Truck Gate Inbound Errors Project

Problems and Error Types

* Obtained from survey responses and complaints received.

Trailer Not Inbounded	**Wrong Department Being Contacted for Special Deliveries**
Wrong Trailer Number	**Wrong Scac**
Wrong Trailer Status	**Trailer Not Being Inbounded Quickly Enough**
High AP Stress Load During Peak Times and Associates Missing Breaks	**Trailer Sent to Wrong Location**

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Root Cause Analysis

- Most causes of truck gate errors condensed to three causes during 5 Whys analysis:
  - User Error
  - Lack of Training
  - Associate Overwhelmed, Distracted, or Busy
- These causes can be broken down further into six root causes:

Lack of Error Proofing and Prevention	**Scheduling**
Lack of Automation and Streamlining	**Leadership**
Lack of Process Knowledge and Training	**Lack of Error Detection, Correction, and Tracking**

Lack of Error Proofing and Prevention

Potential Solution	Practical Methods
Set up Error-Proofing and Prevention Measures.	YMS confirmation prompts based on unusual combinations of input data. Error messages based on data stating trailer is not at location to be inbounded. (From GPS or trailer travel plan)

- Example 1: User tries inbounding WM trailer with 5 digits. Most WM trailers have 6 digits so a confirmation prompt is triggered.
- Example 2: User tries to inbound a WM trailer that has a GPS location in another state. Triggers confirmation prompt.
- This would require an update to YMS which would be a hard sell.

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Potential Solution	Practical Methods
Increase Automation and Streamlining, Remove or Redesign Inefficient Process Points	Kiosks, Gates, TC-70 Improvements, Barcodes/QR codes on trailers and/or bills, Camera's that capture trailer numbers, Better understanding of partner departments (CRO, Crete, Trans.) to recognize opportunities, Improved Signage and Truck Flow, Combine CRO and Truck Gate functions.

Lack of Automation and Streamlining

- Trailer barcodes could help but YMS mobile app user interface and connection issues could limit this improvement.

- Signage improvements proposed.

- RFID, GPS and similar technologies are common in other yards for trailer tracking.

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Lack of Process Knowledge and Training

Potential Solution	Practical Methods
Provide more useful and timely training and process reminders.	Redesign/Supplement training program. Truck Gate Manual, SOP's, OBW's: Created and consistently updated. Easily accessible and searchable. Visual process reminders for new and uncommon processes. (Badge backers, Notepad for "Write It Down, Don't Forget", Info Sheets for drivers, Crete office, etc.)

- Manual of truck gate procedures created and shared. Some process reminders implemented. More to come.
- Major struggle is placing reminders somewhere they are beneficial due to the amount of rare and unusual processes.
- Need to redesign truck gate training program for new AP associates.

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Potential Solution	Practical Methods
Look into current schedule. Set-up and reorganize to meet peak truck gate times.	Provide data based optimal AP schedule and reasons why this new schedule would improve AP operations. PowerPoint. Include 77 hour limit in consideration.

Scheduling Opportunities

- Schedule options and staffing tools provided to leadership.

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Potential Solution	Practical Methods
Inform leadership of the struggles of the department and provide possible solutions. Encourage leadership to take a active role in implementing other solutions.	Provide results of this DMAIC project. Encourage managers to learn truck gate and yard basics. Provide visual (PowerPoint) and easy to understand presentation of truck gate operations.

Leadership Opportunities

- AP management informed of this need.
- AP and DC managers encouraged to better understand an overview of truck gate functions in order to better make the broader decisions that could have downstream impact on the truck gate.
- Still need to make simple/visual flow chart and explanation of truck gate operations.

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Lack of Error Detection, Correction, and Tracking

Potential Solution	Practical Methods
Implement Error Detection, Correction, and Tracking Measures.	YMS tracking of unusual yard/gate situations. Prompts supervisor to investigate. Within DC system to do above via Excel and YMS Reports. TCR/Seal Card Audits, Stickers for all inbounds. Better communication process for errors from people affected to gate associates.

- Truck gate discrepancy report still not being used to full effect. Discrepancies take time which causes backups of trucks which discourages taking time filling out a discrepancy report.

- Yard inventory error finding Excel macro in progress.

- Difficult to detect errors until they cause issues. A better tracking of error types and their costs would be a starting point. The new cameras should help to a point.

- Updates to paperwork auditing process would be partially helpful. In progress.

Overall Conclusions

- There is definitely room to improve using only lower cost solutions and I have begun to implement some of these.

- It would be beneficial to look into higher cost/quality technology based upgrades to our YMS software and towards automating a majority of truck gate operations. This could aid in eliminating the large amount of hours needed at the truck gate along with reducing error rates.

- The lack of effective error detection, correction, and tracking measures will cause error rates to fluctuate over time.

Tools and Reports

- While going through this project I either created or found some useful tools online.

- I added a file to the public drive with templates and manuals under "DMAIC Tools and Templates".

1 - Project Viability Matrix
2 - Business Case
3 - Project Charter
4 - Gantt Chart - Project-Process Timeline
5 - Fishbone Diagram
6 - SIPOC - Suppliers, Inputs, Process, Outputs, Customers
7 - Value Stream Map
8 - Cause and Effect Matrix
9 - FMEA - Failure Modes and Effects Analysis
10 - Solutions Selection Matrix
11 - Force Field Analysis
12 - SWOT Analysis
13 - DOE - Design of Experiments
14 - 5 Whys Analysis
15 - Cost Benefit Analysis - In Depth
16 - Cost Benefit Analysis - Moderate
17 - Cost Benefit Analysis - Quick
18 - Control Plan
19 - Monitoring and Response Plan
CSSC Six Sigma Training Guide
IASSC Reference Document
MinitabManual
Six Sigma Green Belt Study Guide

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