

Search and rescue in HK

→ Thirty members gathered in the aftermath of Typhoon Kalmaegi to hear Captain Chan Kwok Wai speak on Hong Kong's Maritime Search and Rescue (SAR) System and recent developments in the Cospas/Sarsat satellite-based search and rescue system.

Captain Chan joined the Marine Department in 1991, and has recently retired – the passage of Typhoon Kalmaegi marked the first occasion for many years where the No. 8 typhoon signal was hoisted and he was not required to work. He spent almost 16 years involved in maritime search and rescue, and was one of eight experts who participated in the IMO/ICAO Joint Working Group on the Harmonisation of Aeronautical and Maritime Search and Rescue. He was also tasked by IMO with conducting SAR workshops and needs assessments in Bangladesh, Sri Lanka and the Maldives. He was chair of the Cospas/Sarsat Operations Working Group in 2009 and 2010.

SAR plans

Hong Kong is unusual in that marine and aeronautical search and rescue are not controlled by a single authority. Since the aeronautical boundaries are different, the Director of Civil Aviation handles aircraft events, while the Director of Marine covers maritime SAR.

The Hong Kong Maritime Rescue Coordination Centre (MRCC) is responsible for an enormous area – practically the whole of the South China Sea from latitude 10 degrees north to the top of the Taiwan Strait, and almost to the coast of the Philippines in the east. The reason that tiny Hong Kong covers such a large area without any formal international agreement is due to the large number of disputed reefs and islands in the area. The countries bordering the South China Sea were unable to agree on spheres of responsibility, so they decided that colonial Hong Kong could do it all. After 1997, when Hong Kong became a Special Administrative Region of the People's Republic of China, nobody felt any need to change the system.

The speaker described the resources available to MRCC, both locally and regionally, and gave a brief overview of the shore-based GMDSS communications installed at the rescue centre. The MRCC is manned by five teams of three men, who work around the clock on a shift system. Each team contains one master mariner and one former radio officer. The MRCC handles about 300 cases every year, although only around 60 cases turn into genuine search and rescue events. Of these, about half involve

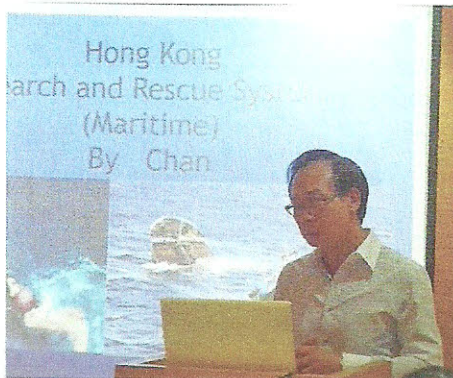
fishing vessels. Captain Chan showed some excellent slides of recent rescues.

Hong Kong's contingency plan for SAR is actually drawn up by the Security Bureau, and is currently being updated to include incidents where mass rescue is required. Plans will shortly be in place to tackle cases such as a large modern passenger ship sinking 100 miles off Hong Kong – an interesting topic for a future presentation, perhaps.

Satellite programmes

The MRCC monitors all-DSC emergency frequencies and disseminates alerts to local SAR agencies, other MRCCs and ships in the vicinity of an emergency as appropriate. It also monitors ship security alerts from Hong Kong flagged ships and acts as the Marine Department's Emergency Control Centre.

Distress messages are handled under the Cospas/Sarsat satellite system. Since the Philippines and North Korea do not have the necessary equipment, Hong Kong covers their areas as well, and has dedicated phone lines so messages can be passed quickly to the other countries.



Captain Chan makes his presentation

Cospas/Sarsat has been in operation since 1985 and has five low earth orbit SAR (LEOSAR) satellites, which use the Doppler Effect to determine the range and bearing of distress transmitters. Unfortunately, the coverage is sporadic, and the doppler solutions are ambiguous, so two satellite passes are required to determine an accurate position. This came as a shock to most members, who had assumed the distress positions were determined and transmitted immediately.

The LEOSAR satellites will be replaced in 2018 by a series of mid earth orbit (MEOSAR) satellites – 15 are currently being prepared – which will be global, reliable, highly accurate and will give almost instantaneous distress positions.

Such was the level of interest in Captain Chan's excellent talk that it became our longest ever presentation, and the questions went on for some considerable time. By the time our branch chairman, Captain Vikrant Malhotra, presented Captain Chan with an NI plaque to thank him for his talk, he probably felt he had earned it!

Captain Alan Loynd FNI



Presenting a well-earned NI plaque