“Gate Technology”

AAPA
Port Operations, Safety, Information Technology
April 25, 2007
Introduction - MTC Gates

- MTC with JV partners operate 8 terminals on U. S. west coast
- Southern California
  - STS Evergreen, TTI Hanjin, WBCT Yang Ming and China Shipping
- Northern California
  - STS Evergreen, TTI Hanjin
- Pacific Northwest
  - MTC Evergreen, TTI Hanjin
- Containers handled in 2006 – 3.7 million
- Does not include MTC East activity
Gate Technology Overview

- Introduction
- Physical Infrastructure
- Preparation and community – VoyagerTrack
- Premier Appointment System
- Summary
Physical Infrastructure

- OCR Portals
  - Obtain container number, chassis number, gen-set number, truck license plate (hardest)
    - For every success = more accuracy, less input
  - RFID readers can replace truck license plate

- Pedestals
  - Handles remaining data exchange
    - Driver’s license (card reader), Automated scale interface
    - Human Interaction - booking number, seal number, pick-up information, trucking company
Physical Infrastructure (cont’d)

- Streamlined In moves
  - Booking number, trucking company, seal number only verbal exchanges

- Hands-off Out moves
  - No human intervention based on successful OCR reads
    - System evaluation that leaving with correct container, chassis, etc.
  - Automated Gate Arms
Beyond Infrastructure…

Preparation is the key
Favorite Quote about Preparation

- “It usually takes me more three weeks to prepare a good impromptu speech”
  - By Mark Twain
Preparation

- Enhanced communication
- More timely information available
- Two way communication exchange

leading to improved efficiency/performance
Preparation is…

- Stimulated via available communication channels offering assistance
More on Preparation

- Web Information and VRU (Voice Response Units) for shipping community such as VoyagerTrack, eModal, WebAccess
  - Allows prechecking transaction information with terminal database
  - Minimizes Trouble Transactions
  - Allows for effortless appointment making
  - VoyagerTrack in 2006 – over 18 million web hits
    - Highest sites over 6.3 hits per vessel move
      - High saturation level – how does this happen?

Abundant opportunities to communicate both ways
Container Moves versus Web Hits

Year

Number

2000 2001 2002 2003 2004 2005 2006

Container Moves
Web Hits
Timely Communication

- VoyagerTrack – all live information
- Event Notifications
  - Import Container Availability (can be picked up)
  - Demurrage Warning
  - Enter and Exit Gate
  - PierPASS TMF released
  - Standing Trouble Transaction Notification
  - Ready for an Appointment
  - Export Booking now in Terminal System
Appointment Systems

- Set up correctly, Appointment Systems encourage use of web sites/VRU’s
  - Data is verified during appt making process
    - Booking doesn’t exist in terminal system
    - Container hasn’t discharged yet
    - All empties already picked up on that booking
    - That empty needs to be returned to a depot

- In addition, an Appointment System is an important terminal management tool
Appointment Systems (cont’d)

- Level the arrivals per time period
- Therefore, reduce trucker turn-time
  - Proven during initial deployment period
- Not just arrivals at the gate but per yard areas
  - Balancing effect on CHE workload
- Proactive Communication Tool
  - Terminal now knows and has communication with all trucking companies going to specific yard areas during any time period – can communicate to that group directly
    - Dangerous cargo spell, accident, etc.
Government Intervention

- Lowenthal Bill passed September 2002 (State)
- Focus on Air Quality (funded by CTA)
- CTA initially pushing for Extended Gate Hours
- Appointment System a last minute compromise
  - Truckers perceived as unwanted constraint
  - Terminals insisted on some control
- **Main initiative – Terminal to be fined $250 per truck that waits more than 30 minutes outside terminal**
  - Only other fine - $750 per truck if terminals found ramming trucks into terminals so the trucks could wait inside instead of outside to avoid fines…
- Initially Bill thought to have no chance
Premier Appointment System
(a.k.a. PAS)

- Biggest initiative – Lowenthal Bill
- Approach determined by MTC/JV’s
  - Get over it – yes, directed at terminals
    - Not just achieve fine avoidance
  - Opportunity to address future growth
  - Better option than longer hours with low truck participation – very costly
- Opportunity to improve communication
  - Truckers – no direct business relationship
- Opportunity for terminal efficiencies
  - Example – same day appointments accepted
PAS Functionality Highlights

