

**For discussion
on 6 March 2018**

Legislative Council Panel on Security

Mountain Rescue Strategy and High Angle Rescue Operations

Purpose

This paper aims to brief Members on the Fire Services Department's ("FSD") mountain rescue strategy and high angle rescue operations for mountain accidents in Hong Kong, and the cooperation between the FSD and relevant departments.

Background

2. In recent years, the number of people participating in mountain activities has been on the rise. In 2017, the country parks attracted around 13 million visitors, and many of them were hikers.

3. While hiking activities are good for health, there are also inherent risks. Some participants do not make the necessary preparations in advance. For example, some do not pay attention to the weather conditions, some do not bring the suitable equipment, and some enter high risk country areas that are not easily accessible, underestimating the dangers in the mountain paths. Some hikers also choose to trek alone, and support will be lacking when an accident occurs. In addition, some are keen on extreme mountaineering activities, such as shoreline trekking¹ and free solo climbing. However, they may not have brought along the appropriate equipment or possessed the necessary skills or experience. Some may even overestimate their physical strength or health conditions. In case of unforeseeable worsening of

¹ Shoreline trekking is an extreme sport. Participants have to proceed closely along the shoreline, and when they come across a bluff, they have to climb with bare hands or jump into the sea to get around it. Shoreline trekking is very demanding both technically and physically. Participants are prone to get trapped because of exhaustion, or fall off the cliff or into the sea when they slip.

weather conditions, the risk of an accident will increase substantially. In the unfortunate event of an accident, due to the vast landscape of country areas, with some mountain locations particularly difficult to access, not only the trapped person will be in peril, the rescue mission will also be fraught with difficulties.

4. The recent years have witnessed an increasing trend in the number of accidents at mountains. According to the FSD's statistics, the number of mountain rescue incidents increased from 150 in 2010 to 340 in 2017. The number of people injured in mountain accidents also increased from 74 in 2010 to 175 in 2017, while the number of deaths increased from 3 in 2010 to 15 in 2017. The situation has aroused concern.

Mountain Search and Rescue Team and its Support Team

5. To enhance its search and rescue capability for mountain accidents, the FSD set up a Mountain Search and Rescue Team ("MSRT") in October 2016, with its 139 members deployed to fire stations near popular mountain activity spots². MSRT members are all familiar with Hong Kong's mountain terrain and hiking routes, and good at searching for and rescuing victims of mountain accidents. All MSRT members have to receive a three-week training in advanced mountain rescue techniques, which include orienteering, rope rescue, large-area mountain rescue strategies, performing rescue missions under extreme weather, etc. MSRT members are all equipped with adequate personal protective equipment, and each mountain search and rescue unit is equipped with professional rescue tools and emergency survival equipment to assist members in performing mountain rescue work.

6. The MSRT has, since its establishment, participated in a total of 65 mountain search and rescue operations and saved 119 hikers. One of the rescue operations carried out by the Department lasted for one day and night during the passage of severe tropical storm Pakhar over Hong Kong in August 2017, in which a man and a woman stranded on Fei Ngo

² With effect from April 2017, two teams have been deployed to the fire stations at Sai Kung and Lei Muk Shue. With effect from April 2018, another four teams will be deployed to the fire stations at Shau Kei Wan, Shek Kip Mei, Ma On Shan and Tai Po East.

Shan were rescued.

7. Besides the MSRT, the FSD set up a Mountain Search and Rescue Support Team (“MSRST”) to strengthen co-ordination and support for mountain search and rescue operations. Comprised of nine instructors from the Fire and Ambulance Services Academy richly experienced in mountain search and rescue, the MSRST is mainly responsible for providing mountain rescue incident commanders with technical and strategic support by analysing clues about missing persons, assisting to formulate search strategy, liaising with relevant government departments, etc.

Strategies and Plans to cope with Mountain Accidents

8. The FSD has formulated strategies and plans in five aspects, namely training, equipment, deployment, support and inter-departmental co-operation, to ensure that its members are better equipped with operational and response capabilities for effective handling of various types of mountain accidents.

(i) Professional Training

9. To maintain its operational efficiency, the MSRT conducts regular training on mountain navigation during daytime and nighttime, rope rescue training as well as search strategy training at mountain accident black spots. Apart from these black spots, the MSRT formulate emergency rescue plans for various popular mountain activities spots, including ascertaining the location of hiking trails and rescue routes, to enhance its responsiveness to mountain accidents.

10. In 2017, the FSD established a departmental knowledge management system for all its members to acquire specialist skills such as mountain and high angle rescue. Moreover, FSD members can seek professional advice from various expert teams via the system to enhance their rescue techniques.

(ii) Special Equipment

11. The FSD also provides the MSRT with special equipment including GPS tracking device, Unmanned Aircraft Systems, Night Vision Systems, infrared telescope as well as communications equipment required for setting up temporary command posts in the countryside. To further strengthen its mountain search capability, the FSD has acquired three mountain search and rescue dogs from the United Kingdom to assist in the searching for missing or trapped persons.

