A NEW PORT FOR SOUTH AFRICA

PROSPECTS FOR CONTAINER TRANSSHIPMENT

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The introduction of the Class-EEE containerships of 18,000 to 22,000 TEU has greatly reduced the transportation cost-per-container on extended voyages on the Asia-Europe route. Such development has led to the construction of several transshipment terminals across Asia and around the Mediterranean Sea, where the mega-size ships interline with fleets of smaller vessels that sail coastal services or along inland waterways. The nature of trade has produced container transshipment terminals as hubs of classical hub-and-spoke container transportation networks.

Prior to the construction of the Suez Canal, Asia–Europe trade sailed via the southern tip of Africa, where sailing ships stopped at Cape Town. At the present day, much container trade bypasses the Suez Canal and sails by Cape Town, South Africa, and includes trade between South America and East Africa, as well as between West and East Africa and Asia and South America. Several African ports have recently undergone expansion to manage the increasing volume of Asia–Africa container trade more effectively. There are also tentative plans to expand major South American container ports.

CONTAINERS AT PORTS

The West African Port of Luanda in Angola processes almost 1 million TEU annually with Lagos, Nigeria processing over 2 million TEU annually. Over 2 million TEU per annum arrives at the Port of Santos, Brazil and accounts for 47% of Brazil's container trade. South African ports at Cape Town, Port Elizabeth and Ngqura account for 1.5 million TEU annually, with Durban receiving 2.7 million TEU per annum. The annual volume of container traffic arriving at large South American and West African ports indicates the potential to develop a transshipment port for mega-size containerships near Cape Town.

ASIA'S AFRO-BRAZILIAN CONNECTION

Future development at the Port of Santos, Brazil may include dredging the harbour to a 17 metre depth which would determine the operational capability of South African transshipment. At Santos's present depth, class-EEE container ships could sail from major Asian transshipment terminals carrying a combined load of containers destined for the combination of South Africa, West Africa and South America. A South African transshipment terminal may need to simultaneously berth several mega-ships and provide sheltered water for a fleet of smaller ships, interlining Panamax or post-Panamax sizes of containership that would sail the South Africa-Santos and South Africa-Lagos routes.

Should the Port of Santos be dredged to a 17 metre depth, several class-EEE ships may sail from different Asian transshipment ports and meet each other at the South African terminal, all carrying containers

destined for the combination of South American, West African and South African destinations. Ships would also sail from East and West African ports and eastbound class-EEE ships from Santos would be carrying containers for Asian, South African and East African destinations. Automated transfer of containers between ship and port then port to ship would be essential to quickly and correctly process a massive volume of containers.

MEGA-SHIPS

With Asian trade accounting for about 50% of the container traffic passing through South American, West African and some South African ports, combined container volume could exceed 4 million TEU annually, or over 11,000 TEU per day. Within the next few years, there may be enough trade passing by Cape Town for a mega-ship with a 22,000 TEU capacity to sail every 2nd day between an Asian transshipment terminal and a transshipment terminal at the southern tip of Africa, to interline with smaller ships that will sail on the Atlantic Ocean, depending on future port development at Santos.

The present volume of containers shipped between Asia and South America could warrant a mega-ship arriving at a South American port every third day. An equivalent volume of containers sails the combined South Africa/West Africa–Asia trade route, excluding Durban and warranting the arrival of a mega-ship at a transshipment terminal near Cape Town every third day. A trio of mega-ships sailing from 2 distant Asian transshipment terminal and 1 Brazilian terminal could converge at an automated South African transshipment terminal every third day to transfer containers amongst ships that sail a classical hub and spoke network.

CAPE TOWN OPTION

The potential South African transshipment terminal would form the hub of a classical hub-and-spoke transportation network, with the optimal location of the terminal being somewhere between St Helena Bay on South Africa's west coast and Algoa Bay on South Africa's east coast. There is limited available space for a super-terminal at Durban Bay while Richard's Bay is far from the shipping lanes that connect to Sunda Strait and Strait of Malacca. Algoa Bay would require the construction of a very extensive super breakwater to provide sheltered water to accommodate a fleet of containerships at an expanded Ngqura super-terminal.

During the 1930's, Table Bay was dredged to berth bigger ships at the then newly constructed deeper Cape Town docks. Further deep dredging of Table Bay to a 17 metre depth may be possible, with material being used to reclaim land from the sea to construct part of a transshipment super terminal. Extending the harbour breakwater or constructing a new super breakwater could provide sheltered water to anchor a fleet of containerships, with a super terminal either built at an expanded Robben Island or built next to Cape Town's present container terminal and partly integrated with it.

SALDANHA BAY/ST HELENA BAY

The deep water inlet and Port of Saldanha Bay is located 60 nautical miles north of Cape Town, with an entrance of 20 metres in depth at the maritime ore terminal. There may be scope to deep dredge the shallower part of Saldanha Bay to the south of the ore terminal to a 17 metre depth where construction of a transshipment super terminal may be possible. The southern region of Saldanha Bay offers sheltered water where a fleet of smaller container ships may drop anchor. However, there are also plans to develop a LNG terminal at Saldanha Bay.

The semi-sheltered St Helena Bay is located some 20 miles to the northeast of Saldanha Bay and the construction of an extended breakwater could provide a sheltered area where a fleet of ships may drop anchor. Deep dredging of the bay could provide the necessary 17 metre water depth and material to build all or part of a transshipment super terminal. St Helena Bay would be the default location should construction of a mega-transshipment terminal at either Table Bay or at Saldanha Bay be deemed impractical.

FUTURE TRADE

Within 10-years, mega-size container ships could converge at a transshipment terminal at or near Cape Town every second day, the result of steadily increasing trade between Asia and Africa/South America, and also East Africa–South America. The future projected volume of container traffic that could pass through such a transshipment terminal would warrant extensive evaluation of possible locations for the super terminal that include:

- Cape Town: offshore terminal on an expanded Robben Island built on land reclaimed from the sea, historical part of island preserved
- Cape Town: coastal terminal on reclaimed land adjacent to existing container terminal, breakwaters extended further into Table Bay
- Saldanha Bay: coastal terminal adjacent to ore terminal
- St Helena Bay: coastal terminal partially enclosed by extended breakwater
- Offshore terminal on an expanded Dassen Island some 35 miles north of Cape Town, with land reclaimed from the sea through dredging

OVERSEAS INVESTMENT

The recent downturn in China's economy has encouraged Chinese and Asian investors to show interest in expanding and developing maritime terminals along the African coast. South Africa's Department of Transport has recently invested in upgrading and expanding container terminals at Cape Town, Port Elizabeth (Ngqura Terminal) and Durban to serve South African–Asian trade. South Africa's Western Cape region offers a choice of several possible locations for a container transshipment terminal that can serve as a hub for mega-ships that can interline with smaller container ships that sail future African coastal services.

ABOUT THE AUTHOR

Harry Valentine was born in Cape Town, South Africa and earned a Degree in Engineering from Carleton University in Ottawa, Canada. He also undertook postgraduate studies and researched into transportation economics at Carleton University. He has worked in both the energy and transportation sectors and has published extensively on energy and transportation issues.

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