The Panama Canal Expansion Plan and its Effect On the Intermodal US Mini-Landbridge Service

Presented by
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Overview

• Panama Canal
  – Background
  – Expansion project

• Asia to US east coast options
  – Panama Canal
  – US mini-landbridge
  – Suez Canal

• Comparison among services
Panama Canal: background

- Gulf of Mexico (north)
- Pacific Ocean (south)
- 80km long
- Three sets of locks, two lanes each
- Transit time ≈1 day
- Delay is typical

Panama Canal: background

Gatun Locks (Gulf side)
Panama Canal: expansion project

- Two new sets of locks, one lane each
- Cut installed between 1939-1942 by US Army Corps of Engineers
- 2014 target completion
Panama Canal: expansion project

- Current locks
  - LOA: 294m
  - B: 32.2m
  - T: 12m
  - 4,800 TEU

- New locks
  - LOA: 366m
  - B: 49m
  - T: 15m
  - 10,000 TEU

Courtesy of Panama Canal Authority. Source: PanCanal.com.
Panama Canal: market focus

![Graph showing historical and forecast capacity growth.](https://example.com/graph.png)

 Courtesy of Panama Canal Authority. Source: PanCanal.com.
Panama Canal: market focus

Courtesy of Panama Canal Authority. Source: PanCanal.com.
Asia to US east coast containership options

Panama Canal, US mini-landbridge

Courtesy of APL Limited. Used with permission.
Asia to US east coast containership options

• World containership capacity growing rapidly

• Average vessel size increase
  – 1995: 1,535 TEU
  – 2005: 2,230 TEU

• Post-Panamax vessels 25% of world fleet

• Post-Panamax fleet to grow capacity by 80% by 2011 (2.5M TEU to 4.6M TEU)
Panama Canal: challenge

• East coast ports
  – NY/NJ
  – Virginia
  – Charleston
  – Savannah
  – Jacksonville/Everglades/Miami

• Port capacity
  – Ports tight
  – Between 2001-2010, 38% expansion capacity expected (52% in north, 22% in south)
  – Expansion is estimated to keep with port demand
US mini-landbridge: challenges

- West coast ports
  - Los Angeles/Long Beach
  - Oakland
  - Portland
- Rail service east

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**West Coast Full Container Imports**

- Portland
- Seattle
- Oakland
- POLA
- POLB

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**West Coast Full Container Exports**

- Portland
- Seattle
- Oakland
- POLA
- POLB
US mini-landbridge: challenges

• West coast port congestion
  – Real estate expensive
  – Environmental regulations constricting
  – Low efficiency

  • US west coast: 5,000 TEU/acre-yr
  • International: 15,000 TEU/acre-yr
US mini-landbridge: challenges

• West coast port congestion
  – Estimated that US west coast would have to “add a port the size of Elizabeth each year” to match port growth in China
  – Between 2001-2010, 35% expansion capacity expected (28% in north, 38% in south)
  – Expansion is estimated to keep with port demand in north, but fall short in the south
  – Shift of cargo north?
US mini-landbridge: challenges

- Rail congestion
  - Containers less profitable than chemicals, coal
  - Infrastructure expensive
  - Railroad congestion backs up port
  - Double-tracking entire corridor from Los Angeles to Chicago
# Option Comparison

<table>
<thead>
<tr>
<th></th>
<th>Mini-Landbridge</th>
<th>Panama Canal (now)</th>
<th>Panama Canal (expanded)</th>
<th>Suez Canal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fleet and Vessel Particulars</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fleet size</td>
<td>5 vessels</td>
<td>8 vessels</td>
<td>8 vessels</td>
<td>10 vessels</td>
</tr>
<tr>
<td>Vessel size</td>
<td>10000 TEU</td>
<td>4800 TEU</td>
<td>10000 TEU</td>
<td>10000 TEU</td>
</tr>
<tr>
<td>Throughput</td>
<td>520000 TEU/yr</td>
<td>249600 TEU/yr</td>
<td>520000 TEU/yr</td>
<td>520000 TEU/yr</td>
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<tr>
<td><strong>Opex to Operator</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost /TEU</td>
<td>$2,475</td>
<td>$1,079</td>
<td>$978</td>
<td>$1,093</td>
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<tr>
<td>Time</td>
<td>17 days</td>
<td>26 days</td>
<td>26 days</td>
<td>35 days</td>
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<tr>
<td><strong>Current Market Share</strong></td>
<td>61%</td>
<td>38%</td>
<td>-</td>
<td>1%</td>
</tr>
</tbody>
</table>

*All data adapted from ACP estimates*
Outlook

- Trade too large for either option alone
- Ports/rail congested; Canal under capacity
- Market will push “Panamax 2” vessels to Canal
- Free up west coast ports from turning around smaller vessels
- West coast ports have additional environmental requirements for operators
Outlook

• Ports/rail must be up to the challenge
  – Improve equipment (larger cranes)
  – Improve port efficiency (logistics)

• Current statistics imply high-value cargo is worth premium

• New Panama Canal likely to increase share

• Suez unlikely to play large role

• Operators win: more efficient operation
Thank you

Questions?

Photo of container ship M/S Emma Maersk removed due to copyright restrictions. See http://www.maersk.com/NR/rdonlyres/DA9D71D3-9824-43D8-B6D2-49F50745781C/0/EMMAMÆRSK.jpg