



# Digital Dashboards In Terminal Operations Management

AAPA Marine Terminal Management – IT360  
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# What are Dashboards?

- Technology Tools That Provide **Real-Time Visualization** of Critical Business Indicators to Help in Decision Making



- Provide a Visual “Snapshot” of Key Performance Indicators
  - Gain total visibility of multiple systems or measures instantly
- **Benefits of Digital Dashboards include:**
    - Ability to make more informed decisions
    - Align strategies and organizational goals
    - Ability to identify and correct negative trends
    - Measure efficiencies/inefficiencies
    - Ability to drill down into underlying causal indicators and details
    - Saves time compared to running multiple reports

# Operational vs. Analytical Dashboards

## Operational

- View of current activities and frequently changing metrics
- Identifies potential operational issues as they occur
- Provides alerts on exception issues, and drill-through to facilitate real-time response
- Require less training than analytical dashboards

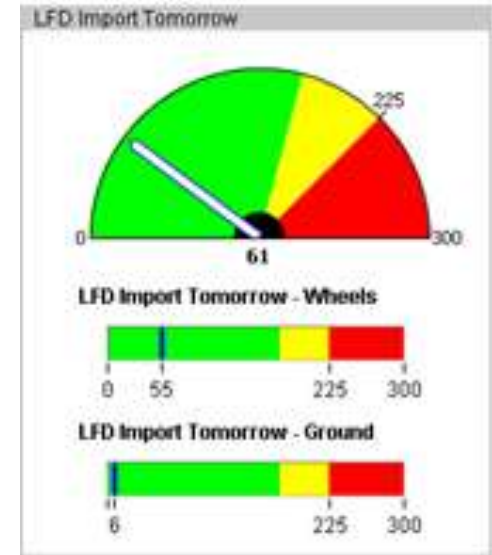
## Analytical

- Gains insights from a volume of data collected over time
- Understand what happened, why, and what changes should be made in the future
- Sophisticated models, what-if analysis and pivots to identify patterns and opportunities
- Often used by analysts and highly trained staff

*Operational, or KPI dashboards tell you if you're on target today.  
Analytical dashboards set targets for tomorrow.*

# Characteristics of Operational Dashboards

- **Graphical (and textual) Displays**
  - Graphics convey information “At-a-Glance”
- **Real-time Data**
  - Enables Right-Time Decision Making
  - Aggregates Multiple Data Sources into Composite Views
- **Alert System**
  - Visual Indicators and Alerts (Including Email, SMS, etc.)
  - Event-based or Scheduled Reports with Data
- **Actionable**
  - Identify in real time that action needs to be taken.
  - Drill-down and Causal Analysis to identify what action is needed
- **User-customizable (highly desirable)**
  - Operational dashboards are both “top-down” and “bottom-up” tools.



*“Operational dashboards track core operational processes and emphasize monitoring more than analysis or management.”*

*- Performance Dashboards, Wayne Eckerson*

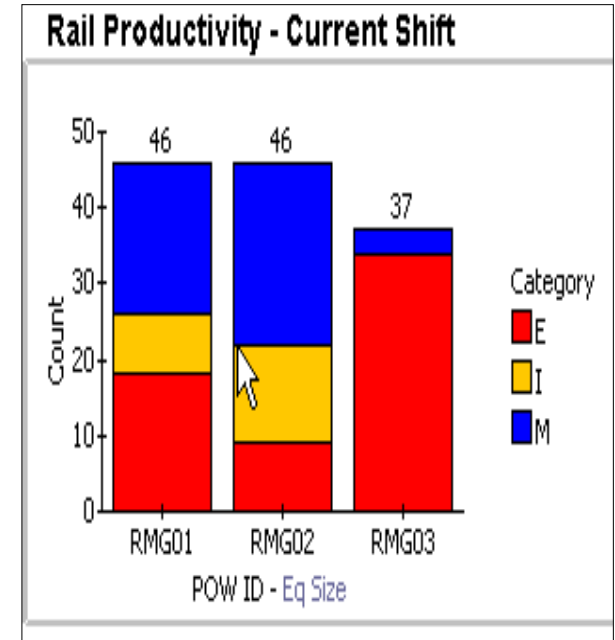
# Case Study APL / Eagle Marine Services

