

Things have come a long way since and could not be a better venue to discuss trade network issues and I have been asked to offer some comments on vessel deployment impact from the perspective of the private sector TO, primarily as related to container operations.

# WHAT IS TRENDING: GLOBALLY

## **CASCADING WELL IN PLAY: VESSELS ARE LARGER IN MOST EVERY TRADE. TREND WILL CONTINUE.**

**Expanding capacity,  
bigger ships to test  
European ports  
this year ...**

*JOC, January 2015*

**Revenues of 16 of the 20  
largest carriers that  
publish their accounts,  
fell by 5% to \$60 billion  
in the first half.**

*Drewry Maritime Research,  
September 2015*



**U.S. ports that  
don't invest will miss  
the mega-ships,  
Charleston port chief  
says...**

*JOC, September 2015*

**Port congestion  
Here to stay, MOL  
executive says ...**

*JOC, November 2014*

So let's take a quick look at what's trending globally – these headlines kind of sum it up

The ships are larger in most every trade with Cascading well into play – AZX from 5-6000 to 8700's overnight and not without some problems – airdraft, crane height in some ports, sailing draft light in others

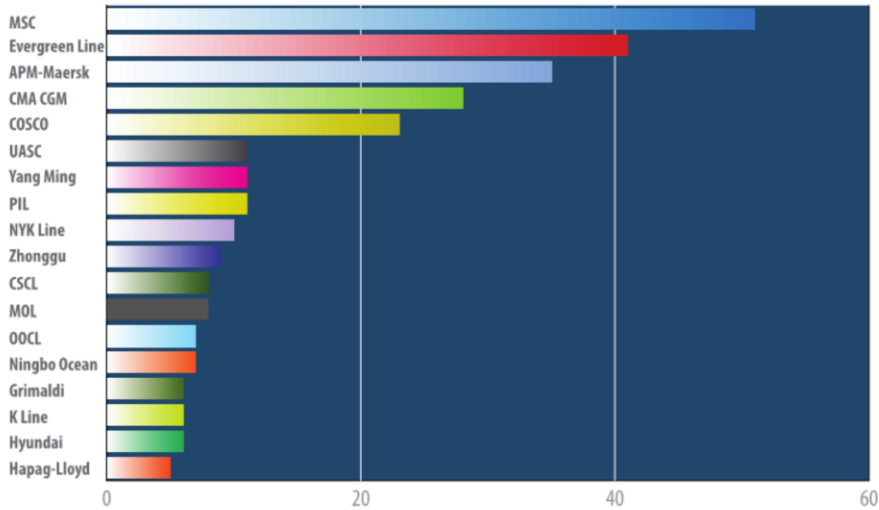
Not only in US but Europe tested as well

Ports terminals continue to build/expand to accommodate

Unfortunately many carriers continue to suffer financially and some say congestion will linger for some time

# WHAT IS TRENDING: CAPACITY

## 2015 ORDERBOOKS FOR TOP 20 CONTAINER CARRIERS TEUS (in thousands)



All the while the major players continue to build and add capacity – and majority of new orders now in mega ship class (alpha liner) top 5 listed here ordered twice the capacity of the next 12 carriers combined

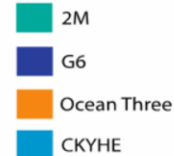
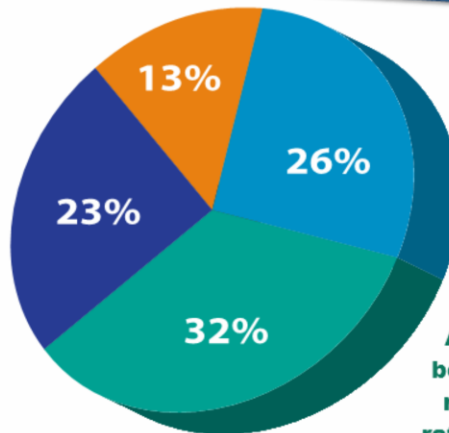
# WHAT IS TRENDING: DEPOLYMENT

**..Drewry warns that late ship deliveries will add to 2015 overcapacity...**

*Drewry Maritime Research, January 2015*

**Carriers' profits remain thin ahead of 'challenging year'**

*JOC, April 2015*



**A different recovery for box carriers; a continued reduction of unit costs, rather than the matching of supply and demand at the individual trade route level...**

*Drewry Maritime Research, October 2014*

And at the same time the uber alliances continue now representing over 90% of all capacity deployed/ordered with 2M the largest and its two members having the largest capacity on order.

