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NEXT BRANCH MEETING
17th August 2004



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The Overhead Camshaft Norton – Part 3



Photo Barry Stickland

END OF AN ERA

At the end of 1954 Norton's announced that they would no longer be giving full works support for Grand Prix racing. Instead they would now use standard machines but incorporate development features for the next season's models. Not all events would be contested. This announcement came just as they were developing a Moto-Guzzi type laid down single cylinder known as the F-type (Flat Engine). This new racer was under test at MIRA where it immediately produced more power than the old engine. The horizontal engine ran backwards with a five-speed gearbox. The frame was a new type having a larger diameter spine tube which was also the oil tank. A machine similar to this can now be seen at Sammy Miller's Museum in New Milton, Hampshire.

The 1954 Inters were virtually the same as the previous year except that only a few were for Clubmans and almost all went abroad with Australia and New Zealand receiving quite a few.

The following year saw very little change in either the Manx or Internationals although the Inters now had the rear sub-frame welded on as was the Manx. Very few Inters were now to Clubmans spec, and almost all went abroad. The Inter was also now available in black trim and most of these went to Australia. The end of the year saw the resignation of Joe Craig. He had been there since 1925 except for a wartime break and was tragically killed in motoring accident near Innsbruck in 1957.

The 1956 Manx's were now benefiting from the works production development models.

The frame was now in its final form with a small rear loop, phosphor bronze bushes for the swinging arm replacing the metallastic bushes, an oil reservoir in the nearside frame tube for lubrication of the side plates of the primary chain, and a rear chain buffer guide. The forks were also altered by shortening the stanchions in conjunction with a different pair of fork yokes, the top being a "dropped" type. The engine had some more improvements with new cams and higher compression ratios and BHP output was steadily rising creating further problems.

The Inters still retained the single-sided brakes although the other roadsters had been using full width hubs for a year or more. Production of the Inters slightly increased with 1956 being the peak year for the featherbeds. There were plenty of extras to be had, which were mainly Manx parts. Even those parts not normally listed such as the Manx twin leading brakes were occasionally fitted,

The most significant change to the 1957 Manx's was that the bevels were redesigned. They were now produced with a coarser pitch because as power and revs increased the finer type of bevel would break.

To the surprise of many, the works turned out with a few '90' bore machines based on the Craig 1954 engines but with internal flywheels. These were designed by Doug Hele, who had rejoined Norton, along with Bert Hopwood, the designer of the Twin cylinder Dominator engine.

The Inters were down on production compared to the previous year but were still subject to some development. Compression was now up to 8.4 for the 350 and 8.1 for the 500. A new silencer replaced the pear-shaped one and this helped to extract a bit more from the stifled performance. As these engines were now almost long-stroke Manx engines, a silencer became much of a hindrance.

The early type cast iron full width front hub was now used in addition to the full width rear. The petrol tank now had bolt-on chrome panels and the headlamp arrangement was tidied up. Although the Clubmans had all but finished, a couple were still built but not entered.

NO MORE INTERS

In 1958 the Manx gearbox was changed to the AMC type, which the roadsters had been using since 1956 but differed from this by the clutch operating mechanism. The Manx had a far superior roller and cam lever device, very similar to that of the lightweight Jubilee system. An improved clutch accompanied the new gearbox with its adjuster in the outer pressure plate.

This year also produced another full batch of Inters with the familiar D type footrest finally being abandoned. These Inters were to be the last of along and illustrious history that spanned 25 years. The improvements that had taken place over the years had started to stagnate. For example, the Inters were still using the laid down type Norton-Burman gearbox long after the rest of the roadster range were fitted with the AMC type, and no further development was to take place. Production ceased but some 46 years on there are still a few of these last Internationals around today.

HELE'S NEW ENGINE

By 1959 Doug Hele was back in charge of the Manx's development and would be responsible for both the Racing and Production models. He had been working on a desmodromic Manx engine that had fierce cam profiles making quicker opening and closing of the valves.

However, the extra load on the vertical drive soon caused it to fail. The drive was redesigned with an extremely strong and simpler layout. He decided to adopt this design for the production Manx's. In this the bevels were splined to a larger diameter vertical shaft, which ran in needle roller bearings, and the lower bevel housing was quite radically changed having a light alloy tube casting. This means that the pre and post 59 engines are quite distinguishable and it has become a matter of opinion as to which looks the better engine!

When the 1960 season dawned it soon became apparent that Hele and his team had not been idle for although design changes were relatively small, reliability and performance had improved. A better big-end assembly, Stellite was used on the tappets, higher compression ratios and glass fibre used for the first time on the seat assembly thus reducing weight all played their part in the improvement. The Dunlop alloy rims were finally abandoned to be replaced by Borrannis. With 57 500's and 48 350's built during this year, the Manx production remained steady.

Further improvements were made during 1961 with the piston shortened to two rings and thus shortening the barrel. A new type of Amal G.P. Carb was used replacing the pilot adjustment for fuel to air by using the monobloc pilot system. This resulted in better starting and slow speed pickup, particularly out of corners. The oil tank was completely redesigned to the rhomboid shape and suspended from rubber bushes and held by a thick rubber band against a rubber pad. The swinging arm pin was now a much larger hollow pin with a greater surface area and less weight although some top flight riders like Phil Read preferred the solid type as the greater hole in the gusset plate caused flexing.

To be continued ...

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2004 Events

Thames Valley Branch NOC - Events Calendar			
Date	Event	Contact	Status
September			
Tues 21 st	Thames Valley NOC clubnight – Cricketers*	Ian Verrinder	Confirmed
October			
Tues 19 th	Thames Valley NOC clubnight – Cricketers*	Ian Verrinder	Confirmed
November			
Tues 19 th	Thames Valley NOC clubnight – Cricketers*	Ian Verrinder	Confirmed
December			
Tues 19 th	Thames Valley NOC clubnight – Cricketers*	Ian Verrinder	Confirmed

- For the uninitiated The Cricketers is at Hayley Green, Near Bracknell

