PICCO P5

One or two London Club Members have asked me why it is that Steve has been running *Picco* Engines for most of the year, and yet we have not done a track test on them. More especially when he has been demonstrating that they are every bit a match for some of the more fashionable engines.

The answer lies in my personal policy with regard to reviewing products. I cannot claim to be perfect and always get it right, but as far as possible I have always tried to report matters as I find them, warts and all!! I believe that this is the only long term way in which such reports can maintain their credibility. At the same time, if I do find problems, I talk to the manufacturers or importers to get their comments, least I have missed something and my fears are unfounded.

So it was that with the *Picco* I contacted the importers to say that we were using the engines and were very pleased with them in all respects, except that we could not set them for optimum performance, under all track conditions, using the plastic carburettor as supplied with the engine. We were using one engine with a *Nova Rossi* carb and a second one with an *OPS* carb. I was prepared to go to press at this stage but pointed out that if I did so I would have to mention this fact. The response was for another carb to be sent which was claimed would solve the problems. It did not, the results were just the same as with the previous ones.

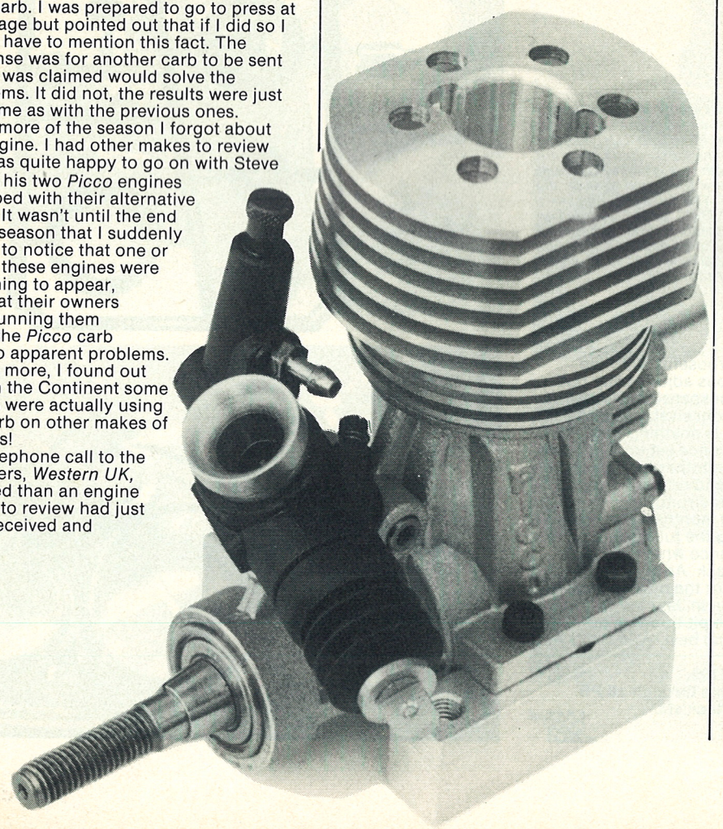
For more of the season I forgot about the engine. I had other makes to review and was quite happy to go on with Steve racing his two *Picco* engines equipped with their alternative carbs. It wasn't until the end of the season that I suddenly began to notice that one or two of these engines were beginning to appear, and that their owners were running them using the *Picco* carb with no apparent problems. What's more, I found out that on the Continent some drivers were actually using this carb on other makes of engines!

A telephone call to the importers, *Western UK*, revealed than an engine for me to review had just been received and that this time there would definitely be no problems with regard to setting the engine with the carb supplied. Having heard this several times before I was somewhat sceptical. Never the less I did have a spare *Nova Rossi* carb I could use if necessary, so off I went to pick up the engine. As will be revealed in due course my scepticism was to prove ill founded. it appears that

Colin Leake has been running the latest F1 engine from Picco

Picco have at last got it right, and so I decided that now is the time to proceed with a long overdue report on what is a very much underrated engine in the UK.

Having said that the carburettor was the reason for the delay in testing the engine this is probably the best place to start the technical description.



