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AAIA

Air Accident Investigation Authority

Aerodrome (ADRM)

Investigation Report

**Incident to
Boeing 737-800BCF, VP-BEN,
Hong Kong International Airport
Hong Kong
14 October 2021**

IVR-2025-03

AAIA Investigations

Pursuant to Annex 13 to the Convention on International Civil Aviation and the Hong Kong Civil Aviation (Investigation of Accidents) Regulations (Cap. 448B), the sole objective of the investigation and the Investigation Report is the prevention of accidents and incidents. It is not the purpose of the investigation to apportion blame or liability.

The Chief Inspector instigated an inspector's investigation into the incident in accordance with the provisions in Cap. 448B.

This incident investigation report contains information of an occurrence involving a Boeing 737-800BCF aircraft, registration VP-BEN, flight number SBI8817, operated by Siberia Airlines, which occurred at Hong Kong International Airport (VHHH) on 14 October 2021.

The aircraft operator, the Hong Kong Observatory (HKO), the Airport Authority Hong Kong (AAHK) and the Civil Aviation Department (CAD) provided assistance to the investigation.

Unless otherwise indicated, recommendations in this report are addressed to the regulatory authorities of the State or Administration having responsibility for the matters with which the recommendations are concerned. It is for those authorities to decide what action is taken.

This Investigation Report supersedes all previous Preliminary Report and Interim Statements concerning this incident investigation.

All times in this Investigation Report are in Hong Kong Local Time unless otherwise stated.

Hong Kong Local Time is Coordinated Universal Time (UTC) + 8 hours.

Chief Accident and Safety Investigator

Air Accident Investigation Authority

Transport and Logistics Bureau

Hong Kong

April 2025

Synopsis

At time 00:03 on 14 October 2021, a Siberia Airlines (S7) Boeing 737-800 Boeing Converted Freighter (BCF), registration mark VP-BEN, flight number SBI8817, from Irkutsk International Airport in Russia (UIII) to Hong Kong International Airport (VHHH) landed on Runway (RWY) 07L.

While following Air Traffic Control (ATC) instructions to vacate the runway via Taxiway (TWY) A7, the aircraft taxied onto a paved area between TWYs A6 and A7 (the incident site). The incident site was a section of a twin-taxiway system being built for future aircraft operations. The aircraft stopped in front of marker boards on the incident site and was instructed by ATC to shut down all engines.

After inspection by ground engineers, the Airport Authority Hong Kong (AAHK) advised ATC that there was no damage to either the aircraft or runway/airport facilities. No person was injured in the occurrence.

The investigation team has made two safety recommendations.

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1. FACTUAL INFORMATION

1.1 History of the Flight

- (1) At time 00:03 on 14 October 2021, a Siberia Airlines (S7¹) Boeing 737-800 (B738) landed on Runway (RWY) 07L² at Hong Kong International Airport (VHHH). The B738 was a Boeing Converted Freighter (BCF), registration mark VP-BEN, flight number SBI8817, from Irkutsk International Airport in Russia (UIII).
- (2) While following the instructions of the air traffic controller (the controller) to vacate the runway via taxiway (TWY) A7 after landing, the B738 taxied onto a paved area between TWYs A6 and A7 (the incident site). The incident site was a section of a twin-taxiway system being built and had not yet been commissioned for aircraft operations.
- (3) The B738 stopped in front of marker boards on the incident site [see Figure 1] and was instructed by the controller to shut down all engines.

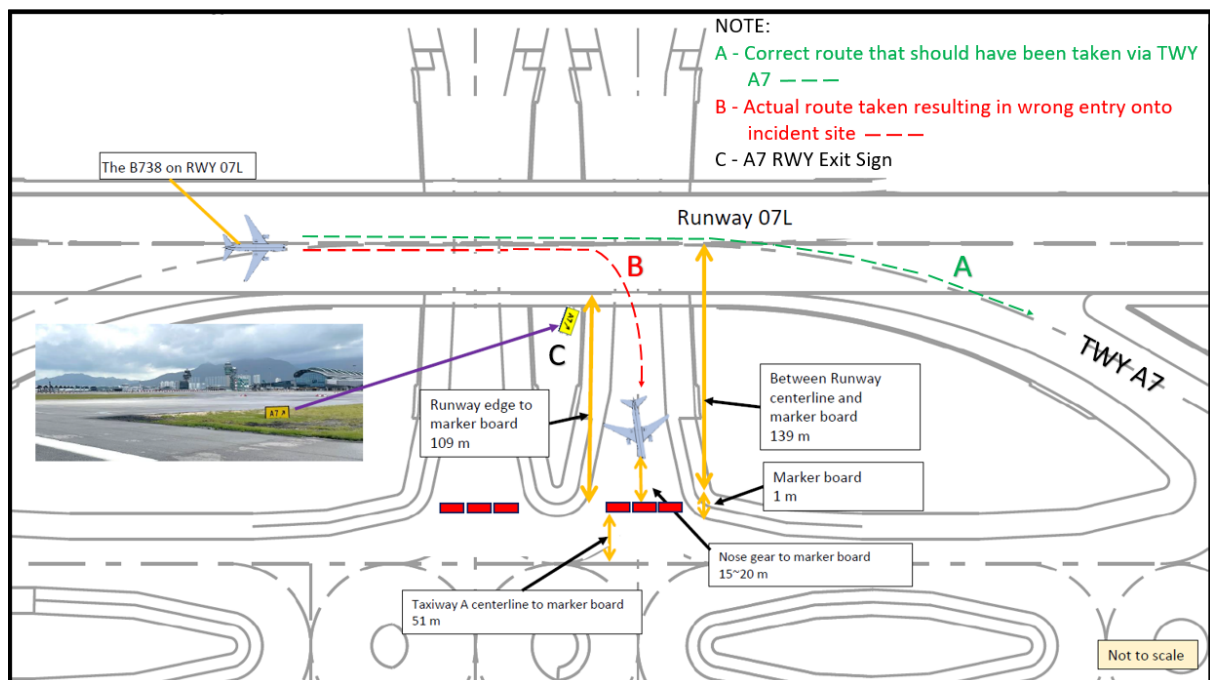


Figure 1 – Entry of the B738 onto the incident site

1 S7 is the airline code of the International Air Transport Association (IATA).

2 Under the Three-runway system (3RS) Project, a new runway to the north of and parallel to the original dual runways was being constructed at VHHH at the time of the incident. The original North Runway (RWY 07L/25R) was re-designated as the Centre Runway (RWY 07C/25C) on 2 December 2021, to prepare for the commissioning of the new North Runway in 2022 with the designation of RWY 07L/25R. The incident occurred on 14 October 2021; hence the designation of RWY 07L/25R in this Investigation Report refers to that of the original North Runway prior to its re-designation on 2 December 2021.

- (4) Inspections by ground engineers and the Airport Authority Hong Kong (AAHK) staff on site showed that there was no damage to either the B738 or runway and airport facilities. With the clearance of the controller, the B738 was towed to its parking bay by a tug without further incident.

1.2 Injuries to Persons

There were four crew members on board the B738, namely the Captain, the First Officer, the Relief Pilot and the Loadmaster. There were no injuries to any of the crew members or other persons due to the incident.

Injuries to Persons						
Persons on board:	Crew	4	Passengers	0	Others	0
Injuries	Crew	0	Passengers	0		

Table 1: Injuries to Persons

1.3 Damage to Aircraft

There was no damage to the B738.

1.4 Other Damage

There was no damage to other property or the environment.

1.5 Personnel Information

1.5.1 Flight Crew

- (1) The Captain was the pilot flying (PF³). The First Officer was the pilot monitoring (PM⁴). The relief pilot was in the observer's seat. The flight crew members held valid licences and medical certificates [see 6.2].
- (2) The Captain said he had operated to Hong Kong "*some years ago*" while the First Officer had not operated to Hong Kong before. The relief pilot had been to Hong Kong three times previously, namely March and November 2014 and September 2021, being in the observer's seat on all these occasions.

3 The Pilot Flying (PF) takes direct responsibility for flying the aircraft for the complete flight or for particular parts of it such as the Descent/Approach and Landing.

4 The Pilot Monitoring (PM) or alternatively Pilot Not Flying (PNF) monitors the flight management and aircraft control actions of the PF and carries out support duties such as communications and check-list reading.

1.5.2 Air Traffic Controller

The controller held a valid Air Traffic Control (ATC) licence with appropriate ratings and a valid medical certificate [see 6.3].

1.6 Aircraft Information

1.6.1 Boeing B737-800BCF

The B738 had valid Certificates of Registration and of Airworthiness [see 6.4].

1.6.2 Maintenance History

After arriving at the parking bay, the pilots of the B738 reported to the China Aircraft Services Limited (CASL) engineers on site that the right-hand side (RHS) windscreen wiper was not working and requested the CASL engineers to have it checked and repaired.

1.7 Meteorological Factors

At 00:00 on 14 Oct 2021, Tropical Storm Kompasu was centred at about 690 km Southwest of Hong Kong. Strong Wind Signal Number 3⁵ was in force. The outer rain bands of Kompasu had brought occasional heavy showers with reduced visibility down to about 3000 m to the north runway. Winds at the airport were around 10 to 15 kts easterlies with gusts up to about 20 kts. [See Appendix 1 for details of the weather report received from the Hong Kong Observatory.]

1.8 Navigation Aids

1.8.1 There were no reports of abnormal operation of any ground-based navigation aids or aerodrome visual ground aids including ground markings, movement area guidance signs, taxiway lights, stop-bar lights and runway lights.

1.8.2 As the incident site had not been commissioned for operational use as taxiways, it had not been provided with any visual aids (i.e. ground markings and lighting). Marker boards with unserviceability lights (i.e. red fixed lights) were placed at the site. Details on the location of these marker boards are shown in paragraph 1.17.3(3)(e) and Photo 2.