- **Business Need**

- To Manage Marine Terminals Effectively, Operations Management requires real time access to:
  - Equipment productivity
  - Yard inventory conditions
  - Gate conditions

- **Current State**

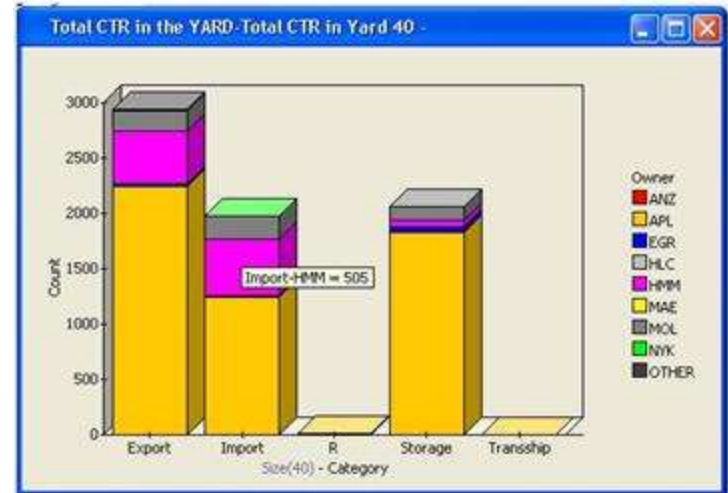
- Current systems do not provide this information in an immediate and visible manner.
- Inefficiencies in production and avoidable expenses are incurred as a result.



# Dashboard Opportunities

- Productivity
- Inventory
- Gate Conditions
- S/T Demand forecasting
- Technology Effectiveness
- Exception Event Alerts

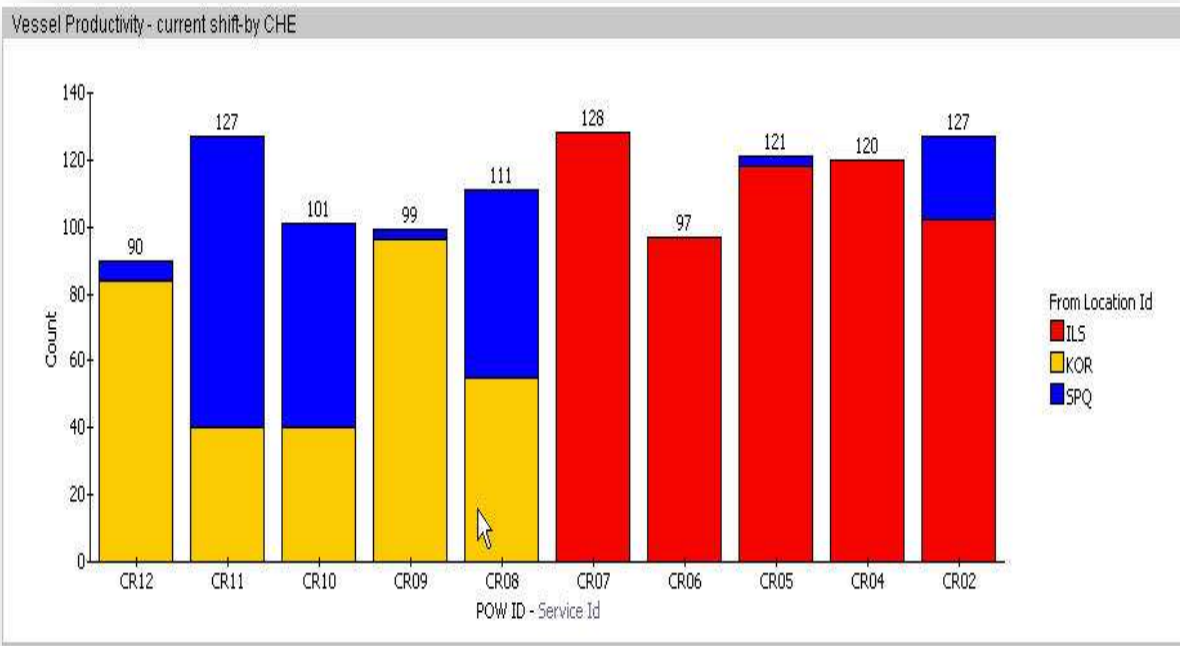
ALL CTR in the YARD 9764  
CTRS WHLD 5931  
EMPTY on WHEEL 694  
CAPACITY Ground Utilization % 0.94  
  
LFD Import Today 36  
Import on Demurrage 147



# Crane Productivity

- How are the Cranes Doing?
- What are the Cranes Doing?
- Where is Corrective Action Needed?

