

Note 62



Effect of CRL/S on performance

In a separate investigation of engine data the author found that there was an increase in performance as CRL/S rose.

Hassan and Mundy chose for the Coventry Climax FPE a ratio of $CRL/S = 5''/2.675'' = 1.87$. Then this 5'' con.-rod was retained for convenience and cost in developing the FPF series, although altered from an angled joint to straight, until the final 2.5L stretch. It was then thought worthwhile to add 0.1'' (2%) to the length, presumably the most that could be obtained with the forgings from the original dies. Therefore the 2.5L unit had $CRL/S = 5.1''/3.54'' = 1.44$.

In contradiction to the above statement, Tony Rudd found that he obtained a 6% power gain from his IL4 1 Litre Formula 2 engine when CRL/S was *reduced* 11%, from $4.625''/2.425'' = 1.91$ to $4.125''/2.425'' = 1.70$ (40). He believed that there was a rise in Combustion Efficiency from the increased piston acceleration away from Top Dead Centre which was more than offsetting the increased piston friction.

With a free choice for the 1967 DFV Keith duckworth used $5.23''/2.55'' = 2.05$ and that engine certainly was not short of performance!

There *has* been a move to higher values of CRL/S with time, egs.:-

1992 Honda RA122E/B [not Coy]	2.32	(69);
2000 Ferrari 049	2.68	(987);
2009 Toyota RVX-09H [not Coy]	2.72	(1091).

