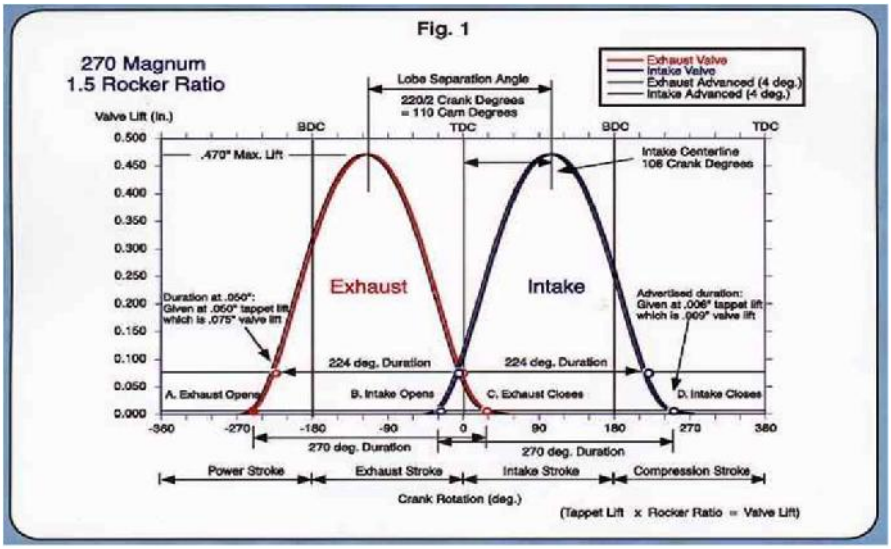
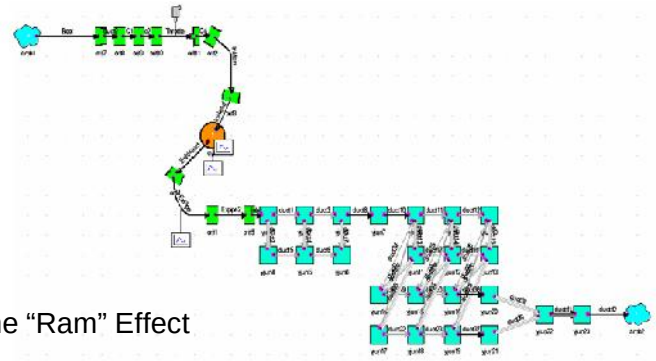
INTAKE & EXHAUST TUNING



"Tuning" is accomplished by timing the reflected waves from expansions or contractions in the intake and exhaust systems such that the reflected waves arrive at the combustion chamber at the appropriate time to increase combustion chamber density (volumetric efficiency) or reduce EGR. Naturally Aspirated F1 engines can achieve Volumetric Efficiencies of 1.3 via good tuning. This seminar shows how the intake and exhaust runner lengths are adjusted along with opening and closing valves timings to maximize air flow, and engine performance, including both parametric modeling, 1-D fluid dynamic modeling, as well as actual measurements of intake and exhaust pressure waves and engine power.

Covered Topics Include:

- Tuning Basics
- Valve Timings
- Overlap and Backwash
- 4-Stroke Exhaust Tuning
- Intake Tuning: Dynamic Effects
- Example of Tuned system vs. AM120
- Measurements:
- WOT Torque Curve
- Intake and Exhaust Pressure Traces
- Intake Tuning – Runner Length and the "Ram" Effect



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