5 In warnings issued by the Hong Kong Observatory, Strong Wind Signal Number 3 means that strong wind is blowing or expected to blow generally in Hong Kong near sea level, with a sustained speed of 41-62 kilometres per hour (km/h), and gusts which may exceed 110 km/h, and the wind condition is expected to persist.

1.9 Communications

The B738 was equipped with Very High Frequency (VHF) radio communication systems. All VHF radios were serviceable. Communications between Hong Kong ATC and the B738 were recorded by the Digital Recording System (DRS⁶) of Hong Kong ATC, in support of the provision of air navigation services. There was no interruption to communications between Hong Kong ATC and the B738.

1.10 Aerodrome Information

1.10.1 Hong Kong International Airport (VHHH)

See 6.5.

1.10.2 Additional Information on VHHH

1.10.2.1 The 3-Runway System (3RS) Project

- (1) At the time of the incident, the 3-Runway System (3RS) project was in progress at VHHH. One of the core components of the 3RS Project was the construction of a new runway to the north of and parallel to the original dual runways.
- (2) When the new North Runway became operational, the previous North Runway, later re-designated as the Centre Runway, would be closed for reconfiguration before the 3-runway system became fully operational.

1.10.2.2 The Incident Site

- (1) As part of the 3RS Project, a pair of dual taxiways on both sides of and across the original North Runway was constructed. These dual taxiways would provide a temporary crossing for aircraft ground movements between the new North Runway and those parts of the airport to the south of the original North Runway during closure of the latter runway for reconfiguration. These temporary taxiways would be decommissioned once the reconfigured Centre Runway and the wrap-around taxiways at both runway ends became operational.
- (2) The incident site was located between TWYs A6 and A7 on the southern side of the original North Runway (07L/25R) [see Figure 2 below].

6 Digital Recording System is an ATC system that provides recording, playback and real time monitoring functions for radio transmissions, intercom and audio reception at controller workstations from the headset microphone and the surrounding area.



Figure 2 - Aerial view of the incident site

- (3) The part of the project at the incident site commenced in April 2017 and was completed in June 2020. At the time of the incident on 14 October 2021, there were no ground markings or aerodrome ground lights on the incident site as it had not yet been commissioned for aircraft operational use, which was scheduled for the 3rd quarter of 2022. As stated in 1.8.2, marker boards with unserviceability lights were placed at the site.

1.10.2.3 Aeronautical Information

- (1) The Aeronautical Information Management Centre (AIMC) in the Air Traffic Management Division of CAD is responsible for the collection and dissemination of information relating to the Hong Kong Flight Information Region [see Hong Kong Aeronautical Information Publication (AIP) Part 1, Section GEN 3.1]. Aeronautical information products include:
- (a) aeronautical information of a lasting character essential to air navigation is issued in the Hong Kong Aeronautical Information Publication (AIP);
 - (b) temporary changes to the information contained in the AIP are provided by means of special pages as an AIP Supplement;
 - (c) information that does not qualify for the origination of a NOTAM or for inclusion in the AIP, but which relates to flight safety, air navigation, technical, administrative or legislative matters is issued as an Aeronautical Information Circular (AIC);
 - (d) information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard the timely knowledge of which is essential to personnel concerned with flight operations is issued as a Notice to Airmen (NOTAM) and distributed by means of telecommunication; and

- (e) aeronautical charts.
- (2) AIC 10/19 was issued on 29 March 2019 [see Appendix 3] with the general information and a diagram that new taxiway connections were being constructed at the landscaped areas adjacent to the (then) existing North Runway for the future 3RS and that while works were progressing there might be temporary changes to the surface conditions of the landscaped areas. The construction works were planned for completion by Q2, 2020.
- (3) AIC 13/20 was issued on 27 April 2020 [see Appendix 4] to supersede AIC 10/19 due to the extension of the estimated completion date to Q4 2020. The rest of the information in the previous AIC10/19 remained unchanged.

1.11 Flight Recorders and ATC Records

The Digital Flight Data Recorders (DFDR) records of the B738 and records from ATC systems including DRS and A-SMGCS were retrieved and analysed.

1.12 Wreckage and Impact

There was no damage to the B738.

1.13 Medical / Pathological Information

No medical or pathological investigations were conducted as a result of this occurrence, nor were they required.

1.14 Smoke, Fire and Fumes

Not applicable.

1.15 Survival Aspects

Not applicable.

1.16 Tests and Research

Not applicable.

1.17 Organisational and Operational Information

1.17.1 Siberia Airlines (S7)

- (1) According to information obtained from Siberia Airlines (S7), the S7 Headquarters (HQ) in Russia was responsible for all flight dispatch matters in relation to S7 flights coming to or departing from Hong Kong, including the filing of flight plans.
- (2) As advised by S7 HQ during the investigation, the pre-flight information provided to their flight crews did not include AIC information as their understanding of the ICAO Annex 15⁷ requirements was that *“the AIC contains information that does not require the publication of NOTAM or its inclusion in the AIP”*.
- (3) The Director of the S7 Branch in Hong Kong was not responsible for aircraft operation matters and had no knowledge of the construction works involved in the occurrence. The Hong Kong Branch Director’s responsibilities covered contacts with all handling agents for their provision of services, financial issues, invoicing, etc., and communication issues with CAD and AAHK.

1.17.2 The B738 Flight Crew

- (1) According to the flight crew of the B738, the pre-landing briefing was done at top of descent, including the exit from RWY 07L to be used. They clearly stated to the investigation team that they were not aware of the paved area between TWYs A6 and A7 (the incident site) or any construction works near RWY 07L.
- (2) The crew also advised that there was heavy rain on short final and over the runway during their landing, with visibility reduced. Use of the windscreen wiper was not required before touchdown and the RHS windscreen wiper was found inoperative only when it was selected after landing.
- (3) After landing, the B738 crew was instructed twice by ATC to expedite vacating the runway via TWY A7. When they saw the A7 RWY Exit Sign and the paved area behind the sign, they turned onto the paved area, believing it to be TWY A7. They then saw the marker boards in front of them and stopped the aircraft on the incident site while at the same time the controller instructed the B738 to stop.

⁷ Annex 15 to the Convention on International Civil Aviation sets out Standards and Recommended Practices for aeronautical information services.

1.17.3 Airport Authority Hong Kong

- (1) The Airport Authority Hong Kong (AAHK) is a statutory body governed by the Airport Authority Ordinance (CAP 483, The Laws of Hong Kong), wholly owned by the Hong Kong Special Administrative Region (SAR) Government and responsible for VHHH operations and development.
- (2) Operation of VHHH by the AAHK is under an Aerodrome Licence granted by CAD in compliance with CAD safety and security requirements.
- (3) In relation to the incident site, AAHK had provided aerodrome ground lights (AGL), ground markings and marker boards as follows:
 - (a) Standard aerodrome ground lights (AGL) and ground markings were provided along the surface of runways and exit taxiways.
 - (b) RWY Exit Sign for TWY A7 was placed *“prior to the runway exit point in line with a position at least 60 m prior to the point of tangency where the code number is 3 or 4”* as per ICAO Annex 14⁸, Volume 1, paragraph 5.4.3.17 [see Figure 3].



Figure 3: Location of RWY Exit Sign for TWY A7

- (c) The inscription on the RWY Exit Sign for TWY A7 consisted of an arrow with a 45-degree inclination to indicate the direction towards TWY A7 [see Photo 1].

⁸ Annex 14 to the Convention on International Civil Aviation sets out Standards and Recommended Practices for the physical characteristics and obstacle limitation surfaces to be provided for at aerodromes, and certain facilities and technical services normally provided at an aerodrome.



Photo 1: Inscription on RWY Exit Sign for TWY A7

- (d) As it was considered that the incident site had not yet been commissioned for operations, it had not been provided with any visual ground aids (i.e. ground markings and lighting). Marker boards and unserviceability lights (i.e. red fixed lights) were placed at the site.
- (e) These marker boards with unserviceability lights were placed at that end of the incident site close to the junction with TWY A at 51 m from the TWY A centreline and was far away from the other end of the incident site at its junction with the RWY at 140 m from RWY centreline and 109 m from RWY edge [see Photo 2].



Photo 2: Location of marker boards on the incident site

- (f) The location of the marker boards as stated above was to avoid the risk of damage to aircraft in case of a runway excursion and impact due to jet blast generated by aircraft taking off. This consideration was based on ICAO Annex 14, Volume 1, paragraph 3.4.3 that *“A strip including a precision approach runway shall, wherever practicable, extend laterally to a distance of at least 140 m where the code number is 3 or 4 on each side of the centre line of the runway.....”* and paragraph 3.4.7 that *“No mobile object shall be permitted on this part of the runway strip during the use of the runway for landing or take-off”*.