- Import Decked – Appt limits based on yard areas / time slots / production capacity
- Trucks without appointments allowed in to reach limits if not all appts booked
  - Truckers view number of appointments left
    - Used to pick best time or pick best container (import)
  - Reports summarize the number of appointments made, appointments kept (and missed), trucks allowed in without appointment, etc. for each limit
Appointment Making Process

- Not just an act of making an appointment...
- Visibility to shipment status part of process
- Improves trucker decisions being made previously without any information
- Helps in preparation of transaction
- Diminishes trouble transactions (hang-ups at gate area)
- Trucker actually a participant in yard planning
Basic View of Info Exchange

Terminal

Capacity

Trucker

Terminal

Appointments

Trucker
Full View of Info Exchange

Terminal → Capacity → Trucker

Terminal → Appointments → Trucker

TRUCKER → Volumes → Trucking Community
PAS and Trucker Turn Times

- Once PAS in place, we performed a study to see effectiveness of PAS
  - Driver time within terminal – not outside
- We measured before and after
- We did not measure with appt vs. without
- Greatest accuracy in first few months
- None of our terminals changed processes to give advantage to appointment trucks
  - Only if have appointment, guarantees entrance
- We used May as baseline (July 1st deployment) – so all months relative to May
- Statistics for Grounded Imports
  - Most important and source of most complaints
PAS Study

- Premier Appointment System at STS-OAK
  - Impact on trucker turn-times?
  - Impact on emissions?

- Graph to display turn-times
  - From May through late August
  - All comparisons relative to May turn-times
  - Decked Imports (non-MLB) since highest percentage of Appointments for this move type

- The Graph…
Turn-time Graph

Gross TurnTime during PAS Implementation

Minutes (May as base)

Month

May June July August

Gross TurnTime
Turn-time Graph Analysis

- July* compared to May turn-times, with a 35% increase in volume:
  - 2297 truck trips spent an average of 15.96 minutes less than trucks did during May.
    - 2297 trucks X 15.96 minutes = 611 hours
    - 611 hours of idling trucks eliminated!

  Or

- July compared to June, then 2297 X 24.94 minutes = \(955\) hours of idling trucks eliminated!
PAS Study Results

- Improved service to the trucking community - less time for same work
- Improved Terminal productivity
- Less pollution!
  - Imagine 955 trucks idling for one hour each*
  - or
  - Imagine one truck idling for over 39 days non-stop around the clock*

*Results from month of July 2003 only.
Gross Turn Time Change for Gate Passes with Import Decked Moves  
(Non MLB)

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</thead>
<tbody>
<tr>
<td>No of Gate Passes</td>
<td>1,705</td>
<td>1,666</td>
<td>2,297</td>
<td>2,086</td>
<td>2,655</td>
<td>1,536</td>
<td>1,329</td>
<td>1,954</td>
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<td>Diff From May</td>
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<td>9.14</td>
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<td>-18.21</td>
<td>-26.46</td>
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Gross Turn Time Change for Gate Passes with Import Decked Moves
(Non MLB)

WBCT

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<tbody>
<tr>
<td>No of Gate Passes</td>
<td>8,970</td>
<td>10,578</td>
<td>9,782</td>
<td>9,125</td>
<td>9,357</td>
<td>8,945</td>
<td>7,261</td>
<td>8,904</td>
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<tr>
<td>Diff From May</td>
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<td>-0.41</td>
<td>-2.61</td>
<td>-3.54</td>
<td>-4.44</td>
<td>-16.13</td>
<td>-17.42</td>
<td>-17.58</td>
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</table>
Gross Turn Time Change for Gate Passes with Import Decked Moves
(Non MLB)

EGA LAX

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<tbody>
<tr>
<td>No of Gate Passes</td>
<td>9,113</td>
<td>8,126</td>
<td>8,274</td>
<td>7,784</td>
<td>9,023</td>
<td>9,964</td>
<td>8,008</td>
<td>8,757</td>
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<tr>
<td>Diff From May</td>
<td>0.00</td>
<td>-5.78</td>
<td>-17.59</td>
<td>-10.00</td>
<td>-5.66</td>
<td>-9.08</td>
<td>-11.91</td>
<td>-11.77</td>
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Difference from May - Gross
Trucker Time Saved

