

LCQ12: Aircraft noise

Following is a question by the Hon Chan Chi-chuen and a written reply by the Secretary for Transport and Housing, Mr Frank Chan Fan, in the Legislative Council today (July 4):

Question:

The Government has indicated that in order to reduce the impact of aircraft noise on areas in the vicinity of flight paths, the Civil Aviation Department has implemented a number of aircraft noise abating measures in accordance with the balanced objectives, promulgated by the International Civil Aviation Organization (ICAO), of managing aircraft noise. Such measures include requiring aircraft in the small hours to avoid, as far as possible, overflying populated areas, and adopting ICAO's noise abatement departure procedure during take-off and the continuous descent approach for landing. However, in recent months, I have received complaints from quite a number of residents in Ma Wan who pointed out that quite a number of aircraft overfly Ma Wan at an altitude below 5 000 feet after taking off in late hours (i.e. between 11pm and 7am the following day), thus generating tremendous noise and making it difficult for them to fall asleep. In addition, a number of residents in Clear Water Bay and Tseung Kwan O have relayed that aircraft have been overflying the two districts at an extremely high frequency in late hours since May this year, causing serious noise nuisance to the residents. In this connection, will the Government inform this Council:

(1) of the respective numbers of aircraft departing Hong Kong which overflew Ma Wan at an altitude (i) below 5 000 feet, (ii) between 5 000 and 7 000 feet, and (iii) above 7 000 feet, from May last year to May this year (set out in a table);

(2) of the respective numbers of times, as recorded by the various aircraft noise monitoring terminals in late hours in each month from May last year to May this year, for which aircraft noise levels reached (i) 70 to 74 decibels (dB), (ii) 75 to 79 dB and (iii) 80 dB or above (set out in a table);

(3) among the aircraft departing Hong Kong from May last year to May this year, of the types of those with noise levels reaching 80 dB or above, and the airlines to which such aircraft belonged;

(4) of (i) the number of flights overflying Sai Kung District in late hours, and (ii) the number of complaints about aircraft noise received by the authorities from the residents there, in each month from January to June this year;

(5) of the measures to be put in place to further abate aircraft noise; and

(6) whether it will set up an aircraft noise monitoring terminal in Sai Kung District; if so, of the details; if not, the reasons for that?

Reply:

President,

In accordance with international standards and recommendations, the design of flight paths takes into account factors including terrain environment and required obstacle clearances. To ensure aviation safety, departing aircraft are required to comply with the minimum climb gradient requirements specified in the departure procedures published in the Hong Kong Aeronautical Information Publication (HKAIP). The departure procedures published in the HKAIP are designed in accordance with the safety requirements of the International Civil Aviation Organization (ICAO). According to the relevant requirements, departing aircraft are required to fly at an altitude of not less than 1 800 feet in the vicinity of Ma Wan. The actual climb gradient of departing aircraft is dependent on various factors such as the payload and performance characteristics of individual aircraft and weather conditions, etc. Generally speaking, as far as minimum climb gradient is concerned, the Civil Aviation Department (CAD) would not specify additional requirement for departing aircraft apart from the requirements set out in the HKAIP.

Our reply to various parts of Hon Chan Chi-chuen's question is as follows:

(1) The number and altitude of aircraft flying over Ma Wan between 11pm and 7am the following day when departing to the northeast of the Hong Kong International Airport (HKIA) between May 2017 and April 2018 (Note 1) are set out at Annex 1.

(2) The CAD has 16 noise monitoring terminals (NMTs). The aircraft noise events recorded between 11pm and 7am the following day by these terminals from May 2017 to April 2018 (Note 1) by month are set out at Annex 2.

According to the noise data recorded at the Ma Wan NMT between 2012 and 2017, the number of noise events of 70 decibels or above and of 80 decibels or above has decreased by 33% and 80% respectively. This shows the effectiveness of the aircraft noise mitigating measures adopted by the CAD, the details of which are elaborated in part (5) below.

(3) Between May 2017 and April 2018 (Note 1), the operating airlines and aircraft types of departing aircraft with noise events of 80 decibels or above recorded between 11pm and 7am the following day are set out at Annex 3.

(4) The HKIA has two parallel runways which run northeast to southwest. The direction from which aircraft land at and depart from the HKIA mainly depends upon the wind direction and other operational considerations. Sai Kung area is primarily affected by aircraft approaching the airport from northeast direction, i.e. using Runway 25. When westerly wind prevails at the HKIA, aircraft will approach the airport from the northeast overflying Tseung Kwan O, Sai Kung, Ma On Shan, Shatin and Tsuen Wan for safety and operational reasons. As such, under acceptable wind direction, wind speed and safety conditions, arriving aircraft between midnight and 7am will be arranged to land from the southwest direction over the sea, i.e. using Runway 07, in order to alleviate the aircraft noise impact on the aforesaid areas.

