

KGCOE MSD I Technical Review Agenda

P10227: FSAE Variable Intake

Meeting Purpose:

1. Overview of the project
2. Confirm Engineering Specifications and Customer Needs
3. Review concepts
4. Propose a design approach and confirm its functionality
5. Cross-disciplinary review: generate further ideas

Materials to be Reviewed:

1. Project Description
2. Work Breakdown
3. Customer Needs
4. Customer Specifications
5. Current/Previous System Design
6. Proposed Design #1
7. Proposed Design #2
8. Risk Assessment

Meeting Date: January 15, 2010

Meeting Location: Room 09-3489

Meeting time: 10:30 am – 12:00 pm

Meeting Timeline	
Start Time	Topic of Review
10:30	Introduction for the project
10:35	Work Breakdown
10:40	Customer Needs
10:50	Customer Specifications & Current System Design Schematic
11:00	Questions, Concerns, Ideas
11:10	Proposed Design #1
11:20	Questions, Concerns, Ideas
11:30	Proposed Design #2
11:40	Questions, Concerns, Ideas
11:50	Risk Assessment
11:55	Questions, Concerns, Ideas

Senior Design Project Data Sheet

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Project #	Project Name	Project Track	Project Family
P10227	Variable Intake	Vehicle Systems and Technologies Track	FSAE
Start Term	Team Guide	Project Sponsor	Doc. Revision
2009-2	Dr. Alan Nye		

Project Description

Project Background:

As each competition passes, fuel efficiency and technical superiority becomes much more prevalent in competition scoring. To advance the RIT Formula SAE Racing Team in the engine subsystem, the infinitely variable intake system will prove to be innovative and technically competitive.

Problem Statement:

This senior design project will develop an infinitely variable intake system for the Formula SAE race car that will allow for increased fuel efficiency, design advancements and a greener methodology to produce more engine power.

Objectives/Scope:

1. Measure the fuel efficiency of the engine
2. Improve power and torque
3. Packaging the system with simplicity to allow for ease of installation and maintenance
4. Design and build for the non-professional, weekend and competition market

Deliverables:

- Increased volumetric efficiency and fuel economy of the engine
- Improved power/torque
- Better drivability
- High reliability
- Manufacturability
- Servicability

Expected Project Benefits:

- Allow the RIT FSAE Racing Team to flourish in competition
- Advance the engine subsystem
- Lead into other Senior Design engine projects

Core Team Members:

- Dave Donohue
- Dan Swank
- Matt Smith
- Kursten O'Neill
- Tom Giuffre

Strategy & Approach

Assumptions & Constraints:

The largest constraint of this project is dependent on the status of the dyno facilities and the race car. To complete all listed deliverables specified by our customer, the intake system requires full testing and tuning.

In addition, the car, as a whole, is built for high performance using lightweight designs. This trend is found in every facet of the car including the intake system.

Issues & Risks:

Project Issues/Risks/Constraints

- Project Realm
 - New Project to upgrade engine package
 - New area of study for some
- Available Resources
 - Obtaining Resources
 - Order Parts/Hardware
 - Lead Time for race car completion
- Implementation Issues
 - Packaging to comply with FSAE regulations
 - Understanding the limitations of the engine package and testing resources