CIGMA

Containerized Intermodal Goods Movement Assessment: 2008

An assessment of the issues and trends impacting the transportation of containerized products throughout the logistic chain of N.A.

RON SUCIK
THE TIOGA GROUP

Presentation to
Sandhouse Gang
Northwestern University Transportation Center

Sept. 16, 2008
So what is CIGMA & Why do the study?

- CIGMA is a composite assessment of the issues and trends impacting the movement of containerized products into North America.

- Every facet of the transportation chain deals with various issues and trends in their own best interest and these actions interrelate to other components of the transportation chain.

- These entities initiating the first actions are not cognizant of the effect their actions may have on the other elements of the transportation chain.

Background history of CIGMA!

- 1997 First Transload Study
  - 26 Retailers - will look for alternative to POLALB
  - Transloading of ISO to DOMCONs to increase
  - Inland Empire and Import Warehouse Development

- 2000 Transload Study Update
  - 2nd Tier of Steamship Lines lack inland intmdl infrastructure
  - Transloading peaking
  - Alameda Corridor increasing on-dock infrastructure
  - All water thru Panama Canal to Gulf and East Coast

- 2003 Transload Study Morphs into Trade Flow Study
  - Plans for Prince Rupert
  - 2002 Lockout surges AWEC
  - EC DC respond to 36% US pop. Logistics Parks Develop

- 2006 Trade Flow Update
  - IPI off-dock & AWEC = dropping Transloading percentage
  - Congestion becoming the issue
Why do CIGMA in 2008?

- 2008 Issues Affecting Trade Flow Movement
  - Higher IPI Rates
  - Increased Bunker Charges
  - Continued Diversion of Traffic AWEC

- 2008 Issues Affecting Traffic Through LA/LB
  - TWIC Program
  - ILWU Contract Negotiations
  - Ports Clean Truck Issues and Proposed Fees
  - Port Infrastructure Cargo Fees
  - Lowenthal Ports Fees
  - SCAG RTP Port Container Fee
  - SCAG RTP Railroad User Fee

2006 vs. 2007 Inbnd/Outbnd Loads

<table>
<thead>
<tr>
<th>Port</th>
<th>2006 Loads (TEU)</th>
<th>2007 Loads (TEU)</th>
<th>Change (TEU)</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Los Angeles</td>
<td>4,408,185</td>
<td>4,410,169</td>
<td>1,984</td>
<td>0.0%</td>
</tr>
<tr>
<td>Long Beach</td>
<td>3,719,650</td>
<td>3,704,593</td>
<td>(15,087)</td>
<td>-0.4%</td>
</tr>
<tr>
<td>Oakland</td>
<td>875,649</td>
<td>870,284</td>
<td>(5,365)</td>
<td>-0.6%</td>
</tr>
<tr>
<td>Vancouver</td>
<td>1,126,760</td>
<td>1,180,711</td>
<td>54,951</td>
<td>4.9%</td>
</tr>
<tr>
<td>Seattle</td>
<td>799,139</td>
<td>819,153</td>
<td>20,014</td>
<td>2.5%</td>
</tr>
<tr>
<td>Tacoma</td>
<td>114,237</td>
<td>112,200</td>
<td>(2,037)</td>
<td>-1.8%</td>
</tr>
<tr>
<td>Portland</td>
<td>89,693</td>
<td>110,741</td>
<td>21,048</td>
<td>23.5%</td>
</tr>
<tr>
<td>Total</td>
<td>11,761,452</td>
<td>11,780,983</td>
<td>19,531</td>
<td>0.2%</td>
</tr>
</tbody>
</table>

Inbound/Import Loads (TEU): 2006 2007 Volume Change Percentage Change

<table>
<thead>
<tr>
<th>Port</th>
<th>2006 Loads (TEU)</th>
<th>2007 Loads (TEU)</th>
<th>Change (TEU)</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York &amp; New Jersey</td>
<td>1,266,597</td>
<td>1,315,091</td>
<td>48,494</td>
<td>3.8%</td>
</tr>
<tr>
<td>Virginia Ports</td>
<td>860,378</td>
<td>901,241</td>
<td>40,863</td>
<td>4.8%</td>
</tr>
<tr>
<td>Charleston</td>
<td>421,496</td>
<td>430,372</td>
<td>9,876</td>
<td>2.3%</td>
</tr>
<tr>
<td>Savannah</td>
<td>666,168</td>
<td>704,045</td>
<td>37,877</td>
<td>5.7%</td>
</tr>
<tr>
<td>Houston</td>
<td>1,016,965</td>
<td>1,060,692</td>
<td>43,727</td>
<td>4.3%</td>
</tr>
<tr>
<td>Total</td>
<td>5,750,588</td>
<td>6,017,042</td>
<td>266,454</td>
<td>4.6%</td>
</tr>
</tbody>
</table>
San Pedro Bay Cargo Forecast - LALB