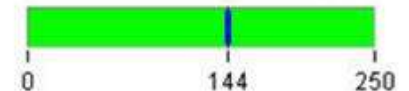
## Vessel Production Current Shift



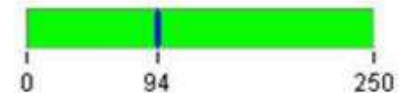
## Rail Production Current Shift

342

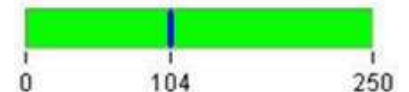
OB Rail Events this shift RMG\_01



OB Rail Events this shift RMG\_02



OB Rail Events this shift RMG\_03





# Inventory

- Text is Still Important
- Inventory Overview
- Capacity Utilization
- Line Operator Limits

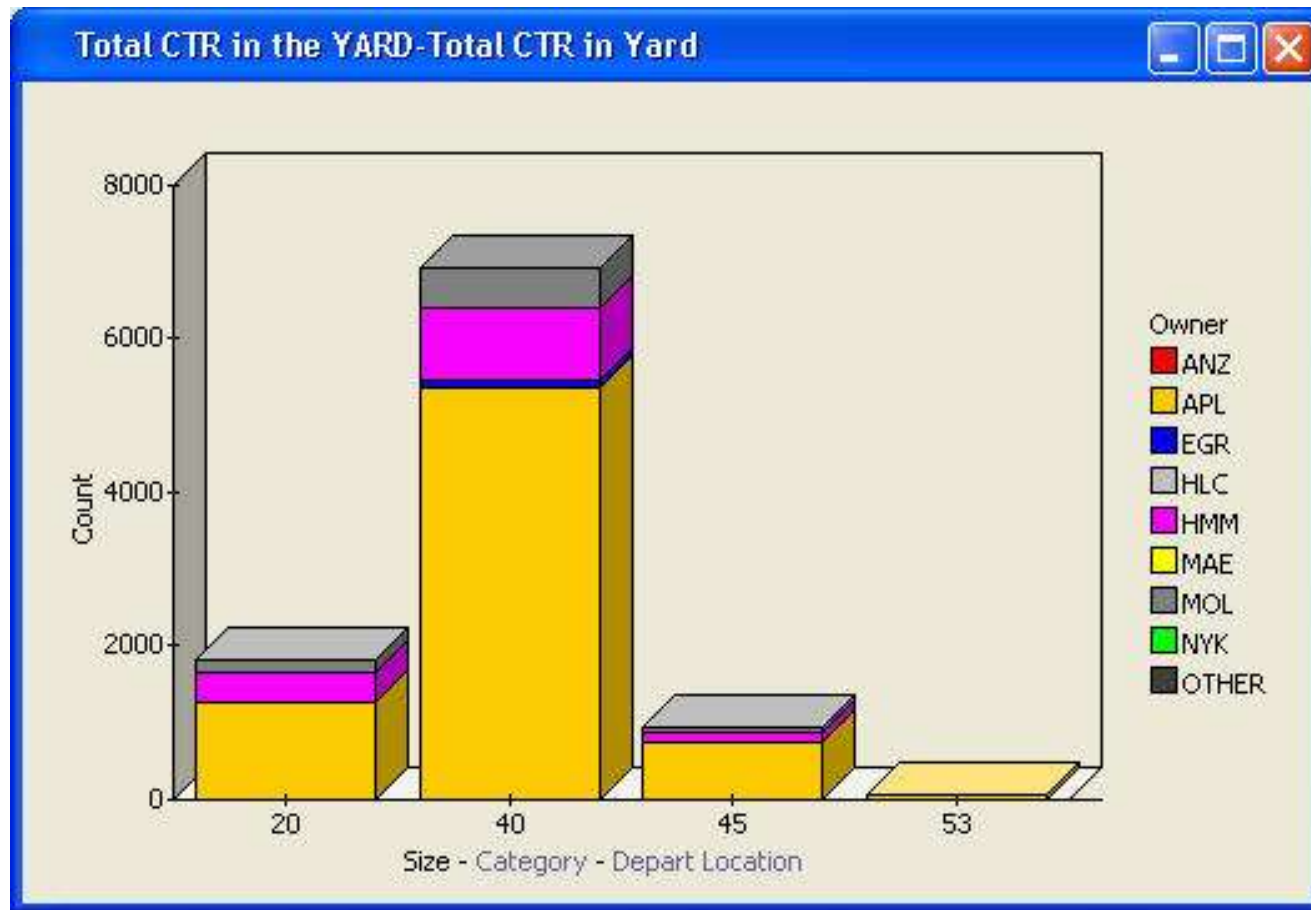
ALL CTR in the YARD 9764  
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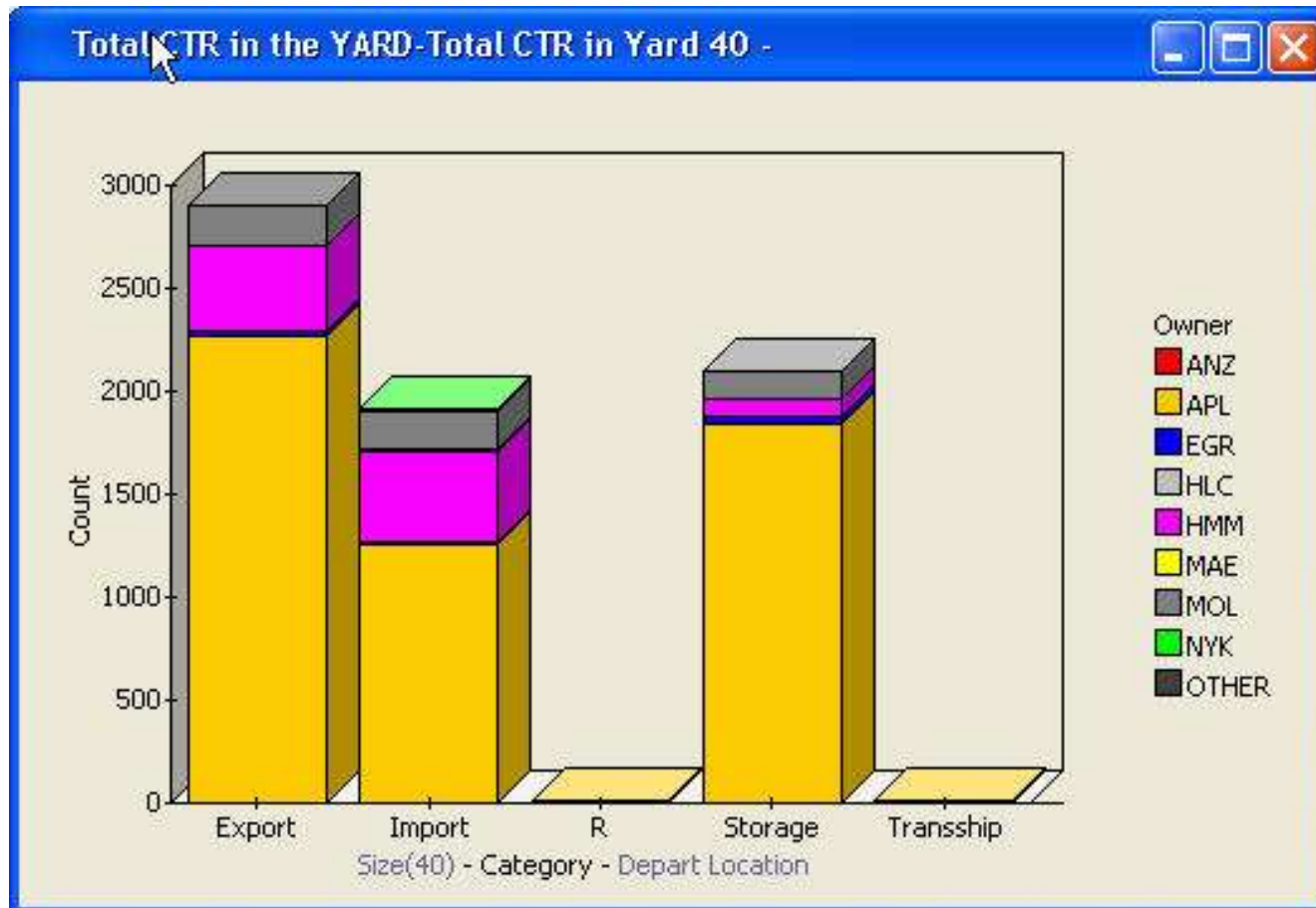
# Example: Inventory Drill-Down