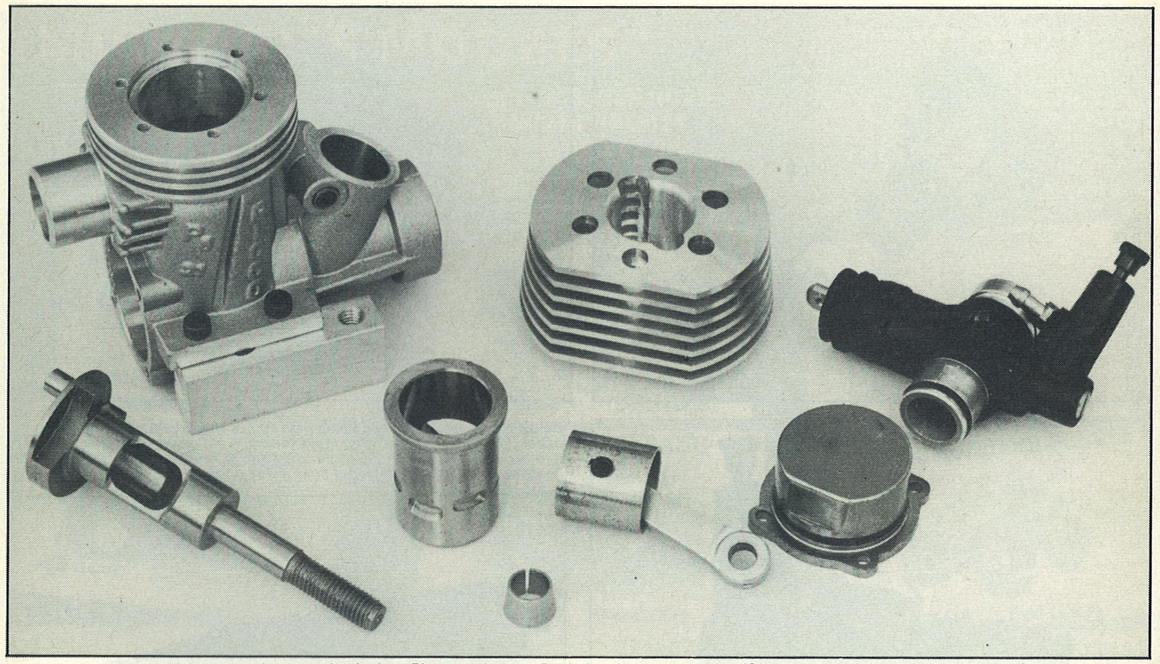
What's it got

The 9mm carburettor fitted to the *Picco* Engine is usually referred to as being plastic which is a little misleading. True the body of the carb is made of plastic but all the moving parts, slide, jet and needles etc. are metal. The use of plastic for the body is infact a very sensible choice. It is inherently robust and the adjusting screws that screw into it hold their settings very well. On this latest version of the carb the end of the slide has been changed. On the previous *Picco* carbs the end of the slide was machined to form a rounded shape. On the new carb it is finished square at the end. This provides one of the easiest means of checking that any engine you may be offered is fitted with the latest carb.

In addition the jet, which used to project well into the venturi area has been moved back to the side. The needle which was previously unusually short has been considerably lengthened. On earlier carbs it was clear of the jet before the throttle was one third open. Now the throttle has to be opened well past half way before the needle is clear of the jet. I can only assume that it was done to obtain better control of the mid range mixture. If so it certainly seems to have succeeded. With this latest carb fitted the engine is much easier to set for optimum performance under all operating engine speeds and loads, an obvious necessity for a racing car engine.

Finally on the subject of changes to the carb they have now gone back to the practice of using a spring on the slow running stop adjustment screw to help hold its setting. Presumably they found that it was not sufficient to rely on the plastic locking the screw. The attention given to this last detail serves to illustrate that *Picco* have been working hard to ensure that their carb is as near perfect as they can make it.

To achieve a good seal to the Crank-case an 'O' ring which is set well down the stub of the carburettor in such a way that the seal is made halfway down the hole in which the carburettor is located. This is a much more positive way of using the 'O' ring to make a seal than allowing it to sit on top of the hole as is the case with othermakes of engines. For once I felt confident enough in the seal not to bother using silicon rubber to make the joint. In use my confidence proved to be well founded and we were not troubled with air leaks. The Crank-shaft as one would expect of such a high performance engine runs in a substantial 13mm main bearing. The back of the counter balance weight is formed to a thin full circle web to reduce crank case turbulence. Unusually the central hole from which the mixture emerges into the crank case is just that, a plain unworked hole. It sports none of the so called turbo boost flutes or swirls found on rival makes of engines. When one bears in mind that the track test that



Above: All the parts which go together to make the best Picco *engine yet. Backplate features a rubber 'O' ring seal and the heatsink head is of a reasonable size.*

follows finds that the engine breathes very well and has an exceptional ability to pull well at high revs, it makes one wonder just how much of an expensive gimmick these are.