<table>
<thead>
<tr>
<th></th>
<th>000 Loaded TEU</th>
<th>CAGR %</th>
<th>25 Yr %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2005</td>
<td>2010</td>
<td>2015</td>
</tr>
<tr>
<td><strong>Imports</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>East Coast</td>
<td>9,653</td>
<td>12,215</td>
<td>14,982</td>
</tr>
<tr>
<td>West Coast</td>
<td>8,976</td>
<td>13,262</td>
<td>18,181</td>
</tr>
<tr>
<td><strong>SubTotal</strong></td>
<td>18,629</td>
<td>25,477</td>
<td>33,163</td>
</tr>
<tr>
<td><strong>Exports</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>East Coast</td>
<td>5,170</td>
<td>6,497</td>
<td>7,465</td>
</tr>
<tr>
<td>West Coast</td>
<td>3,331</td>
<td>4,179</td>
<td>4,908</td>
</tr>
<tr>
<td><strong>SubTotal</strong></td>
<td>8,501</td>
<td>10,675</td>
<td>12,373</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>East Coast</td>
<td>14,823</td>
<td>18,712</td>
<td>22,446</td>
</tr>
<tr>
<td>West Coast</td>
<td>12,307</td>
<td>17,440</td>
<td>23,089</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td>27,130</td>
<td>36,152</td>
<td>45,536</td>
</tr>
</tbody>
</table>

Export Complexities – 2007 & 2008

- WC Ports up 15.4% - EC Ports up 14.4%
- Drivers – Devaluation of dollar & demand for export grains
- Decline in imports decreases availability of containers
- Ship capacity affected by deployment & export weights
Inland Market Regions

Inland Routing Examples

<table>
<thead>
<tr>
<th>Origin</th>
<th>Destination</th>
<th>Ocean Route</th>
<th>Port</th>
<th>Intact or Transload</th>
<th>Inland Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>Northeast</td>
<td>TransPac WC</td>
<td>LA/LB</td>
<td>Intact 40'</td>
<td>Rail Intermodal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TransPac WC</td>
<td>Oakland</td>
<td>Transload 53' Cont</td>
<td>Rail Intermodal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TransPac WC</td>
<td>Seattle/Tacoma</td>
<td>Intact 40'</td>
<td>Rail Intermodal</td>
</tr>
<tr>
<td>China</td>
<td>Southwest</td>
<td>TransPac WC</td>
<td>LA/LB</td>
<td>Intact 40'</td>
<td>Rail Intermodal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TransPac WC</td>
<td>Oakland</td>
<td>Transload 53' Cont</td>
<td>Rail Intermodal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All Water EC</td>
<td>NY &amp; NJ</td>
<td>Intact 40'</td>
<td>Truck</td>
</tr>
<tr>
<td>China</td>
<td>West Coast</td>
<td>TransPac WC</td>
<td>LA/LB</td>
<td>Intact 40'</td>
<td>Rail Intermodal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TransPac WC</td>
<td>Oakland</td>
<td>Transload 53' Cont</td>
<td>Rail Intermodal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TransPac WC</td>
<td>Seattle/Tacoma</td>
<td>Intact 40'</td>
<td>Truck</td>
</tr>
<tr>
<td>China</td>
<td>Midwest</td>
<td>TransPac WC</td>
<td>LA/LB</td>
<td>Intact 40'</td>
<td>Rail Intermodal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TransPac WC</td>
<td>Oakland</td>
<td>Transload 53' Cont</td>
<td>Rail Intermodal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TransPac WC</td>
<td>Seattle/Tacoma</td>
<td>Intact 40'</td>
<td>Rail Intermodal</td>
</tr>
<tr>
<td>Europe</td>
<td>Midwest</td>
<td>Atlantic EC</td>
<td>NY &amp; NJ</td>
<td>Intact 40'</td>
<td>Rail Intermodal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Atlantic EC</td>
<td>Virginia</td>
<td>Intact 40'</td>
<td>Rail Intermodal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Atlantic EC</td>
<td>Baltimore</td>
<td>Intact 40'</td>
<td>Rail Intermodal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Atlantic EC</td>
<td>Baltimore</td>
<td>Intact 40'</td>
<td>Truck</td>
</tr>
</tbody>
</table>
Choice of route and strategy subject to many factors

