

MINUTES OF DEVELOPMENT MEETING HELD ON 19TH JUNE, 1963.

Present: Mr. J.J. Booker. (Chairman)
Mr. L.H. Davenport.
Major V.T. Mountford.
Mr. C. Greenwood.
Mr. Baker.
Mr. Thomas.
Mr. Bromley.

Copy to: Mr. R.A. Wilson-Jones.

OUTBOARD ENGINE.

Quotations have now been received from Non-Ferrous of Kettering, Walsall Aluminium and Greatbridge Foundry. On prices, Non-Ferrous were prohibitive and it has been decided that, in view of the fact that the majority of items quoted by Walsall were favourable, that they should be approached with a view to bringing the one or two high prices into line. Mr. Mackay of Walsall Aluminium is to be contacted with a view to obtaining sample castings as soon as possible. He should further be approached with regard to the refunding of tooling charges after a quantity of 2,500 castings have been supplied.

In the meantime, tests are being run with a modified cylinder head in which the cored water passage has been filled in. In view of the urgency of this project it was agreed that a start should be made on jig and tool design. It was emphasised that a programme both for development and production must be put forward as soon as is possible.

MODIFICATIONS TO CURRENT DIESEL ENGINE RANGE.

Mr. C. Greenwood gave details of the work he has carried out over the last month or so on the 85 Engine, together with agreed recommendations. These are given below:-

Alterations and Corrections to Machining and Assembly.

1. The timing side main bearings are to be fitted cold.
2. The driving side main bearing is to be fitted cold to its housing. It is then to be reamed to size and the housing faced and machined with a mandrel in the bearing.
3. The driving side and timing side bearings are then to be through reamed after fitting to the crankcase.
4. All jigs and fixtures for crankcase, bearing housing and fan case are to be checked and corrected where necessary.

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5. The polishing of all brass fittings such as governor linkage etc. is to be discontinued.

Alterations to design requiring action by the Drawing Office.

1. The diameter of the locking screw for the driving side and timing side main bearing is to be increased from $\frac{1}{4}$ " to $\frac{5}{16}$ ".
2. The 4 - $\frac{1}{4}$ tapped holes previously used for the attachment of the gauze sump strainer are to be deleted from the drawing.
3. The oil slots are to be deleted from the governor thrust washer drawing.
4. The drilled oilway from the big end to the small end on the connecting rod is to be deleted.
5. The drawing of the tappet is to show this as solid instead of drilled and plugged.
6. The piston drawing is to be altered to accommodate slotted scraper rings, both below the compression rings and in the skirt. These scraper rings are to have the same lighter radial loading as the first prototypes received.
7. The Puralator fuel filter would be standardised instead of the FRAM.
8. The fitting of a temperature gauge as standard equipment is to be discontinued; it will be supplied as an optional extra.
9. Cast iron cylinder barrels are to be standardised on 85 Engines except - for the time being - on engines supplied to the various Ministries. These authorities are to be notified of our desire to change and tests will be arranged if the suggestion is acceptable. Tests of cast iron cylinder barrels are to be carried out on 100 single and twin cylinder engines.
10. The filler cap on all engines except the 350 is to be redesigned to accommodate a screwed-in plastic cap.

In view of the trouble experienced with porosity in the crankcase castings, the foundry is to be contacted and the possibility of slightly modifying the design of the crankcase if this will eliminate the porosity is to be considered.

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The progress of the design of the new range of diesel engines is to be the subject of a separate meeting which should be called in the near future.

MOTOR CYCLES.

750 c.c. Interceptor. The machine is now running with a single carburettor and automatic advance mechanism incorporated and Messrs. Amal have been asked to send a representative to visit the Works with a view to deciding if the carburettor bore should be $1\frac{1}{8}$ " or $1\frac{3}{16}$ " and, having decided this, to finalise the carburettor setting.

In view of the saving in cost which will be effected by fitting coil ignition instead of the K.2F magneto, the design of a housing for the coil ignition contact breaker is being pushed forward at Westwood. The complete set of equipment has been promised by Messrs. Joseph Lucas during week ending July 5th and tests will start as soon as the contact breaker housing is available. Major Mountford is in touch with our American distributors in order to obtain their acceptance, or otherwise, of coil ignition as standard equipment.

In view of the report from one of our distributors in America that the speed of the Interceptor is increased by the fitting of 250 sized compact, the use of this on the Interceptor is being investigated by the Drawing Office.

Connecting Rod Bolts. It was emphasised by Major Mountford that, whilst we have been receiving supplies of the correct bolts from America, it is not desirable or possible that this should continue indefinitely and every effort should be made to obtain supplies from a British manufacturer. Mr. Wilson-Jones is in contact with Messrs. Guest, Keen and Nettlefold regarding supplies.

