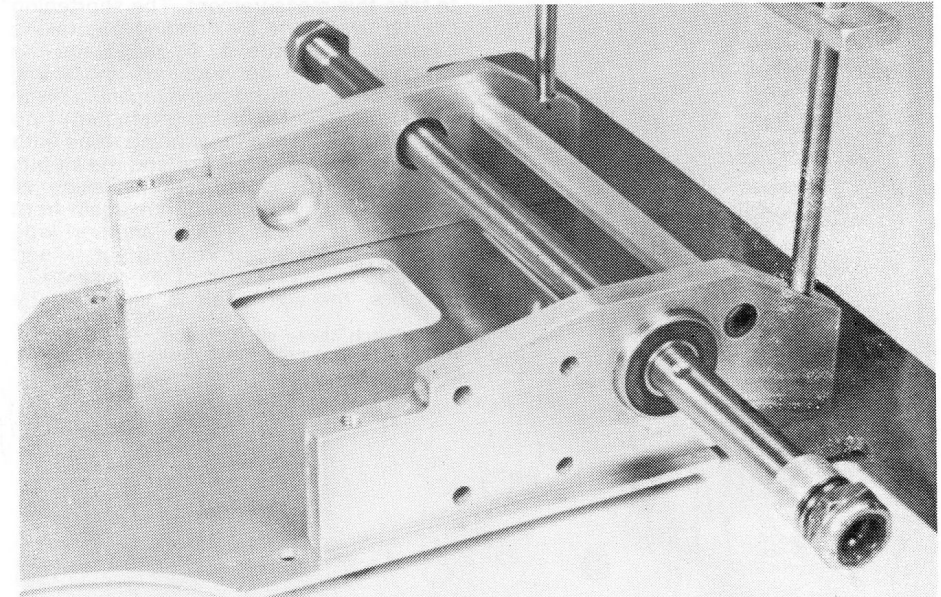


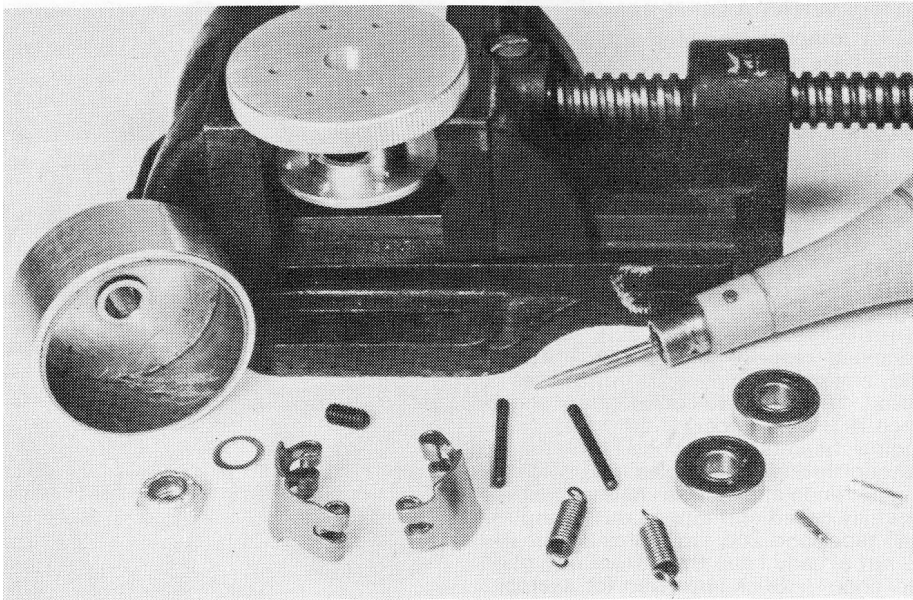
Shaping a tyre fast on the lathe using a hacksaw blade. Cover rest of lathe with a sheet — it's filthy black dust everywhere.



Simple mandrels turned up in a few minutes from bar. Worth making — they last until you lose them.

