An Overview of the Breakbulk Shipping Sector

Presented to the AAPA Commissioners Seminar

Ft. Lauderdale, Florida

5th June 2013 as REVISED 10-21-13
This presentation, which was originally presented on June 5th at the AAPA Commissioners seminar has been revised.

Please delete the previous version which was posted to the AAPA website and use this one.

Thank you. Norbridge, Inc.
Breakbulk Shipping

When ships were made of wood and men were made of iron!
An Overview of the Breakbulk Shipping Sector
Presented to the AAPA Commissioners Seminar

Ft. Lauderdale, Florida
5th June 2013
Today’s Objectives

✓ Introduce Norbridge
✓ Profile the current breakbulk shipping industry structure
✓ Discuss some key demand drivers
✓ Assess the implications for US ports
Norbridge is a management consulting firm focused on three industry sectors:

- **Transportation and Logistics**
  - Shipping Lines (container and bulk)
  - Ports and Terminals
  - Land Transport (truck, rail, intermodal, parcel)
  - Other Transport Providers (logistics services, integrators, freight forwarding, leasing)
  - Shipper Logistics & Supply Chain (automotive, high tech, consumer products)

- **Energy and Mining**
  - Utilities
  - Process Industry
  - Coal Producers

- **Pharmaceuticals and Medical Products**
  - Pharmaceuticals
  - Biotechnology
Our Focus: We support our clients as trusted advisors in five major consulting areas

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Sales and Marketing</th>
<th>Operations</th>
<th>Organization</th>
<th>Litigation Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic planning</td>
<td>Demand and supply forecasts</td>
<td>Supply chain design and management</td>
<td>Organization re-design</td>
<td>Economic analysis</td>
</tr>
<tr>
<td>Business and investment planning</td>
<td>Market and competitive research</td>
<td>Strategic sourcing</td>
<td>Post-merger integration</td>
<td>Expert witness support and testimony</td>
</tr>
<tr>
<td>Market entry &amp; competitive strategies</td>
<td>New product development</td>
<td>Equipment planning and management</td>
<td>Corporate governance</td>
<td></td>
</tr>
<tr>
<td>Financial simulation modeling</td>
<td>Pricing strategies and processes</td>
<td>Operations improvement</td>
<td>New process training</td>
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</tr>
<tr>
<td>M&amp;A screening and due diligence</td>
<td>Sales Force effectiveness</td>
<td>Internationalization</td>
<td>Management development and education</td>
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<tr>
<td>Technology developments</td>
<td>Communications</td>
<td></td>
<td>Compensation and incentive systems</td>
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<tr>
<td>Customer needs</td>
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</tr>
</tbody>
</table>

Industry Sector
Norbridge’s transport, supply chain and maritime clients are international leaders in their sectors.
International waterborne trade is comprised of four major segments:

