For discussion
on 3 Aug 2012

TFWL/03/2012

An Overview of Typhoon Shelters in Victoria Harbour

PURPOSE

The purpose of this paper is to give Members an overview of typhoon shelters in Victoria Harbour.

BACKGROUND

2. The Marine Department (MD) gave an overview of commercial port operations and facilities in Victoria Harbour at the first meeting of the Task Force on Water-Land Interface held on 24 November 2011. In the subsequent discussion of the work plan of the Task Force, the topic of sheltered waters in the harbour was accorded priority for further deliberation. A boat trip to visit several typhoon shelters and a marina in the harbour was then conducted on 11 May 2012 to foster Members' understanding of the different uses of sheltered waters in the harbour. This paper provides additional information on typhoon shelters to facilitate Members' further deliberation.

FUNCTIONS OF TYPHOON SHELTERS

3. Typhoon shelters are provided to meet the safety need for protection of local vessels and river trade vessels during typhoons and inclement weather conditions. Although they are primarily built to ensure vessel safety during typhoons, many of the typhoon shelters also serve as day-to-day operation bases of local vessels. Such daily usage obviates the need for vessels having to stray into the busy working harbour unnecessarily, causing traffic congestions and giving rise to safety hazards. The Merchant Shipping (Local Vessels) (Typhoon Shelters) Regulation, Cap 548E governs the use of the typhoon shelters. MD is responsible for regulating and controlling the use of the typhoon shelters by enforcing Cap 548E.

4. There are 14 typhoon shelters in the territory and seven of them are located within the harbour (see **Annex** for a map showing their locations). Apart from Shau Kei Wan and Causeway Bay Typhoon Shelters which are mainly used by Class III[1] and Class IV[1] local vessels,

[1] Local vessels are of four classes under the Merchant Shipping (Local Vessels) Ordinance, Cap.548. Class I include launches and ferries; Class II include cargo lighters, dumb lighters, dredgers and barges, pilot boats, and tugs; Class III are fishing vessels; and Class IV are pleasure vessels. There are 15,500 local vessels.

the other five typhoon shelters in the harbour play a key role in providing much needed space for over 2,000 port operation vessels (i.e. Class I[1] and Class II[1] local vessels such as ferry vessels, cargo barges, tugs and pilot boats) and river trade vessels to take refuge within the harbour during inclement weather. They are in close proximity to the main working area of the Hong Kong Port and allow the working vessels to operate up till the last moment before seeking shelter from approaching typhoons. The vessels can seek shelter without risking to be exposed to gale force wind and rough sea if they were to go to the other typhoon shelters outside the harbour. Apart from the safety and operational requirements, there is an insurance implication that Class II[1] local vessels are required to seek shelter in purposely built gazette typhoon shelters during the passage of typhoons.

ASSESSMENT OF TYPHOON SHELTER SPACE DEMAND

5. Demand for typhoon shelter space covers the requirements for the locally licensed vessels (excluding Government vessels but including those with licenses expired for less than 3 years) and Mainland coastal and river trade vessels that may need to seek refuge in Hong Kong during typhoon passage.

6. MD has been conducting regular assessments of typhoon shelter space requirements by these vessels based on data going back as far as over 30 years ago. The latest available information is also incorporated as they become available. The regression model devised in the study has been observed as an accurate and effective tool for forecasting the future demand for typhoon shelter space.

7. The parameters used in the assessment include:

- economic forecasts – released by the Financial Secretary in his Budget Speech
- population forecasts – released by the Census and Statistics Department in its "Hong Kong Population Projections"
- forecasts of container throughput handled at locations other than container terminals – released by the Transport and Housing Bureau in its Study on Hong Kong Port Cargo Forecasts
- port statistics – released by Marine Department in its annual Port of Hong Kong Statistical Tables and departmental website

8. The key assumptions in the assessment include:

- the occupancy factor of 8/3 for estimating the typhoon shelter space requirements for each vessel, including allowance for safe separation, fenders, scope for anchor chain and stern moorings, and provision of fairways and fire-lanes (i.e. area required = vessel

length x vessel breath x 8/3)

- 100% provision of typhoon shelter space for locally licensed vessels (excluding Government vessels[2]), including those with licenses expired which have not been renewed within the past three years

9. The assessment is conducted on an overall territory-wide basis. According to the latest estimation by MD, the total existing supply of typhoon shelter space could meet the forecast demand throughout the projection period up to 2025.