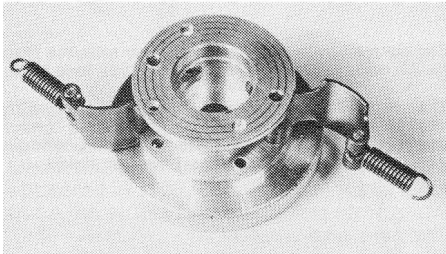
The beautifully machined hangers supporting engine on near side and ballbearinged clutch support on the far side. Note also ball-bearinged axles bearings and additional bar for rigidity.





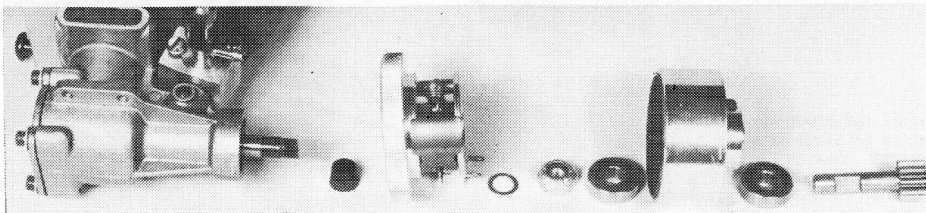
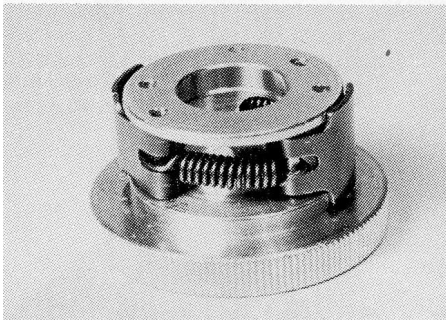
Parts for the clutch laid out with machine vice for fitting.

Left: First stage of fitting shoes.



This is not the only surprise. Veco crankshaft must be shortened so that it is 11/16in. in length measuring from the bearing. The Veco tapered collet is slid off to take this measurement. The shortening can be best done by grinding off, taking care not to overdo it. At this stage the clutch parts can be examined and a trial set up made with the two hangers in place to see just what is being attempted. I do hope that all this so far is being done with plan laid out in front of you and the kit bits spread out for identification. Design of flywheel and flyweights differs again from common practice — just another little surprise! But it is not finished yet — and this is to my mind one of the nicest differences, the crankshaft is supported by

Left: Clutch shoes all tucked in. Below: Items lined up to assemble clutch, bellhousing and gear on crankshaft.



the clutch hanger. That is to say we have overcome the system by which only one end of the shaft is held — we have both ends held which must surely be a better engineering answer than any other. Always provided, of course, that the whole mounting is perfectly rigid. This explains the reason for the two side hangers. They are stout and hold that rear end vicelike, whilst still allowing enough frontal flex for the steering end.

With the aid of the little washers between engine hanger and end plate of Veco 19 some modest degree of endfloat can be arranged for the clutch bellhousing. It only needs a very little — but that little is really desirable. Once the general set up is grasped then the crankshaft can be ground down as required with every confidence.

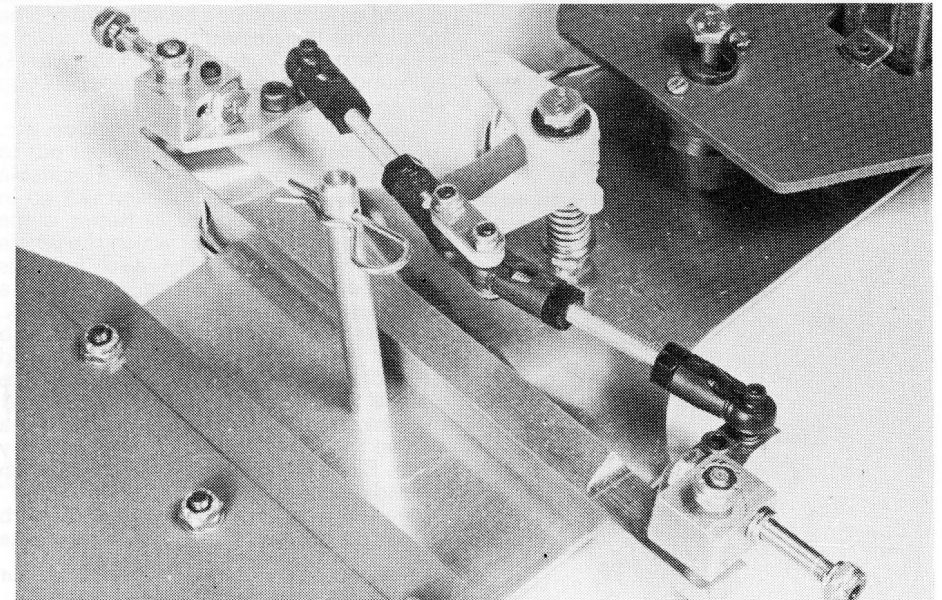
Rear axle and clutch bearings are fitted in place and secured with Loctite. Note also the rear hanger spacer which ensures the rigid fitting of this end. Take a look at the neat brake arm. A little quiet relaxation at this stage would be to bond on the brake and clutch linings and also the tyres to the wheel hubs. Delta recommend the pregluing of hubs and tyres and then tipping in lacquer thinners. More usual is the customary spreading of Evo-stik and pushing into place without delay. This is very much a matter of personal choice. I am an Evo-stik man and follow Keith Plested's excellent method by fitting the hub on a mandrel in the lathe, turning the

