

DEPARTMENT OF MECHANICAL ENGINEERING
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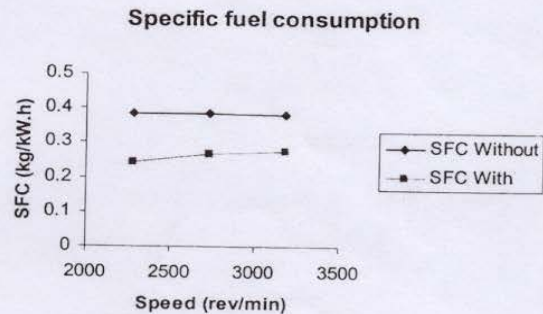
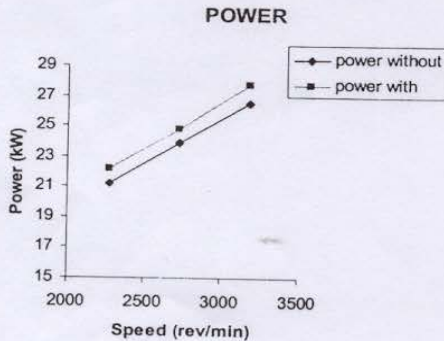
14.01.2004

TESTING OF LUBRICATING OIL WITH AND WITHOUT XIR CONCENTRATED ADDITIVE.

The test was carried out on the engine test facility of the Open University of Sri Lanka to determine the effect of lubricating oil additive on power developed by the engine and the fuel consumption.

The engine oil was drained completely from the engine and a new oil filter was installed. The engine was filled with new lubricating oil – SAE 40 Lanka super DS Caltex Lubricants Lanka Limited.

The engine was run for 30 minutes to bring it to desirable operating conditions. Initially, readings were taken for the power and fuel consumption when the additive is not added and subsequently, readings were taken for the same condition after adding the additive to the lubricating system. The variation of power and specific fuel consumption for both cases are shown in figures given below.



The graphs clearly show an increase in the power output from the engine and a decrease of specific fuel consumption, which suggests that the lubricant lubricates the engine better when the additive is added to the oil.

Results shows an average of 4% increase in power and 27% decrease in fuel consumption, thus reducing friction and wear of reciprocating components inside the engine.

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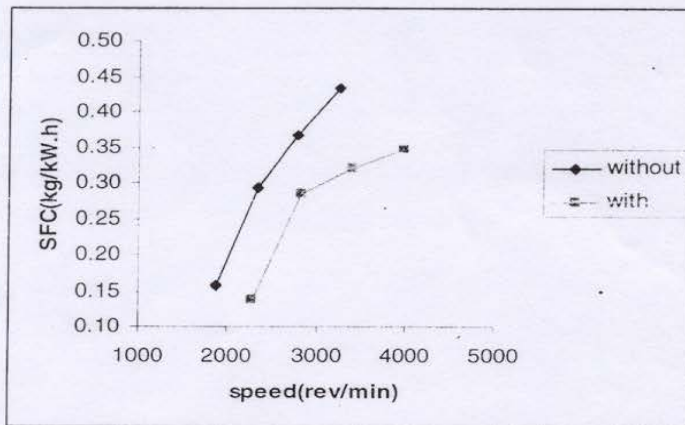


11.03.2004

Fuel additive testing –X-1R

This test was carried out on the engine test facility of The Open University of Sri Lanka, to determine the effect of the above fuel additive on fuel consumption and emission characteristics of the engine.

The engine was started and was run for 30 minutes to bring it to desirable operating conditions. Initially readings were taken for the fuel consumption and opacity of emissions when the additive is not added to the fuel. Having run 3,000 km with the fuel additive next reading set was taken under same conditions. The variation of specific fuel consumption is shown in the figure.



The opacity before adding the fuel additive to the fuel system was $6.02m^{-1}$ and after adding the additive to the fuel system was $5.9m^{-1}$

The results show an average of 12% fuel saving and a 2% decrease in opacity when the additive is added to the diesel fuel.

[Handwritten Signature]
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