- Rising fuel costs
- Profitability concerns on marginal services
- Changing balances of domestic equipment for transloading
- Development of inland logistics parks Railroad intermodal capacity and strategy
- Concerns over long-term port capacity and congestion potential
- Devaluation of the dollar

What is the origin of my cargo? Should I go Panama or Suez? What size ship should I use? What port can handle the ship?
Ocean Carrier Vessel Size and Capacity

- The additions in 2007 of 399 cellular ships totaling 1,362,572 TEU pushed the total of available container capacity over the 10 million TEU mark in 2007. The top 20 (by capacity) steamship companies reached 10,099,145 TEU by May 6, 2008.

- Although some of the order numbers are hard to verify AXS-Alphaliner reported last October that in the previous five months orders for 100 of the VLCS of 12,500-13,500 TEU were concluded since the first batch of eight ships that had been ordered by CSAV in May of 2007.

- The breakdown by year of delivery for these 100 ships stands as follows:
  - 2010 = 29 units
  - 2011 = 52 units
  - 2012 = 19 units
Emma Maersk 14000 TEU Vessel

So Which U.S. Port Can Handle the Emma Class Vessels?

Near Dock Staging Area – Port of LA

ON DOCK RAIL
OUT THE PORT GATE
TO THE TRANSLOADER OR OTR

AFTER THE TRANSLOAD
DO YOU GO BACK TO THE RAIL------ OR OVER THE ROAD
Did the increase in IPI Rates Promote Transloading?

- With increases in IPI rates and higher bunker charges it was expected that steamship companies would be encouraging more transloading to reduce their inland costs.

- Comments from the steamship companies do not support that premise as the carriers would slow down or make fewer calls rather than drop a port of call.

- Existing infrastructure on the WC and especially in San Pedro with abundance of on-dock capabilities would seem to favor continued movement of containers directly from the ships to an on-dock railcar and movement in trains directly Eastbound to the warehouses and distribution centers in the Heartland of the country.

What About Increased Bunker Charges?

- Bunker prices have tripled within the last three years and as of May of 2008 had increased 87% since the beginning of 2007 and now represent as much as 50-60 percent of total ship operating costs, depending on the type of ship and service.

- Belief higher bunker charges would result in the cutting back of some of the AWEC resulting in a return of some of the traffic that had migrated to the all-water services.

- Comments from the steamship companies do not support that premise as the carriers would slow down or make fewer calls rather than drop a port of call.
Population density makes intermodal rail an essential part of freight movement

• Eastern U.S. region holds 66% of the U.S. population

• Approximately 75% of U.S. consumption takes place in the East

Projected population growth will increase volume and capacity requirements

Population in Major Metropolitan Areas
- GT 10,000,000
- 5,000,000 – 10,000,000
- 2,500,000 – 5,000,000
- 1,500,000 – 2,500,000
- 1,000,000 – 1,500,000
What About Transloading?

- For the most part the transloading occurring on the East Coast and Gulf has been into a box for movement by highway.

- Transloading in the PNW and Oakland is growing but given first port of call rotations does not lend itself to calling their first

- So. CA has warehouse space available near port as well as in the Inland Empire. So. CA is the largest local market near a port and generally has a plentiful supply of containers and trailers for transloading imported goods.

- Los Angeles also generates a lot of Domestic Containers and trailers from the freight moving to consumption for 25 million people in the PSW.

---

Major Population Centers Forecast for 2030
ARRIVE BY RAIL AND SHUTTLE TO THE DC

LOGISTICS PARK COMPLEX
Just a **Sample of Current or Proposed Dev.**

- Columbus of course has the Rickenbacker Airport complex.
- Charleston is seeing development in the Berkley and Dorchester County areas along I-26.
- Dallas has the Dallas Logistics Part as well as ProLogis Park in Lancaster and ProLogis Freeport Corporate Center in Coppell.
- Houston has the CenterPoint development near Kendleton.
- Jacksonville has speculation taking place at the Cecil Field complex.
- Kansas City has the KC Logistics Park in Gardner and the Richards-Gebaur Airfield in Missouri.
- Norfolk has the Inland Port area of Front Royal.
- NYNJ has the area near Exit 8A on the Jersey Turnpike seeing development.
- Portland has the Trammel Crow development less than a mile from the port.
- Stockton might work for Oakland.
- Tacoma has the First Park Northwest Landing in DuPont.
- Victorville and Barstow in Southern California.

