

**AAPA Annual Convention
Norfolk Virginia
October 4, 2007**

**Innovative Approaches to Port Challenges
Dwell Time and Transit Time Management
at the Port of Halifax**

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Innovative Approaches to Port Challenges

Dwell Time and Transit Time Management at the Port of Halifax

Agenda:

- The Challenge
- The Approach
- The Result
- Lessons Learned

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Dwell Time and Transit Time Management at the Port of Halifax

The Port of Halifax

- Full service port with multiple terminals to service container, bulk, breakbulk and project cargo; 550,000 TEU in 2006
- First/last east coast North American port to/from Europe, the Med & Suez
- Deepest berths on the east coast of North America; easily accommodates post-Panamax ships
- Double-stack rail access on one system (CN) to Montreal, Toronto, Chicago and beyond
- The Port of Halifax is uncongested with available terminal and rail capacity

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Dwell Time and Transit Time Management at the Port of Halifax

The Challenge:

- To improve the quality and consistency of service to port customers by measuring and monitoring two key performance metrics:
 - Container Dwell Time
 - Total Transit Time

- To collect these metrics for thousands of containers without introducing an unmanageable burden on Port staff

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Dwell Time and Transit Time Management at the Port of Halifax

➤ Container Dwell Time

The time a container sits at a marine terminal (terminal dwell time) or rail terminal (rail dwell time) before starting its inland journey

- Dwell times rising due to rail car supply issues
- Dwell times are non-productive
- Inefficient use of rail and terminal resources
- Delays delivery of cargo to the customer
- Direct impact on quality of service

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Dwell Time and Transit Time Management at the Port of Halifax

➤ Total Transit Time

The total elapsed time from vessel discharge to arrival at the ultimate inland destination

- Direct measure of consistency of service
- Allows for improved logistics planning

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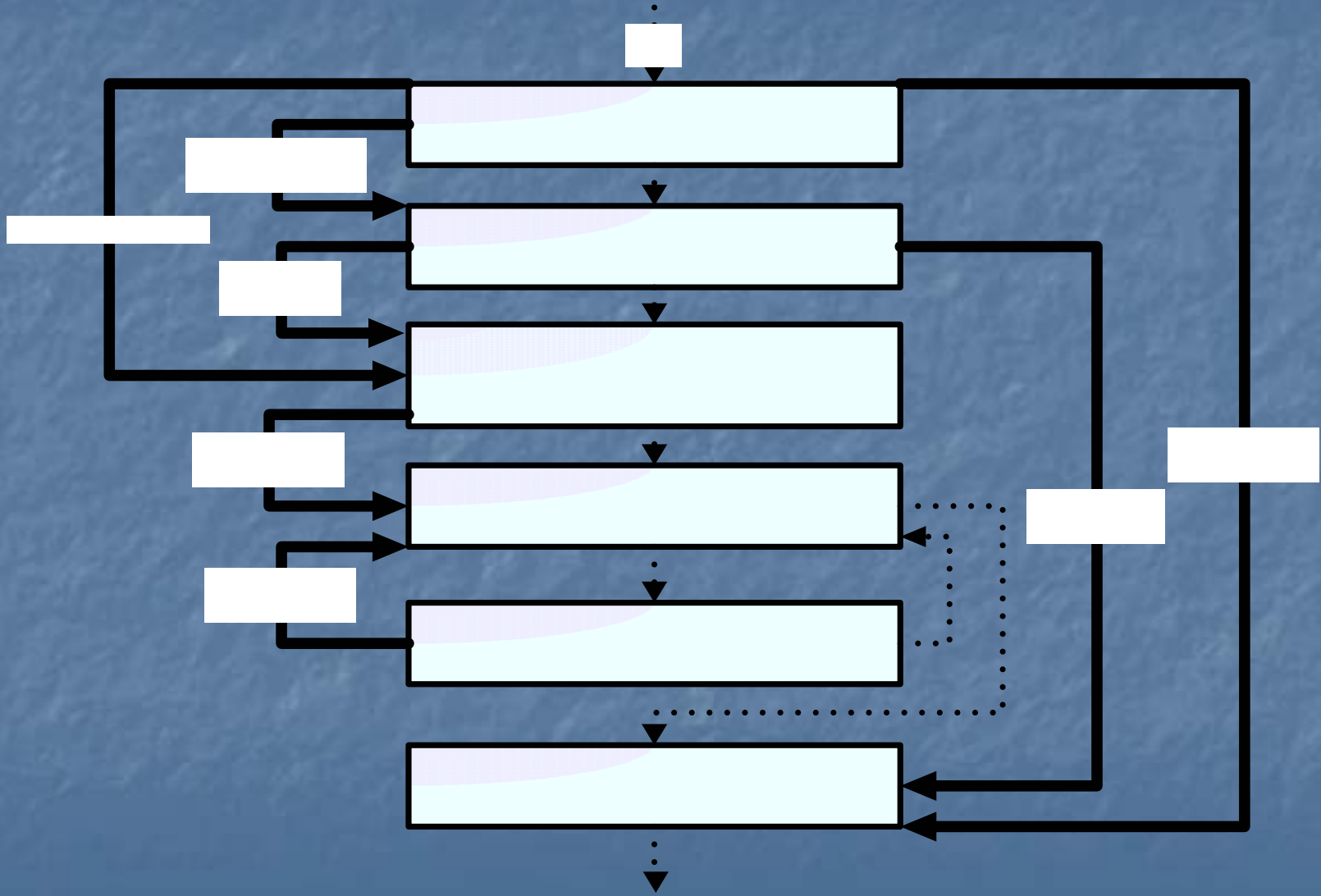
Dwell Time and Transit Time Management at the Port of Halifax

