Combating Run Waste at a Flexographic Printing Company

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Company Background

- **AWT Labels and Packaging - Based out of Minneapolis, MN**
- **Result of a merger between Advanced Web and Web Label**
  - Advanced Web - 1991
  - Web Label - 1976
  - Combined facilities - May of 2006
  - Second facility in South Elgin, Illinois
- **Employees: 164.5**
- **AWT Labels and Packaging is a printing company specializing in flexographic printing**
  - High quality labels and flexible packaging
  - For some of the largest consumer goods manufacturers in the nation

What is Flexographic Printing?

- Flexography uses a flexible relief plate to apply ink to a substrate
- Each plate applies different ink color

What is Flexographic Printing?

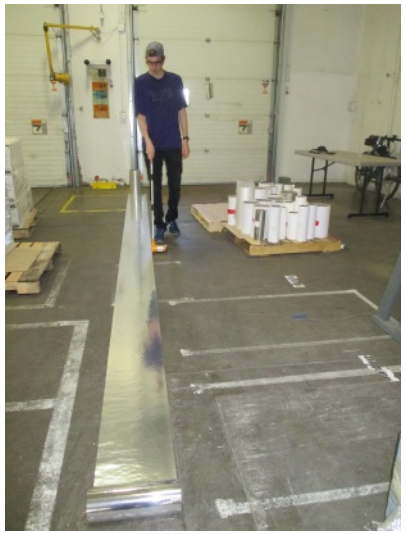
- Often there are multiple layers of material that are adhered together to make the final product

Project Overview

- **Project 1: Run waste reduction of the four P-Series presses**
  - Material waste
  - Energy waste
  - Time waste
- **Project 2: Chemical inventory and VOC alternative cleaning products**
  - Inventory current cleaning chemicals
  - Assess VOC quantity and hazard
  - Suggest and test alternative solutions

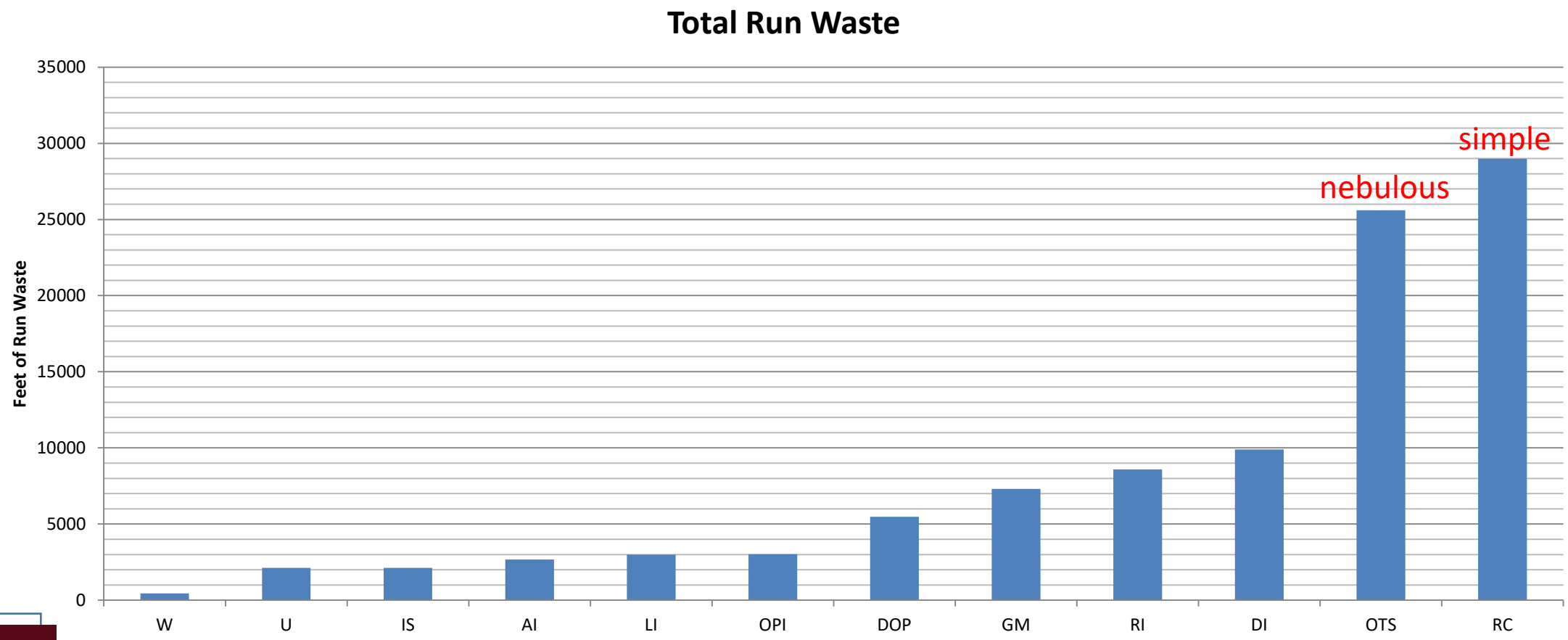
Approach

- **Quantifying Run Waste:**
  - Green sheet study – operator-driven waste logging
  - Core waste study – measuring expended material cores
  - Unflagged waste study – measuring operator fidelity in identifying waste
- **Studying Major Sources of Waste:**
  - Analyzing results of the three studies
  - Identifying most significant buckets
  - Deciding which sources to tackle



