

Container service from Japan to NYC

Mini-Landbridge			Panama Canal (now)			Panama Canal (expanded)			Suez Canal		
Vessel Particulars											
Vessel size	10,000 TEU		Vessel size	4,800 TEU		Vessel size	10,000 TEU		Vessel size	10,000 TEU	
Utilization	85%		Utilization	85%		Utilization	85%		Utilization	85%	
Effective TEU	8500 TEU		Effective TEU	4080 TEU		Effective TEU	8500 TEU		Effective TEU	8500 TEU	
Throughput	442000 TEU/yr		Throughput	212160 TEU/yr		Throughput	442000 TEU/yr		Throughput	442000 TEU/yr	
Opex to Operator											
<i>Movement</i>	<i>Time</i>	<i>Cost</i>	<i>Movement</i>	<i>Time</i>	<i>Cost</i>	<i>Movement</i>	<i>Time</i>	<i>Cost</i>	<i>Movement</i>	<i>Time</i>	<i>Cost</i>
	<i>day</i>	<i>USD/TEU</i>		<i>day</i>	<i>USD/TEU</i>		<i>day</i>	<i>USD/TEU</i>		<i>day</i>	<i>USD/TEU</i>
Dock in Japan	1	\$ 3	Dock in Japan	1	\$ 6	Dock in Japan	1	\$ 3	Dock in Japan	1	\$ 3
Transfer to ship		\$ 200	Transfer to ship		\$ 200	Transfer to ship		\$ 200	Transfer to ship		\$ 200
Japan to POLA/POLB	9	\$ 119	Japan to Panama	15	\$ 258	Japan to Panama	15	\$ 199	Japan to Suez Canal	18	\$ 239
Dock in POLA/POLB	1	\$ 3	Panama Canal transit	2	\$ 88	Panama Canal transit	2	\$ 81	Suez Canal	2	\$ 77
Transfer to rail		\$ 200	Panama to Elizabeth, NJ	7	\$ 121	Panama to Elizabeth, NJ	7	\$ 93	Suez to Elizabeth, NJ	13	\$ 172
Rail to NYC	5	\$ 1,500	Dock in Elizabeth		\$ 6	Dock in Elizabeth		\$ 3	Dock in Elizabeth		\$ 3
Ship to truck to dest	1	\$ 200	Ship to truck to dest	1	\$ 200	Ship to truck to dest	1	\$ 200	Ship to truck to dest	1	\$ 200
Surcharge(s)		\$ 250	Surcharge(s)		\$ 200	Surcharge(s)		\$ 200	Surcharge(s)		\$ 200
	17	\$ 2,475		26	\$ 1,079		26	\$ 978		35	\$ 1,093
<i>*Times modeled from APL's PCE route</i>			<i>*Times modeled from APL's APX route</i>			<i>*Times modeled from APL's APX route</i>			<i>*Times modeled from Maersk's AE2, TA2, and estimates</i>		
Assumptions			References (see Works Cited/Works Consulted)								
Fuel cost (4 800TEU ship) = \$ 47,633 /day			Containership-info website (45,000kW main for 4800TEU ship, 0.90 svc margin, SFOC 165g/kW-hr, 297\$/MT fuel)								
Fuel cost (10 000TEU ship) = \$ 84,681 /day			Containership-info website (80,000kW main for 10000TEU ship, 0.90 svc margin, SFOC 165g/kW-hr, 297\$/MT fuel)								
Lease cost (4 800TEU ship) = \$ 35,000 /day			Beddow, M., cost for operator (\$35000/day lease rate, including crewing and maintenance, for a 5500TEU ship)								
Lease cost (10 000TEU ship) = \$ 48,000 /day			Beddow, M., cost for operator (\$48000/day lease rate, including crewing and maintenance, for a 8500TEU ship)								
Total cost (4 800TEU ship) = \$ 17.22 /TEU-day			Fuel + lease cost								
Total cost (10 000TEU ship) = \$ 13.27 /TEU-day			Fuel + lease cost								
Flat port fee = \$ 24,000 /vessel			Estimated (Professor Marcus)								
Intermodal transfer = \$ 200 /TEU			Estimated (Professor Marcus)								
Rail LA to NYC= \$ 1,500 /TEU			Estimated (Professor Marcus)								
Panama Canal fee = \$ 54 /TEU			Thornby, C.								
Suez Canal fee = \$ 50 /TEU			R.K. Johns & Associates Inc.								
TSA surcharge for Asia to US											
WC = \$ 75 /TEU			Damas, P.								
TSA surcharge for intermodal transfers = \$ 175 /TEU			Damas, P.								
TSA surcharge for Asia to US											
EC via Pan/Suez Canal = \$ 200 /TEU			Damas, P.								
*Note: These calculations are a rough estimate of operating expenses only, the fleet sizes must also be considered as a Capex											
Required Fleet Size for Weekly Service (based on cruising time)											
5			8			8			10		
Current Market Share (more generally, Asia to US east coast)											
61%			38%			-			*All data adapted from ACP estimates 1%		
Capacity Limitations											
West coast port expansion limited Rail capacity increase slow and not aggressive			Size limitations on vessels Canal currently at 85% capacity East coast port expansion limited			Size limitation only for largest vessels Excess Canal capacity expected at least 'til 2025 East coast port expansion limited			Suez Canal capacity		

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