The Approach - Container Tracking System (CTS):

- Receive container movement event information from source, as close to real time as possible:
 - Container Discharge Event from Terminal Operator
 - Ramp Event, Rail Terminal arrival/departure events, and deramp event from rail service provider
- Store event data in a local data base
- Provide tools to analyze and report on dwell times and transit times
- Develop using state-of-the-art .NET technology

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Dwell Time and Transit Time Management at the Port of Halifax



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Dwell Time and Transit Time Management at the Port of Halifax

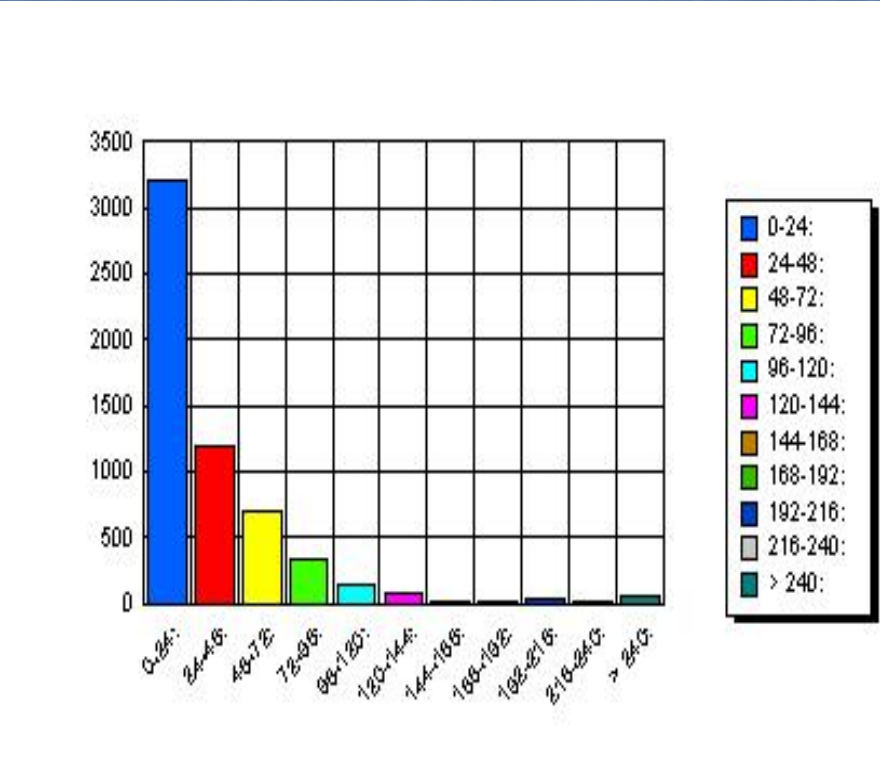
Dwell Time Snapshot

Halifax Port Authority Average Terminal Dwell Time Report

Report Parameters: Start Date: 01/01/2007 -- End Date: 01/31/2007 -- Terminal: All
 Destination: All -- Ship Line: All -- Vessel: All -- Arrival Date: All

