Exhaust System Modeling and Oil Pan Design

Status: Available

Group Members:

Sponsor(s): SF-1

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Project Description

Background

Exhaust tuning has significant effects on internal combustion engine operation and can drastically alter the characteristics of power delivery. In the case of a Formula SAE competition engine, low RPM response and power are desired, requiring deliberate tuning of intake and exhaust systems. This is a similar practice as would be employed in the development of an exhaust system for any internal combustion engine.

Project Details

To obtain the desired characteristics of the current SFU Formula SAE engine, the exhaust system would require a complete retrofit. Fluid modeling may be employed to optimize flow characteristics leading to a design with appropriate dimensions and geometry to make use of wave-pulse scavenging while adhering to the packaging constraints of the vehicle. Camshaft lobe profile may also be revised to further optimize the exhaust system.

In short, the project will co-(be)(f)-14(l)(c)-4TETBTt,7( )6(t)-4(o)8(t)-9(r)-3(e)18(0 0 5(e adhe)4(r)-3(CID 16>79 T(7( )6(t)-

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