

LCQ5: Application of drones in police system

Following is a question by the Hon Tang Fei and a reply by the Secretary for Security, Mr Tang Ping-keung, in the Legislative Council today (December 11):

Question:

It is learnt that patrolling with drones has become an important tool used in western countries and on the Mainland for enhancing the management of public safety and response to emergencies. There are views that against the background of promoting the development of low-altitude economy in Hong Kong, drone technology shows great potential of application in the police system. In this connection, will the Government inform this Council:

- (1) whether it has plans to promote the application of drone technology in the police system and other disciplined services, especially for beat patrolling, crime prevention and traffic management; if so, whether there is a specific timetable and sufficient operating staff;
- (2) whether it will conduct differentiated assessment of the effectiveness of patrolling with drones and set the relevant criteria of assessment in view of different environments and safety requirements; if so, of the details; if not, the reasons for that; and
- (3) whether it will, by drawing reference from the experience of other places, further improve the relevant rules and regulations on the application of drones for patrolling in Hong Kong, so as to promote technology advancement and protect the privacy and safety of members of the public at the same time?

Reply:

President,

The Security Bureau (SB) has been actively encouraging and supporting the application of various new technologies in its disciplined services and auxiliary services to enhance service efficiency and quality. In particular, in view of the growing popularity of drone technology around the globe, the departments are using drone technology as appropriate through adopting different strategies and assessing the situation, in order to facilitate and enhance the delivery of various tasks.

The reply to the Member's question is as follows:

- (1) The disciplined services and auxiliary services are, having regard to their operational needs, equipped with drones of different sizes, weights and models, as well as various types of instrument systems that can be mounted on drones. The drones are deployed where applicable to enhance efficiency and

better utilise manpower resources. The use of drone technology is increasingly common in the departments and are serving various functions in different situations, including:

1. Crime detection and investigation: In carrying out operations, the Hong Kong Police Force (HKPF), the Customs and Excise Department and the Immigration Department (ImmD) use mounted high-resolution cameras on drones to assist in investigation and evidence collection at crime scenes, especially in the countryside and at the sea. Such video footage can be used as evidence in court when necessary.
2. Beat patrolling and crime prevention: The HKPF uses drones to conduct high-rise patrols at crime black spots. For instance, mounted thermography and infrared detection systems are used to detect the presence of suspicious persons lingering or hiding at remotely located places or at difficult terrains.
3. Maintaining public safety and order, crowd and traffic management: Drones are used by the HKPF to monitor crowd and traffic flow in large-scale events. Through real-time images, potential safety hazards are promptly identified and dealt with. The HKPF is planning to introduce a system under which drones will be hovered at designated locations for a long period of time for illumination and broadcasting, sending messages to remind members of the public to stay vigilant.
4. Rescue operations: The HKPF, the Fire Services Department (FSD) and the Civil Aid Service use drones to surmount dangerous and harsh conditions, such as cliffs and mountains, and quickly reach the scenes to assist in the search for missing persons. Throughout the rescue process, drones can also conduct aerial surveillance to ensure safety at the site. In major and special incidents where the scenes are complicated, drones can take high resolution photographs of collapsed and deformed debris for the production of three-dimensional models, thereby facilitating the assessment and planning of rescue operations by the ground rescue party. If necessary, the airdrop system installed at the drones will be used to drop necessities to persons in need of rescue.
5. Firefighting: The FSD uses drones equipped with thermal detectors to monitor temperature changes of various locations at the fire scene from multiple angles in the air. Based on such data, incident commanders can devise the routes of entry into and evacuation from the fire scene and work out firefighting strategies, hence enhancing operational efficiency and safety.
6. Management of prisons and detention facilities: To strengthen security of these facilities, drone technology is employed by the Correctional Services Department and the ImmD to assist in the inspection of security facilities by analysing the deteriorating conditions of boundary fencing and detecting anomalous objects at roof-tops of buildings, as well as in emergency response operations involving correctional institutions and detention facilities.

The application of drone technology is a specialised skill and the departments attach great importance to the training of relevant personnel. In 2017, the FSD established the Unmanned Aircraft System Team which uses drones

in firefighting and rescue tasks. In October this year, the HKPF formally established the Force Drone Cadre to assist all Regions in performing flight missions. As at November this year, there are a total of about 800 drone operators under the disciplined services who have been recognised by the Civil Aviation Department (CAD) with Advanced Rating and are qualified to conduct advanced drone operations (including the use of drones weighing more than seven kilogrammes and up to 25 kilogrammes). The disciplined services will, based on operational needs, continue to train sufficient qualified operators to tie in with the development in the future.

(2) As drone technology matures, drones have become more versatile in terms of their functions. At present, in using drone technology, the disciplined services will conduct assessments and take various factors (including nature of operation, location, terrain and weather) into full account before deciding on the most suitable model of drones and the corresponding instrument systems to be used, so as to optimise the performance of different duties and functions. The disciplined services will periodically review the effectiveness of drone technology application in their operations and will keep in view the technological development, so as to devise strategies continuously for the use of drones in the long run.

(3) To further enhance the regulation of the application of drones, the Transport and Logistics Bureau and the CAD have commenced reviewing the existing civil aviation and other relevant legislation and regulatory regime. In the process, reference will be made to similar legislation and standards imposed by the civil aviation authorities of other major regions (including the Mainland China, Australia and Canada), with due consideration given to Hong Kong's present needs and long-term development. As a first step, the CAD will relax the existing restrictions on "beyond-line-of-sight flying activities" under the Small Unmanned Aircraft Order. Meanwhile, the Government will update the civil aviation legislation in phases, starting with amending the existing Small Unmanned Aircraft Order to cover drones weighing more than 25 kilograms and up to 150 kilograms. The Government will also consider the enactment of a new dedicated legislation for various types of Advanced Air Mobility weighing more than 150 kilograms.

The disciplined services will, under Hong Kong's legislative framework, draw on the experience of other regions and apply drone technology where appropriate and feasible. In particular, the HKPF is exploring the introduction of an automatic patrol system, subject to the relaxation of "beyond-line-of-sight flying activities", to conduct automated aerial mission by allowing drones to fly according to default routes and analysing the images using artificial intelligence. This can lead to greater operational effectiveness and higher work quality. While developing drone technology, various departments will exercise stringent control and supervision in the course of enforcing the relevant legislation to ensure that the operation of the drone is safe and complies with the Personal Data (Privacy) Ordinance, so as to protect the privacy of the public.