1.17.4 Civil Aviation Department

- (1) Besides aeronautical information service, the responsibilities of the CAD include, among other things, the provision of air traffic control (ATC) service within the Hong Kong Flight Information Region as assigned by ICAO, as well as overseeing the safety of airport operations.
- (2) The controller cleared the B738 to land RWY 07L in a normal manner. When the controller noticed that the aircraft had slowed down its taxi speed when passing abeam TWY A6, he told the pilot to expedite and take TWY A7 as the following arrival was 3.2 NM behind (which was a normal spacing). When the controller noticed that the B738 had slowed down further, he instructed the pilot to expedite via TWY A7 again. The pilot read back the instruction correctly.
- (3) Both the controller and ATC Aerodrome Supervisor (ASU) advised during the investigation interviews that the incident site was completely dark at night although it could be visually observed from the tower in daytime. ATC had received prior briefing and was aware that the incident site was not available for operational use. When the controller noticed that the B738 was taking the wrong runway exit onto the incident site, he realised that there was a problem and instructed the B738 to stop immediately and instructed the succeeding arrival on final to go around. The controller activated the crash alarm to alert the Airport Fire Contingent (AFC) as he was concerned that there might be obstructions on the incident site which could affect the B738. The controller instructed two more succeeding arrivals to go around.
- (4) The ASU took over the control of the situation involving the B738, including communication with Rescue Leader and Apron Control staff on scene so that the controller could focus on his other ATC operations. It was difficult to ascertain by visual observation from the control tower whether the B738 was on the grass area or on the paved area. The ASU therefore told the B738 to shut down all engines and expect to be towed from the incident site afterwards. On receiving information from Rescue Leader and the Apron Control staff that there was no visual damage to the aircraft or

ground structures, the ASU arranged for the B738 to be towed away from the incident site.

1.18 Additional Information

Not applicable.

1.19 Useful or Effective Investigation Techniques

Not applicable.

2. Safety Analysis

The Safety Analysis provides a detailed discussion of the safety factors identified during the investigation, providing the evidence required to establish the findings, causes, contributing factors and the safety recommendations.

2.1 Introduction

The incident took place shortly after midnight when Strong Wind Signal Number 3 was in force and the airport was affected by passing showers. The investigation reviewed the available evidence from the perspectives of weather conditions, aircraft operations, ATC operations, airport operations and dissemination of aeronautical information.

2.2 Weather Conditions

- (1) Whilst the crew of the B738 stated that it was raining heavily during their approach to and landing on RWY07L, some of the airport staff who proceeded to the B738 location immediately after the incident recalled it was not raining and the ground was not wet. Reference was thus made to the weather report received from HKO [see Appendix 1], in particular the radar images that covered the period from three minutes before the incident time of 00:03 hours HKT to three minutes after the incident, in an attempt to ascertain whether or not it was raining over RWY07L during the incident.
- (2) Referring to item (d) of the Attachment in Appendix 1, the 1-min visibility reading of '25RA' forward scatter meter reduced from 7 km to 3200 m during the time from 00:02 to 00:03 and the reading of 'MID' forward scatter meter also reduced from 11 km to 5000 m during the time from 00:03 to 00:04 indicated a reduction in visibility over the eastern and middle sections of RWY07L as a result of probable rain shower that moved in a general east to west direction.
- (3) Item (g) of the Attachment to Appendix 1 shows the Constant Altitude Plan Position Indicator (CAPPI) images from the storm detecting radar on top of Tai Mo Shan) at 3 km above the CAPPI horizon. Comparing the two images captured at 00:00:06 and 00:06:06 respectively, it can be seen that within that 6-min period, a patch of high level rain echo moved from over the north-eastern half of the airport island (covering the middle and eastern parts of the north runway around 00:00:06) in a north-westerly direction and became clear of the airport island but was still covering Sha Chau some time before the end of the period. It can be concluded that there was rain at least over the middle and eastern parts of RWY07L during part of that period, without considering the wind factor. According to item (c) of the Attachment to Appendix 1, the 2-min surface wind during

the period from 00:00 to 00:05 HKT was mainly easterly of around 15 knots with gusts up to 23 knots along the north runway.

- (4) Item (h) of the Attachment to Appendix 1 shows Plan Position Indicator (PPI) images originated from the Terminal Doppler Weather Radar (TDWR) located at Brother's Point (Tai Lam). Signals are transmitted at 0.6 degree of the TDWR horizon covering the entire Lantau Island, the airport island and the surrounding water area. However, the coverage is limited in some sectors due to terrain blockage of Lantau Island. Within that slightly less than 7-min period captured, in general the patch of rain echo moved from over the airport island towards the northeast with precipitation intensity (the colours red, yellow, green and blue represent intensity in descending order) and echo size reducing as the rain echo travelled. In the 23:59:55 image, intense echo returns (red/yellow) could be seen lying east of the two runways (the east echo) as well as over and to the north of the western portion of RWY07L (the west echo). At 00:01:06 the west echo shifted to the northwest and was clear of the RWY07L approach path. However the blue and green echo remained in the area until 00:03:55. From 00:01:06 to 00:04:40 the east echo shifted northward and westward affecting RWY07L. At 00:05:51 the east echo was fully clear of RWY07L affecting only the missed approach track. It can be concluded that RWY07L was under the effect of rain echo from 23:59:55 to 00:04:40.
- (5) Based on the analysis in points (2) to (4) above, it was highly probable that the B738 crew had encountered moderate to heavy rain on final approach and upon landing RWY07L, as they mentioned in the investigation interview. As a result, flight visibility would have been affected.

2.3 Aircraft Operations

2.3.1 S7 operations at VHHH

- (1) The S7 Branch in Hong Kong handled mainly administrative and accounting matters. Flight dispatch matters for flights to/from Hong Kong were handled by S7 dispatch office in Russia through HAS as the local handling agent. According to the S7 HQ, AIC information would not be included in the Pre-flight Information Bulletins. Hence information on construction works adjacent to the North runway in AIC 10/19, which was later superseded by AIC/13/20, was not known to the B738 crew. However, according to ICAO Annex 15, information in AICs include information on flight safety, among others.
- (2) The HAS flight dispatch supervisor was only aware of a new runway being built at VHHH but not the relevant details or the construction works involving the incident site.

2.3.2 Flight Crew Situational Awareness

- (1) From the evidence collected, the investigation team considered the effects of the following aspects on the situational awareness of the B738 flight crew:
 - (a) familiarity of the flight crew with VHHH,
 - (b) awareness of the flight crew of the conditions of the incident site,
 - (c) visibility from the cockpit on the runway after landing, and
 - (d) ATC instruction to expedite leaving the runway.
- (2) Regarding (a), all of the flight crew members were relatively unfamiliar with VHHH. The Captain recalled that it was “*some years ago*” that he had operated to VHHH. The First Officer had not operated to VHHH before. The relief pilot had been to Hong Kong three times previously, namely March and November 2014 and September 2021, being in the observer’s seat on all these occasions.
- (3) Regarding (b), information on construction works adjacent to the North runway was published in AIC 10/19 on 29 March 2019, which was later superseded by AIC/13/20 on 27 April 2020. Nevertheless, the Pre-flight Information Bulletins provided by S7 HQ to the flight crew did not include AIC information, according to the company procedure of S7. Hence, the flight crew members of the B738 had no prior knowledge of the presence of a paved area leading out of the runway and that the paved area was not available for aircraft operations. When pre-landing briefing was done at top of descent, which included the exit from RWY 07L to be used, information on the incident site was therefore not covered as it was not available to the crew.
- (4) Regarding (c), the crew advised the investigation team that there was heavy rain on short final and over the runway during their landing and the RHS windscreen wiper was found inoperative when it was selected after landing. These two factors together worsened the situation for the flight crew when they were trying to find the required exit taxiway to the right of the aircraft.
- (5) Regarding (d), after the B738 landed, ATC instructed the aircraft twice to expedite vacating the runway via TWY A7. Whilst the instructions might have put pressure on the flight crew, they were in line with ICAO guidance. Doc 4444, paragraph 7.10.3.1, item g) states that “*when necessary or desirable in order to expedite traffic, a landing aircraft may be requested to expedite vacating the runway*”. Doc 4444, paragraph 7.10.3.3 states that “*if the pilot-in-command considers that he or she is unable to comply with the requested operation the controller shall be advised without delay*”.

- (6) The investigation team considers that the crew members' unfamiliarity with VHHH and unawareness of the presence of an unlit and unmarked non-operational paved area (the incident site) leading out of the runway in items (a) and (b) were factors contributing to the occurrence of the incident.
- (7) The combined effects of the factors in (c), i.e. the rain over the runway and the inoperative right-hand side windscreen wiper of the aircraft, impaired the flight crew's situational awareness. Coupled with these factors, the presence of the non-operational paved area leading out of the runway adversely affected the flight crew's judgement on the correct taxiway to follow.

2.4 Air Traffic Control Operations

- (1) The spacing between the B738 and the subsequent arrival was normal at the time the B738 landed. When the controller observed that the B738 was slowing down its taxiing speed on the runway, he instructed the B738 to expedite. The instruction was in line with ICAO Doc 4444 guidance and was acknowledged by the B738.
- (2) ATC was aware that the incident site had not yet been commissioned for operational use and it was completely dark at night when observed from the ATC Tower. When the B738 took the wrong turn onto the incident site, the controller instructed it to stop and activated the crash alarm to alert the Airport Fire Contingent (AFC), due to the concern that there might be obstructions on the incident site which could affect the B738.
- (3) Due to the occurrence of the incident, the controller instructed the succeeding arrival on final to go around. With the B738 remaining on the incident site, he instructed two more succeeding arrivals to go around.
- (4) The ASU took over control of the incident from the controller so that the controller could concentrate on his other normal ATC responsibilities. In view of the uncertain conditions of the incident site, the ASU instructed the B738 to shut down all engines. The ASU arranged for the B738 to be towed away from the incident site after information was received from the AFC and Apron Control staff on site that there was no visual damage to the aircraft or ground structures. Such precautionary measures to avoid possible damage to the aircraft and ground facilities were considered appropriate.

2.5 Airport Operations

The investigation team had assessed the following issues on airport operations and development, which are under the responsibility of AAHK as the aerodrome operator:

- aerodrome ground lights, signage and markings,
- changes in the aerodrome operating environment,
- marker boards for the delineation of closed areas,
- engagement by AAHK of the aviation community, and
- safety risk assessment.