- Level 1: Containers in the Yard



# Example: Inventory Drill-Down

- Level 2: 40 ft Containers by Status



# Example: Inventory Drill-Down

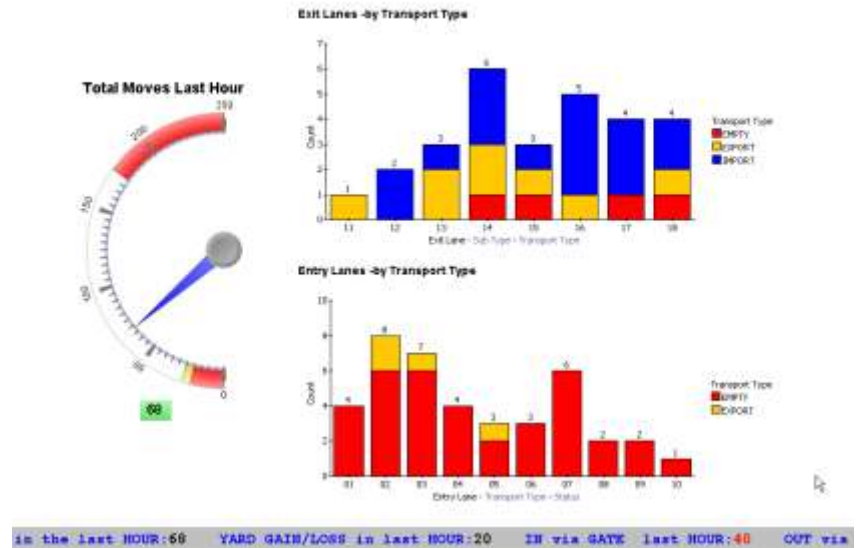
- Level 3: Exports by Vessel



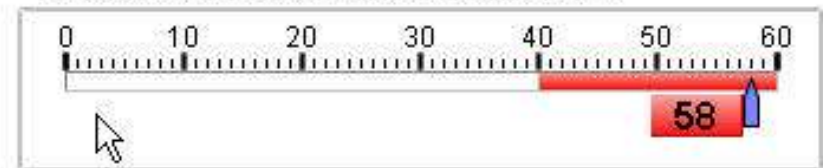
# Gate Conditions

- Customer Facing
- Problem / Trouble Alerts
- Resource Management
- Rapid Operations Response to Changes in Volume or Patterns, i.e. Load/Empty, Line, etc.