175 c.c. MOTOR CYCLE. The costs which have been prepared by the Cost Office for this machine show that as it stands it is not an economic marketable proposition and the whole project will be reviewed. Consideration is to be given to an alternative type of engine and it is suggested that the possible design of one or ~~two~~ more two-stroke engines is given serious consideration. Mr. Thomas is giving some thought to this matter.

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BATCH TESTS. It is intended as soon as possible to carry out a routine batch test on the 750 c.c. Interceptor fitted with a new clutch. Up till the moment all machines going through Assembly have been urgently required for orders.

Over-oiling on 250 c.c. Machines. The results obtained by the production racing machine at both Oulton Park and Thruxton have been extremely encouraging and the oil consumption being extremely low with no loss from the breather. Modifications incorporated are to be examined with a view to a possible incorporation in future standard production.

During investigations of the lubrication system of the 250, it was found that the drilling of the pump disc was incorrect. On checking the jigs it appears that the original drilling jig, designed and produced at Westwood, had been incorrect from the start. This has now been corrected and the jig modified. Future supplies of discs for assembly will be now free of this fault. It is hoped that this may contribute towards more efficient scavenging.

Counter-shaft sprocket nut on 250 c.c. Machines. Action has been taken by Mr. Thomas with regard to the extension of the thread on the counter-shaft. It is considered desirable that this modification is introduced as soon as possible.

250 c.c. Kick Starter Spindle. In view of the quantity of broken kick starter shafts which have become apparent recently, discussions have taken place with the Albion Engineering Co. Ltd. regarding the strengthening of this component. The suggestion of a change in material would not, according to Mr. Wilson-Jones, give us any great increase in strength. It is, therefore, desirable that the size of the splined end of the shaft is increased in diameter. Mr. Wilson-Jones is in touch with the Albion Engineering Co. regarding this change which should be put through with the minimum of increase in cost. Mr. Thomas is to investigate the possibility of a standard kick starter crank for all models and also to investigate the suggestion of a kickstarter crank folding at the lower end.

Timing Chain Tensioner - 250 c.c. Although no adverse effects have been reported from other sources, we have received reports from America that the face of the cast iron timing chain tensioner - which bears on the chain - is not square with the machining for the attachment bolts. This face is chilled and, therefore, cannot be machined by us although the surface is polished. Mr. Baker is in touch with the Foundry in an effort to improve the accuracy of the casting and in the meantime he has produced a tensioner with the face ground. This, of course, may remove most of the hardening but it is - at the moment - in a machine on test x to see if undue wear takes place.

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Failure of Cylinder Head Steady Lugs. There have been reports recently of a few cases of broken lugs on 250 cylinder heads. There would appear to be no apparent reason for this as many thousands are in service and the material of the cylinder has not been changed. Mr. Baker is looking into the matter to see if any alteration in the method of fitting has taken place.

75 c.c. Machine. Major Mountford is endeavouring to obtain some definite information regarding a working engine from Villiers; also efforts are being made to obtain information as to whether Messrs. Ducati are in a position to supply their 50 c.c. engine with positive foot operation for the gearbox. We shall, within the next week or two, have the machine complete but no engine will be available.

Nodular Iron Clutch Centres. Tests are continuing on both 350 and 250 c.c. machines. Mileages covered to date are:-

250 - 6,050.

350 - 1,223.

Smaller Diameter Valve Stems for 250 c.c. Machines. It is estimated that a test of at least 5,000 miles should be carried out on these components. Complete sets are awaited from the Toolroom before the test can commence. It was hoped that this modification could be carried out so as to be included in the 1964 specification.

Continental Tank. In view of comments regarding the unusual shape of the Continental tank, a modified Crusader Sports type tank is to be obtained from the manufacturers. This is to be approximately 1" to 1½" narrower and tapered towards the top. Another sample is to be obtained with the welding rib not completely polished away on the top surface. This should effect a saving in cost.

Morse Chains. Unfortunately, no record of the machines to which the 50 set of Morse chains was fitted has been retained. A further 50 set is to be ordered in lieu of Renolds chains and instructions will be given that these are to be fitted to machines supplied on the Home market and a record kept of the machines so equipped so that a check may be made on their performance in service.

214N Valves fitted to 250 c.c. Machines. This test is continuing, the mileage to date being 1,699.

* Speedometers. Arrangements have been made for Mr. Maxted to visit the Works and finalise with Mr. Thomas the fitting of the new Smith's instruments for the 1964 season.

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Silencers. A prototype of the new design is completed and is to be sent away for plating. In view of impending legislation it is necessary that tests are completed within 14 days so that, subject to a final decision, the silencer would be ready for adoption at the start of the 1964 season.

Manual Hoists. Detailing is still proceeding in the Drawing Office and is scheduled for completion by the end of June.

Railway Platform Trolley.

A guide price has been quoted and further information is awaited.

Booke.

① H. Line Equipment - New items need drawing and tracing from time to time.

② Items - to ~~be~~ be taken off Spares List 3?

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