Furthermore, all aircraft approaching the HKIA from the northeast direction between 11pm and 7am on the following day are encouraged to adopt the continuous descent approach (CDA) subject to operational considerations. As aircraft on CDA descent from a higher altitude, noise experienced in areas such as Sai Kung and Ma On Shan will be lower. The number of aircraft flying over Sai Kung area between 11pm and 7am the following day when approaching from the northeast of the HKIA between January and April 2018 (Note 2) is set out at Annex 4. The number of complaints against aircraft noise from residents of Sai Kung area received by the Transport and Housing Bureau and the CAD between January and June 2018 is set out at Annex 5.

(5) The CAD has implemented a series of aircraft noise mitigating measures in accordance with the balanced approach to aircraft noise management promulgated by the ICAO. These measures include requiring aircraft to avoid overflying populated areas, to adopt the noise abatement departure procedures prescribed by the ICAO during take-off and the quieter CDA for landing, etc. in the small hours as far as possible. The CAD has also implemented the Radius-to-Fix turn flight procedures since 2012 to allow aircraft equipped with satellite-based navigation technology to adhere closely to the nominal centre line of the flight track when departing to the northeast of the HKIA and making south turn to the West Lamma Channel. This keeps the aircraft at a distance away from the areas in the vicinity of the flight paths (particularly Ma Wan), and reduces the impact of aircraft noise on these areas.

Apart from implementing the aircraft noise abatement operational procedures mentioned above, the CAD has prohibited aircraft not meeting the relevant aircraft noise standards from landing and taking off in Hong Kong. Since 2002, aircraft not complying with the noise standards in Chapter 3 of Volume I, Part II of Annex 16 to the Convention on International Civil Aviation (Chapter 3 noise standards) are not allowed to operate in Hong Kong. To strengthen this aircraft noise mitigating measure, starting from 2014, the CAD has imposed further restrictions on aircraft which are marginally compliant with the Chapter 3 noise standards to land and take off in Hong Kong. To further strengthen this measure, the CAD is also planning to impose more stringent requirements with additional operating restrictions on aircraft which do not comply with the noise standards in Chapter 4 of Volume I, Part II of Annex 16 to the Convention on International Civil Aviation (Chapter 4 noise standards) (Note 3), or equivalent, to operate at the HKIA from 10pm to 7am on the following day starting from the Summer Season of 2019. The airlines have been consulted on the plan, and they showed understanding and support. This measure, when implemented, will further alleviate the aircraft noise impact on the local communities.

With the advancement of aviation technology, aircraft engines are quieter than before, and the improved design of airframe has also helped reduce noise significantly. To reduce the impact of aircraft noise on the areas near the flight paths, many airlines are replacing their aircraft with quieter models progressively. The CAD will continue to monitor the progress made by airlines in aircraft fleet replacement and deployment of quieter aircraft for night time operations, as well as the effectiveness of such

measures.

(6) The CAD monitors the implementation of various aircraft noise mitigating measures and the noise caused by aircraft operating into and out of the HKIA through a computerised Aircraft Noise and Flight Track Monitoring System. At present, there are a total of 16 NMTs installed in Hong Kong covering locations along or close to the flight paths, which are respectively at Sha Lo Wan, Tung Chung, Sunny Bay, Ma Wan, Tsing Yi (2 terminals), Tai Lam Chung, Tsing Lung Tau, Ting Kau, Tsuen Wan, Kwai Chung, Tai Wai, Mid-Levels, North Point, Jardine's Lookout and Shau Kei Wan. Sai Kung is at a distance from the airport where overflying aircraft are at relatively higher altitudes and the aircraft noise impact is relatively low. Nevertheless, the CAD will where necessary deploy mobile noise monitoring equipment for short term aircraft noise monitoring and data collection at other locations for analysis in order to have a better understanding of the impact of aircraft noise on those locations.

Note 1: The data for May 2018 are pending verification and thus not available yet.

Note 2: The data for May and June 2018 are pending verification and thus not available yet.

Note 3: Volume I, Part II of Annex 16 to the Convention on International Civil Aviation sets out the aircraft noise standards formulated by the ICAO at different times. The aircraft noise standards of Chapter 3, which were formulated at a later stage than those of Chapter 2, are more stringent. Aircraft marginally complying with Chapter 3 noise standards refers to an aircraft which is in compliance with Chapter 3 noise standards, but its noise level is relatively close to the upper limit prescribed in Chapter 3. The aircraft noise standards of Chapter 4, which are applicable to aircraft for which the application for a Type Certificate was submitted between 2006 and 2017, are more stringent than those of Chapter 3. Generally speaking, the noise levels of Chapter 4-compliant or equivalent aircraft are lower than those of Chapter 3-compliant aircraft.