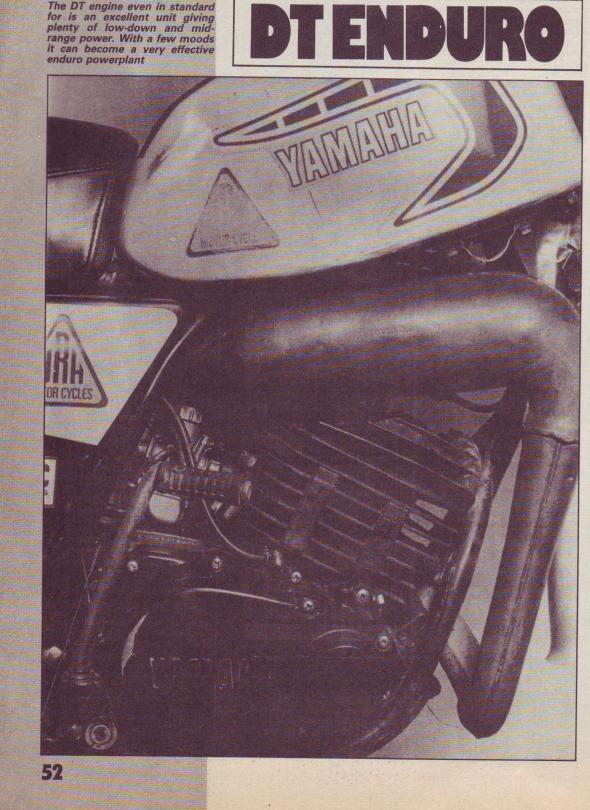
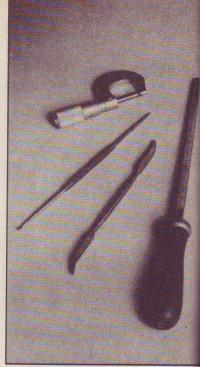
AUGUST 1982 70p CAN GG70321 \$2.95 Workshop Tuning a DT175 blus ition 1C RSEARS 1 1 cialists





Part



MAMAH

Basic hand tools are all that is required to transform your DT into a flyer — note small files for ports

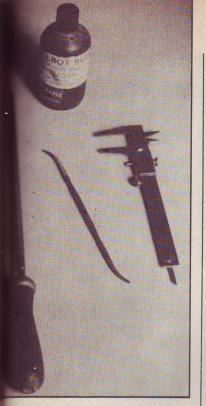
The second instalment tells of our attempts successful — to get more poke out of the already plucky DT175 motor.

FIRST of all, to all you guys expecting a second instalment of the saga last month — my apologies but due to crashing said DT second time out and coming off second best, I had to defer further news for a month. Good start eh?

Anyway, let's get back on the trail (!) and carry on where we left off last time.

In standard spec. the DT175 motor is a very impressive piece of work indeed for a trailbike unit. It pulls well from low revs, has plenty of mid-range and revs pretty cleanly at the top end. Like virtually all 'strokers, however, it responds well to a little tuning.

Anyone who hasn't ridden off-road much tends to think that you need plenty of bottom end pull from a dirt bike, with an ability to rev out in



top being almost superfluous. This is not the case for an enduro because much of the course is ridden flat out in all the gears — and there are usually stretches of open moorland where top gear is used to the full. When touching seventy or so along a dirt track, I have still been passed by KTMs and such as though standing still.

Many smaller enduro bikes 125s especially - have an incredibly vicious step into the power band. Having ridden a couple of such machines, I decided that although I needed the poke, I didn't want a distinct on-off situation with the power band. A happy medium between the softness of the road version and the gutsy pull of a pukka dirt-beater was needed. To get these kind of characteristics it is vital not to

Inlet port needs to be opened out top and bottom to enable reed stops to be opened up for Boyesen reeds



go overboard on porting mods by raising transfers wholesale or by getting car-ried away with sky-high exhaust ports.

PORTING

Dave Walker and I decided to restrict mods first of all to simply raising the exhaust port by a very modest 1mm in the centre of the opening, radiusing off to nothing at the edges. This is designed to give a good spread of power throughout with no sharp step in the power band. When doing this it is important to ensure that the port edges are carefully radiused to prevent the rings from snagging and breaking. Dave used small hand files to take off the unwanted metal - a porting tool used in these circumstances would be too efficient in its removal of material.

The main problem with the standard porting is that it is too good! The ratio of transfer port height to exhaust port

Boyesen reeds are an obvious mod for a reed-valve bike like the Yamaha — they make a great difference

dimensions looked about right for maximum power. Bottom end poke had been retained by the undersquare bore to stroke ratio but there wasn't a lot more to be had in the exhaust port without losing some of the desirable mid-range performance. The answer could have been to raise the transfer ports and then alter the exhaust to suit but this in turn leads to increased engine speeds and all sorts of other problems we really didn't want to get into.

