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COMPARISON BETWEEN 750 INTERCEPTOR AND CONSTELLATION MODELS AT M.I.R.A. PROVING GROUND - 7th June, 1962

		M. P. H.	
Maximum Speeds on Timing Straight		750	Constellation
Using Standard Foot Rests	East	99.04	97.34
" " " "	West	95.97	92.08
" " " "	Mean	97.5	94.71
Using Pillion Foot Rests	East	102.0	1 04.2
" " " "	West	100.2	103.2
" " " "	Mean	101.1	103.7
Speed at lights after accelerating from 40 m.p.h. in top gear at Timing Hut (Approx. 600 yds.)	East	76.56	73.75
	West	75.71	71.58
	Mean	76.13	72.66

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		M. P. H.					
		15 secs 750			Constellation		
Acceleration Test over ¼ mile from standing start through the gears (average speed)	E.	60.0	60.0	57.8*	59.2	60.0	60.0
	W.	62.2	61.2	60.0	57.8	62.2	57.8
	N.	61.1	61.1	58.9*	58.5	61.1	58.9
Speed through lights	E.	86.47	83.91	81.12*	83.10	83.91	84.54
	W.	83.91	81.51	80.74	81.31	80.93	81.51
	N.	85.09	82.71	80.93*	82.21	82.41	83.02

* Clutch slip developed on East run.

NOTES

The speeds "using standard foot rests" were run with the rider seated on the front portion of the dual seat and crouched as low as possible. Under these conditions the 750 is seen to be about 3 m.p.h. faster than the Constellation. The mean speed of the 750 corresponds to 5,300 r.p.m. and that of the Constellation to 5,400 r.p.m. This confirms the bench test of the 750 engine which shows considerably more power at this sort of speed.

On the other hand when using the pillion rests with the rider seated on the rear portion of the dual seat the Constellation is 2½ m.p.h. faster than the 750. The engine speeds corresponding to the mean speeds are 5,920 r.p.m. for the Constellation and 5,500 r.p.m. for the 750. At these speeds the power curves show the Constellation giving about 1½ more BHP than the 750. The latter is still at least 3 BHP below its peak power so would go appreciably faster if geared the same as the Constellation instead of taking advantage of its extra torque to enable it to cruise comfortably at high speeds without over revving the engine. Part of the lack of sheer maximum speed with the 750 is, however, attributable to the fact that for some reason this machine was fitted with a handlebar set considera bly higher than that on the Constellation. This would prevent the rider getting so flat.

The superior torque of the 750 at middium speeds is well shown by its 3½ extra m.p.h. after accelerating from 40 m.p.h. in top gear for a distance of about 600 yards. This is in spite of its higher top gear.

The acceleration test over ¼ mile from a standing start through the gears is the first test of this kind we have ever run. Clearly such a test depends

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very much on the rider's skill in making his initial get-away. This is shown by a certain amount of variation in the individual runs. Measurements were taken both of the time to cover the quarter mile (expressed in the results given above as the average speed) and of the speed through the lights at the end of the ¼ mile. It was noted that the runs with best average speeds did not always show the highest speed at the end of the measured distance. This may be due to differences in driving technique (get-away, gear changing, etc.) on the different runs or possibly to errors in measuring the total time for each run which was necessarily by stop watch. Setting aside the third pair of runs with the 750 cc engine, when clutch slip developed, there is little to choose between the two machines. The 750 cc shows a slight advantage on average speed for all runs, but the best average speed (or time) obtained with the Constellation was as good as the best average speed with the 750. The best speed at the end of the distance was however slightly better for the 750 than for the Constellation.

The acceleration figures at first seem rather disappointing from the point of view of the 750 cc machine which has considerably better torque figures. It must be remembered, however, that in a test of this nature only the three lower gear ratios are used and that the engine is very quickly up to high r.p.m. at which there is less difference between the two power curves. What difference there is is largely offset by the 5% higher gear ratio used on the 750.

Petrol consumption figures were run at 45 m.p.h. as is usual in our batch tests.

The Constellation recorded 82.42 m.p.g. and the 750 cc 69.6 m.p.g.

.....R.A. Wilson-Jones.....
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