---

**Which Retailers Will Transload?**

- Variance in the nbr. of stores and the amts. of vol. retailers might have which leads to variety of different logistic chains in the system.

- Some retailers have the volume to move intact and distribute from inland Logistic Parks.

- Others will find transloading is driven by their product density

- Some retailers with small enough volumes will consider transloading in China in order to drop-ship the containers directly to their stores with the correct product mixes.
What About Those Motor Carriers?

- UP Streamline product provides an opportunity to utilize or in some cases sample the rail intermodal product.

- End of 2007 est. 92,000 units of excess capacity in the industry. Over supply will eventually meet the current demand by business failures, carriers parking equipment and delays in replacing older tractors.

- Is this result of shippers driving down the charges of motor carriers as long as there was a surplus of carriers? Some carriers believe there could be “day of reckoning” coming as this fall out of motor carriers will force the shippers to finally have to pay the higher fees.

- This “rude awakening” scenario goes along with the theme we have been seeing as railroads increase IPI rates and the steamship companies try to recover their higher bunker charges. The leverage the shippers once held over the transportation industry may be coming to an end and the field of realistic costing may be coming into being.
ISSUES AFFECTING TRADE FLOW MOVEMENT THROUGH
PORTS OF LOS ANGELES AND LONG BEACH

- TWIC Program
- ILWU Contract Negotiations
- Ports Clean Truck Fee
- Ports Infrastructure Cargo Fee
- Lowenthal Ports Fee
- SCAG RTP Port Container Fee
- SCAG RTP Railroad User Fee

These fees are in addition to the two existing fees already on books. The Pier Pass $50/TEU applied to movements of containers during peak traffic periods and the container fee applied to containers moving by rail to retire the debt on the 20-mile Alameda Corridor.

ISSUES AFFECTING TRADE FLOW MOVEMENT THROUGH WEST COAST PORTS

- TWIC Program

Transportation Worker Identification Credentials:

Estimates that as much as 25% of local drayage drivers will be disqualified and could lead to a shortage of drivers to move the containers on and off the Port Complex.
ISSUES AFFECTING TRADE FLOW MOVEMENT THROUGH WEST COAST PORTS

- ILWU Contract Negotiations

The International Longshore Workers and Warehouse Union

The ILWU six year contract expires in July. Negotiations have started and there is hope of an early settlement. ILWU workers for the first time in 2007 experienced making less money than the previous year due to the reduction in the number of imports handled.

Most retailers have already put alternative logistics options in place since the 2002 lock-out. Smaller importers are hoping for smooth negotiations with no disruptions.

ISSUES AFFECTING TRADE FLOW MOVEMENT THROUGH PORTS OF LOS ANGELES AND LONG BEACH

- Ports Clean Truck Fee

Scheduled for implementation originally June of 2008. It may have been moved back to October of 2008 with recent meetings. $35/TEU with funds to be used to help operators purchase new trucks that meet the ports strict diesel emission guidelines.

Who Pays? Beneficial Cargo Owners
ISSUES AFFECTING TRADE FLOW MOVEMENT THROUGH PORTS OF LOS ANGELES AND LONG BEACH

• Ports Infrastructure Cargo Fee

Scheduled for implementation at the Ports’ in January of 2009 in the amount of $15/TEU. Funding to be applied to needed infrastructure improvements in the immediate area.

Who pays? Beneficial Cargo Owner

• Lowenthal Ports Fee

Proposed legislation by California Senator Alan Lowenthal that would impose a $30/TEU fee on containers moving through the Ports of Los Angeles, Long Beach and Oakland. The funds to be applied toward infrastructure improvements in roadways and tracks in outlaying areas.

Who Pays? Beneficial Cargo Owner
ISSUES AFFECTING TRADE FLOW MOVEMENT THROUGH PORTS OF LOS ANGELES AND LONG BEACH

• SCAG RTP Port Container Fee

Southern California Association of Governments:
Regional Transportation Plan:

Another $30/TEU Port Container Fee to eventually be applied to infrastructure improvement.