Average Terminal Dwell Time: 36

Hours	Count	% Total
0-24:	3,212	(55.26%)
24-48:	1,184	(20.37%)
48-72:	703	(12.09%)
72-96:	335	(5.76%)
96-120:	150	(2.58%)
120-144:	73	(1.26%)
144-168:	16	(0.28%)
168-192:	18	(0.31%)
192-216:	36	(0.62%)
216-240:	21	(0.36%)
> 240:	65	(1.12%)
Total:	5,813	

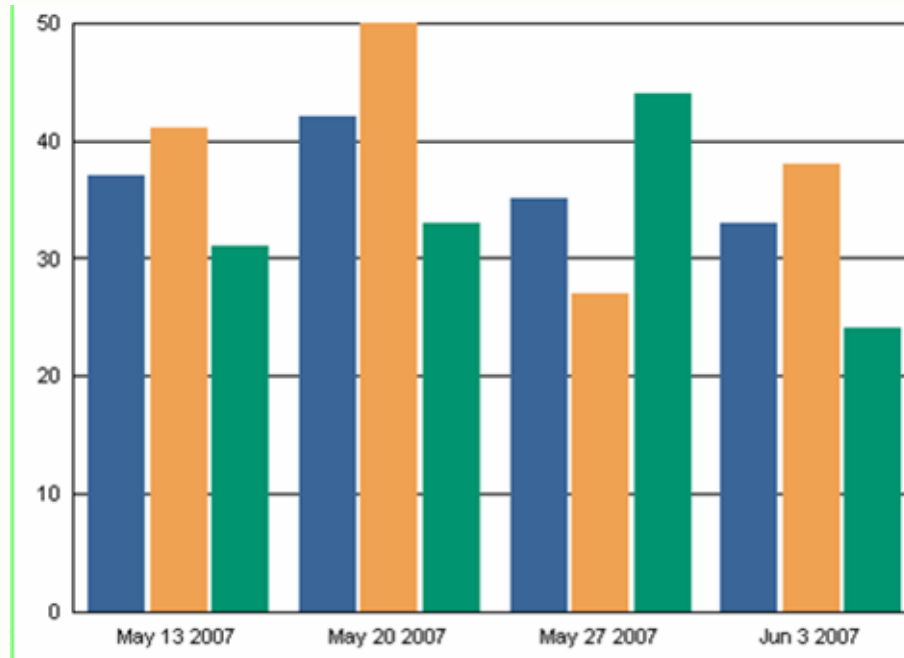


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Dwell Time Trends

Average Terminal Dwell Time by Terminal - 4 Weeks
(Sunday, May 13, 2007 - Saturday, June 9, 2007)



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On-Line Inquiry – Container Search

Voyage/Container Explorer

Ship: **ZIM NEW YORK** Discharged: **2007-05-06**
#20's: **53** #40's: **199** Total Container Count: **252**
Total Tonnage: **4,427 MT**

