The Fourth Meeting of the Aerodromes Operations and Planning Sub-Group (AOP/SG/4)

Video Teleconference, 10 to 13 November 2020

Agenda Item 4: Provision of AOP in the Asia/Pacific Region

COVID-19 CHALLENGES: CONTINGENCY PARKING ARRANGEMENT & TYPHOON MEASURES

(Presented by Hong Kong, China)

SUMMARY

This paper presents the challenges brought by COVID-19 to Hong Kong International Airport due to a surge in demand for parking space in response to reduction in air transport services. This paper also shares the contingency measures in dealing with the passage of typhoon with a view to ensuring aircraft and airfield safety.

1. INTRODUCTION

1.1 Air passengers' traffic has been seriously affected by the COVID-19-related travel restrictions. With a significant reduction in demand for air transport, air carriers have progressively grounded their aircraft from services. To accommodate the unusually high demand for aircraft parking, the Airport Authority Hong Kong (AA) has been working closely with local home-based carriers and the Hong Kong Civil Aviation Department (CAD) in formulating a contingency parking plan for long layover aircraft at the Hong Kong International Airport (HKIA). Compounding the situation is that the HKIA is located in the sub-tropical zone where tropical cyclones frequently visit during the period between April and October on an annual basis. Additional measures for safeguarding these long layover aircraft and preserving airfield safety are therefore adopted.

2. DISCUSSION

2.1 Long Layover Aircraft Parking on Taxiways and Taxilanes

2.1.1 To accommodate the large number of grounded aircraft while maintaining normal airport services to airlines and passengers, the HKIA has been exploring every possibility in the provision of aircraft parking positions. Apart from temporarily re-designating a number of frontal and remote parking stands for long layover aircraft, the Airfield Department of the AA has been working closely with home-based carriers in assessing their imminent needs, such as the number of additional parking stands required and the preferred parking configuration with reference to the fleet mix of their grounded aircraft, etc. With these information, the AA decided that temporary parking positions on taxiways and taxilanes should be arranged.

2.1.2 The arrangement of short term (in terms of hours) temporary parking on taxiways / taxilanes was not uncommon during normal airport operation, but it was mainly to cater for ad hoc scenarios such as aircraft reshuffling abeam parking apron, full apron condition, etc. Therefore, the provision of long term (in terms of weeks and months) and large scale contingency parking in addressing the pressing needs from home-based carriers would require careful planning and swift judgement by all parties concerned. At the time when the contingency parking arrangement was formulated, international guidelines and experience from other airports were not immediately available to HKIA. As such, the following factors were considered when formulating the contingency parking arrangement: -

a) Annex 14 SARPs on aircraft clearance were adopted as the basis of design;

b) Nose-gear stopping positions were marked on pavement;

c) Tail-to-nose parking was adopted;

d) Allocation of parking positions should take into consideration airlines' strategy of rotating their aircraft to maintain airworthiness and execute their maintenance plans;

e) Special taxiway access arrangements / procedures were introduced to facilitate aircraft maintenance by maintenance personnel; and

f) Ground access and aerodrome surface conditions have been considered to ensure that the achievement of the required response time by Rescue and Fire Fighting Services (RFFS) would not be affected, including (i) established emergency vehicle access were not blocked, (ii) adequate clearance on the concerned taxiways / taxilanes were provided to allow unrestricted access for RFFS vehicles and (iii) close communication on aerodrome situation was maintained with RFFS provider.

2.1.3 The first layout design proposal was submitted to CAD and was finalized in February 2020. In the past few months, close communication with home-based carriers and CAD was maintained, with several adjustments made to the contingency parking plan to address different parties' concerns. In July 2020 when the demand for contingency parking was peaked, a total of 115 nos. of Code C and Code E parking positions have been temporarily provided on taxiways and taxilanes. Together with the 126 nos. of parking stands temporarily deployed for long-term parking, a total of 241 nos. of contingency parking positions have been made available for home-based carriers at HKIA.

2.2 Additional Measures in Preparing for Typhoon Season

2.2.1 According to HKIA's experience, the use of taxiways and taxilanes for contingency parking was considered effective in addressing the additional demand for parking positions due to the impact brought by the COVID-19 pandemic. Yet, additional measures would be required in order to secure aircraft and airfield safety considering that majority of taxiways / taxilanes are located in exposed areas with no or limited shelters (e.g. terminal buildings, hangars etc.) for protecting aircraft from strong winds during typhoon conditions.

2.2.2 Discussions among AA, CAD, home-based carriers and the Hong Kong Observatory (HKO, the local aviation meteorological service provider) were made in April 2020, which was 1.5 months in advance of the onset of the typhoon season in mid-June 2020. Through close communication and coordination, different safeguarding measures were adopted which are summarized below:-

a) Analyzed wind data (e.g. wind speed, wind direction, gust) obtained from previous typhoons;

b) Arranged fly out of aircraft. For aircraft in out port, return flight should be delayed until passage of typhoon;

c) Arranged strategic parking of aircraft in accordance with their wind resilience characteristics as advised by aircraft manufacturers. Aircraft types which were more resilient to strong wind (e.g. B777 and A350) were strategically parked / positioned on taxiways and taxilanes to create shelter for aircraft with less wind resilience (i.e. Code C aircraft). Frontal parking was also arranged for Code C aircraft;

d) Increased aircraft weight through typhoon pre-fuel;

e) Provided double chocks to secure the aircraft;

f) Arranged concrete or metal block tie-downs for designated aircraft as per airlines' instruction; and

g) Loaded pallet-blocks and / or sandbags into cargo compartment of aircraft to i) increase aircraft weight and ii) adjust the centre of gravity of aircraft to enhance wind resilience.

2.2.3 The AA has been maintaining close coordination with the HKO throughout the typhoon season, so that timely response to the latest forecast could be made to minimize the impact on the operation of HKIA. Joint efforts with airlines were also made to ensure that all agreed procedures could be readily deployed. In short all contingency parking arrangement and typhoon preparation measures have been implemented in an effective manner with the joint efforts of the airport community.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the collaborative efforts of AA and the airport community in addressing the challenges due to the COVID-19 pandemic;

b) share experience and lesson-learnt of different airports in coping with difficulties encountered in parking an unprecedented number of grounded aircraft; and

c) discuss any relevant matters as appropriate.

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