(iii) Mobilising mechanism for the MSRT and the MSRST

12. When a mountain rescue operation involves two or more injured persons, or the incident occurs at a mountain accident black spot, the Fire Services Communications Centre will, on top of the standard attendance³, mobilise the MSRT to participate in the rescue operation and inform the leader of the MSRST. Upon receipt of the notification, the supervisor of the MSRST will liaise with the Incident Commander to assess the situation at scene. Subject to the assessment, the MSRST will be mobilised to participate in the rescue operation.

(iv) Support by the High Angle Rescue Team (“HART”)

13. When a rescue operation is carried out at a complicated and steep terrain or on a cliff, the FSD will not only deploy additional manpower, but also mobilise the HART to the scene for assistance in order to enhance the efficiency of the rescue operation. Established in 2011, the main duty of the HART is to carry out challenging rescue operations in vertical environments. 58 HART members have been deployed to three fire stations⁴. All its members have to undergo a strict selection process and receive a five-week specialised training, which mainly includes rope access techniques, safety training at high angle locations as well as rescue training tailor-made for the environment of Hong Kong. Every HART member has acquired an internationally recognised qualification for working at high angle locations and is required to undergo not less than 80 hours of specialised training per year.

³ The standard attendance of a mountain rescue operation includes a Hydraulic Platform, a Light Rescue Unit/Major Rescue Unit.

⁴ HART members are deployed to the three fire stations at Pok Fu Lam, Tin Sum and Kowloon Bay.

The HART is equipped with specialised rope rescue equipment, such as fall arrestor and power ascender which enable rescue personnel to move up and down rapidly and to carry out rescue missions even in narrow space. The HART will conduct regular on-site rescue trainings at wharf cranes, tower cranes, gondolas outside the external walls of high-rise buildings, the Observation Wheel in Central, etc. The HART will also assist the management bodies of various infrastructures and cable car systems in developing contingency plans for emergencies.

(v) Inter-departmental co-operation

14. In mountain search and rescue operations, the FSD always works closely with the Government Flying Service (“GFS”) and the Civil Aid Service (“CAS”) etc. The departments meet and communicate regularly to enhance their co-ordination and versatility in actual operations.

GFS

15. Upon receiving the call to action from departments, the GFS will, depending on circumstances, deploy helicopters to assist in aerial searches for missing persons and survey mountain terrains, and also provide support in transporting rescue personnel to mountains and evacuation of the injured from the scene urgently. If necessary, the drill yard of the Fire and Ambulance Services Academy in Tseung Kwan O will be used as a temporary helipad for the GFS helicopters. The GFS may also make use of other sites suitable for landing and taking off in various districts, such as Plover Cove Reservoir in Tai Po and West Dam in Sai Kung, to transport members of the MSRT and the MSRST to the scene to conduct rescue operations.

CAS

16. With the benefit of professional training, the Mountain Search and Rescue Company (MSaR) of the CAS also plays an indispensable role in mountain search and rescue operations. The 164 members of the MSaR are all auxiliary members who have undergone training in mountain search and rescue operations. They are required to stand-by on roster at the CAS and GFS Headquarters on Saturdays, Sundays and

public holidays.

17. The FSD, in collaboration with the Hong Kong Police Force (“HKPF”), the GFS, the Agriculture, Fisheries and Conservation Department (“AFCD”), the Auxiliary Medical Service, the CAS, etc., holds a hill fire and mountain rescue exercise every year to enhance co-ordination and co-operation among government departments in mountain incidents.

Public Education

18. To strengthen public education on the safety of mountain activities, the FSD has provided safety information about mountain activities on its website. The FSD also proactively liaises with hiking organisations or online groups, and organises safety talks on hiking activities to raise public awareness of the safety of such activities.

19. The FSD educates the public about the preparation for mountain activities and the responses in the event of an accident through various channels, e.g. through the Fire and Ambulance Services Academy Open Day, Fire Station Open Day, Fire Safety Carnival, participating in CAS’ Mountaineering Safety Promotion Day, promoting via the FSD Mobile App, etc.

20. The CAS also proactively promotes public education on hiking activities. In 2017, the CAS hosted a series of hiking safety promotion activities and training courses, so as to strengthen the hiking safety awareness of the public, prevent mountain accidents, and educate the public on the handling procedures and self-help tips in case of an accident.

21. The AFCD’s “Enjoy Hiking” website provides information on hiking techniques and equipment, together with a list of high-risk locations in country parks. The CAS will also strengthen patrolling at the aforementioned high-risk locations to safeguard hikers from mountain accidents. Besides, the AFCD has erected warning signs at steep mountain terrains and their nearby locations to warn off hikers.

22. The Security Bureau Mobile App, Safeguard HK, provides safety information on various mountain activities, including camping safety, hiking safety, means to call for emergency rescue, safety guidelines on helicopter rescue, etc. The App also enables a user who has switched on the GPS function to search on the map the locations of nearby country park first aid stations in case of need. Recently, the Hiker Tracking Service was introduced to the App in February 2018. After a user registers his/her mobile phone number, the App will be able to record and track his/her location using GPS for the next 24 hours. In case that user gets lost or is found missing, the emergency rescue parties of the FSD and the HKPF can locate him/her with the system's records to facilitate the rescue operation.

Conclusion

23. The relevant government departments will continue to closely communicate and co-ordinate with each other to provide quality mountain rescue and high angle rescue services. They will also continue to strengthen public education to raise the safety awareness of the public.

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