_____

SECURING THE GLOBAL SUPPLY CHAIN
Singapore's Role in APEC

Joshua Ho[*]

6 July 2006

IMMEDIATELY following the shocking September 11th World Trade Centre attacks in New York, governments around the world hurried to assess their vulnerability to highly-organised terrorist groups willing to sacrifice thousands of lives to achieve their aims. The initial focus was on the vulnerability of the air transport system. Attention, however, soon turned to the maritime sector – that is, the vulnerability of port infrastructure and commercial shipping to a maritime terrorist attack.

The current focus on maritime and supply chain security is all the more salient because the modern commercial maritime and shipping business milieu is the most dynamic and endemic of all the world's international commercial systems. It is revealing to just consider the numbers. On any one day in the year there are approximately some 52,000 merchant vessels either preparing to sail or already at sea. There are currently well over 6,500 port and harbour facilities around the world, serviced by approximately 112,000 merchant vessels of numerous varieties, manned by over 1.2 million officers and ratings of every conceivable nationality, religion and ethnicity. There are also in excess of 45,000 shipping companies and maritime businesses, both of which link roughly 225 maritime trading nations, dependent territories and island states.

This international maritime trading system is responsible for the perpetual motion of approximately 5.8 billion tonnes of goods (80 percent of the world trade by volume), including an estimated 15 million containers that collectively registered a staggering 232 million point-to-point and transhipped movements in 2001. This collective high speed trade is facilitated by an aggregate average of some 3.6 million vessel movements every year, on occasion as many as 12,000 moves every 24 hours. Given the labyrinth of the maritime and shipping business system, it is no wonder that locating a handful of maritime terrorist or organised criminal operations amidst this daunting canvas is problematic at best and impossible at worst.

Disastrous impact of an attack

The consequences of an attack on the global supply chain or on the maritime transportation network can be disastrous. In the new era of globalisation, ports have evolved from being traditional interfaces between sea and land to providers of complete logistics networks brought about chiefly by containerisation.

_____

Containerisation has made it possible for the carriers to shift from a port-to-port focus to a door-to-door focus. This is brought about by intermodalism -- the interchangeability of the various modes of transporting the container by road, rail, or sea. Intermodalism has made it possible for goods to move from the point of production, without being opened, until they reach the point of sale or final destination. As a result of ports being providers of complete logistics networks, high-volume, mainline trade will focus on just a few mega ports, making these ports the critical nodes of global seaborne trade.

So important are hub ports in the global trading system that it has been estimated that the *global* economic impact from a closure of the hub port of Singapore alone could easily exceed US$200 billion per year from disruptions to inventory and production cycles. Hub ports therefore are potential lucrative targets for the terrorist and the handling of the container is a key source of vulnerability in the supply chain.

Containers and the Supply Chain

In 2005, some 23 million TEUs of general cargo was transported through the port of Singapore, making the Republic the busiest port in the world. The sheer volume of container traffic makes inspection of all containers virtually impossible. Refrigerated containers with thick insulation offer particular advantages for concealment. Searching containers only on a random basis would be insufficient, so it's necessary to rely on timely intelligence and on profiling of ports, shippers, cargo receivers, freight forwarders and so on.

Currently, containers are usually sealed with passive indicator seals. The seals do not physically prevent entry but merely indicate whether the container has been opened since it was sealed. There are many ways that containers can be used for illegal purposes, such as:

- substituting illegal materials for legal cargo;
- mixing bogus shipments in a container of multiple shipments;
- packing legitimate cargo at the front of a container with illicit material behind;
- shipping empty containers with hidden compartments; and
- shipping a container through one or more transit points to mask its origin.

Container Security Initiative (CSI)

The Container Security Initiative or CSI goes some way to mitigate the risks mentioned above. The key features of CSI are the posting of US Customs officials at major foreign ports, the increased screening of designated "high-risk" containers at their port of loading and the use of "smarter", tamper-proof containers and container seals. Another important initiative that has been introduced in conjunction with CSI is the "24-hour rule", which requires the transmission of container manifests 24 hours before loading. CSI offers members the reciprocal opportunity to enhance their own shipment security through the same system. Members not party to the CSI should do so soon given that total container traffic is expected to rise by 66 percent by 2010.

The container transport chain is a massively complex system with numerous players, including shippers, transport operators, specialised terminals and handling facilities, and freight integrators. Terrorists might use different approaches: they could intercept a legitimate consignment and tamper with it (the 'hijack' scenario), or develop a legitimate

trading entity to ship a dangerous consignment (the 'trojan' horse scenario).

Most measures to ensure the security of the supply chain have so far focused on intermediate stages of the chain – the port terminals and the ships. Concern should now shift to inland carriers and freight integrators operating in the first and last few links of the chain. These might represent a greater security risk than their counterparts nearer the middle of the chain, that is, the terminal operators and ships. These problems are now being addressed by the World Customs Organisation, the Asia-Pacific Economic Cooperation (APEC), and other regional forums.

Conclusion

Security cannot begin and end at the regulated security zone of a port, but must be integrated into the entire logistics supply chain. The security implications of the transport, packing and reporting of dangerous goods through the supply chain are assuming greater priority. This is where the real challenges will be in the future.

Ports are one node in the supply chain, and a ship is but a link between nodes. The best approach is one that looks at the supply chain in its totality. The security issues go across the supply chain for each consignment, from point of origin to point of destination. Many security concerns in the container transport chain are related to inland carriers and freight integrators – the first and last few links of the chain. Vulnerabilities in the container environment are highest in rail yards, road stops and shipping/loading terminals.

Supply chain security requires the active participation of the logistics and transport industry to ensure that all parts of the container transport chain are included in a comprehensive security framework. In this regard, international cooperation is necessary and APEC could be an appropriate forum to look at issues concerning the security of the global supply chain.

Singapore can also play a useful role in this field by helping APEC to chart new waters in promoting common supply chain security efforts. Singapore is well plugged into the Asia-Pacific region and has been proactive in enhancing security in light of the threat from terrorism.

---

[*] Joshua Ho is a Senior Fellow and Coordinator of the Maritime Security Programme at the Institute of Defence and Strategic Studies, Nanyang Technological University.