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Minutes of the Motorcycle Development Meeting
held on February 10th, 1961.

Present:-

Major V.T. Mountford
Mr. J.J. Booker
Mr. R.A. Wilson-Jones
Mr. R. Thomas
Mr. G. Baker

Matters arising:-

1.- Silencing: It was reported that all steps possible have been now taken to prevent:-

- (a) The end retaining nut from coming unscrewed
- (b) The light alloy silencer end from revolving relative to the silencer body
- (c) The centre retaining rod from turning in its screw bush

With regard to the disintegration of the synthetic rubber sealing ring, Mr. Wilson-Jones is in touch with firms producing such components with a view to obtaining one capable of withstanding higher temperatures. But in view of the fact that the edge of the conical part of the silencer which beds onto the ring may cut into the ring whatever it is made of, it may be necessary either to protect the ring with a flat steel washer, or have it made of some material such as copper/asbestos.

It was decided that after tests with the existing silencer incorporating still further varieties of baffling should be carried out in order to reduce the noise level. It was suggested that the Motor Industries Research Association should be in a position to give some guidance to the industry in relation to noise reduction. Mr. Wilson-Jones is to approach Mr. Palin of the I.A. regarding this.

2.- 250 cc Front Fork: A 250 cc machine using the heavy gauge B quality front fork is now assembled, and the appropriate fork springs are to be tested within the next fourteen days.

3.- Sidecar Forks: A reasonable mileage has now been covered on the works combination fitted with heavy gauge fork tubes, appropriate fork springs and solo type fork ends. Reports from all who have ridden the outfit indicate that it is not desirable

to use the solo type fork ends for sidecar use. The steering being very heavy.

It is suggested that the Walsall firm, who produce the sidecar type fork end castings with which considerable trouble has been experienced as the result of casting blow holes should be approached regarding the release of the dies - it being felt that another firm would probably produce a better grade of casting.

4.- New Fork Head clip: Some discussion took place on the merit of the present casquette, and the desirability or otherwise of reverting to a front fork incorporating a separately mounted front head lamp. It was decided that any modification desirable on this new type should be proceeded with, with a view to the possibility of fitting this type of fork at an early opportunity on certain machines.

5.- Lubrication on 700 cc machines: (a) It was reported that the engine incorporating plates running from the oil well to the cylinder base was being tested at M.I.R.A. at that moment. Unfortunately, this machine after covering about 30 miles at high speed failed as the result of slipped timing. This has necessitated the dismantling of the whole engine to replace the timing peg in the crankshaft. The engine is now reassembled and will be taken again to M.I.R.A. as soon as possible.

(b) Some tests run on the bench to investigate the possibility of some of the over oiling being due to surplus oil being fed to the over head rockers and timing gear have been carried out. These preliminary tests have shown that when the engine is cold a large proportion of the oil is returned direct to the timing cover via the pressure release valve in the timing cover joint face. This quantity naturally decreases as the engine warms up although at normal running speeds there is still oil by passed in this way. The engine has now been taken off the bench to make way for the 600 cc single cylinder engine, which it is desirable to run as soon as possible. But a means of returning the oil by passed through the release valve direct to the tank is to be found, and tests will be run using this and incorporating in the overhead oil pipes a means of reducing the amount of oil fed to the rocker gear. It will be necessary of course to run a fairly prolonged test to ensure that sufficient oil is reaching the camshafts and tappets.

Mr. Young has been asked whether any progress has been made reference Major Mountford's memo of the 13/10/60 regarding a long term redesign of the cylinder heads etc. on the 700 cc engine.

7.- Light Alloy cylinder barrels:

(a) Hyper Eutectic piston for use in the LM 4 Alloy cylinder barrel: The piston is at the moment in the Tool Room having the right degree of ovality produced by hand. These pistons were originally turned round.

(b) A further piston has been received from Messrs. Ionic, and at the moment the accuracy of the chromium plating is being checked. After some discussion on the relative merits of chromium plated pistons and aluminium cylinder barrels having chromium plated bores it was suggested that Mr. Wilson-Jones contact Messrs. Monochrome and also Messrs. Sheepbridge regarding the availability of alloy cylinder barrels having chromium plate bore.

8.- Clutches fitted to Super Meteor and Constellation machines: Mr. Wilson-Jones is supplying a sketch showing details of a method of slotting clutch plates with a view to reducing the tendency of the plates to distort. Mr. Hill of Messrs. Albion is also investigating the trouble experienced with drag on this clutch.

9.- Oil Filter on 250 cc machines: Messrs. Nylonic are to be asked to quote for the supply of a nylon element for this filter. Mr. Thomas is to report on the result of the various requests for quotations which have been sent out.

10.- Cylinder heads on 250 cc Clipper machines: Mr. Freeman is to investigate the position with a view to a decision being made as to if and when light alloy cylinder heads are to be fitted on the Clipper machine.

11.- New Cam Form for 250 cc Clipper and Crusader machines:

Mr. Baker reported that this will be in production in the reasonably near future, and he has been asked to ensure that a record of the engines into which this new cam form is fitted. This should enable us to form an opinion as to whether the modification has the desired effect.

12.- Batch Tests: A batch test on Constellation and Crusader Sports are being carried out at M.I.R.A. today.

13.- 250 Frame by Messrs. Reynolds Ltd: We are still awaiting a further sample frame from Messrs. Reynolds.

14.- Mr. Wilson-Jones reported that a final sample of the nylon roller^{cage} is due in approximately seven days time.

15.- The two prototype five speed gearboxes fitted to machines are to be tried by as many riders as possible.

16.- The Scooter: It was reported that the first complete engine should be running during the forthcoming week, and that the second engine would be available in approximately ten days.

17.- Bottom Links Front Forks: Steel links to enable the alloy damped type fork to be tested at M.I.R.A. are being produced in the Tool Room. The lightweight type forks utilizing bonded rubber are at the moment awaiting assembly in the Tool Room.

18.- Mr. Thomas is to report on the progress of the prototype 350 cc engine based on the Crusader unit. It is to be recorded that in future when alterations are made to the cylinder head and cylinder barrel the possibility of incorporating finer pitch on both these items is to be seriously considered.

19.- Mr. Thomas is to report on the progress of the design of the 200 cc machine using a unit based on the Crusader 250.

20:- It has been decided that for 1962 the ~~Crosser~~ type cylinder head joint incorporating synthetic rubber ring type seals for the push rod tubes is to be adopted on all 250 cc and 700 cc engines.

21.- The question of waterproofing of rear brakes was briefly discussed. It was reported that the experimental type produced recently in steel was very effective, but as the introduction of cast alloy type rear brake cover plates is imminent some investigation as to the possibility of making modifications to this new light alloy cover plate to achieve the same results is necessary. Mr. Thomas is looking into this matter.
