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The Straits of Malacca and Singapore: Ensuring Safe and Efficient Shipping

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To date, three studies have been done on the carrying capacity of the Straits of Malacca and Singapore. The studies are necessary as traffic will increase in the future, hence increasing the possibility of accidents. The studies will help improve measures currently undertaken or are being proposed to address safety of navigation. Apart from underlining the urgency of these measures, a comprehensive review of the measures will also help assure the users of the Straits.

Maritime and Port Authority of Singapore (MPA) Study

LAST month, the Maritime and Port Authority of Singapore (MPA) released the preliminary results of its carriage capacity study during the 34th Tripartite Technical Experts Group (TTEG) Meeting held in Singapore from 12 to 13 October 2009. MPA also briefed the shipping industry, academia and media on 28 October 2009. The study indicated that there were 257,000 vessel movements in the Singapore Strait in 2007 based on actual vessel reports to the Vessel Traffic Services (VTS) in Singapore. The study also noted that the number of collisions in the Singapore Strait has remained constant over the last three years, despite increasing traffic. This indicates that an increase in traffic volume may not automatically lead to an increase in the number of collisions.

The narrowest point of the Straits of Malacca and Singapore lies in the Singapore Strait just south of St. John's Island, which is just 2.2 km (1.2 nm) wide. As any traffic congestion along the Straits of Malacca and Singapore would first be experienced in the Singapore Strait, it was right that the MPA had commissioned the study, and relied on a dynamic simulation model.

Although the MPA study has yet to be fully completed, it noted that the Singapore Strait could safely accommodate a doubling or more of vessel traffic in the future, especially with advances in technology and enhanced traffic management measures. The second phase of MPA's study will therefore look into possible traffic management measures to ensure safe and efficient navigation through the Singapore Strait. Given the long time frame it will take for a doubling of traffic in the Singapore

Strait, there is adequate time to work out these traffic management measures.

The Nippon Foundation and MIMA Studies

Besides the MPA study, the Japan Ministry of Land, Infrastructure and Transport, in conjunction with the Nippon Foundation, sponsored a study in 2007 which projected that by 2020, a total of 141,000 vessels would transit the Straits. The results of this study were presented at the third International Maritime Organization (IMO) sponsored meeting on enhancing the safety, security and environmental protection of the Straits of Malacca and Singapore held in Singapore from the 4-6 September 2007.

More recently, the Maritime Institute of Malaysia (MIMA) presented the results of a study which claimed that the maximum carrying capacity of the Malacca Strait is 122,640 vessels and that this limit would be reached in 2024. The presentation was made at the 6th MIMA International Conference on the Strait of Malacca held in Kuala Lumpur from the 23-24 June 2009. The study used queuing theory as a methodology and projected the carrying capacity based on historical shipping traffic data collected via STRAITREP. This is an IMO-mandated ship reporting system for the larger ships transiting the Malacca and Singapore Straits.

Traffic and Congestion Issues are Well Addressed

While it is clear is that shipping density will increase in the future, the rate of increase is dependent on a host of factors and assumptions not directly addressed by the studies themselves. Transit times will not appreciably increase even with a doubling of shipping capacity. But safety issues will have to be addressed with greater urgency to avoid unnecessary delays that might arise from increased vessel interactions.

The good news is that the littoral states – Indonesia, Malaysia and Singapore -- have already started embarking on a whole range of projects designed to improve the sea lane conditions in the Straits of Malacca and Singapore. Projects include the Maritime Electronic Highway (MEH) undertaken under the auspices of the IMO, which will be the platform for future e-navigation initiatives in the Straits. There are also the six projects undertaken under the ambit of the Cooperative Mechanism (CM) on Safety of Navigation and Environmental Protection in the Straits of Malacca and Singapore, which was a landmark voluntary arrangement between the littoral states, user states and other stakeholders, under UNCLOS Article 43.

The projects included the removal of wrecks; capacity building for hazardous and noxious substance preparedness and response; equipping of small vessels with automatic identification system (AIS) transponders; the setting up of tide, current and wind measurement systems; and the replacement and maintenance of aids to navigation. The proposal of new projects like the establishment of 24-hour emergency vessel towage services will further improve the efficiency of the sea lanes. In addition, the three littoral states, together with the IMO, agreed at the recent 34th TTEG meeting to establish a work programme to review the Traffic Separation Scheme (TSS).

Assuring the Users of the Straits

Although the three separate studies on the carrying capacity of the Straits of Malacca and Singapore differ in their methodologies and conclusions as to the exact amount of shipping the Straits can carry and when that might occur, there is general consensus that shipping density will increase and the problems of congestion, if it occurs, will first appear in the Singapore Strait.

The silver lining is that projects are already underway, or are being proposed, to address the safety of navigation issues in order to improve sea lane conditions with the participation of all interested stakeholders. This is encouraging since it reflects the proactive attitude of the littoral states towards

ensuring safety of navigation and their appreciation of the industry's potential concerns. However, as the financial crisis has shown, we must also prepare for the low- probability but high-impact scenarios which could have far-reaching consequences, like multiple accidents. Therefore, some of the projects may need to be put on the fast track due to the long lead time required for implementation.

There is also a clear need for a comprehensive review of all the measures that would be required to optimise the sea lane conditions in order to provide users with a good transit experience. Members of the shipping industry and user states should continue to work closely together with the littoral states to improve the safety of navigation in the Straits of Malacca and Singapore -- one of the most important maritime arteries in the world.

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