**Background**

- Sponsor: Versatility Tool Works and Manufacturing (VTW)
  - Small metal works company based in Alsip, Illinois.
  - Company has started producing tooling cabinets.
- Problems concerning the life span and durability of the tool cabinets.
- Issues concerning the previous design were determined and corrected.
- To address an improved design

**Objectives**

- Test new cabinet design
  - Ensure cabinet functionality
  - Determine life span (weight and cycle threshold)
  - Identify weak points and design failures
- Develop innovative ideas for a next generation tool storage cabinet.
  - Different tool storage concept
  - Be unique and functional at the same time

**Gantt Chart**

[Diagram showing project timeline and tasks]

**Aknowledgments**

- Testing Team: Marin Assaliyski, Vitali Basiourski, Luke Grabowski, Jose Guerrero, Natacha Tchobanova
- Faculty: William Maurer (Advisor), Sheldon Moshinsky (Advisor), Dr. Hu
- Russ Zanaty, John Kriegshauser
- Design Team: Ryan Attard, Vitali Basiourski, Lawrence Dorn, Laurie Feldman, Vlad Ioan Rusz, Priscilla Zellarchaffers
- Sponsor: Versatility Tool Works & Manufacturing

**Design**

**Jobsite Box**

**Benefits:**
- Built in compressor and generator
- Decreases theft by locking movable tools to the box
- Can store different sizes and shapes of tools, as well as other types of tools not normally found in regular tool boxes.
- It is desirable that appliances and tools that are widely used by tradesmen on the work site are integrated into the bottom portion of the tool box.
- Provides way of breaking into new market.
- No drawers involved, which means less design issues to be found.

**Disadvantages:**
- Just changing existing product
- The generator and an air compressor can cause unwanted vibrations in the job site storage unit.
- Cost Effectiveness

**Combination Box**

**Benefits:**
- Easy access
- It can be utilized as an end piece, Waste no space
- Storage for different geometric shapes and long pipes or pieces.
- Close to current VTW design, can be viewed as an add-on.

**Disadvantages:**
- Not a radical idea
- Cost effectiveness

**Conclusions**

**Testing**

- Resulted in premature deformation.
- Increasing the number of bearings will distribute the load, and with more contact points, it will take longer to fail.
- Inner slides deformed, as well as a small part of the slide assembly.
- Thicker parts are recommended so as to increase the stiffness.
- Strong and stiffer materials can be chosen to also address both problems.

**Design**

- Multi-purpose toolboxes.
- Jobsite Tool Cabinet
  - Not only holds tools, but also holds a compressor, power chords, and other useful equipment would make the toolbox a one-stop storage for all your needs.
- Combination Toolbox
  - Both circular and rectangular drawers
  - Can connect corners, end pieces, and mid-sections of a row of tool cabinets
  - Most versatile
  - Complications with manufacturing.
- RFID
  - Useful
  - Complications with manufacturing.

**RFID: Radio Frequency Identification**

**Benefits:**
- Locks up expensive equipment, allows only specific personnel to access tools.
- Tracks expensive equipment
- Provides insight into process/product design as well as more accurate management accounting
- Being able to locate which drawer contains the appropriate part
- Decrease wear by eliminating the extra use of opening the wrong drawer

**Disadvantages:**
- There are a lot of little addi-tions that can be made using RFID and some cutting device
- Perception of benefits by customers
- Effectiveness of RFID with so much metal around

**BACKUP**

- Jobsite Tool Cabinet
  - Can store different sizes and shapes of tools.
  - It can be utilized as an end piece.
  - Easy access
  - Built in compressor and generator
- Combination Toolbox
  - Both circular and rectangular drawers
  - Can connect corners, end pieces, and mid-sections of a row of tool cabinets
- Jobsite Tool Storage Cabinet
  - Easy access
  - Built in compressor and generator

**New Product Evaluation and Improvement**

Sponsored By:

VERSATILITY TOOL WORKS & MANUFACTURING COMPANY