



Sheeter Load Quality Improvement



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 Category: Business, Engineering, & Technology
 Company: WestRock

INTRODUCTION & METHODOLOGY

Company: WestRock is a paper and packaging manufacturer that operates in over 100 countries, with 50,000+ employees, and in a variety of mediums. The Joplin location prints packing for the food industry. This project focused on their Heidelberg Speedmaster XL 145 printer or press 1226.

Problem Statement: Since January 2020 to December 2020, press 1226 has experienced excessive feeder stops due to out of spec sheeted stock. From January 2020 to December 2020 press 1226's feeder stops have averaged 1.63 stops per 10,000 sheets.

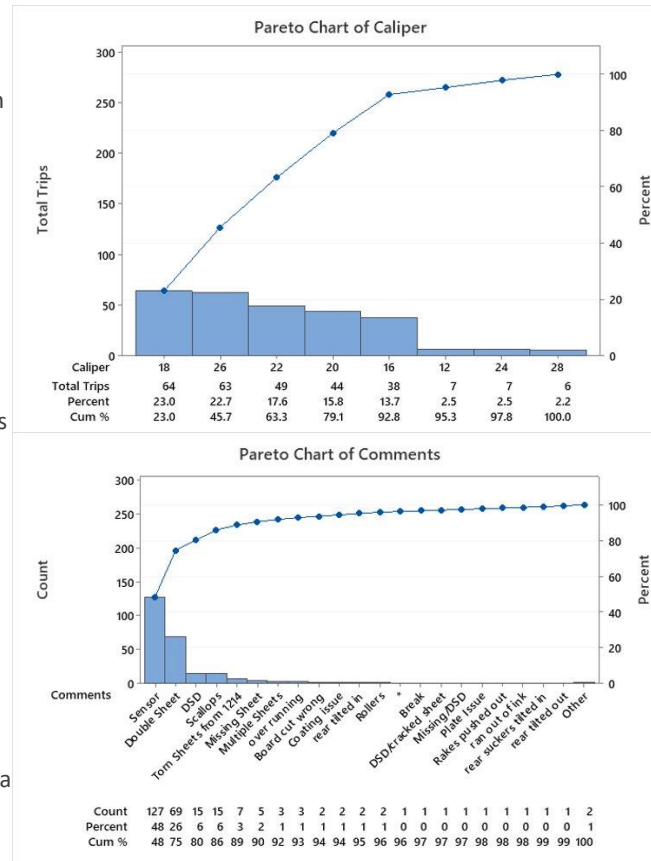
Objective Statement: By April 30, 2021, reduce feeder stops from 1.63 stops per 10,000 sheets to .923. The Goal Formula is 70% improvement from the baseline to toward to entitlement (Goal= BL-(BL-Ent)*.7).

Methodology: The DMAIC model stands for Define, Measure, Analyze, Improve, and Control. For the purposes of this project, I complete Define, Measure, Analyze, and will give the company recommendations for improvement.

1. Define: Developing the business case, charter, forming a team, setting ground rules, and understanding the customer.

2. Measure: Selecting what to measure, creating operational definitions, data collection plans, and collecting data.

3. Analyze: Summarize the data, identify possible root causes, and create potential solutions.



MEASURE, CONCLUSIONS & ACKNOWLEDGEMENTS

Data Collection Week (Measure): Data was collected from March 19th to March 26th. In total 1,171,726 total sheets were a part of the study. Of this, there were 261 feeder trips. This means that there were 2.23 feeder stops per 10,000 sheets. Considering this, the team shifted the goal to 1.23 feeder stops per 10,000 sheets to better understand the financial benefit of the project. This eliminates 1 trip per 10,000 and is a more aggressive goal than originally planned. What the team learned from the data is that decurl causes more trips than upcurl. Decurl is when the sheet makes a rainbow shape and upcurl is the opposite. We also learned that 18 caliper board had more trips than a higher caliper board. The commonly held belief is that no matter what a high caliper board will trip more.

Pareto Chart of Caliper: This chart shows that board that is 18mm thick has the greatest number of trips at 64. The next is 26mm with 63 trips. To resolve 80% of the trips. Calipers of 18, 26, 22, 20, and 16mm should be investigated further. This chart shows the team that more data should be collected with a greater equality among board calipers.

Pareto Chart of Comments: The comments section on the data collection sheet is what informed this chart. This chart shows the trips by how they tripped in the feeder. Showing this to the team lets them know that they need to take a closer look at their sensors. There are multiple sensors that can cause a sheet to trip. This is an area where the printer itself can provide a breakdown of data or do further data collection. Deeper analysis could show a clearer pattern in the data.

Conclusions & Recommendations: WestRock would be wise to explore the data more. Learning that decurl causes more trips than upcurl will change how the sheeter operator works the rolled sheets. The data from the Heidelberg printer is very useful and can be leveraged to the company's advantage. A vast majority of the sheets that tripped were within specifications, meaning the specifications are not a factor in feeder trips.

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