Who Pays? Ports and Railroads

• SCAG RTP Railroad User Fee

Southern California Association of Governments:
Regional Transportation Plan:

Another $15/TEU Container Fee with the funds to eventually be applied to infrastructure improvements.

Who Pays? Railroads
Take Away Points from Northwestern Presentation

- Continued diversion AWEC stimulating shorthaul intermodal & Motor Carrier traffic from East Coast ports.

- Transloading percentage will increase slightly.

- Opportunity for truck builders with demand for new equipment as ‘Green Truck’ issue ripples through the industry.

- As economy strengthens probably shortages of domestic containers may develop.

- Retailers continue to expand in population growth areas.

- Motor Carriers trying to stimulate Railroad interest in short haul lanes like the Kansas City, KS to Marion, OH.
CIGMA PARTICIPANTS

RAILROADS
BNSF, CP, CSXT, FEC, KCS, NS, UP & UP STREAMLINE

STEAMSHIP CO.
APL, CHINA SHIPPING, CMA-CGM, HANJIN, HYUNDAI, MAERSK, MOL, NYK, OOCL & ZIM

MOTOR CARRIERS
DART, J B HUNT, KNIGHT, SCHNEIDER, SWIFT, U.S. XPRESS & WERNER

PORTS
CHARLESTON, JACKSONVILLE, LA, LONG BEACH, NORFOLK, NYNJ, OAKLAND, PORTLAND, SAVANNAH (GPA), TAMPA & TACOMA

TRN/LDR, 3PL, IMC’S
ABILITY/TRI MODAL, AMERICAN LOG. INTL, CAL CARTAGE, CENTURY/UNIV CH ROBINSON, HUB GROUP, MAERSK LOGISTICS, NYK LOGISTICS PACTER STACKTRAIN, PERF. TEAM, TWIN MODAL & WERNER GLOBAL LOG.

RETAILERS/SHIRPERS
BEST BUY, BLUE LYNX, CIRCUIT CITY, DOLLAR TREE, LOWES, MENARDS, MICHAELS, PIER ONE, WAL-MART, CARGILL & NORTH STAR RAIL INTMDAL

REAL ESTATE DEV.
ALLEN GRP, CBRE, CENTERPOINTE, HILLWOOD & IDI

IMS WORLDWIDE
PRINCIPAL CURTIS SPENCER

LB CITY COLLEGE INSTRUCTOR JIM MUCCI

THE TIOGA GROUP

CIGMA 2008

- Containerized Intermodal Goods Movement Assessment
- Containerized transportation issues and trends in the North American logistics chain
- Executives and planners with importers, distributors, transloaders, ports, railroads, motor carriers, real estate developers, and public agencies need current, insightful information on North American containerized trade issues and trends.
- The future of China as a dominant supply source versus rapid growth in India
- Asia cargo share shift to East Coast Ports
- Outlook for West Coast port capacity, rail service, and drayage rates
- Expansion of South Atlantic ports to serve Southeast population and distribution growth
- Future of NY/NJ and Virginia Ports as the primary East Coast entry points
- Outlook for inland rail service from the East Coast
- Impact of bulk vessel shortages on containerized export demand
- The Tioga Group is addressing this need by offering an integrated review, assessment, and forecast of major current supply chain issues in North American containerized trade. The report focuses on the 2008/2009 time horizon to capture the dynamic nature of the international supply chain.

- Tioga interviewed over 60 firms representing all supply chain elements, including:

| BNSF | MOL | CH Robinson | Wal-Mart |
| CN | NYK | Pacer Stacktrain | Hillwood |
| CP | Dart | Best Buy | GA Ports Authority |
| NS | JB Hunt | Circuit City | Ports of LA & LB |
| UP | Hub Group | Lowe’s | Port of NY & NJ |
| APL | USXpress | Michaels | Port of Oakland |
| Maersk | Cal Cartage | Pier One | VA Port Authority |
THE CIGMA REPORT 2008

THANK YOU FOR YOUR TIME

Any interest or questions regarding the CIGMA report by The Tioga Group can be made to
The Tioga Group, Inc.
1617 JFK Blvd
Suite 1252
Philadelphia, PA 19103
215-775-2142