Container Number	Shipper	Size	Weight	Discharge Date	Current Status
AMFU302862	ZIMU	20 ft	21 MT	2007-05-06 15:30	DERAMPED
CLHU219318	ZIMU	20 ft	24 MT	2007-05-06 16:03	DERAMPED
CLHU219685	ZIMU	20 ft	24 MT	2007-05-06 16:10	DERAMPED
CLHU225110	ZIMU	20 ft	24 MT	2007-05-06 15:57	DERAMPED
CLHU275563	ZIMU	20 ft	24 MT	2007-05-06 16:07	DERAMPED
CLHU277102	ZIMU	20 ft	24 MT	2007-05-06 15:30	DERAMPED
CLHU279074	ZIMU	20 ft	24 MT	2007-05-06 16:03	DERAMPED
CLHU291559	ZIMU	20 ft	24 MT	2007-05-06 16:13	DERAMPED
CLHU301159	ZIMU	20 ft	26 MT	2007-05-06 15:52	DISCHARGED
CLHU308444	ZIMU	20 ft	20 MT	2007-05-07 03:05	DISCHARGED
CLHU309170	ZIMU	20 ft	21 MT	2007-05-06 15:21	DERAMPED
CLHU407719	ZIMU	40 ft	13 MT	2007-05-06 15:15	DISCHARGED
CLHU416990	ZIMU	40 ft	10 MT	2007-05-06 14:55	DERAMPED
CLHU444134	ZIMU	40 ft	24 MT	2007-05-06 14:58	DISCHARGED
CLHU448062	ZIMU	40 ft	10 MT	2007-05-06 13:21	DISCHARGED
CLHU802323	ZIMU	40 ft	16 MT	2007-05-06 18:44	DISCHARGED
CLHU806040	ZIMU	40 ft	11 MT	2007-05-06 18:32	DISCHARGED
CLHU808875	ZIMU	40 ft	14 MT	2007-05-06 19:27	DISCHARGED
CLHU847396	ZIMU	40 ft	7 MT	2007-05-06 18:55	DISCHARGED
CLHU847399	ZIMU	40 ft	11 MT	2007-05-06 14:59	DISCHARGED
CLHU857965	ZIMU	40 ft	8 MT	2007-05-06 14:17	DISCHARGED
CLHU858972	ZIMU	40 ft	7 MT	2007-05-06 19:05	DISCHARGED

[CMS/CTS Compare](#) [Discharge Report](#) [View Details](#) [Cancel](#)

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On-Line Inquiry – Container Details

Container Tracking Query - Main Menu
_ □ ×

File Reporting Options Help

Query

Container Number:

Voyage

Vessel	Voyage	Discharge Date

Latest Container Details for Selected Voyage

Ship Line:	<input type="text" value="ZIMU"/>	Size:	<input type="text" value="20"/>	Rail Car Number:	<input type="text" value="58007"/>
Status:	<input type="text" value="DERAMPED"/>	Location:	<input type="text" value="TERMINAL"/>	Train Number:	<input type="text" value="Q1149107"/>
Discharged:	<input type="text" value="05/06/2007 15:57"/>	HalTerm	<input type="text" value=""/>	Terminal Dwell:	<input type="text" value="18"/>
Ramped:	<input type="text" value="05/07/2007 10:02"/>			Rail Dwell:	<input type="text" value="11"/>
Departed:	<input type="text" value="05/07/2007 22:00"/>	<input type="text" value="HALIFAX"/>		Total Dwell Time:	<input type="text" value="29"/>
Arrived:	<input type="text" value="05/09/2007 08:31"/>	<input type="text" value="MONMONINT"/>		Rail Leg:	<input type="text" value="49"/>
Deramped:	<input type="text" value="05/09/2007 11:22"/>			Transit Time:	<input type="text" value="67"/>

Container Movement History for Selected Voyage

From	Departure Date	To	Arrival Date	Car #	Train #
HALIFAX	05/07/2007 22:00	MONMONINT	05/09/2007 08:31	58007	Q11491...

06/01/2007 09:54

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Web Based Inquiry – Container Search

The screenshot shows a Microsoft Internet Explorer browser window displaying the Port of Halifax website. The address bar shows the URL: <http://www.portofhalifax.ca/english/portataglance/ContainerStatusAndMovements.html>. The website features a navigation menu with links for Home, About Us, Port at a Glance, Shipping, Port Business, News & Events, and Resources. A left sidebar contains a menu with items like Port Map, E-mail Alert System, Facilities, DSR, Sailing Schedule, Cruise Schedule, Statistics, Port Conditions, Port Security & Marine Operations, and Container Status & Movements (which is highlighted). The main content area is titled "Container Status and Movements" and includes an aerial photograph of the port. Below the photo, there are instructions for using the container search tool, an "Add Containers" section with a text input field containing "aclu201544" and an "Add >>" button, a "Selected Containers" section with an empty box and a "Remove" button, and a "Search" button at the bottom.

The Port of Halifax - Microsoft Internet Explorer provided by HPA

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites Media Print Mail

Address <http://www.portofhalifax.ca/english/portataglance/ContainerStatusAndMovements.html> Go Links

Port of Halifax Home | About Us | Port at a Glance | Shipping | Port Business | News & Events | Resources

Home » Port at a Glance » Port Conditions PRINTER FRIENDLY

Container Status and Movements

Instructions:

Enter container numbers one at a time and click [Add]. These will be added to the list of container numbers to the right. To remove a container number, select it in the list and click [Remove]. When you list is complete click [Search] to view your results.