2.5.1 Aerodrome Ground Lights, Signage and Markings

- (1) Standard aerodrome ground lights (AGL) and ground markings were provided along the surface of runways and exit taxiways and a RWY Exit Sign for TWY A7 with a 45-degree inclination to indicate the correct direction towards TWY A7 was also placed in accordance with ICAO Annex 14.
- (2) As the incident site had not yet been commissioned for operational use, it was appropriate that taxiway AGL and ground markings were not provided. However, considering the size and location of the incident site leading out from the runway and the significant change in its surface condition from a grass area to a paved area, the investigation team considers that additional measures by AAHK would help avoid the possibility of confusion to pilots due to the significant change in landscape in the vicinity of the incident site.

2.5.2 Changes in the aerodrome operating environment

- (1) In the provision of aerodrome ground lights, signage and markings, aerodrome operators have to ensure the appropriate compliance with relevant ICAO Annex 14 SARPs as one of the safety requirements. The investigation team considers that it is equally important for such provisions to remain valid and appropriate in line with changes in the aerodrome operating environment.
- (2) When the entire area between the A7 RWY Exit Sign and TWY A7 was previously a grass area, the inscription consisting of an arrow with a 45-degree inclination on the sign, which was ICAO-compliant, would have given a good indication to pilots of the correct direction of TWY A7. However, the incident site had subsequently changed to a paved area in the form of a taxiway, although markings had not been provided as it had not been commissioned for aircraft operational use, a practice in line with the requirements of ICAO for taxiway markings. The investigation team considers that, with the location of the paved area immediately behind the A7 RWY Exit Sign, the possibility of pilots mistaking the paved area to be TWY A7 could not be disregarded, especially for pilots unfamiliar with VHHH, as in this case.

- (3) It is stated in ICAO Doc 9157 – Aerodrome Design Manual, Part 4 – Visual Aids, Chapter 12 that:
- Paragraph 12.1.1: *“The achievement of safe and efficient aircraft taxiing and ground movement at aerodromes requires the provision of a system of signs for the use of pilots and vehicle drivers on the movement area”.*
 - Paragraph 12.1.7: *“An information sign shall be provided where there is an operational need to indicate, by a sign, a specific location, or routing (direction or destination) information, or to provide other information relevant to the safe and efficient movement of aircraft and vehicles”.*
- (4) Because of site constraints in the vicinity of the incident site, a simple arrangement to provide additional signs might not be easily achievable. Nevertheless, ICAO Annex 14 paragraph 5.2.17.1 states that *“where an information sign would normally be installed and is impractical to install, as determined by the appropriate authority, an information marking shall be displayed on the surface of the pavement”.*
- (5) In tandem with the commencement of AAHK’s provision of ICAO Annex 14 taxiway-related visual aids (e.g. taxiway edge marking) in end October 2021, a yellow cross [see Photo 3] was painted at the junction of the incident site with the runway at each of the four locations on both sides of the runway as shown in Appendix 2.



Photo 3: Yellow cross painted on the incident site after the incident

- (6) The yellow crosses provided served only as a temporary preventive measure until the runway on which this incident occurred was closed for

reconfiguration to become the Centre Runway after the new North Runway was commissioned in November 2022. Nevertheless, the investigation team concurs with this preventive measure and considers that the concept behind its provision, albeit for a limited period, is appropriate and important for the holistic safety risk assessment process for future construction works at VHHH.

2.5.3 Marker Boards for the Delineation of the Incident Site

- (1) Taking into consideration ICAO Annex 14 requirements concerning runway strip, marker boards with obstruction lights were placed at that end of the incident site close to the junction with TWY A at 51 m from the TWY A centreline and was far away from the other end of the incident site at its junction with the RWY at 140 m from RWY centreline and 109 m from RWY edge.
- (2) In this incident, the three pilots onboard the B738 advised during the investigation interviews that they did not see the marker boards until the aircraft had left the runway and turned onto the incident site.
- (3) After the incident, an additional set of marker boards were placed on the paved area on the other side (northern side) of the North Runway on 18 October 2021, to avoid the possibility of aircraft making a wrong turn to the left. In accordance with ICAO Annex 14 requirements, these additional marker boards were located outside the runway strip at 140 m from the North Runway centreline. Furthermore, on each of the previous set as well as the additional set of marker boards, three extra red lights were installed with three lights facing either side of the marker boards to enhance their visibility.

2.5.4 Engagement of the Aviation Community

- (1) There are established forums under the chairmanship of AAHK to engage CAD, AAHK contractors and other stakeholders in the aviation community on operational and safety matters, including the 3RS Project. Such forums include, among others, the Airfield Operations and Safety Committee (AOSC), the Visual Aids Working Group (VAWG), and the Runway Safety Team (RST).
- (2) The AOSC meets once every four months to discuss and review day-to-day airfield activities and make recommendations to improve safety and efficiency relating to aircraft ground movements. Its membership includes representatives of AAHK departments, CAD divisions, the Government Flying Service, the Airline Operators Committee (AOC), Airlines, aircraft maintenance franchisees and the International Federation of Air Line Pilots' Associations (IFALPA). At AOSC meetings, AAHK provided works updates to the airport community since the commissioning of the works abeam the original North Runway.

- (3) The VAWG is a sub-group of the AOSC with a membership comprising representatives of AAHK, CAD and the Hong Kong Airline Pilots Association (HKALPA, which is a member of IFALPA). The VAWG conducts ad hoc meetings to review technical matters and make presentations to AOSC. Since the matters will be reported to AOSC, the Airline Operators' Committee (a member of AOSC) will also be engaged.
- (4) The RST is another sub-group under the AOSC. Its membership includes AAHK, CAD, airlines, HKALPA, ATC officers association, Government Flying Service, Hong Kong Business Aviation Centre, line maintenance organisations and the Airport Fire Contingent. It was established independent of AOSC to enhance runway safety by identifying and managing runway safety risks in a collaborative and multi-disciplinary manner, as well as communicating safety issues to airfield operational personnel in a dedicated platform. AAHK has made reference to the ICAO Runway Safety Team Handbook when establishing the RST.
- (5) The investigation team considers that appropriate forums have been established by AAHK for engagement of the aviation community on airport operational and development issues.

2.5.5 Safety Risk Assessment

- (1) The following information was provided by AAHK on safety risk assessment on airfield construction works involving the incident site:
 - (a) extracts from records of the First Meeting of the Airfield Operations Safety Working Group on 12 February 2014 (which was last updated on 30 July 2020 after the 17th meeting of RST), which listed the following items on "*specific component of hazard*":
 - *driver not familiar with airfield environment and got lost*
 - *work outside the demarcated worksite*
 - *intentionally break the rule of taking shortcut by travelling on taxiway*
 - *mechanical failure of the vehicle (no brakes)*
 - *driver under drug/alcohol influence*
 - *incapacitated driver*
 - *debris left by the construction vehicles whilst they leave the worksite*
 - *stockpile in midfield area*
 - *aircraft intrude into the closed worksite*
 - *runway condition not suitable for operations – communications hazards (Runway is closed but pilot still uses the runway for take-*

off /landing)

- *unfavourable weather condition*
- *aircraft technical problem*
- *aircraft irregular operations*
- *missed approach due to preceding traffic still occupying runway*
- *undershoot / overrun*
- *Miscommunication Hazards*
- *Inadequate Signage Hazards*
- *Poor airport Design Hazards*

(b) Risk assessment Report No. 60 – Project Title: 3301 North Runway Crossover Taxiway (Pavement Works) signed on 3 January 2018 showed under the item “*Aircraft entering the working area*”:

- *Cause: Marker boards with red warning light misplaced at the taxiway junction*
- *Proposed control measures:*
 - *Pre-work measure – to confirm location of marker boards with AD in the briefing*
 - *During work measures -*
 - *marker boards with red warning light will be placed properly at taxiway junction to avoid aircraft entering*
 - *ensure wingtip clearance*
 - *marker boards location will be verified by AD duty team*
 - *notify AD immediately in case of emergency*

(2) The above considerations were relevant from their respective aspects. The investigation team considers that strengthening the assessment from the aircraft operations perspective would further enhance the safety risk assessment process. Considerations from the aircraft operations perspective include, among others, misidentification of aerodrome signage by pilots, aircraft inadvertently entering a works area in the movement area while vacating the runway (as what had happened in this incident), pilots being unfamiliar with the airport due to infrequent operations at the airport concerned (as in the case of this incident), etc.

(3) The investigation team considers that the aircraft operations perspective should form an integral part of the holistic process of safety risk assessment for aerodrome operations.

2.5.6 Examples and Application of Safety Risk Assessment Methodologies

- (1) For runway safety, the ICAO Runway Safety Programme promotes the establishment of Runway Safety Teams (RSTs) at airports as an effective means to reduce runway related accidents and serious incidents. The ICAO Runway Safety Team (RST) Handbook provides guidance materials to assist the development and implementation of an effective action plan for runway safety at aerodromes. In this light, AAHK has established an RST under the AOSC with a multi-disciplinary membership to enhance runway safety [see 2.5.4(4)].
- (2) Major international aerodrome operators and regulatory authorities have developed rules, procedures and guidance to facilitate the implementation of international safety management standards by relevant stakeholders. The UK Civil Aviation Authority (UKCAA), for instance, has published CAP 760 - Guidance on the Conduct of Hazard Identification, Risk Assessment and the Production of Safety Cases for Aerodrome Operators and Air Traffic Service Providers. CAP 760 includes the involvement of pilots as key participants at various stages of the safety assessment process.
- (3) Eurocontrol has also prescribed a Safety Assessment Methodology (SAM), which is a *“framework of methods and techniques to develop safety assessments of changes to functional systems”*. [See <https://www.eurocontrol.int/tool/safety-assessment-methodology>.] SAM allows users to perform the following processes:
 - *Functional Hazard Assessment (FHA) – identify hazards, assess their effects and the related severity,*
 - *Preliminary System Safety Assessment (PSSA) – fault tree analysis, event tree analysis, common cause analysis, etc,*
 - *Air Navigation System Safety Assessment Methodology (SSA) – documentation of the evidence, collecting data, test and validation, etc.*
- (4) In defining the FHA process and Safety Objectives Specification, SAM makes specific reference to highlight *“aircraft operations”*.