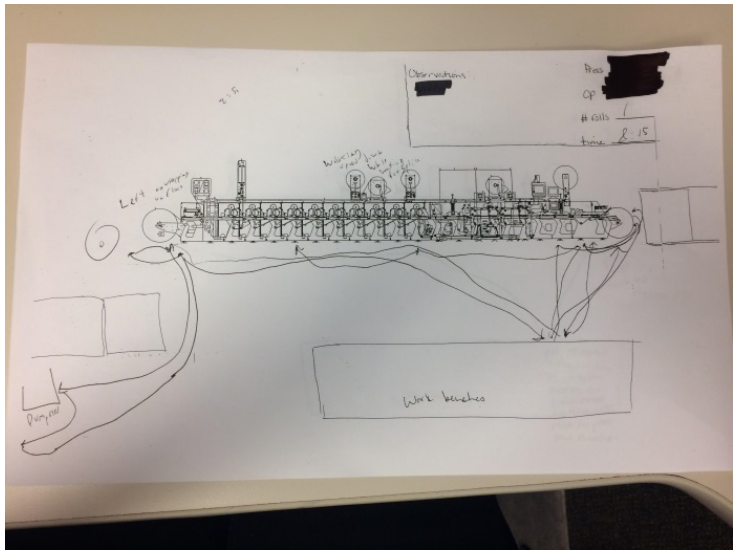
Run Waste Logger Results

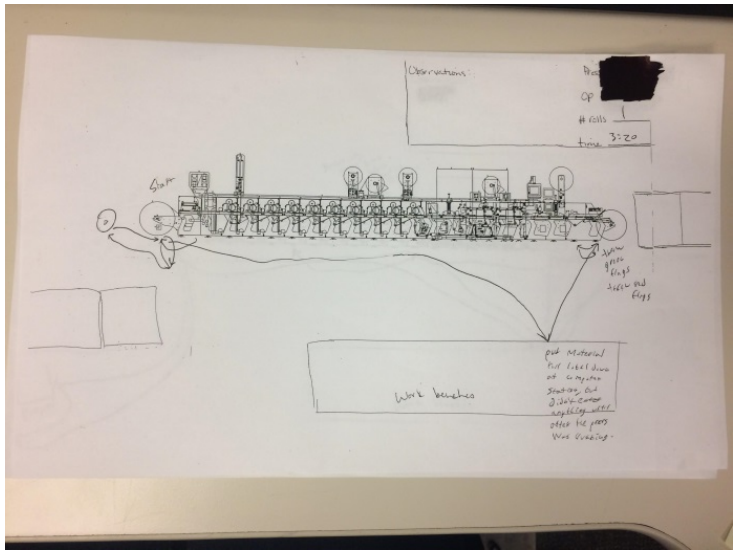
Roll Change (RC) = 30%
RC + Other Troubleshooting (OTS) = 57%



Approach

- **Understanding Roll Changes**
  - Spaghetti diagrams
  - Dozens of observations
  - Find the best practices
- **Create Standard Work Procedure**
  - Gather best practices
  - Confer with operators
  - Formalize SOP
  - Measure efficiency of implementation





Primary Recommendation – Roll Change Standard Work Procedure

- **Main Objectives:**
  - Standardize best practices – every operator is best operator
  - Reduce unnecessary movements
  - Offload time-consuming, non-essential tasks from roll change event
- **Recommendations:**
  - Have everything staged for the roll change
  - Be at the unwind end to manually stop press
  - Put off ink refills or unnecessary paper work
- **Savings:**
  - Work loss time
  - Cost of material, labor, and energy

Solutions Summary Table

Recommendation	Annual reduction	Total cost	Annual savings	Payback period	Status
Roll change standard work	12,000 kWh and 300 hours	$4,000	$153,000	<1 Months	Implementing
Manually stop press	18,700 lbs stock	$2,000	$61,000	<1 Months	Implementing
Press helper roll change	2,400 kWh and 62 hours	$4,000	$30,000	<2 Months	Recommended
Standardize cleaning products	13,000 lbs chemical	$0	$1,400	Immediate	Recommended
Use stand-off	200 lbs stock	$0	$640	Immediate	Recommended

On a Personal Note…

- The experience working at a company has been invaluable to me
- Learned how to operate in a professional work environment
- Exercised and bolstered my communication and writing skills
- Made connections and learned from mentors