As Revenues of 16 of the 20 largest carriers that publish their accounts, fell by 5% to \$60 billion in the first half the alliances continue to push for cost reductions across the board as compensatory rates have been difficult to sustain in overcapacitated trade routes

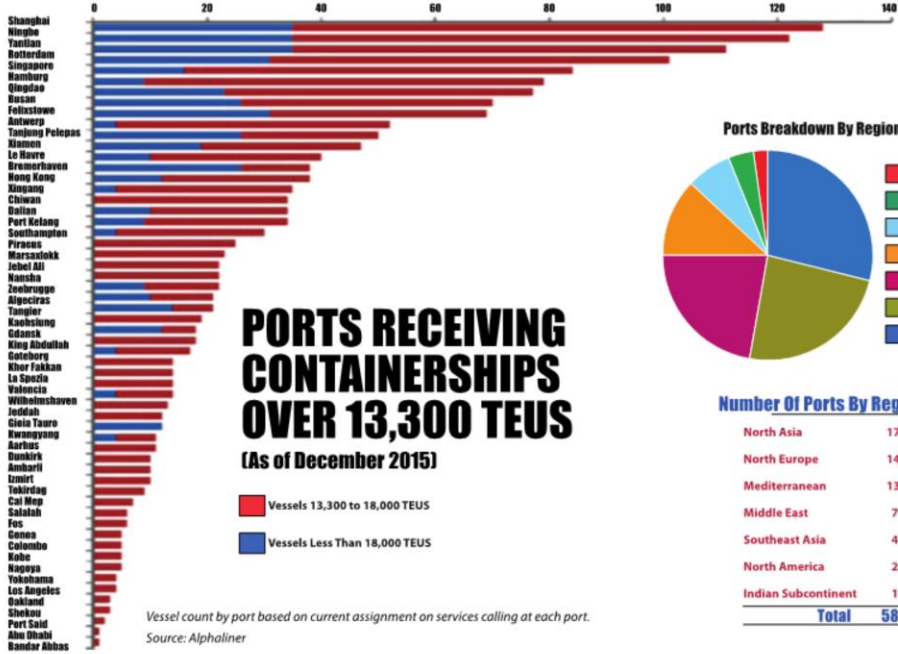
# MORE ULCS CALLS AT U.S. PORTS EXPECTED

## CARRIERS WILL RUN OUT OF DEPLOYMENT OPTIONS FOR LARGE SHIPS

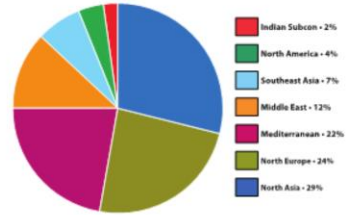
- ③ The massive pipeline of 18,000 to 21,000 TEU vessels that will hit the market in the next few years is expected to drive more 13,000 to 16,000 TEU vessels into Asia and to the North America trade.
- ③ 58 ports currently receive ships of over 13,300 TEUS with beams of over 49m (>20 rows wide).
- ③ The 35 ships of more than 18,000 TEUS, with beams exceeding 58m (23 rows wide), currently call at 27 ports on the Asia-Europe route.
- ③ Out of the 138 vessels of this size (13,300 to 20,000 TEUS) that are currently in operation:
  - 109 units are deployed on the Far East/North Europe Route;
  - 24 units are on the Far East/Med Route
- ③ Only 3 vessels are deployed on the North Europe/Far East/U.S. West Coast pendulums; 1 each is deployed on the Far East/Middle East Gulf and Far East/U.S. West Coast Services.