“the (FHA) process identifies potential failure modes and hazards. It assesses the consequences of their occurrences on the safety of operations, including aircraft operations, within a specified operational environment”.

The FHA Safety Objectives Specification includes the following items:

- *to identify all potential hazards associated with the system;*
- *to identify hazard effects on operations, including the effect on aircraft*

operations;

- *to assess the severity of each hazard effect;*
- *to specify Safety Objectives, i.e. to determine the maximum frequency of hazard's occurrence;*
- *to assess the overall foreseen (future) risk associated to introducing the change or new system.*

- (5) The investigation team agrees with these methodologies, which include specific reference to highlight “*aircraft operations*”. Since aircraft are the major group of users of the movement area, the aircraft operations perspective is among the pertinent considerations for the holistic safety assessment when planning for and monitoring the progress of construction works on the movement area. This approach will help to ensure that the effectiveness of relevant mitigation measures is maintained throughout the entire works programme.

2.6 Dissemination of Aeronautical Information

- (1) AIC 10/19 issued on 29 March 2019 [see Appendix 3] stated that:
- *new taxiway connections were being constructed at the landscaped area adjacent to the existing North runway;*
 - *works would only be conducted outside North Runway operation hours;*
 - *there might be temporary changes in the surface conditions of the concerned landscaped areas.*
- (2) At the time of the incident, AIC 13/20 had been issued to supersede the previous AIC 10/19. Except for the expected works completion date, which was extended from the 2nd quarter of 2020 to the 4th quarter of 2020, the rest of the contents of these two AICs, including an attached plan, were identical.
- (3) In reviewing the dissemination of aeronautical information, the investigation team examined the following timeline:
- AIC 10/19 was issued on 29 March 2019
 - AIC 13/20 was issued on 27 April 2020
 - pavement work on the incident site was completed in June 2020
 - the incident occurred on 14 October 2021
- (4) The above timeline shows that the incident occurred more than two and a half years after general information on the construction works was

provided. Other than the expected completion time of the works, there had been no updates on work progress or the conditions of the construction site, which had in fact significantly changed from a grass area to a paved area 15 months before the incident occurred. Updated information on the site conditions would have helped to enhance pilot situational awareness when operating in the vicinity of the area. In this regard, the ICAO has promulgated the following Standard in Annex 14, Volume 1, Chapter 2, paragraph 2.9.2:

“The condition of the movement area and the operational status of related facilities shall be monitored, and reports on matters of operational significance affecting aircraft and aerodrome operations shall be provided in order to take appropriate action, particularly in respect of the following: a) construction or maintenance work”.

- (5) ICAO has also provided guidance addressed to aerodrome operators in the Runway Excursion Risk Reduction (RERR) Toolkit – Aerodrome Best Practice (RERR 2nd edition – Issue 2011). Under the item on notified aeronautical information and changes thereto, it is stated that:
- *Information about, including changes to, the condition of the movement area and related facilities must be provided for aerodrome users.*
 - *The aerodrome operator must have trained staff who are competent and authorised to advise aeronautical information units in a timely manner about aeronautical data and any changes to published information.*
 - *Personnel assigned to these tasks need to be provided with recurrent training as necessary.*
- (6) After the incident, NOTAM A0900/21 was issued on 20 October 2021, which stated that *“pilots are reminded that paved area between TWY A6 and TWY A7 is not for aircraft use”*. This NOTAM was superseded by AIP Supplement 14/21 issued on 2 December 2021 [see Appendix 5] with updated information on the paved areas adjacent to the runway, which had then been re-designated as the Centre Runway.
- (7) The investigation team considers that the reminder in NOTAM A0900/21 would have been useful to enhance pilots’ situational awareness of the change in landscape in the vicinity of the incident site if such information had been made available to pilots before the incident occurred. This highlights the significance of adequate consideration from the aircraft operations viewpoint during the risk assessment process for the identification of appropriate mitigation measures, including the content of and timing for pertinent aeronautical information promulgation.

3. Conclusions

From the evidence available, the following findings are made with respect to the occurrence. These findings should not be read as apportion blame or liability to any particular organization or individual.

3.1 Findings

- (1) When vacating the runway after landing, the incident aircraft (B738) taxied onto the incident site, which was a paved area not yet commissioned for operational use. [1.1(2)]
- (2) The B738 stopped on the incident site in front of marker boards with engines stopped as instructed by ATC. [1.1(3)]
- (3) There was no injury to persons. [1.2]
- (4) There was no damage to the B738. [1.3]
- (5) There was no damage to property or the environment. [1.4]
- (6) The B738 flight crew members held valid licences and medical certificates. [1.5.1(1) and 6.2]
- (7) The B738 flight crew members were unfamiliar with operations at Hong Kong International Airport. [1.5.1(2)]
- (8) The Air Traffic Controller held a valid ATC licence with appropriate ratings and a valid medical certificate. [1.5.2 and 6.3]
- (9) The B738 had valid Certificates of Registration and Airworthiness. [1.6.1 and 6.4]
- (10) The right-hand side windscreen wiper of the B738 was unserviceable. [1.6.2]
- (11) At the time of the incident Tropical Storm Kompasu was centred about 690 km Southwest of Hong Kong and Strong Wind Signal Number 3 was in force. The crew advised that there was heavy rain on short final and over the runway during their landing, with visibility reduced. [1.7 and 1.17.2(2)]
- (12) Whilst aerodrome ground lights and ground markings were provided at the then North Runway and Taxiways A6 and A7, the incident site was not

provided with ground markings, signage or taxiway lights as it had not been commissioned for operational use as a taxiway. [1.8.2]

- (13) There was no interruption to communications between ATC and the B738. [1.9]
- (14) At the time of the incident, AIC 13/20 issued on 27 April 2020 was in force with information that new taxiway connections were being constructed at the landscaped areas adjacent to the then North runway. This AIC superseded AIC 10/19 issued on 29 March 2019 due to the extension of the estimated completion date to Q4 2020. The rest of the information in the previous AIC10/19 remained unchanged. [1.10.2.3(3)]
- (15) The Siberia Airlines (S7) HQ in Russia was responsible for all flight dispatch matters in relation to S7 flights coming to or departing from Hong Kong, including the filing of flight plans. [1.17.1(1)]
- (16) AIC information was not included in S7 pre-flight Information for flight crews as S7 did not consider it necessary to do so. However, according to ICAO Annex 15, information in AICs include information on flight safety, among others. [1.17.1(2) and 2.3.1(1)]
- (17) The B738 crew had no prior knowledge of the presence of a paved area at the incident site, which was not for operational use. [1.17.2(1) and 2.3.1(1)]
- (18) Considering the size and location of the incident site leading from the runway and the significant change in the surface condition from a grass area to a paved area, additional measures by AAHK would help avoid the possibility of confusion to pilots due to significant change in the landscape in the vicinity of the incident site. [2.5.1(2)]
- (19) Subsequent to the incident, AAHK arranged for a yellow cross to be painted at each of the 4 locations on both sides of the runway to a measure to prevent recurrence of a similar incident. [2.5.2(5)]
- (20) The B738 pilots did not see the marker boards until they had turned onto the incident site. [2.5.3(2)]
- (21) There are established forums under the chairmanship of AAHK for engagement of the aviation community on operational and safety matters. [2.5.4]
- (22) Strengthening the assessment from the aircraft operations perspective would further enhance the safety risk assessment process for aerodrome operations. [2.5.5(2)]

- (23) Aeronautical information on the construction works had not been updated in line with the works progress since such information was issued 2 and a half years before the time of the incident. [2.6(4)]

3.2 Cause

The flight crew of the aircraft involved in the incident mistook a paved area leading out from the runway to be the assigned runway exit whereas the paved area had not yet been commissioned for operational use. [3.1(1)]

3.3 Contributing Factors

- (1) The flight crew of the aircraft involved in the incident were not familiar with operations at Hong Kong International Airport and were not aware that the paved area leading out of Runway 07L had not been commissioned for operational use at the time of the incident. [3.1(7), 3.1(16) and 3.1(17)]
- (2) Coupled with factors which impaired the flight crew's situational awareness, including the rain over the runway and the inoperative right-hand side windscreen wiper of the aircraft, the presence of the non-operational paved area, with the physical appearance and dimension of a taxiway leading out of Runway 07L, adversely affected the flight crew's judgement on the correct taxiway to follow. [2.3.2(7)]

4. Proactive Safety Actions

Whether or not AAIA identifies safety issues in the course of an investigation, relevant organisations may proactively initiate safety action in order to reduce their safety risk. AAIA has been advised of the following proactive safety action in response to this occurrence.

4.1 Safety Actions Already Implemented

After the incident, CAD and AAHK conducted reviews on measures to prevent the recurrence of similar incidents. The following measures had been adopted.

4.1.1 Marker Boards

- (1) In addition to the marker boards already provided on the incident site on the southern side of the North Runway, another set of marker boards were placed on the paved area on the other side (northern side) of the North Runway on 18 October 2021, to avoid the possibility of aircraft making a wrong turn to the left. In accordance with ICAO Annex 14 requirements, these additional marker boards were located outside the runway strip at 140 m from the North Runway centreline.
- (2) Three extra red lights were installed on each of the marker boards with three lights facing either side of the marker boards to enhance their visibility.