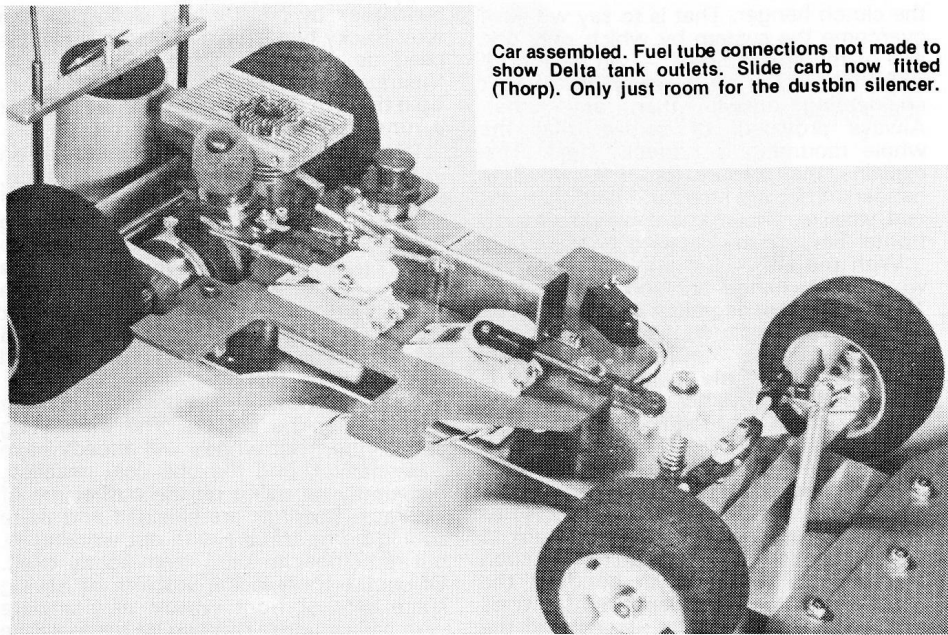
headstock by hand whilst sliding on the tyre. Sticky tyre is held in plastic envelope used as a glove mitten. This is non-frustrating and keeps the hands clean. Spin the tyre round via the mandrel so that it runs true and leave to set off.

Delta even offer a special mandrel as an accessory for this desirable operation, which is followed by a certain amount of tapering off of wheels with a sanding block. However, a mandrel is so easy to make up that it is hardly worth the trouble (and expense) of acquiring a readymade one from distant parts. It takes only about ten minutes to make up a pair for front and rear wheels and they will last for ages until you lose/lend them.

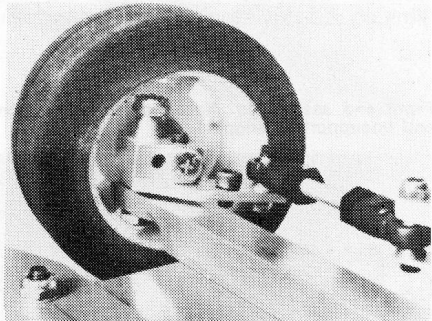
Dodging now to the front end the steering can be set up. The interesting ballbearing front wheels will already have been noticed and the bbs duly installed, but gently, pressing on the outer rim of the race. Bearings are shielded and there should be no trouble with dirt working in, but remember to keep them lightly oiled. Of course there is the problem of having spare sets of front wheels all complete with ballbearings. This can be made a little lighter in two ways. First by getting some surplus bearings if possible; then by limiting raceday stocks to two spare pairs;

Front end assembled. Note robust connections and unsupported kingpins.