The big end receives much of its lubrication through a hole drilled in such a way as to pass from the throat of the crank through to one of the bearing surfaces of the crank-pin. I know that just such a hole caused problems for at least one engine manufacturer, who subsequently stopped using it, and I rather suspect that it may be the cause of problems that appear to be besetting another manufacturer at the moment. That being said I can only speak as I find. Our engines have been extensively used all season with the sort of low gear ratios and late gear changes that should have found any weaknesses. So far we have had none, nor have we heard other drivers complaining of any problems in that area.

The Heat-sink Head is of generous proportions with the combustion chamber formed as an integral part of the head. This arrangement should, and indeed does appear to, ensure adequate cooling. In this respect the *Picco* seems to be one of the few engines in use at the moment where drivers have not felt the need to resort to spending hard earned cash on larger fancy heads turned from solid. Mind you I rather suspect that in many cases the use of such heads owes more to fashion than to a genuine need!!

Picco have now ceased to use the forged steel con-rod that they tried for a time in earlier engines and now use a conventional machined alluminium one. The small-end bearing is unbushed in the normal manner and the big-end bearing takes the form of a pressed bronze insert with two lubrication holes. One can't but help wondering if this is made by the same company thatmakes *Nova Rossi* con-rods. They seem to me to be identical.

The crank-case is now more conventional mounting lugs. The exhaust stub is formed as an integral partof the crank-case casting and is heavily finned. This should help heat dissipation from one of the hottest areas of the engine, but it does restrict one to the use of the type of slip on exhaust manifold rather than the type which bolt rigidly on. There are arguments for and against both types, but I personally prefer the rigid type in that they are less likely to be knocked off during a race. Indeed on two occasions this season Steve has had problems when his manifold has been knocked backwards and come away from the pipe.

From the previous paragraph it follows that the *Picco* manifold it of the type that slip over the exhaust stub making a seal with a short length of silicon rubber seal and being held in place with a spring. I'm a little worried by the way the spring fouls the throttle stop screw. At least the spring that *Picco* use is an adiquatly strong one. infact when ever I have to use a manifold that is retained in this manner I always use a *Picco* spring rather than one of the rather weak ones supplied by some other engine manufacturers.

The back plate is made from a light alloy but in the *Picco* engine this has been chrome plated to reduce both wear and friction.

It's a small point but the pinch bolt that retains the carb is in itself worthy of a mention. It is formed from two hollow steel sections, one of which holds a bolt and the other of which is threaded. The two halves are shaped to fit either side of the carburettor stub. In use this holds the carburettor in place very firmly yet it is impossible to damage the carburettor by over tightening the screw.

Finally on the engine front we come to the piston and liner. And the name 'P5' would suggest there are five inlet ports in the liner. Each port is quite small. One is placed centrally opposite the exhaust port with the others located symmetrically either side of it. The two outer ones have small flutes worked into them, presumably to help the gas flow. One can't but help notice how simple these ports are compared with some of the offerings that are coming to market from some other manufacturers. Never the less they seem to work well enough as will be seen from the track test. As far as materials go the piston and liner follow the well proven norm with an alluminium piston running in a chrome plated brass liner.