4.1.2 Aeronautical Information

NOTAM A0900/21 was issued on 20 October 2021, which was superseded by AIP Supplement 14/21 issued on 2 December 2021, with updated information on the paved areas adjacent to the runway (which had then been re-designated as the Centre Runway).

4.1.3 Ground Markings

A yellow cross was painted at each of the four locations on either side of the runway adjacent to the paved areas to indicate no entry to the paved areas.

5. Safety Recommendations

5.1 Safety Recommendation SR-2024-05

It is recommended that the operator should review the content of its pre-flight information bulletin for pilots to ensure that pertinent aeronautical information for aircraft operations is included.

Safety Recommendation Owner: Siberia Airlines

5.2 Safety Recommendation SR-2024-06

It is recommended that the aerodrome operator should conduct holistic safety risk assessment during the planning and implementation phases of work projects on aircraft movement areas to ensure the continued effectiveness of risk mitigation measures taken in relation to aircraft operation.

Safety Recommendation Owner: Airport Authority Hong Kong

6. General Details

6.1 Occurrence Details

Date and time:	14 October 2021, 0003 hrs Local (1603 hrs UTC, 13 October 2021)
Occurrence category:	Incident
Primary occurrence type:	Aerodrome
Location:	Hong Kong International Airport, Hong Kong
Position:	22° 18' 56.18" N, 113° 54' 52.78" E

6.2 Pilot Information

6.2.1 Pilot Flying (PF)

Age:	43
Licence:	ATPL III. 0107246
Aircraft ratings:	AN-24, B-737
Date of first issue of aircraft rating on type:	02.2008
Instrument rating:	CAT-III A
Medical certificate:	Class 1. Valid to 18.03.2022
Date of last proficiency check on type:	03.04.2021
Date of last line check on type:	21.06.2021
Date of last emergency drills check:	24.11,2020
ICAO Language Proficiency:	Level 4
Limitation:	No
Flying Experience:	
Total all types:	12315
Total on type (B737) :	6955
Total in last 90 days:	152
Total in last 30 days :	65
Total in last 7 days:	23

Total in last 24 hours:	5:43
Duty Time prior to the incident:	6:43

6.2.2 Pilot Monitoring (PM)

Age:	27
Licence:	ATPL III. 0107880
Aircraft ratings:	B-737
Date of first issue of aircraft rating on type:	10.2018
Instrument rating:	CAT- IIIA
Medical certificate:	Class 1. Valid to 03.02.2022
Date of last proficiency check on type:	12.09.2021
Date of last line check on type:	07.12.2020
Date of last emergency drills check:	12.07.2021
ICAO Language Proficiency:	Level 4
Limitation:	No
Flying Experience:	
Total all types:	1600
Total on type (B737) :	1300
Total in last 90 days:	130
Total in last 30 days :	57
Total in last 7 days:	7:50
Total in last 24 hours:	5:43

Duty Time prior to the incident:	6:43
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6.2.3 Relief Pilot

Age:	37
Licence:	ATPL III. 0106271
Aircraft ratings:	B-737
Date of first issue of aircraft rating on type:	21.10.2011
Instrument rating:	CAT- IIIA
Medical certificate:	Class 1. Valid to 14.09.2022
Date of last proficiency check on type:	12.07.2021
Date of last line check on type:	01.02.2021
Date of last emergency drills check:	28.04.2021
ICAO Language Proficiency:	Level 5
Limitation:	No
Flying Experience:	
Total all types:	8300
Total on type (B737) :	7800
Total in last 90 days:	243
Total in last 30 days :	76
Total in last 7 days:	32
Total in last 24 hours:	5:43
Duty Time prior to the incident:	6:43

6.3 Air Traffic Controller

Licence:	Hong Kong Air Traffic Controller's Licence
Ratings:	Aerodrome Control
Date of first issue of rating:	10 May 2019
Medical certificate:	Class 3 issued on 12 March 2020. Valid to 31 March 2024.
Instructor certificate:	NIL

6.4 Aircraft Details

Manufacturer and model:	Boeing 737-800BCF	
Registration:	The United Kingdom (Bermuda), VP-BEN	
Serial number:	33545	
Year of Manufacture:	2002	
Engine:	Two CFM International S.A.(CFM) CFM56-7B26	
Operator:	JSC Siberia Airlines	
Type of Operation:	Commercial Air Transport (Cargo)	
Certificate of Airworthiness	Issued on 18 March 2021 by the Bermuda CAA, Standard Certificate of Airworthiness No: 2428	
Departure:	Irkutsk International Airport, Russia (UIII)	
Destination:	Hong Kong International Airport (VHHH)	
Maximum Take-off Weight	174200 Lb (79015 Kg)	
Total Airframe Hours	57886	
Total Airframe Cycles	35634	
Persons on board:	Crew – 4	Passengers – 0
Injuries:	Crew – 0	Passengers – 0
Aircraft damage:	Nil.	

6.5 Destination Aerodrome Information

Aerodrome Code	VHHH
Airport Name	Hong Kong International Airport
Airport Address	Chek Lap Kok, Lantau Island
Airport Authority	Airport Authority Hong Kong

Air Navigation Services	Approach Control, Aerodrome Control, Ground Movement Control, Zone Control, Flight Information Service, Clearance Delivery Control, Automatic Terminal Information Service
Type of Traffic Permitted	IFR (Instrument Flight Rules) / VFR (Visual Flight Rules)
Coordinates	22° 18' 32" N, 113° 54' 53" E
Elevation	28 ft
Runway Length	3,800 m
Runway Width	60 m
Stopway	Nil
Runway End Safety Area	240 m x 150 m
Azimuth	07L / 25R, 07R/ 25L
Category for Rescue and Fire Fighting Services	CAT 10

7. Abbreviations

3RS	Three-runway system
AAHK	Airport Authority Hong Kong
AFC	Airport Fire Contingent
AGL	Aerodrome Ground Light
AIC	Aeronautical Information Circular
AIMC	Aeronautical Information Management Centre
AIP	Aeronautical Information Publication
AOSC	Airfield Operations and Safety Committee
ASU	Aerodrome Supervisor
ATC	Air Traffic Control
BCF	Boeing Converted Freighter
CAD	Civil Aviation Department
CAPPI	Constant Altitude Plan Position Indicator
CASL	China Aircraft Services Limited
DFDR	Digital Flight Data Recorder
DRS	Digital Recording System
EOBT	Estimated Off-Block Time
HAS	Hong Kong Airport Services
HKALPA	Hong Kong Airline Pilots Association
HQ	Headquarters
IATA	International Air Transport Association
IFALPA	International Federation of Air Line Pilots' Associations
IFR	Instrument Flight Rules
NOTAM	Notice to Airmen
PF	Pilot Flying
PM	Pilot Monitoring
PNF	Pilot Not Flying
PPI	Plan Position Indicator
RERR	Runway Excursion Risk Reduction
RST	Runway Safety Team
RWY	Runway

RHS	Right Hand Side
S7	IATA airline code for Siberia Airlines
TDWR	Terminal Doppler Weather Radar
TWY	Taxiway
UIII	ICAO code for Irkutsk International Airport, Russia
UTC	Coordinated Universal Time
VFR	Visual flight rules
VHF	Very High Frequency
VAWG	Visual Aids Working Group
VHHH	ICAO code for Hong Kong International Airport

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To: [REDACTED]
Accident and Safety Investigator
Air Accident Investigation Authority

5 November 2021

Dear [REDACTED]

Weather Report around 00:03 HKT 14 October 2021

I refer to your email dated 21 October 2021.

At 0000H 14 October 2021, Tropical Storm Kompasu was centred about 690 km southwest of Hong Kong. The Strong Wind Signal No. 3 was in force. At around 0000H 14 October, the outer rainbands of Kompasu had brought occasional heavy showers with reduced visibility down to about 3000 metres to the north runway. Winds on the airport were around 10 to 15 knots easterlies with gusts up to about 20 knots.

Please find in the attachment, information listed below to support the investigation: -

- (a) METAR (2330H 13 October 2021 to 0030H 14 October 2021). Kindly note that no SPECI was issued during that period;
- (b) TAF issued at 1100UTC¹ 13 October 2021 valid from 1200UTC 13 October 2021 to 1800UTC 14 October 2021;
- (c) 2-minute mean winds and gusts² from the 3 anemometers along the north runway at 0000H – 0005H 14 October 2021;
- (d) 1-minute and 10-minute visibility readings from the 3 forward scatter meters along the north runway at 0000H – 0005H 14 October 2021;
- (e) 1-minute and 10-minute RVR readings from the 3 transmissometers along the north runway at 0000H – 0005H 14 October 2021;
- (f) 1-minute rainfall data from rain gauge at the meteorological garden at 0000H – 0005H 14 October 2021;
- (g) 3-km Constant Altitude Plan Position Indicator (CAPPI) image from the storm detecting radar in 64 km range at 0000H³ and 0006H 14 October 2021;
- (h) 0.6-degree Plan Position Indicator (PPI) image from Brother's Point Terminal Doppler Weather Radar (TDWR) in 40 km range from about 0000H to about 0006H 14 October 2021.

Kindly note that data provided under items (c) – (h) has not undergone quality control. We will inform you of any errors if found. For further enquiries or additional data, please feel free to contact me at 2926 8242.

Yours sincerely,

([REDACTED])

for Director of the Hong Kong Observatory

¹ HKT = UTC +8

² Gust is the maximum 3-second mean wind speeds in the past 2 minutes

³ Time of radar image is start time of radar scan

- (a) **METAR issued between 2330H 13 October 2021 and 0030H 14 October 2021 (i.e. 1530UTC to 1630UTC 13 October 2021)**

METAR VHHH 131530Z 08015KT 9999 FEW015 SCT030 28/25 Q1007 TEMPO 3500 SHRA FEW010CB SCT020=

METAR VHHH 131600Z 10011G21KT 8000 3200N +SHRA FEW015 SCT030 27/25 Q1007 NOSIG=

METAR VHHH 131630Z 09013KT 9999 FEW016 SCT035 27/24 Q1007 RERA NOSIG=

No SPECI was issued from 1530UTC to 1630UTC.