ACTUAL OCCUPANCY RATE OF TYPHOON SHELTERS

On a territory-wide basis

10. The occupancy rate of a typhoon shelter varies depending on the circumstances of the typhoons, the mobility of vessels and their nature of operations. In the past decade, the occupancy rate of most of the typhoon shelters was between 80% and 100% when typhoon signal no.9 or above was hoisted. While typhoon shelters generally do not have a high occupancy rate during normal days, the Government still needs to provide sufficient shelter spaces in view of the possible loss of human lives and properties under inclement weather.

On a harbour-wide basis

11. For the typhoon shelters within the Victoria Harbour, the demand for their shelter spaces is particularly high given their close proximity to the local port and related facilities. They are essential to allow working vessels to serve until the late minute before taking refuge during bad weather as well as to resume services quickly following the passage of bad weather and thereby contributing to the competitiveness of the Hong Kong Port.

Future trend of typhoon shelter space demand

12. It is forecasted that the growth in local vessels' demand for sheltered space would be about 2 hectares per year on average within the period of the forecasting horizon to year 2025. The anticipated future trend of typhoon shelter space demand has taken onboard the following considerations:

- General socio-economic situation of Hong Kong
- Increase in cargo trade activities with Pearl River Delta region

[2] Typhoon shelter space for Government vessels is provided at the Government Dockyard and various Government buoys in typhoon shelters.

- Development of competing ports in the Pearl River Delta region

THE GOVERNMENT'S POSITION ON TYPHOON SHELTER SPACE SUPPLY

13. The Administration is to ensure that there is sufficient suitable berthing/mooring space within the Hong Kong waters for local vessels and small visiting vessels to take refuge during typhoon or inclement weather for the safety of vessels and crew members onboard.

14. These berthing facilities, which are suitable for local vessels to take refuge during typhoon, are not demarcated by vessel types and can be used (including under normal circumstances) by any type of vessels. Priority is not given to any particular classes of local vessels or river trade vessels to use typhoon shelters or specified areas within typhoon shelters.

Approach to meet the demand of typhoon shelter spaces

15. As aforementioned, the demand and supply of typhoon shelter space are assessed on a territory-wide basis. MD is fully aware that some typhoon shelters near the urban area (such as the New Yau Ma Tei Typhoon Shelter and Kwun Tong Typhoon Shelter) are more popular than the others located in the remote areas (such as the Hei Ling Chau Typhoon Shelter and Yim Tin Tsai Typhoon Shelter). MD is also aware of the needs of the typhoon shelter users e.g. good road access, nearby replenishment facilities and convenient logistics support, and would continue to liaise with the concerned parties and government departments to take these factors into account in the planning of new typhoon shelters when required.

16. However, as the site selection for a new typhoon shelter is subject to many constraints, including land use and other strategic planning/environmental considerations, it would be extremely difficult to identify a site in the urban/harbour area for a new or replacement typhoon shelters and as such, port users will strongly object to closure of or designating of alternative uses in existing typhoon shelters.

17. In the meantime, MD has taken active measures to avoid over-crowding in the popular typhoon shelters during the passage of typhoons, including frequent patrol, radio broadcasts on the current occupancy of various typhoon shelters and on-scene advice to vessel operators to seek shelter in the less congested typhoon shelters, etc.

CONCLUSION

18. Typhoon shelters serve a key role in Hong Kong's marine activities. In continuing to oversee the variety of uses of the Victoria Harbour waters and promote marine safety, MD keeps in view the principles and guidelines on harbourfront enhancement.