Source: Alphaliner

## Number of Vessels More Than 13,300 TEUS Calling At Each Port



### Ports Breakdown By Region



### Number Of Ports By Region

North Asia	17
North Europe	14
Mediterranean	13
Middle East	7
Southeast Asia	4
North America	2
Indian Subcontinent	1
<b>Total</b>	<b>58</b>



# TRENDING IN THE TRADES

## WHAT SEEMS FAIRLY CERTAIN

- ③ **2016 will be a difficult year on the revenue side, driven by overcapacity, low freight rates, fear of losing market share**
- ③ **Alliances will continue and partnerships likely to change based on financial conditions of lines, product offerings, assets**
- ③ **For North America, competition for port calls will be crisp and based on draft, market reach and costs**
- ③ **West Coast ports to see 13,000 TEUS and above size vessels and likely to maintain about 60% of all Trans-Pacific cargoes. West Coast rails/ports will not easily relinquish intermodal shares despite canal expansion and improvements on U.S. East Coast rail routes (NS & CSX)**

## WHAT REMAINS UNCERTAIN

- ③ **How carriers will deploy assets after the Panama expansion**
- ③ **What ports will be winners & losers, especially in the South Atlantic and Caribbean Basin**
- ③ **Based on deployment and vessel size, will carriers run traditional all water loops via Panama or other possibilities, like round-the-world services with hubs in the Caribbean.**
- ③ **How will U.S. Gulf from Asia be served: via Rail currently or via water?**
- ③ **Continued consolidation of major carriers. Any more to come?**

# ULCS DEPLOYMENT IMPACT

## INFRASTRUCTURE DEMAND INCREASING IN ALL SECTORS

**NY-NJ port sill must do more to prepare for mega-ships**

*JOC, October 2015*

**Mega-ships demanding change in port operations**

*JOC, May 2015*

**Port innovation needed to better meet demands of mega-ships**

*JOC, March 2015*



**Truckers declare force majeure as West Coast port congestion continues**

*American Shipper, February 2015*

**Shippers find ways to work around port congestion**

*American Shipper, January 2015*

So the combined result of these global trends has put enormous pressure on infrastructure throughout the supply chain resulting in productivity declines and congestion in many key regions

Add to that a dash of labor woes on the USWC on top of already strained facilities and the impact seemed to grow exponentially

Reduced productivity, no matter the responsible party, resulted in near gridlock in several locations on the west coast and also produced a surge of cargo on the USEC looking for safety valve alternatives to keep supply chains moving



# MORE CONGESTION ??

## con·ges·tion

/kənˈjɛsCH(ə)n/

noun



**The state of being congested.**  
“The new bridge should ease  
congestion in the area.”

### Synonyms

**Crowding, overcrowding; obstruction, blockage;  
traffic jam, bottleneck; informal: snarl-up;  
gridlock**

So how exactly do we define, identify congestion – love this definition state of being congested and synonyms

But at what point is the condition deemed congestion vs just being very busy?

I would say it is one of those things that you know it when you see it but how do we discern between just being very busy and congestion?

# NEGATIVE EFFECTS \$\$\$

## How Do We Know When It Is Congestion And Not Just Busy??

- ⊙ **As a non-productive activity, congestion reduces economic performance (“Opportunity Cost”)**
- ⊙ **Delays, resulting in late arrival throughout supply chain**
- ⊙ **Inability to forecast performance accurately, leading to truckers allocating more time to travel “just in case” and less time on productive activities**
- ⊙ **Wasted fuel increased air pollution**
- ⊙ **Wear and tear on equipment**
- ⊙ **Stressed and frustrated drivers/labor force**
- ⊙ **Spillover effect from congested main arteries to secondary access**
- ⊙ **Higher chance of accidents due constant interruption of normal work flow.**

When we begin to experience reductions in economic performance – and opportunity cost impacts emerge

This can be caused by a number of factors outside of pure labor issues – bunching of vessel arrivals, highway access limitations (rush hour, traffic), warehousing limitations, truck capacity limitations, regulatory requirements (emissions control, air quality), severe weather conditions (usec – snow, hurricane (sandy) but add to any of those a loss of productivity due to labor/management disagreements and exacerbates all of the above