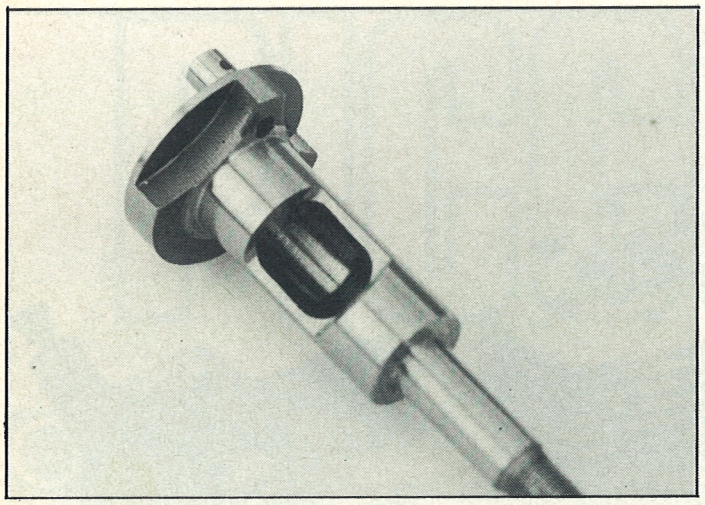
Up on top

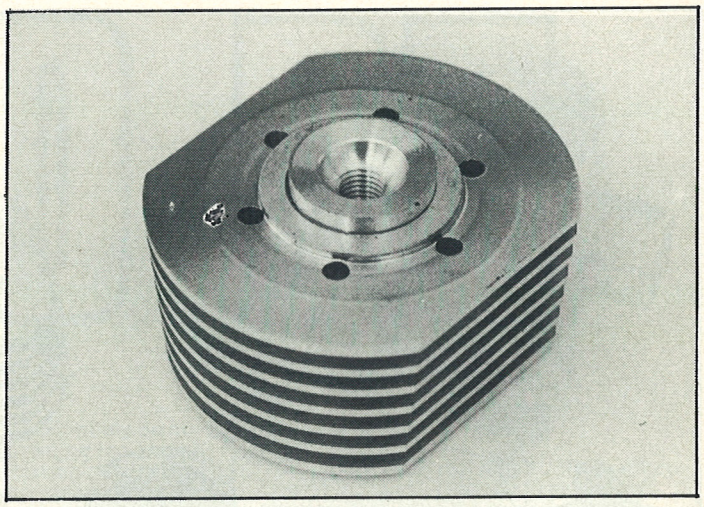
The head shims fitted are two of 0.2mm and one of 0.1mm giving a squish band clearance of 0.64mm or in English 25thou.

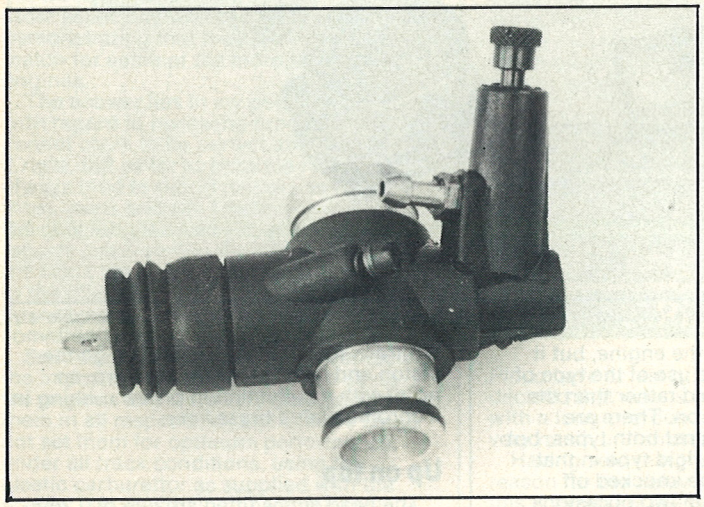
The tuned pipe shows the *Picco* families active involvement in model car racing. It is made of alluminium but is sensibly robust so that it can take the knocks that inevitably occur in racing. I liked also the fact that it features an integral mounting boss on the end so that it is easy to obtain a really secure mounting for the front end of the pipe to the radio plate. All to often races are lost when the pipe gets knocked off or out of line. The pressure nipple shown in the photograph does not come with the pipe, this has been added by me.

Overall the engine feels well made with the light weight high quality castings adding to this impression. When we stripped the motor we found the fit of everything to be very good, though the fit of the big end bearing on the crank pin was so tight that I had some difficulty removing it. As with most engines I have examined when I came to strip the engine for photography I found several pieces of swarf and on this occasion a sliver of what looked like chrome plating. I can only repeat my earlier warning here and suggest that before running any new engine you take it to pieces and look for swarf. When doing this pay particular attention to the bearings and any holes that have been drilled as these appear to make particularly good hidings places. Whilst you have the engine stripped down it may be as well to check that all the oil passages are clear. I have not come across any in our engines that have been blocked yet but I have heard of other drivers who have found them to be totally blocked and have had to clear them with a drill!!

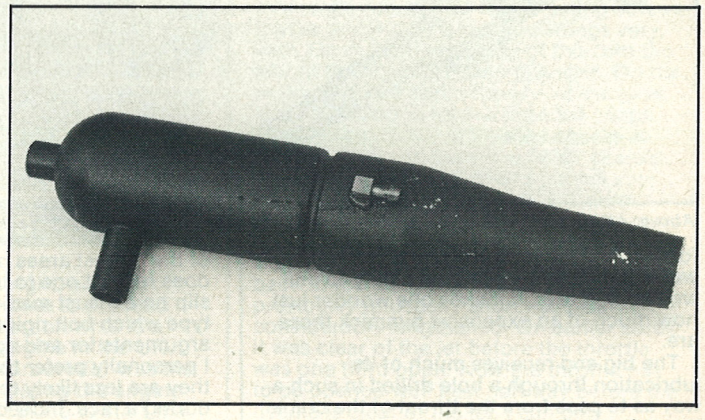
The engine is physically fairly large and when fitting it to one of our *Serpents* I