<table>
<thead>
<tr>
<th>Container</th>
<th>Breakbulk</th>
<th>Liquid Bulk</th>
<th>Dry Bulk</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Commodities</td>
<td>• Commodities</td>
<td>• Commodities</td>
<td>• Commodities</td>
</tr>
<tr>
<td>• Consumer</td>
<td>• Forest products</td>
<td>• Crude oil</td>
<td>• Iron Ore</td>
</tr>
<tr>
<td>goods</td>
<td>• Iron &amp; steel</td>
<td>• Petroleum products</td>
<td>• Coal</td>
</tr>
<tr>
<td>• Manufactured</td>
<td>• Vehicles</td>
<td>• Residual fuel oil</td>
<td>• Grains</td>
</tr>
<tr>
<td>• Industries</td>
<td>• Construction</td>
<td>• LNG</td>
<td>• Stone</td>
</tr>
<tr>
<td>• Retail</td>
<td>• Manufacturing</td>
<td></td>
<td>• Cement</td>
</tr>
<tr>
<td>• Manufacturing</td>
<td>• Economic drivers</td>
<td>• Industries</td>
<td>• Industries</td>
</tr>
<tr>
<td>• Economic</td>
<td>• GDP</td>
<td>• Transportation</td>
<td>• Steel</td>
</tr>
<tr>
<td>drivers</td>
<td>• Population</td>
<td>• Energy</td>
<td>• Energy</td>
</tr>
<tr>
<td>• GDP</td>
<td>• Consumption</td>
<td>• Construction</td>
<td>• Construction</td>
</tr>
<tr>
<td>• Population</td>
<td>• Income</td>
<td>• Food</td>
<td>• Manufacturing</td>
</tr>
<tr>
<td>• Consumption</td>
<td></td>
<td></td>
<td>• Manufacturing</td>
</tr>
<tr>
<td>• Income</td>
<td></td>
<td></td>
<td>• Economic drivers</td>
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<td></td>
<td></td>
<td>• GDP</td>
<td>• GDP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Transport demand</td>
<td>• Construction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Exchange rates</td>
<td>• Manufacturing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Politics</td>
<td>• Economic drivers</td>
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<td>• GDP</td>
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<td></td>
<td>• Construction</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Exchange rates</td>
</tr>
</tbody>
</table>
Breakbulk Shipping Industry Overview
International Breakbulk Shipping Industry

- Approximately 20,000 vessels
  - Vary significantly in terms of size, type, capability and age
- Highly fragmented overall-100s of companies
  - Many one vessel corporations
- High concentration in selected niches
  - Vehicles
  - Reefer
  - Heavy Lift
  - Project
- Overall low growth: structurally & competitively
Global Breakbulk Fleet Developments

Global Breakbulk Vessels
2008-2013 (Number of Vessels)

Note: Size indicative of 2013 total vessels
Source: Lloyd’s World Register of Ships; Norbridge Analysis
*Note: Includes all geared bulker vessels between 30,000 and 50,000 DWT
Breakbulk vs. Container Shipping: some contrasts

Breakbulk Shipping
- Mostly unscheduled: taxi cabs
- Typically port to port
- Significant degree of specialization
- Consequently, capability is typically more important than size
- Panama Canal expansion effect will be small

Container Shipping
- Scheduled (fixed day of the week) is the norm
- Significant multimodal component
- Little specialization
- Consequently, “size matters”
- Panama Canal expansion will have a material (not dramatic) effect
Breakbulk Shipping Markets
## Breakbulk Markets: Major Segments

<table>
<thead>
<tr>
<th>Core</th>
<th>Vehicles</th>
<th>Reefer</th>
<th>Project</th>
<th>Heavy Lift</th>
</tr>
</thead>
</table>
| • Forest products  
  • Iron & steel  
  • AG products  
  • Household goods | • Passenger-new  
  • Passenger-used  
  • Trucks  
  • Buses | • Bananas  
  • Fruits  
  • Meat | • Oil & gas  
  • Factories  
  • Machinery  
  • Wind turbines | • Container handling equipment  
  • Machinery  
  • Yachts  
  • Factories  
  • Turbines & generators |
There are multiple players fulfilling multiple roles in the international breakbulk supply chain:

- **BCOs**
  - Buyers
  - Overseas suppliers
  - Financiers

- **Transport Providers**
  - Local Truck
  - Consolidator
  - Overseas terminal
  - Ocean carrier
  - US terminal
  - US-trucker or
  - US truck-rail-truck

- **Regulators**
  - Customs
  - Agriculture
  - Homeland Security
  - Coast Guard

- **Third Parties**
  - 3PLs
  - Forwarders
  - Brokers
  - CFS Operators
  - DCs

Many of these parties affect the efficiency and effectiveness of a port. However, a port has no control and little influence over most of these parties.
Iron & steel products have driven US import breakbulk demand

U.S. Imports of Selected Commodities 2003-2012

Source: U.S. Census Bureau: Foreign Trade Division USA Trade Online; Norbridge Analysis
Conversely, forest products have driven US export demand