- (b) **TAF issued at 1100UTC on 13 October 2021 valid from 1200UTC 13 October 2021 to 1800UTC 14 October 2021**

TAF VHHH 131100Z 1312/1418 08015KT 9999 FEW015 SCT025 TX30/1406Z TN25/1322Z

TEMPO 1312/1318 09020G30KT 3500 SHRA FEW010CB SCT020

TEMPO 1318/1324 4000 SHRA FEW010CB SCT020

TEMPO 1412/1418 4000 SHRA FEW010CB SCT020=

- (c) **2-minute mean winds and gusts from the 3 anemometers along the north runway at 0000H - 0005H 14 October 2021**

Time (in HKT)	2-minute wind direction/speed/gust (degree/knots/knots)		
	07LA	MID	25RA
0000	080/14/17	090/14/16	110/07/10
0001	090/15/21	100/14/16	110/09/17
0002	090/16/21	090/11/16	100/13/18
0003	090/15/19	090/11/14	100/16/22
0004	090/14/18	090/15/20	100/16/23
0005	090/16/21	090/17/20	100/15/23

- (d) **1-minute and 10-minute visibility readings from the 3 forward scatter meters along the north runway at 0000H - 0005H 14 October 2021**

Time (in HKT)	Visibility (in kilometres (km) or metres (m))					
	07LA		MID		25RA	
	1-min.	10-min.	1-min.	10-min.	1-min.	10-min.
0000	7 km	9 km	8 km	3200 m	8 km	5000 m
0001	9 km	9 km	9 km	9 km	7 km	5000 m
0002	9 km	9 km	8 km	8 km	7 km	5000 m
0003	12 km	9 km	11 km	9 km	3200 m	5000 m
0004	14 km	9 km	5000 m	8 km	6 km	5000 m
0005	13 km	9 km	8 km	8 km	11 km	5000 m

- (e) 1-minute and 10-minute RVR readings from the 3 transmissometers along the north runway at 0000H – 0005H 14 October 2021

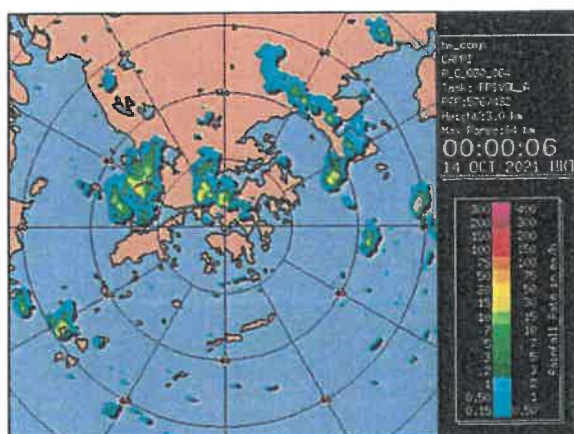
Time (in HKT)	RVR readings (in metres)					
	07LA.		MID		25RA	
	1-min.	10-min.	1-min.	10-min.	1-min.	10-min.
0000	P2000	P2000	P2000	P2000	P2000	P2000
0001	P2000	P2000	P2000	P2000	P2000	P2000
0002	P2000	P2000	P2000	P2000	P2000	P2000
0003	P2000	P2000	P2000	P2000	P2000	P2000
0004	P2000	P2000	P2000	P2000	P2000	P2000
0005	P2000	P2000	P2000	P2000	P2000	P2000

Remark: P2000 means reading above 2000 metres.

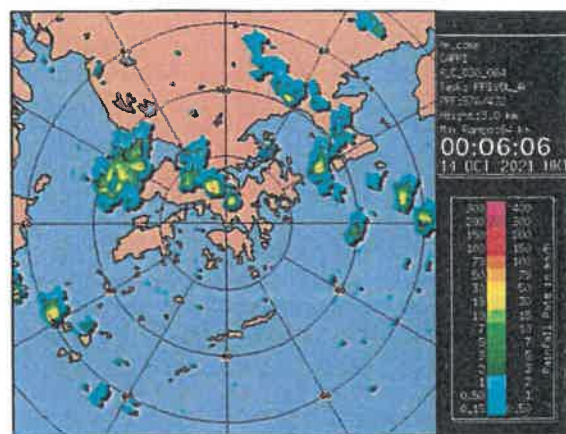
- (f) 1-minute rainfall data from rain gauge at the meteorological garden at 0000H – 0005H 14 October 2021

Time (in HKT)	Rainfall (in millimetres)
0000	0
0001	0.1
0002	0
0003	0
0004	0
0005	0

- (g) 3-km Constant Altitude Plan Position Indicator (CAPPI) image from the storm detecting radar in 64 km range at 0000H and 0006H 14 October 2021

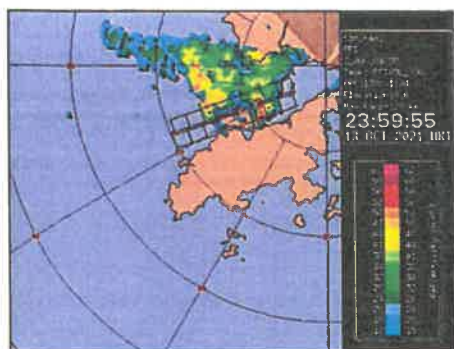


3-km CAPPI radar image, 64-km range
00:00:06HKT 14 October 2021

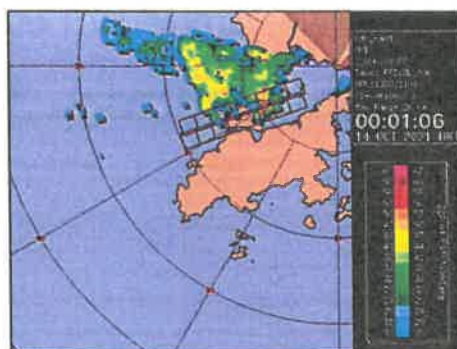


3-km CAPPI radar image, 64-km range
00:06:06HKT 14 October 2021

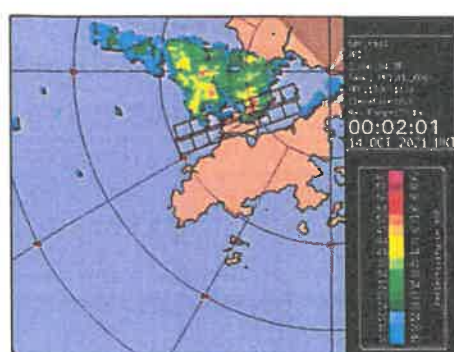
- (h) **0.6-degree Plan Position Indicator (PPI) image from Brother's Point Terminal Doppler Weather Radar (TDWR) in 40 km range from about 0000H to 0006H 14 October 2021**



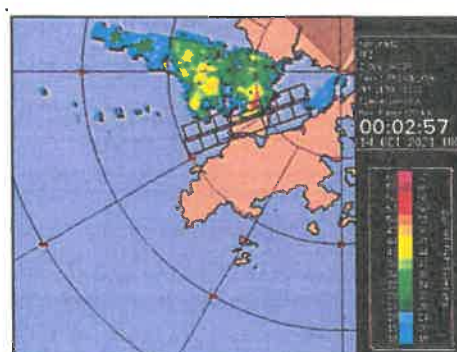
0.6-deg TDWR PPI image, 40-km range
23:59:55HKT 13 October 2021



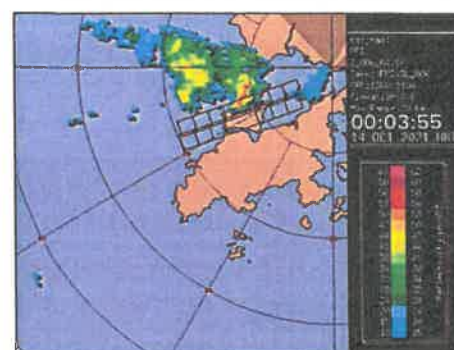
0.6-deg TDWR PPI image, 40-km range
00:01:06HKT 14 October 2021



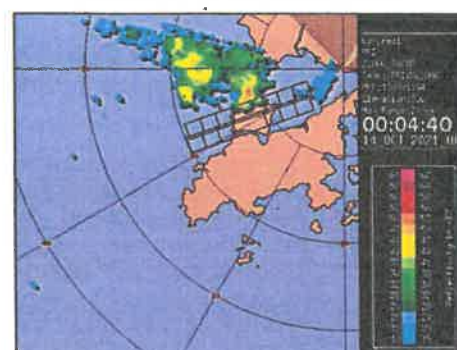
0.6-deg TDWR PPI image, 40-km range
00:02:01HKT 14 October 2021



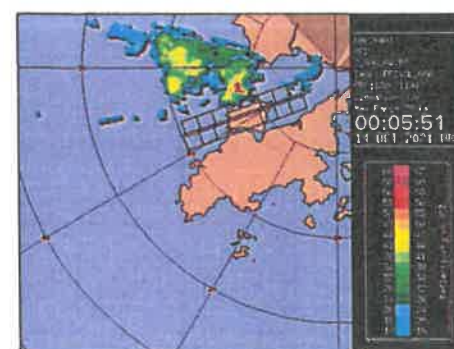
0.6-deg TDWR PPI image, 40-km range
00:02:57HKT 14 October 2021



