Motor Cooling DOE Case Study

- This company approached us because they recognized the need for Design of Experiments (DOE) – but never had success before. Word of mouth led the organization to call us and give us a try.
- The product is a large and complicated device.
- Prior experience always required them to spend an extra 6 to 9 months to complete the design after the originally planned launch date.

Motor Cooling – Situation

- Goal: Quietly fan cool the motor on a device
- Response/ measurement: Air speed (m/s) and noise (db)
  - A basic requirements conflict. To better cool the motor, turn the fan on high. To make the fan quieter, turn the fan off. So how do we meet these competing needs?

Motor Cooling – Solution

- Approach: Explore different fan designs and parameters using DOE. Determine if a window exists for optimization.
  - Alternatives were considered together to meet the project needs
  - Involving the person conducting the test avoided logistical constraints unknown by the rest of the team

Motor Cooling – Immediate Results

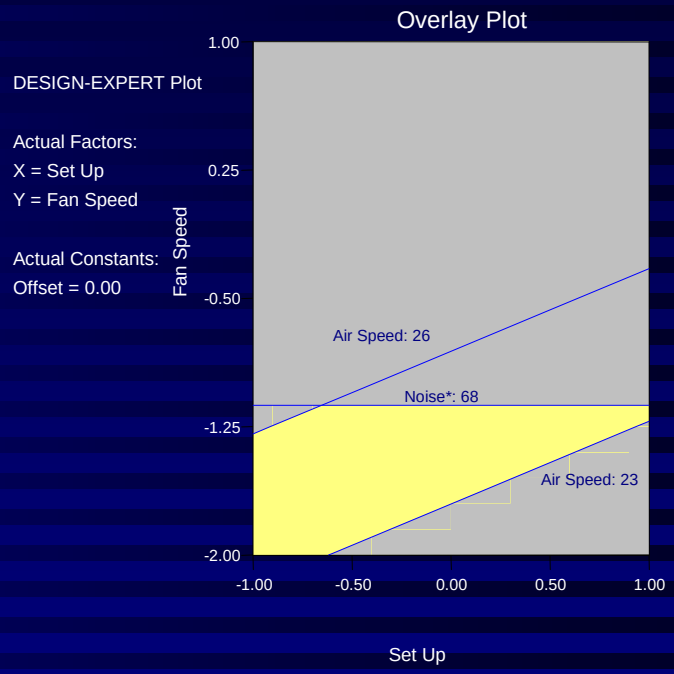
- Found the window of operation prior to building the first “production” part.
  - Avoided the typical launch delay
    - Eliminated need for custom noise reduction components
  - Provided the answer with reduced development schedule and cost
  - Made decision to select the appropriate vendor

"We had ambitious expectations and needed a DOE win. You were able to address our technical challenge and show scaling options for other designs.“

- Project Manager

Motor Cooling – Long Term Results

- Predictable end of projects with consistently improved time to market
- Scaleable and usable for other systems
- Set the company standard for design of this product – at least another 6 major new products were brought to market with the first design attempt.



Perry's Solutions, LLC

- Consulting and Training services from DOE and SPC to project planning and management
  - Solving NPD design, execution and re-plan situations

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