Add Containers

Container number:

Selected Containers

Internet

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Web Based Inquiry – Container Details

The Port of Halifax - Microsoft Internet Explorer provided by HPA


File Edit View Favorites Tools Help

Address <http://www.portofhalifax.ca/english/portataglance/ContainerStatusAndMovements.html>

Home | About Us | Port at a Glance | Shipping | Port Business | News & Events | Resources

Port of Halifax

Home » Port at a Glance » Port Conditions PRINTER FRIENDLY



Container Status and Movements

Search Results									
Container	Size	Discharge Info					Current Status		
		Vessel	Voyage	Owner	Date/Time	Location	Activity	Date/Time	Location
ACLU201544	20	Atlantic Conveyor	7243	ACLU	08/20/07 13:15	Ceres	Deramped	08/28/07 05:07	Chiintter

Please be sure to use the [Modify Search] or [New Search] buttons to modify your current search or to perform a new search. Do not use your browser's Back button.
Container status and movement information is based on information provided to the Halifax Port Authority and updated on a daily basis at 9:30 AM Atlantic time with the previous day's movements.

Smart Port Extranet Login Français Sitemap Feedback Contact Us

Canada

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Web Based Inquiry – Container Details

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Container Status and Movements

Search Results									
Container	Size	Vessel	Discharge Info				Activity	Current Status	
			Voyage	Owner	Date/Time	Location		Date/Time	Location
ACLU201544	20	Atlantic Conveyor	7243	ACLU	08/20/07 13:15	Ceres	Deramped	08/28/07 05:07	Chiintter

Dwell Time						
Container	Discharge	Ramp	Departure	Dwell (hours)		
				Term	Rail	Total
ACLU201544	08/20/07 13:15	08/23/07 19:38	08/24/07 23:38	78	28	106

Movements						
Container	From	Departure	To	Arrival	Car	Train
ACLU201544	Rockingha	08/24/07 23:38	Menmonint	08/26/07 06:27	72608	Q1149124
	Menmonint	08/26/07 11:38	Braintter	08/26/07 23:31	72608	Q1149124
	Braintter	08/27/07 01:44	Chiintter	08/28/07 00:18	72608	Q1149124

Internet

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Dwell Time and Transit Time Management at the Port of Halifax

The Result:

- CTS is a Key tool in managing Dwell Times
 - Dwell times reduced by 37% between June 2005 and May 2007
- Collection, reporting and analysis of dwell times and transit times are fully automated – no staff involvement
 - More effective use of HPA staff time
 - More timely dwell time and transit time monitoring
- Provides visibility of cargo movement through the Port of Halifax to destination
 - Positive customer feedback and suggested enhancements

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Dwell Time and Transit Time Management at the Port of Halifax

Lessons Learned:

- The value of consistent and objective performance measurement
 - Provides baseline data for comparison and marketing
 - Highlights areas where improvements are needed
 - Allows results of improvement efforts to be evaluated
 - Focuses attention on subject area

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Dwell Time and Transit Time Management at the Port of Halifax

Lessons Learned:

- The importance of visibility
 - Customers want to know about their cargo
 - Numerous suggestions for enhancements to improve immediate operational value of data
 - List management, watch lists, and event notification
 - Notification based on thresholds
 - Cargo status information (hold/release events)
 - Truck gate events
 - Export containers

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Lessons Learned:

➤ The role of Innovation

- Making best use of data that you have
 - Getting information to those who can act on it
 - Planning and prediction
- Using current technology
 - Allows quick response to changing needs
 - Facilitates information sharing and collaborative systems

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Lessons Learned:

- Collaboration is key to success
 - CTS was successful due to cooperation among stakeholders
 - Direct participation of rail service provider and two terminal operators
 - Indirect involvement of all ship lines
 - Overcame concerns associated with measurement and monitoring
 - Need to move beyond cooperation to collaboration
 - Look beyond boundaries to understand the entire supply chain, and coordinate technology investments to optimize
 - Technology as infrastructure – seamless integration

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Thank you!