# WHO IS AFFECTED MOST?

**Mega-ships dealing worst congestion hand to LA-LB, NY-NJ**  
*JOC • July 2015*

**FMC releases report on U.S. port congestion**  
*American Shipper • July 2015*

**Virginia port chief blames 'federal incompetency' for congestion**  
*JOC • May 2015*

**Virginia Port Authority takes further steps to address congestion**  
*American Shipper • March 2015*

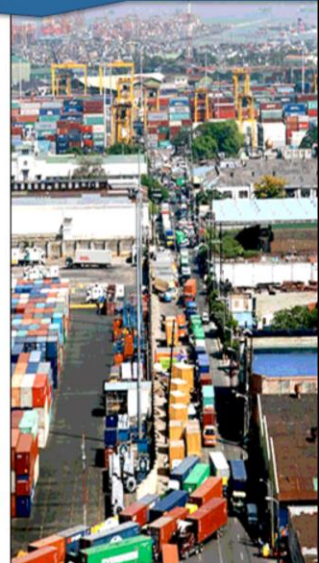
**Congestion flares up again at Port of Virginia**  
*American Shipper • March 2015*

**Truckers feel spike in NY-NJ port congestion**  
*JOC.com • March 2015*

**Shippers' disgust with port congestion heard from Wall Street to DC**  
*JOC • February 2015*

**Port congestion's root cause**  
*American Shipper • January 2015*

**Shippers find ways to work around port congestion**  
*American Shipper • January 2015*



This is where the finger pointing usually begins with each member of the supply chain having their perspective on how and why they have been affected. Not sure I have a good answer for this one as each player has a dog in the hunt but suffice to say that no one benefits from these conditions.

A TO will immediately recognize congestion cost increases – extra handling, moving 3,4 times to deliver/load a box due space constraints in terminal or at rail, additional labor cost due drop in productivity increase in OT, added staffing, increase in injuries, damage and security costs.

# Infrastructure Needs & Investment Plans

## Miami Opens \$668.5 Million Port Tunnel

Joseph Bonney, Senior Editor, JOC - 8-4-15

## Georgia Unveils \$142 Million Capital Spending Plan for Fiscal 2016 ...

Journal of Commerce - 9-24-15

## Port Metro Vancouver Takes Step Toward New Container Terminal ...

Journal of Commerce - 5-7-15

## Port Miami Enters 'Big Ship Era' With New 50-Foot Harbor

American Shipper - 9-21-15

## GPA Board Approves Two New Projects

American Shipper - 9-21-15

## \$9M Project to Fix Tacoma Port Road Starts in Spring 2015

Cargo Business News - 12-10-14

## Mega-Ships Dealing Worst Congestion Hand to LA-LB, NY-NJ

Journal of Commerce - 7-1-15

## Charleston Harbor-Deepening Plan Advances

Journal of Commerce - 10-7-14

## Port Everglades Expansion Wins Federal Approval

Sun Sentinel - 6-26-15

## Seattle to Invest in Terminals and its New Partnership with Tacoma ...

Journal of Commerce - 11-26-14

## Canaveral Ready for Blastoff. Space Coast Port Courts New Lines of Cargo Business, Makes Investments to Ignite Growth.

American Shipper - 9-6-14

## U.S. Ports See Costly Delays as Cargo Ships, Volumes Grow

Wall Street Journal - 4-29-15

## At N.J. Ports, Trying to Limit Congestion as Amount of Cargo Grows Rapidly

NJ.com - 4-28-15

## Port of Oakland Preps Projects in Effort to Gain First-Call Status

Journal of Commerce - 4-9-15

## Delaware River Ports Seek to Capitalize on Growing Volumes

Journal of Commerce - 8-26-15

Marine terminal and roadway congestion are problems all major U.S. gateways will have to contend with in 2016 because the industry has yet to develop an effective strategy to handle the big ships that carrier alliances are deploying to fewer ports, according to a Federal Maritime Commission study released in July.

Two gateways, Los Angeles-Long Beach and New York-New Jersey, in 2014 handled 47.7 percent of the loaded containers moving through U.S. ports, and the top 11 ports handled 85.9 percent of the total 31.6 million loaded 20-foot container units, the FMC noted.

# SO WHO IS INVESTING IN NA?

## What can/is being done to accommodate impact of cascading at a reasonable cost?

### PORTS & PRIVATE SECTOR TENANTS

The results of the AAPA's Port Infrastructure Spending Survey indicated that U.S. Ports and their private sector marine terminal partners are planning to spend at least a combined \$46 billion in port-related improvements through 2016.