Below clockwise: The Picco tuned pipe comes with a very good mounting collet. The revised carburettor, looks the same but now performs as well as it looks. The crankshaft – nicely finished and of very high quality. The heatsink head, odd in shape but does a very good job.



found it necessary to move the short drive belt sprockets out to ensure that the drive belt was clear of the back-plate screws. An old glow plug washer proved to be just perfect for this, doing the job as if it had been designed for the purpose.

On the track we have not yet had the necessary weather conditions to put the review engine through it's paces and it is unlikely that they will occur until next summer. All we can say is that the new specification of the carburettor seems to have done the trick, and there should now be no need to resort to having to use any other make of carb. Only time will tell if this is born out when racing under hot high traction conditions.

We have, as already mentioned, been using two of the motors on and off for most of the season. In use it is obvious that the engines are immensely powerful. Steve has been able to use this power to out drag most of the competition all season. What is particularly impressive is the way the engine is able to accelerate the car away from the line, (Quote Walt Bailey. "He should enter that thing for a drag race") and yet is able to go on pulling strongly all the way down the straight. To quote Paul Cook, who was pitting for Steve at The Nationals, in a tone of voice indicating some incredulity. "It doesn't peak out all the way down the straight".

It's difficult to quantify but somehow the engine seems able to achieve this without sounding over stressed or as if it is pulling particularly high revs, yet it must be as we have been using the same gear ratios as with other engines.

What is less impressive is the way the power is delivered. It tends to be all or nothing. Rather like trying to drive an electric car with a switch instead of a speed controller. Normally with a four wheel drive car and a good traction this is no problem but under poor conditions or on smaller tracks it can be a bit of a handful. We have many different types of engines in our box and once Steve has driven the track test for me he is free to use whatever he chooses. Two changes that he made half way through meetings illustrate the characteristics of the engine and what he thinks of them. He started the Wombwell meeting using one of the *Picco* engines but found the combination of its' brutal power and his light weight car just two much to handle. The *Picco* was duly removed and replaced with a much more controllable *OPS* Motor. At The Nationals at Southampton he started the first day with no less a motor than a *Nova Rossi* 'Gold' in the car but to my amazement spent the lunch break taking it out and replacing it with one of the *Picco* Motors. I have to admit that he appeared to be right and round the large Southampton track the car was actually faster!!

As far as reliability goes I can only speak as we have found. Our *Picco* engines have had a great deal of use this season and have proved to be totally reliable with not a single failure. What is more very little wear seems to have taken place and however unlikely it may seem I have to report that both are every bit as fast now as they were at the start of the season. Nor have I heard of any other drivers having had any problems with the engines. Having said all that it is only fair to point out that very few Picco engines have been used in the UK and it is possible that had more been used faults may have begun to show.

Having covered all the positive points we come to the only area in which we have experienced problems, namely fuel consumption. With an engine this powerful it won't run on air, shame that really. Twice we have run into conditions where the fuel consumption has been a problem. For this to occur the weather has to be extremely hot, the grip high, and the track large enough to make heavy demands on the power available. Even if these conditions exist they will only prove a problem to drivers with high handicaps who are capable of pushing on to near track record speeds. Basically what happens is that a catch twenty two situation occurs with the setting of the main jet. If one attempts to lean the engine out to obtain better fuel consumption it will over heat and cut halfway through the race. Richen it up and you run out of fuel. Steve has been trying to join that small exclusive band who have managed 20 laps of the Crystal Palace circuit in qualifying for some time. Twice this year he has had it in his sights, only to run out of fuel on the last lap.

In fairness to Picco it may well be that the use of their own carb may overcome this problem. Alternatively, in retrospect, maybe we should have taken advantage of the engines ability to pull well from low revs and tried a slightly higher gear ratio.

Over all an impressive engine that has been much more popular with Club Drivers on the continent than it has over here. This may well reflect the fact that not many of the worlds top drivers are currently driving the engine and that the UK importer is not actively involved in racing.

Prices: Engine £123.20, Piston & Liner £36.00, Crankshaft £28.31, Pipe £19.19, Con-rod £18.42.

Importers: Western UK, 84/88 London Road, Teynham, Nr. Sittingbourne, Kent ME9 9QH.

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