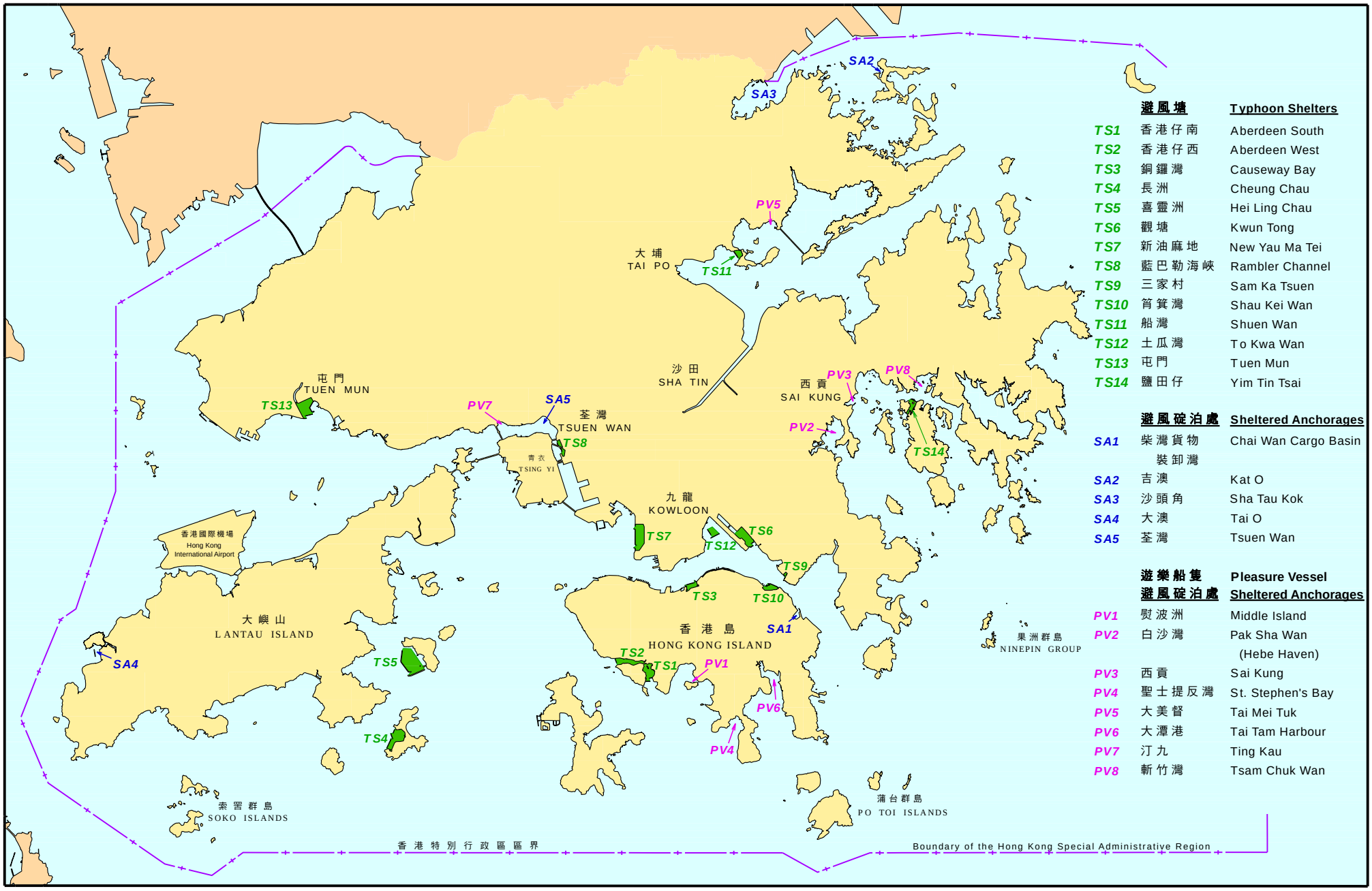
19. Members are invited to give their views on the information provided in this paper.

Marine Department
August 2012

Annex

避風塘及避風碇泊處位置圖

Location Plan of Typhoon Shelters and Sheltered Anchorages



避風塘		Typhoon Shelters
TS1	香港仔南	Aberdeen South
TS2	香港仔西	Aberdeen West
TS3	銅鑼灣	Causeway Bay
TS4	長洲	Cheung Chau
TS5	喜靈洲	Hei Ling Chau
TS6	觀塘	Kwun Tong
TS7	新油麻地	New Yau Ma Tei
TS8	藍巴勒海峽	Rambler Channel
TS9	三家村	Sam Ka Tsuen
TS10	筲箕灣	Shau Kei Wan
TS11	船灣	Shuen Wan
TS12	土瓜灣	To Kwa Wan
TS13	屯門	Tuen Mun
TS14	鹽田仔	Yim Tin Tsai

避風碇泊處		Sheltered Anchorages
SA1	柴灣貨物裝卸灣	Chai Wan Cargo Basin
SA2	吉澳	Kat O
SA3	沙頭角	Sha Tau Kok
SA4	大澳	Tai O
SA5	荃灣	Tsuen Wan

遊樂船隻避風碇泊處		Pleasure Vessel Sheltered Anchorages
PV1	熨波洲	Middle Island
PV2	白沙灣	Pak Sha Wan (Hebe Haven)
PV3	西貢	Sai Kung
PV4	聖士提反灣	St. Stephen's Bay
PV5	大美督	Tai Mei Tuk
PV6	大潭港	Tai Tam Harbour
PV7	汀九	Ting Kau
PV8	斬竹灣	Tsam Chuk Wan

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