

NUMBER TWO

the Wildcat system

Rafferty Newman, of Farham, have developed their "go-fast" gear around their "five-port induction" barrel, available as an over-the-counter item or as part of the Wildcat Kit.

Distinctive machines in yellow and blue livery have begun to be noticed at rallies and sporting events over the last six months. At these events the machines carry the Hampshire Union sash but this report is not on the small but enthusiastic south-coast scooter club but on the union of two very enthusiastic two-wheel men and the go-fast goodies which have emerged from their Fareham workshop.

In June 1965 Les Rafferty and Ian (Ned) Newman opened their small scooter and motorcycle shop. Six

With much of the accent in scootering today aimed at the sporting enthusiast there has become available a range of machines with their special needs in mind. Firms up and down the country have developed their own ideas, many of them proven in competition. Much of the "go-fast" gear now available over the counter has had its beginnings on a wind-swept Snetterton or a fast and furious Brands Hatch event. This series sets out to show you just what is available. The comparisons will be left to your own judgement.



months later they had their second premises and an overall frontage of over sixty feet in the main Portsmouth to Southampton road-busy at the quietest times.

Just a year ago-in April 1968-a new workshop, fully equipped with lathe, boring jig and essential machinery was opened, staffed by six engineers who regularly ride, test and prove the machines they service.

Pressure on even this vast amount of space has meant the firm have had to expand further and a building giving over a further 2,000 square feet has just been

completed, they will house new workshops and offices.

The resulting business these refinements have brought is shown daily in the world-wide response to advertising, in the course of a week letters and orders from Poland, Italy, Germany, Australia, the United States and other countries combine sufficient numbers to attract the interest of local philatelists. The postal authorities are becoming adept at translating different interpretations of the firm's name and trademark of the pouncing tiger.

Several years of experience with tuning two-strokes and other motorcycles before their business was founded has given Les Rafferty an insight into the problems and complexities of engine tuning. His initial experience on the scooter engines went along similar lines to his work with motorcycles and after perfecting the techniques of advanced port timing he concentrated on raising the primary compression ratio of the Lambretta.

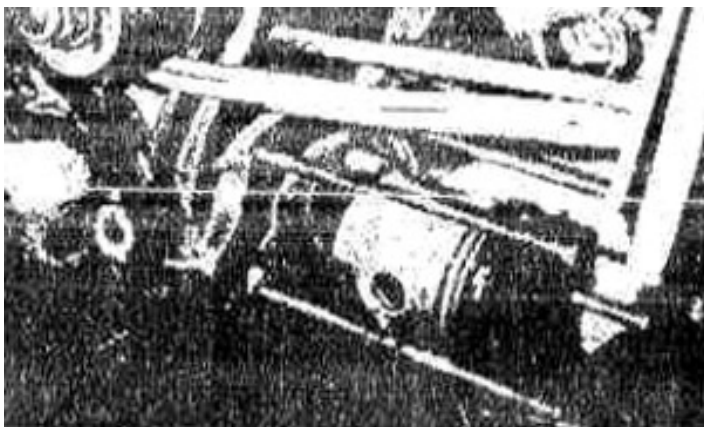
The padded flywheel has been used and proved by almost every engine tuner and after this the R.N. team concentrated on their compression plate which fits

proved on other makes of motorcycle barrel and at the same time a modified SS 180 Vespa barrel has undergone rigorous testing. This has one extra port but is proving to give considerably at the top end. An increase of just over 10 mph has been obtained from the SS 180 after fitting the modified barrel.

The Wildcat five-port system has been developed in a way that allows subsequent reboring without alteration to the advantages obtained by the system. This means new barrels as well as others which have been run-in or rebored can be utilized. With their own equipment for reboring on the premises Rafferty Newman can undertake this work with a fast turn around.

For those riders who are keen to convert the carburetor on their scooter to either the concentric or Monobloc the firm have designed their own inner induction stub which is available at 39/8.

For really top performance a two-stroke racing piston with dykes rings has been produced for the firm. The dykes rings locate to sunk pegs which allow the ring gap to completely close which stops gas escaping so improving compression. Manufactured in a high grade alloy they are hand finished and cost 8 gns. This may sound very expensive but Rafferty-Newman claim an increase in performance after every other tuning has been perfected. The top ring of the two is set to within a very fine limit of the piston crown which further increases the compression and to stop any chances of nipping up the piston between the bottom ring and the gudgeon



The primary compression plate, seen between the piston and crankcase neck needs careful fitting.

between the piston, the barrel and the crankcase neck. Individual fitting of this is vital as even in each mass-produced crankcase and barrel there are differences which matter. The shape and form of the plate is identical but the thickness has to be variable to suit different machines. The principle behind this tuning idea is to fill up several thou. of space in the crankcase neck and at the same time make sure the gas flow is smooth.

Gas flow was the next consideration in the plan to improve performance, subsequent experiment proved the "5-port induction barrel" which has been the big talking point from the Rafferty Newman firm. Two additional ports have been drilled for the Lambretta barrel. The booster ports are immediately opposite the exhaust port end being slightly advanced over the normal transfers help sweep away all lingering gases insuring a more combustible mixture. The five port system has also been

Wildcat

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The "five-port induction" barrel which is the basis of the Wildcat kit. The two outer booster ports are the ones clearly seen above the wide induction port which is at the end of the bore. This barrel is for Lambretta scooters.

pin. Run on Filtrate the barrels when taken down have always been found to carry a little oil.

Friction causes the main loss of generated power in any engine, Les Rafferty has been working on a set of rings that have had their face area—the part which has constant contact with the cylinder wall—halved whilst still retaining their width in the groove and their strength.

Having spent some time on an expansion box exhaust system which woke up all the dogs in Hampshire, Rafferty-Newman find that the Ancillotti marketed by Nanucci is the exhaust system which results in the best performance being obtained from their tuning refinements to the Wildcat. Getting the speed is one thing, stopping when you need to is another essential which is catered for by the firm's specially made brake shoes, retailing at 25/- pair.

Any machine can be supplied by Rafferty-Newman.

The Wildcat induction stub for Monobloc or Amal carbs, is now available from the firm at 39/6.



They have Vespa, Lambretta and Capri scooters in stock, as well as quite a few mopeds, the Solifer Speed motorcycles and Reliant threewheelers. Any machine can be tuned, modified or resprayed to the customers own design and colour scheme, but what must be of greatest interest is the Wildcat Kit for customizing your Lambretta or Vespa.

The Wildcat Kit has: new 5 port barrel, piston (complete with rings and gudgeon pin), Ancillotti racing seat, Ancillotti exhaust system, damper gaiters, ball-end levers, headlamp stone guard, nylon cables and X5 badge— the Wildcat insignia. The price is \$40.

A 150 was test ridden to evaluate the performance.

Acceleration tests conducted on a cold day with three rides for each action gave the following averages—

0—40, first and second gears 5.5 secs.

0—50, first, second, third 10 secs

0—60, four gears 14.8 secs

40—60 third and fourth 8 secs.

Maximum in each gear (indicated speed)

1st 25 mph

2nd 40 mph

3rd 55 mph

4th 70 mph

At the same time tests were made on a 175 which has been tweaked by opening the porting to maximum and fitting a Monobloc. 0-60 times averaged 8.5 secs., whilst a 200 with 5 port barrel, standard carb, and KC Velocita exhaust clocked 8.2. This machine handled with symptoms which suggested a slipping clutch, all tests were conducted with 13 stones of rider.

Rafferty-Newman are at 260-262 West Street, Farham, Hants.

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