- Oakland – 2297 x 24.94 = 951 hrs
- EGA LA - 8274 x 12.11 = 1670 hrs
- WBCTLA - 9782 x 2.2 = 359 hrs
- TTI LGB - 9003 x 2.94 = 441 hrs
- TTI OAK - all wheeled

Total savings – **3421*** hours!
  - Less pollution + Trucker savings
  - Environment – non-mandatory and max 60% kept appts

*July 2003 versus June 2003 – import decked
Recent Accomplishments

- Greater than 5600 moves in 24 hours – 2 x 8 hour shifts  
  \[ \frac{5676}{16} \text{ greater than } 350 \text{ moves/hour.} \]

- PierPASS success in getting activity after lunch hour / after midnight. Not achieved by other terminals without appointment systems.

- TTI Hanjin successfully transitioned to mandatory appointments for Import Pickups
  - Improved security
Tue, 07/11/2006

### Completed Gate Moves

<table>
<thead>
<tr>
<th></th>
<th>1. 07:00 - 17:59</th>
<th>2. 18:00 - 02:59</th>
<th>Total</th>
<th>Night %</th>
</tr>
</thead>
<tbody>
<tr>
<td>EGA LAX</td>
<td>1,904</td>
<td>1,159</td>
<td>3,063</td>
<td>37.84%</td>
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<tr>
<td>TTILGB</td>
<td>3,708</td>
<td>1,968</td>
<td>5,676</td>
<td>34.67%</td>
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<tr>
<td>WBCT</td>
<td>1,902</td>
<td>1,076</td>
<td>2,978</td>
<td>36.13%</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>7,514</strong></td>
<td><strong>4,203</strong></td>
<td><strong>11,717</strong></td>
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### TurnTime

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<tr>
<th></th>
<th>1. 07:00 - 17:59</th>
<th>2. 18:00 - 02:59</th>
<th>Avg</th>
</tr>
</thead>
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<td>EGA LAX</td>
<td>33.08</td>
<td>39.78</td>
<td>35.61</td>
</tr>
<tr>
<td>TTILGB</td>
<td>37.29</td>
<td>43.03</td>
<td>39.28</td>
</tr>
<tr>
<td>WBCT</td>
<td>35.42</td>
<td>34.49</td>
<td>35.08</td>
</tr>
</tbody>
</table>
Current statistics

- Over 100% per import pickup – about 80% utilization – fairly consistent – overbook like airlines. More of an art than a science.

- Advantage is if fall behind or get ahead can adjust system not just live with back ups or inactive assets
PAS Philosophy

This is a trucker system

- Analogy of webcams – great but already out of date
- Trucking community can see what trucking community is planning and doing.
  - Not perfect but improves odds
  - Gambling analogy so no guarantees but improved chance of succeeding
- Better decision making
  - No longer a matter of just pick up first on the list
  - Almost becomes a science
    - Make those appts with the most appts available
    - If combo decked/wheeled, then save wheeled for the tough times
User Interface

- Align with trucker process
- Easy to add, modify or delete
- Process of making appt, see all statuses
- Configuration by terminal preference whether or not appt can be made with less than fully available
Trucker Feedback and Advantage

- Approximately 20 to 1 ratio of communication about how to make appointment versus difficulty in getting required appointment

- Issue of lost box discovered at point of appt not when trucker arrives

- Issue of local container mixed with rail
Summary

- Physical Infrastructure is major ingredient but must not neglect fostering preparation and communication
- Areas to grow – further integration of appt system with terminal system to give further advantage to those with appts and give better prediction to the terminal operator
- Goal – all transaction information collected in appointment making process
The End
More on the Lowenthal Bill

- Two exemptions for terminals:
  - Open 70 hours a week (very expensive)
    - Fully staffed gate
    - Union contract limits shift definitions
  - Deploy an appointment system
Lowenthal Bill Clauses

- Appointments available first come first serve
- Appointment duration at least 60 min.
- No discrimination against any carrier
- Not interfere with a double transaction
- Not turn away or fine a carrier if that motor carrier misses an appointment
  - Therefore, appointments not mandatory

Note: These clauses are law – not optional