IPRO 304: Integration of Process Improvements for A. Finkl and Sons Co.

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Sponsor
FINKL
A. FINKL & SONS CO.
The Problem
A Finkl & Sons Co
• Founded 1879
• Processes 100,000 tons of steel annually
• Manufactures 100% of steel in Chicago
• Distributes to 18 countries around the world
• Steel Processes include
  • Melting
  • Re-melting
  • Forging
  • Heat Treating
  • Machining

Goals
Organization
Progress
Obstacles
Challenges
Questions
**The Problem**

Milling

- Typically the last stage of processing before distribution
- Smoothing and Finishing
- Multi-Million dollar annual process

**Milling Machine**

- 100+ year old process
- 18” Diameter milling head
- 18 Tungsten carbide inserts per machine
The Problem

Operational Problems

• Broken Inserts
  • Multi-Million dollar problem
  • Causes stress to machine and other inserts furthering damage
  • Damages finish resulting in re-milling and time loss
### The Problem

### Goals

**Detect and Notify**

- Build on previous semesters work
  
- Use of accelerometers and data acquisition software (labView) to detect failure
  
- Use of data analysis software (diaDEM) for real time notification

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**Accelerometer Mounted on Milling Machine**

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Kyle Gillmeister
Data Collection

- Data was collected at IIT’s milling facility and A. Finkl & Sons main milling facility.

Data Analysis

- Data analysis began of previous semester’s work.
- Continuation of analysis with new acquisition.
The Problem

• Comprehension of problem
• Solved by meeting with former students

Goals

• Technical understanding of hardware and software
• In process of solution by meeting with former students and technical experts

Organization

Progress

Obstacles

Challenges

Questions
| The Problem | • Scheduling  
 | • Organization of data and administration  
 | • Communication of ideas and insights between data acquisition and data analysis teams  
 | • Expertise in fabrication of notification system |

**Challenges**

A.Finkl & Sons Co., Milling Facility
We Welcome Question, Comments and Criticisms.