University Of Wisconsin Platteville Clean Snowmobile

Outline

- Goals
- Design Strategy
- Design Changes From Paper
- Conclusion

Goals

- Ergonomics and Rider Comfort
- Noise
- Emissions
- E-85 Conversion
- Reliability and Performance
- Thermal Issues

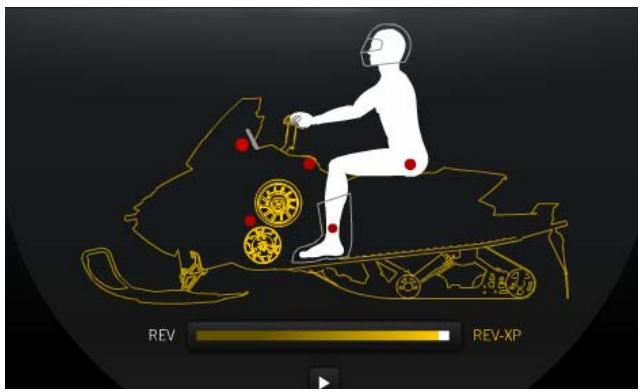
Design Strategy:
Ergonomics and Rider Comfort

- Ski-Doo Rev XP chassis
  - Weight/Rider fatigue
    - 549 pounds
  - Rider positioning
  - Handling
  - Rider Confidence

Ski-Doo Rev Chassis

- Driver comfort features
  - RER reverse
  - Electric start
  - Premium gauge options
  - Digatron monitoring system

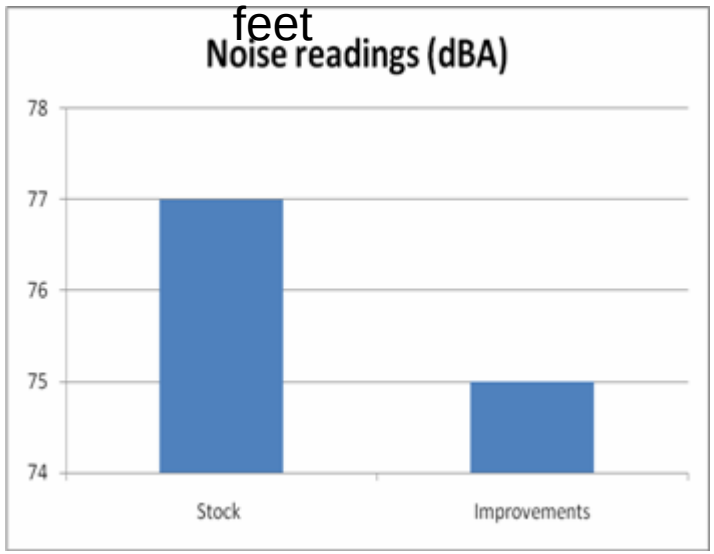
Ski-Doo Rev XP Chassis



Strategy: Noise

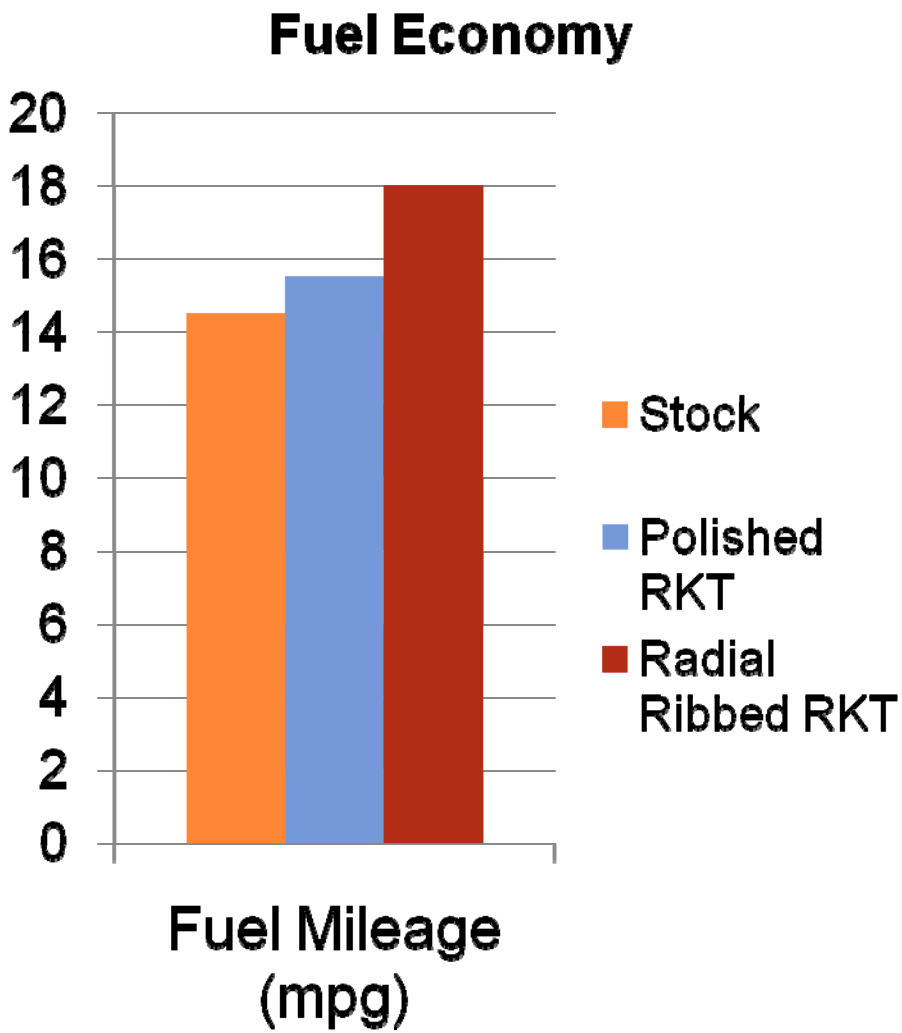
- Stock testing showed adequate noise levels
- Modifications
  - Clutch Guard
  - Catalysts
  - Angled and tapered tail pipe

WOT at 50 feet



Strategy: Emissions

- Engine selection
- Fuel economy
  - Fuel mileage testing
  - Dome selection (polished v. ribbed)
  - Dual ring piston for less blow by
- 3-way catalytic converter
  - 400 cells per square inch



Strategy: E-85 Conversion

- Manipulate stock ECM for ideal fuel map
  - Boondocker fuel management system
- Billet aluminum head to accommodate new domes
  - Higher compression domes to optimize octane rating
- Verify an E-85 compatible fuel system

Strategy: Reliability and Performance

- Important to both the operator and the sales branch
- MSRP: $12834.82
- Extensive testing
  - 300 miles testing
  - 5 dyno hours
  - 18 tuning hours
- Maintain snowmobile performance on E-85
  - Increased compression
  - Maintain power to weight ratio

Strategy: Thermal Issues

- Thermal imaging testing
  - Catalyst hot spot
- Catalyst heat shield
- Catalyst Location

Design Changes

- Biodegradable and non-toxic coolant
  - No ethylene glycol

Conclusion

- Design goals and strategy were born from the concern of the:
  - Operator
  - Dealers and outfitters
  - Environment

Questions?