## Gate Moves in the Last Hour



## Trouble Window Count -Current



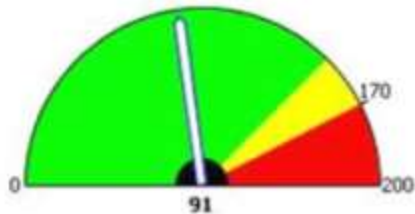
# Short Term Demand Forecasting

- Gate and Yard Manning, Equipment Needs

## Last Free Day Expiry

### Today

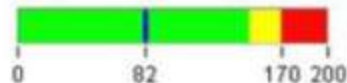
LFD Import Today



LFD Import Today - Ground

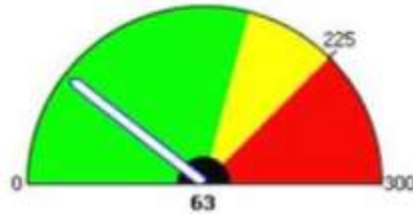


LFD Import Today - Wheels



### Tomorrow

LFD Import Tomorrow



LFD Import Tomorrow - Ground

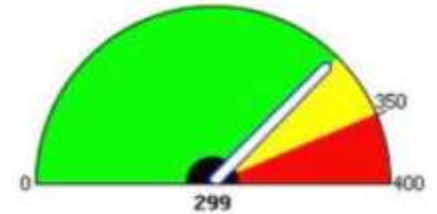


LFD Import Tomorrow - Wheels



### In Two Days

LFD Import in Two Days



LFD Import in Two Days - Ground

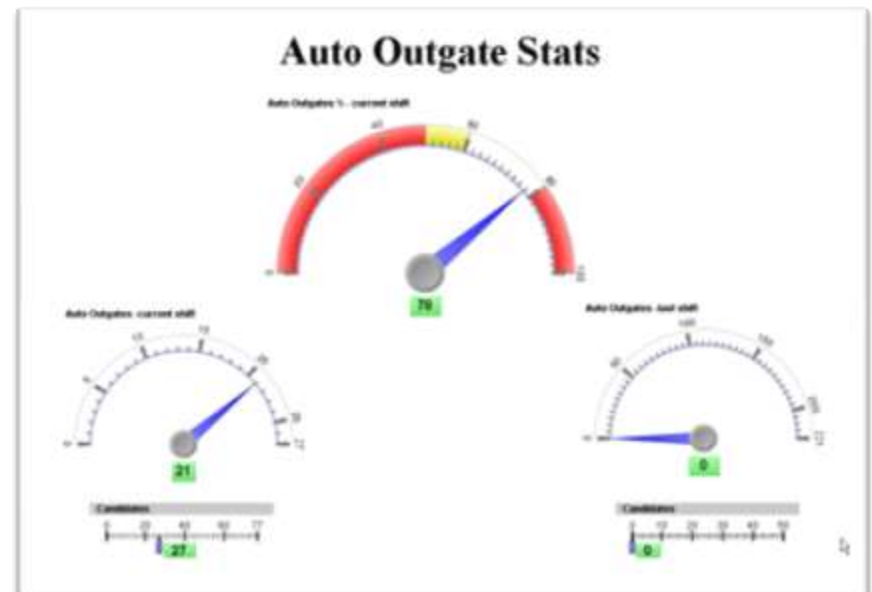


LFD Import in Two Days - Wheels



# Technology

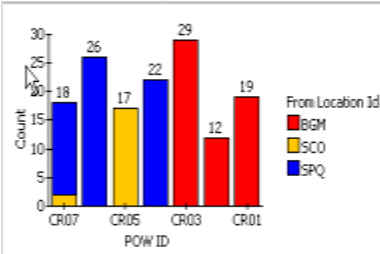
- How is it Performing?
- **Measure by Outcome**
- Rapid Response to Exceptions
- Minimize Operational Impact



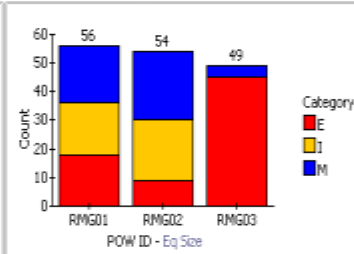
# At a Glance: Terminal Summary

- **One Central View**
  - Vessel
  - Rail
  - Yard
- **Eliminates Reports, Saves Time**
- **Facilitates Communication & Collaboration**