The 2012 survey found that U.S. Port Authorities are planning on investing \$18,334,777,057 through 2016 on marine terminal-related infrastructure improvements, while their private sector terminal partners plan on spending \$27,635,700,008, for a combined total of nearly \$46 billion.





# WHO IS SPENDING WHAT & WHERE?

## Infrastructure Needs & Investment Plans

### PORTS & PRIVATE SECTOR TENANTS

This total works out to be over \$9 billion dollars average per year, of which, approximately 1/3 is spending by Port Authorities and 2/3 by their private sector partners.

Port Region	Ports' Projected Capital Expenditures For 2012-2016	Projected Private Sector Capital Expenditures For 2012-2016	TOTAL Projected Port & Private Capital Expenditures For 2012-2016
NORTH ATLANTIC	2,122,375,000	1,206,500,000	3,328,875,000
SOUTH ATLANTIC	4,080,678,910	261,602,000	4,342,280,910
GULF	4,340,061,518	17,782,298,008	22,122,359,526
GREAT LAKES	224,650,000	135,000,000	359,650,000
NORTH PACIFIC	1,765,715,068	5,914,300,000	7,680,015,068
SOUTH PACIFIC	5,801,296,561	2,336,000,000	8,137,296,561
<b>TOTALS:</b>	<b>18,334,777,057</b>	<b>27,635,700,008</b>	<b>45,970,477,065</b>

Source: AAPA Survey & MARAD

Right about in line with projections from Kiplinger study for similar time period that projected a need for about 8 billion a year spend on port infrastructure to keep pace with growth of trade and future requirements



# WHAT IMPROVEMENTS ARE NEEDED?

## HOW CAN THE PRIVATE STEVEDORE/TERMINAL OPERATOR PARTICIPATE TO MAXIMIZE INFRASTRUCTURE UTILITY?

### IMPROVE VELOCITY/DENSITY

- **Technology critical to improving operations**
- **Equipment enhancements maximize space utilization**
- **Gate/TOS: systems continue to evolve/improve**
- **Automation: one size does not fit all and likely will be gradual as U.S. terminals are expected to tailor automation to individual needs (Middle Harbor - Trapac - GGS LA, VIG NFK, Global NY)**
- **Off-Peak Terminal Operations**
- **Predictable/Reliable Labor Contracts**



Lines need to cooperate with ports to boost productivity, terminal exec says

# WHAT SOLUTIONS ARE IN PLAY?

## **LA-LB terminals move toward truck appointments**

*JOC.com • August 2015*

## **Vancouver port starts project to ease truck congestion**

*American Shipper • June 2015*

## **Peel off method gaining momentum as port congestion fighter**

*JOC • October 2015*

## **Global Terminal extends hours in response to congestion**

*American Shipper • April 2015*

## **Port of NYNJ Inaugurates TIPS System**

*IHS Maritime & Trade September 2015*

## **New app to help Boston port truckers check box availability**

*American Shipper • September 2015*

## **Truck appointments to be tested in NY-NJ port**

*JOC.com • October 2015*

## **Oakland port terminals plan PierPass-style program**

*JOC.com • October 2015*



“Different lines can have very different operating styles, even when they are part of the same alliances. Some can do things in a very structured way and others can be very unstructured. There can still be some competitive dynamics there and they can still try to outmaneuver one another.”

Better stowage may offer the best chance of maximizing productivity and minimizing port stays, the executive said, adding that problems with stowage can reduce productivity by up to 50 percent when dealing with larger vessels.

# WHAT CAN BE DONE DIFFERENTLY?

## **GREY CHASSIS POOLS**

Improved asset utilization, reduce terminal space requirements – implementation has been challenge due alliances

## **GREY BOX POOLS**

Unlikely near-term but perhaps now more momentum with recent shift to grey chassis concept

**GREY TERMINALS** Likely coming soon

**GREY PORTS** In formative stages

**EXTENDED GATES** Who Pays?

**APPOINTMENT SYSTEMS:** Must have stakeholder collaboration to work

**SATELLITE/INLAND TERMINALS:** Accommodate inbound loads/mts

**INTERMODAL/RAIL INFRASTRUCTURE INTERFACE:** On/near dock rail improvements

Generally 'extra' gates work out like this (markup included here):