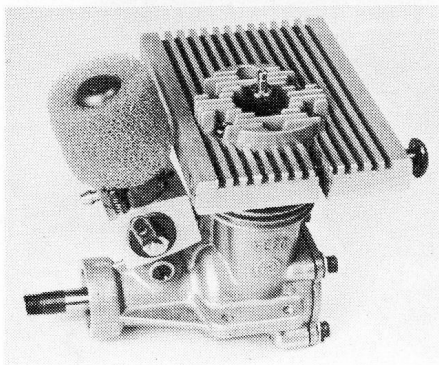




Car assembled. Fuel tube connections not made to show Delta tank outlets. Slide carb now fitted (Thorp). Only just room for the dustbin silencer.



Only just room for the wheels to turn — so watch it!



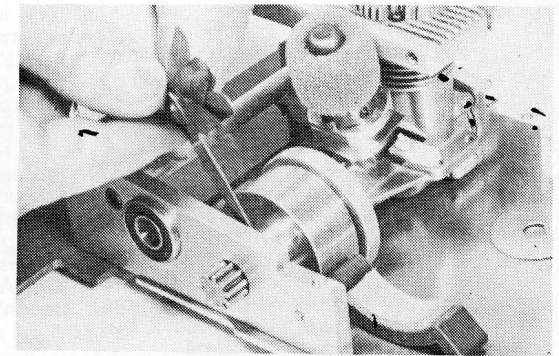
finally by having a set or two plain bearing practice wheels.

The steering crossbeam is a single piece, that is there is no upper and lower claw to hold the kingpin it rests snugly and happily on top of the beam. A short socket head cap screw acts as a steering stop each side. Clearance inside the wheel hubs is quite critical and can be adjusted by the location of the sleeves through which the kingpost runs. When all is well the wheels go round and round in utter silence — you will know when.

There remains the set-up of servos, etc. on the radio plate. This is ready cut out to take Futabas or similar and a suitable upright fuel tank. The Johnson will go in though not designed for it. Better is the special Delta fuel tank for which the whole is designed. This really also involves acquisition of a Delta slide carb including a second needle valve and pressurised tank. However, I struck a period of slide carb famine (new PB not in production and Greeno ceased production) and had to choose between an ancient very Mark 1 PB, a more elaborate arrangement to use a normal Kavan carb or a Thorp slide for my Veco. Since the servo layout is in line on the radio plate with a push for "brake on" and a pull for "engine off" a slide carb offers the neatest answer. It is not quite

First thought: Kavan carb with Delta filter, but awkward to arrange throttle movement.

Adjusting end float for bell-housing with a feeler gauge. Adjustment washer can be seen on right. Two were needed.



Eddie Van Nylen from Belgium had to the latest type Delta but with a great big pumper carb so went to some trouble to arrange suitable linkage. It looks complicated to me, but went very well.

the answer as I have had to block off main jet connection on fuel tank until I get the genuine Delta slide gear. Tank also has that nice spring loaded filler cap similar to the one shown on the latest SG Futura (that man Campbell thinks of all these things first!).

On/off radio switch is mounted to operate from under the plate — this is easier to switch off with the body on. There is only just room at the back for a dustbin type silencer to sit — perhaps a slightly deeper rear bumper would be a good thing but I used the whole of the part provided. It is also quite critical getting the silencer attached to engine with only

enough room to get the fuel connection clear of the fixing screw.

What else remains? Just for the record I took a picture of Belgian Delta man at the British GP who has the very latest model but has fitted a large pumper carb with inevitable complications of the connections which I have avoided. However, he may feel the added urge of the pumper worth the extra effort. I can hardly wait

Special thanks to Ted Longshaw who not only provided the kit but patiently supplied the sundry bits and pieces that I felt desirable to make a good job of it which were asked for in infuriating dribs and drabs.