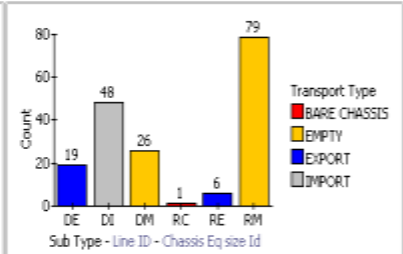
Vessel Productivity - Current Shift



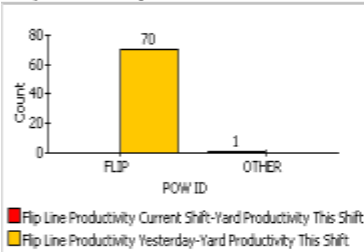
Rail Productivity - Current Shift



Gate Productivity - Current Shift



Flip Line Activity -Current Shift



Total OB Rail on Terminal 1060

ALL CTR in the YARD 8274

CTRS WHLD 6804

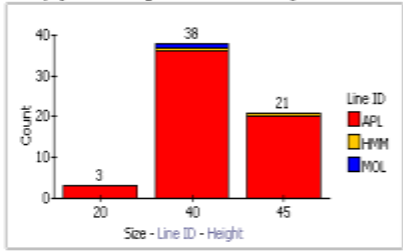
EMPTY on WHEEL 1370

CAPACITY Ground Utilization % 0.50

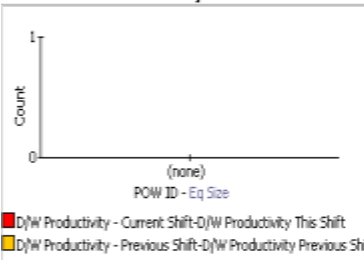
LFD Import Today 14

Import on Demurrage 47

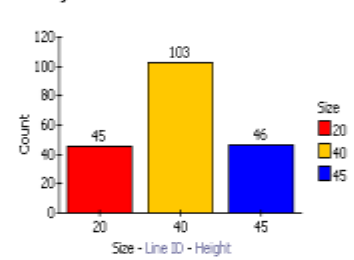
Empty Receiving Candidates - Stayed Wheels



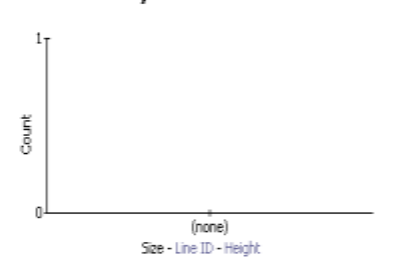
Dock-Work Productivity



RD Stayed wheels YESTERDAY-chart



R/D Productivity - Current Shift



GATE moves in the last HOUR:95

Auto Outgates % - current shift:78

GATE moves in the last HOUR:95

Auto Outgates % - current shift:78



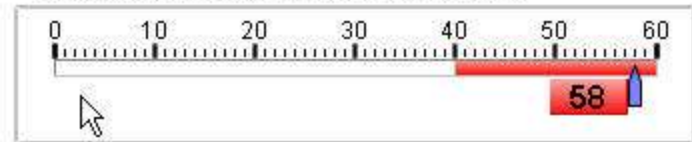


# Alerts & Reports

- Alerts

- Threshold Violation
- Incident Notification

Trouble Window Count -Current



- Avoiding Alert Overload

- Valid Thresholds
- Blackout Periods
- Appropriate Distribution

The screenshot shows a 'Criteria Profile' window for 'Unauthorized Trucking Co. APL Import Delivery'. The 'Notification' tab is active, showing options to 'Enable GUI Alert (To All Users)' (unchecked) and 'Attach GI To Alert' (checked). A 'Notification Blackout' button is visible. Below, a table lists notification recipients with columns for 'User Id' and 'Method'. A modal dialog titled 'Please Enter Notification Blackout Times' is open, showing a table with columns for 'Start Day', 'Start Time', 'End Day', and 'End Time'. A 'Delete' button is at the bottom right of the dialog.

User Id	Method
	Email
	Email
	Email
	Email
	Email
	Email
	Email
	Email
	Email
	Email

Start Day	Start Time	End Day	End Time

# Alerts and Reporting

- **Scheduled Reports**
  - Optional detail
  - Set it and Forget it

**Schedule Profile**

Schedule "Unauthorized Trucking Co. APL Import Delivery" to run automatically.

**Schedule** Recipients Advanced

☒ Daily Every  Day(s)

☐ Weekly

☐ Monthly

Run at:

OK Cancel

Total CTR in the YARD (Total Records:9981 )			
Number	Category	St	Depart Loc
MAXU4511722	Import	E	T
FSCU4198450	Export	F	T
TTNU9542443	Export	F	T
GLDU2984852	Export	F	T
APZU3553380	Storage	E	
GESU4562865	Export	F	VESSEL
APHU4602722	Export	F	VESSEL
APZU4846763	Import	F	T
FCIU9041839	Export	F	VESSEL
MOFU0459108	Storage	E	
APZU3795810	Export	F	VESSEL
APZU4353643	Storage	E	
FSCU4574541	Storage	E	
TCLU5047251	Import	F	T
APZU4407483	Export	F	VESSEL
TEMU2359314	Storage	E	
APHU6250180	Import	F	T
TTNU9542443	Export	F	T

# A Few Words About Implementation

- **Executive leadership**

- A dashboard project must have direction from the leadership.

- **Information Technology**

- Unless all the data for the dashboard comes from non-IT administered systems, it is imperative to have IT support.

- **Viewers**

- There are few if any successful ROI stories for dashboards that do not have “viewers” whose professional success is supported by the dashboard.

- **Choosing Metrics**

- The goal is to uncover the metrics and KPIs that lead the user to a specific decision or action.

# Thank You