Basic deliver/receipt on wheels: gate clerk(s) and yard clerk(s) ~17,000/shift

Peel off: gate clerk(s), yard clerk(s), 1-2 Top Loaders ~\$15,000/shift

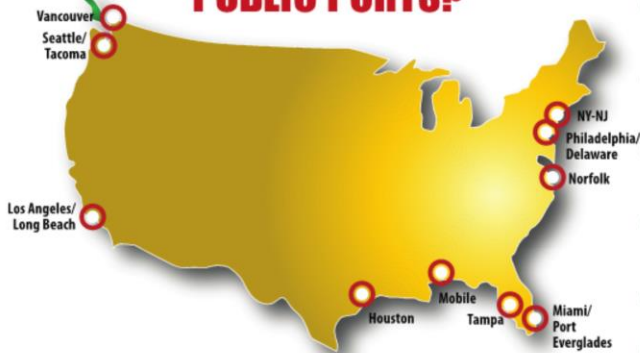
Full Service/RTG: gate clerk(s), yard clerk(s), RTG(s) ~\$21,500/shift

# SOUTHERN CALIFORNIA GREY TERMINALS??



# GREY PORT: WHAT NEXT?

## MORE COOPERATION BETWEEN PUBLIC PORTS?



- Joint planning for the financing, construction and leasing of new container facilities would reduce costly and unnecessary duplications. (Jasper County: Charleston/Savannah)
- Joint marketing efforts would result in cost-saving simplifications. (USWC, USGC Ports)
- Joint planning would encourage logical port specialization that makes the most of each port's comparative advantages. (Miami/PE, Philadelphia/SJPC/Wilmington)
- Some ports share much the same physical environment while also sharing approximately the same global location and rely on many of the same overland transport systems.
- Joint efforts to finance and, in fact, allocate space for new facilities are likely to have more chance of success than would a divided approach. (LA/Long Beach)
- Joint efforts would give more clout in dealing with the major railroad systems providing transcontinental freight service for gateway ports. (LA/Long Beach, Sea/Tac)
- New strategic port pairings: focused on Super Alliances/VLCC's. (Halifax/NY, Norfolk, Miami)
- Past Examples: Port Authority of NY-NJ, Virginia Consolidation, Vancouver Fraser Port Authority.

“The ability to cater to these larger vessels is going to be directly related to the ability to leverage scale,” said Henry Pringle, vice president of consulting firm AlixPartners. “To achieve that scale, there has to be some consolidation, whether it’s through collaboration or mergers.”

# IS THIS A TIPPING POINT?

## **PRIVATE SECTOR TERMINAL OPERATORS & PORTS CANNOT SUSTAIN ALL THAT IS NEEDED!**

- What do terminal rates look like if they truly reflected the full cost of port operations, deeper channels and expanded facilities necessary to accommodate mega vessels
- The proprietary container terminal operated for an individual shipping line is becoming an endangered species
- There will likely be more consolidation within Terminal Operators & Stevedoring Companies
- Formation of operating/equipment sharing agreements become more asset efficient
- Push to automation sooner where possible – what labor implications
- More joint ventures with carriers
- New approaches to billing for stevedoring/terminal services for account of BCO?  
(THC to include stevedoring)

Pick Rates 3% increase 2001 thru 2015 NY usec – uswc rates today not much different than 10 years ago.

Terminal pricing changes could offer \$3 billion savings, McKinsey finds

Berthing fees based on a vessel's length and lower charges per box.

Extra payments for popular berthing slots

Discounts for efficient stowage

Charges for delays and inaccuracies

Rebates when terminals are at fault



# TAKEAWAYS FROM THE PRIVATE SECTOR

## THE VIEW OF THE TERMINAL OPERATOR/STEVEDORE

### OPERATING PROFILE: THE MARKET

- Mega vessels are here to stay. The future is here and will continue to test facility capabilities.
- Uber Alliances will increasingly be the staple of major trade lanes. These alliances will financially and operationally challenge ports and terminal operators in foreseeable future
- Communication by all stakeholders is key to solutions

### INFRASTRUCTURE & TERMINAL INVESTMENT

- Substantial Private/Public investment in play
- Focus remains fragmented by modal type
- Private sector highly focused on return on capital employed and meeting IRR
- Innovative new models needed



**Thank You! Enjoy Your Stay in Tampa.**