We were after a simple bar-

rel mod which gave results without hassle - the idea was to try and fool the exhaust system into thinking that the port timings were still more or less standard and it works!

That was the sum total of the barrel mods except for some work to the inlet tract. I had already fitted a set of the great Boyesen reeds to the bike but had not done anything to the inlet to allow the reeds to open to their fullest extent. By judicious use of a porting tool we removed the metal above and below the reed stops in the port so that the stops could be bent open to 12mm or so.

To gain further benefit from the above mods, it was decided that an increase in compression ratio was a must. This is the only guaranteed sure-fire way of getting more power everywhere. To make things simple - we're so good to you! - we removed the head gasket and used the old trick of lapping the head to the barrel using grinding paste. Afterwards a check on squish clearance using the other old trick of sticking some solder down through the plug hole showed that we had about 50 thou between piston and head. At this stage we decided that that would have to do, but a figure of nearer 40thou will be achieved by machining at a later date.

A word of warning: when you remove the studs from Oil pump is removed from drive shaft — secured by two cross-head screws. An oil seal prevents seepage and leaks







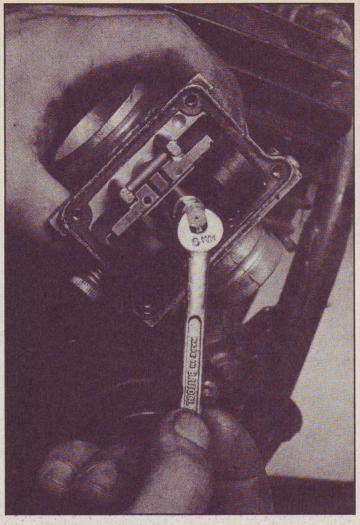
the barrel to lap the head take great care. We had to use a stud extractor and even then one of the threads was left looking a bit sorry for itself. With this work done, we put

the engine back together once more and turned our attention to the ignition timing. Because the mods already carried out would require a retarding of the spark we used a dial gauge to back the timing off to 1.8mm BTDC and then finally checked using a strobe. This is vital if a holed piston is to be avoided.

PETROIL

From the outset it was decided to convert the bike to run on a petroil mix instead of relying on the stock oil pump to provide the necessary lubrication.

Removal of the pump is straightforward: take off the pump casing on the right side of the engine and disconnect the control cable. Undo the two cross-head screws either side of the pump, pull off the oil pipes and the pump will slide off the drive shaft. The shaft is fitted with an oil-seal in the case so there are no worries about air or oil leaks Serval tailpipe replaces the stock pipe to give a few more horses throughout the rev range



Standard main jet is increased from 160 to 190 in order to cater for use of petroil mix.

with the pump removed. Needless to say, the cable can removed from the be machine. The advantage of running without an oil-pump is that you never have to worry about a broken cable and a consequential loss of lube. There is also the small added bonus of saved weight as you no longer need the pump or the oil tank.

Because there is no oil passing through the main jet, it is necessary to go up on the jet size to prevent a weakening of the mixture. We first of all went up from the standard 160 main to a 180 but found that the bike refused to rev out in top so a 190 was tried and a plug check showed it to be perfect. NGK plugs are used.

RESULTS

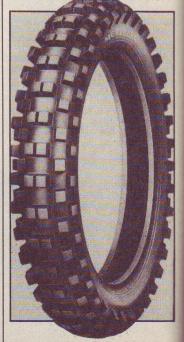
So what has been the result of these mods? Well, previously the bike would pull about 75mph on the flat whereas now it revs out to a happy 85 or so. Even with motocross rubber on the back there is sufficient punch to hang the tail out under power at will.

A couple of other points worth mentioning are the fact that the stock original clutch burnt out during the first event so it will be a good idea to make sure that yours is ok from the start. I also fitted a quick action throttle which reduced twist-grip rotation by 50% - it takes a bit of getting used to but is a good idea in the long run. A new cable is needed and for this I modified an Amal carb one to fit the DT carb top.

I first of all had fitted a 4.00 \times 18 Cheng Shin tyre on the rear with a 2.75 \times 21 at the front. Unfortunately the rear one was too badly damaged to use after the first event suffering severe cuts. I have now fitted a 4.00 × 18 Metzeler motocross tyre which is a very tight fit - you can get it in the swing arm by inserting an extra link in the chain and moving the wheel right to the back of the slot. The difference in grip is astounding.

FUTURE PLANS

I have a few little ideas in mind to try out on the DT (or the DT-IT as it's been nicknamed) the first of which is to fit a 26mm carb from a Yamaha RD250LC road bike which should help the top-end breathing guite a bit. Use the lefthand carb as it is the one fitted with the choke mechanism. Another mod is to fit a complete Fresco exhaust system in place of the standard expansion chamber and tail pipe. This is an unrestricted system which is reckoned to give amazing increases in poke compared to the stock set-up. Let's hope so! Let's hope also that we now see a lot of hot DTs around.



Metzeler motocross tyre is now used at rear end to give better off-road traction