U.S. Exports of Selected Commodities
2003-2012

- Wood and Wood Articles
- Paper and Paperboard Articles
- Machinery and Equipment
- Vehicles (not including Railway)

Source: U.S. Census Bureau: Foreign Trade Division USA Trade Online; Norbridge Analysis
The US Gulf has been the US breakbulk market leader

U.S. Breakbulk Traffic by Coastal Region 2002-2011

Source: AAPA Breakbulk Data; Norbridge Analysis
Breakbulk Demand: Future growth will remain volatile and trade lane focused (Asia, South America, etc.)

IMF Historical & Projected GDP Growth by Trade Region

Source: IMF; Norbridge Analysis
# Breakbulk Markets: Demand Overview

<table>
<thead>
<tr>
<th>Demand Drivers</th>
<th>Steel</th>
<th>Forest Products</th>
<th>Vehicles</th>
<th>Reefer</th>
<th>Specialty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shippers</td>
<td>Global producers; traders</td>
<td>Europe, Canada, US producers</td>
<td>Global producers</td>
<td>Chiquita, Dole, exporters</td>
<td>Manufacturing</td>
</tr>
<tr>
<td>Carriers</td>
<td>Toko, Tokai, chartered</td>
<td>Gearbulk, Saga, Star, chartered</td>
<td>WWL, Japan 3, NOSAC</td>
<td>Chiquita, Dole, Star</td>
<td>Intermarine, Dockships,</td>
</tr>
<tr>
<td>Economic</td>
<td>Commercial construction</td>
<td>Residential construction, economy</td>
<td>Consumer demand</td>
<td>Consumer demand</td>
<td>General economy, projects</td>
</tr>
<tr>
<td>Container Competition</td>
<td>Low</td>
<td>Moderate to high</td>
<td>Moderate</td>
<td>High</td>
<td>Negligible</td>
</tr>
<tr>
<td>Demand Outlook</td>
<td>EU: low US: modest Asia: mod-strong</td>
<td>EU: low US: mod-strong Asia: strong</td>
<td>EU: low US: Mod-Asia: country specific</td>
<td>Strong, but container offsetting</td>
<td>Third world strong; developed world weak</td>
</tr>
</tbody>
</table>
## 2012 US Breakbulk Ports: *Examples*

<table>
<thead>
<tr>
<th>Core</th>
<th>Vehicles</th>
<th>Reefer</th>
<th>Project</th>
<th>Heavy Lift</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Baltimore</td>
<td>• Baltimore</td>
<td>• Gloucester</td>
<td>• Baltimore</td>
<td>• Any port that recently</td>
</tr>
<tr>
<td>• Houston</td>
<td>• Brunswick</td>
<td>• Gulfport</td>
<td>• Charleston</td>
<td>bought container cranes or</td>
</tr>
<tr>
<td>• Mobile</td>
<td>• Jacksonville</td>
<td>• Hueneme</td>
<td>• Houston</td>
<td>RTGs</td>
</tr>
<tr>
<td>• New Orleans</td>
<td>• New York</td>
<td>• Philadelphia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Tampa</td>
<td>• Portland</td>
<td>• Wilmington</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Norbridge review of port reported statistics and Census data
Multipurpose Terminals: A key success factor

Baltimore Dundalk
Multipurpose Terminals: A Key Success Factor

Houston Turning Basin Terminal
Multipurpose Terminals: A Key Success Factor

Jacksonville Blount Island
Breakbulk Market Summary

• Each segment is unique
  – Technologies
  – Structure
  – Market drivers
  – Port requirements

• Market characteristics vary significantly by region, country, coastal range, port and terminal

• There are multiple customers
  – Carriers
  – BCOs (importers, exporters)
  – Third parties: 3PLs, forwarders, brokers
QUESTIONS AND RESPONSES

Thank You!