0.6-deg TDWR PPI image, 40-km range
00:03:55HKT 14 October 2021



0.6-deg TDWR PPI image, 40-km range
00:04:40HKT 14 October 2021

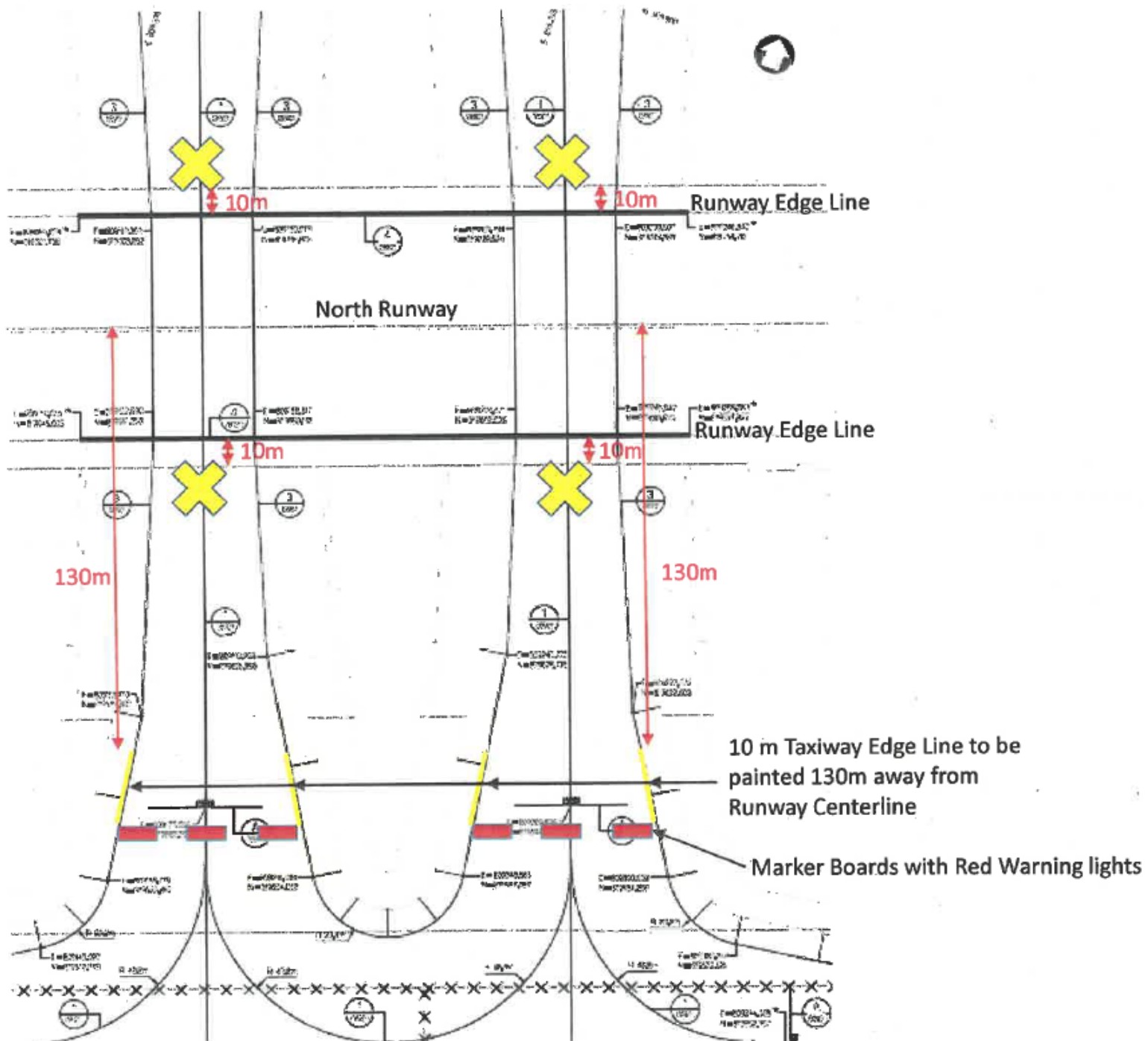


0.6-deg TDWR PPI image, 40-km range
00:05:51HKT 14 October 2021



0.6-deg TDWR PPI image, 40-km range
00:06:47HKT 14 October 2021

Additional Ground Markings



Note



ground markings added after the incident
at junctions of RWY and paved areas not for
operational use

**HONG KONG SPECIAL ADMINISTRATIVE REGION
PEOPLE'S REPUBLIC OF CHINA
AERONAUTICAL INFORMATION SERVICE
(ISO 9001 CERTIFIED)**

PHONE +852 2910 6174
FAX +852 2910 1180
AFS VHHHYOYX
EMAIL aic@cad.gov.hk

AIR TRAFFIC MANAGEMENT DIVISION
CIVIL AVIATION DEPARTMENT
HONG KONG INTERNATIONAL AIRPORT

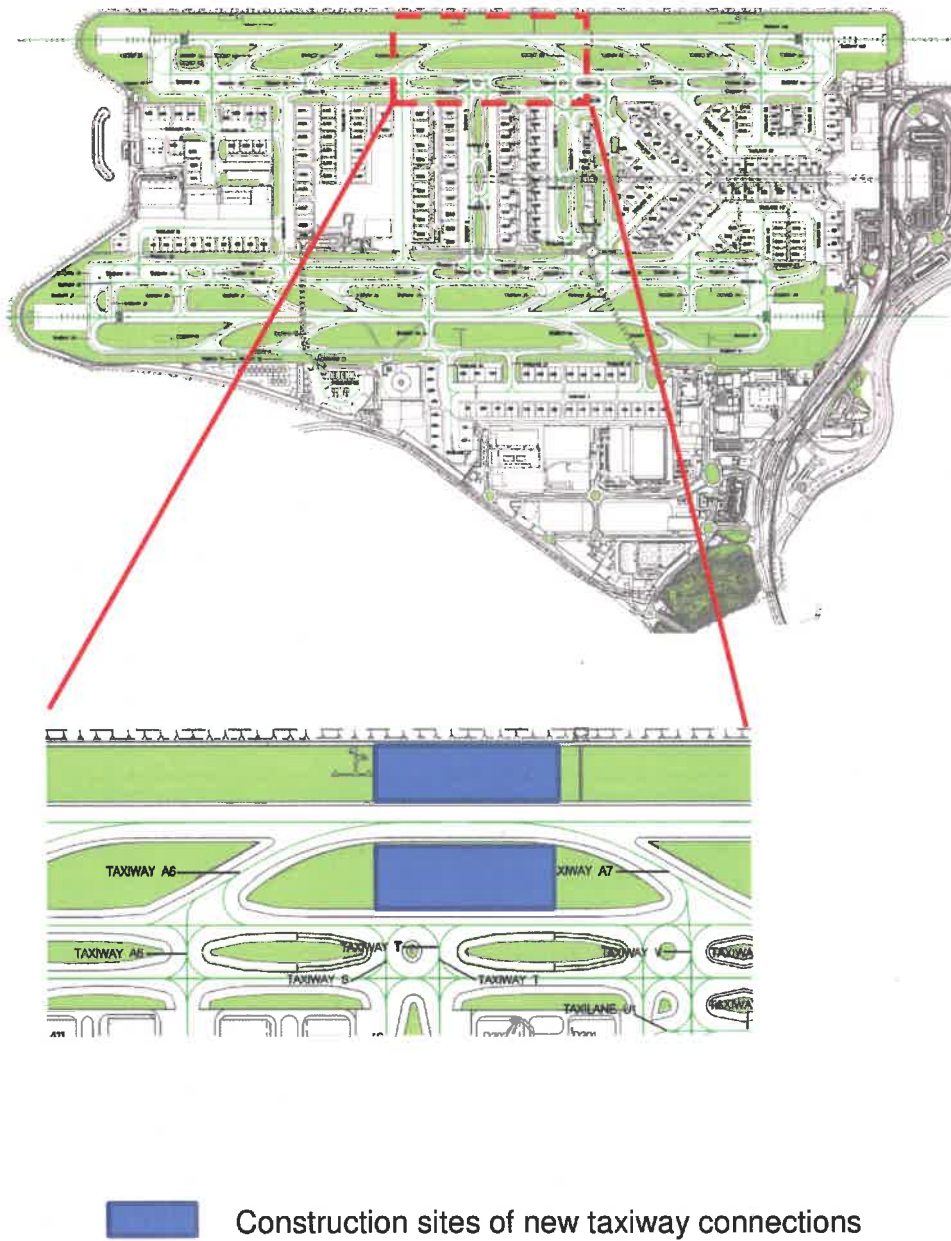
AIC
10 / 19
29 March 2019

**HONG KONG INTERNATIONAL AIRPORT
CONSTRUCTION WORKS ADJACENT TO THE NORTH RUNWAY**

1. New taxiway connections are being constructed at the landscaping areas adjacent to the existing North Runway for the future Three-Runway System of the Hong Kong International Airport (HKIA). The locations are shown on the attached plan. Works will only be conducted outside North Runway operation hours.
2. While works are progressing, there may be temporary changes in the surface conditions of the concerned landscaping areas.
3. The construction works are planned for completion by Q2 2020. **This AIC will remain valid until further notice.**

This Circular is issued for information, guidance and necessary action
by direction of the Director-General of Civil Aviation
Simon LI

CONSTRUCTION WORKS ADJACENT TO THE NORTH RUNWAY



HONG KONG SPECIAL ADMINISTRATIVE REGION
PEOPLE'S REPUBLIC OF CHINA
AERONAUTICAL INFORMATION SERVICE
(ISO 9001 CERTIFIED)

PHONE +852 2910 6174
FAX +852 2910 1180
AFS VHHHYOYX
EMAIL aic@cad.gov.hk

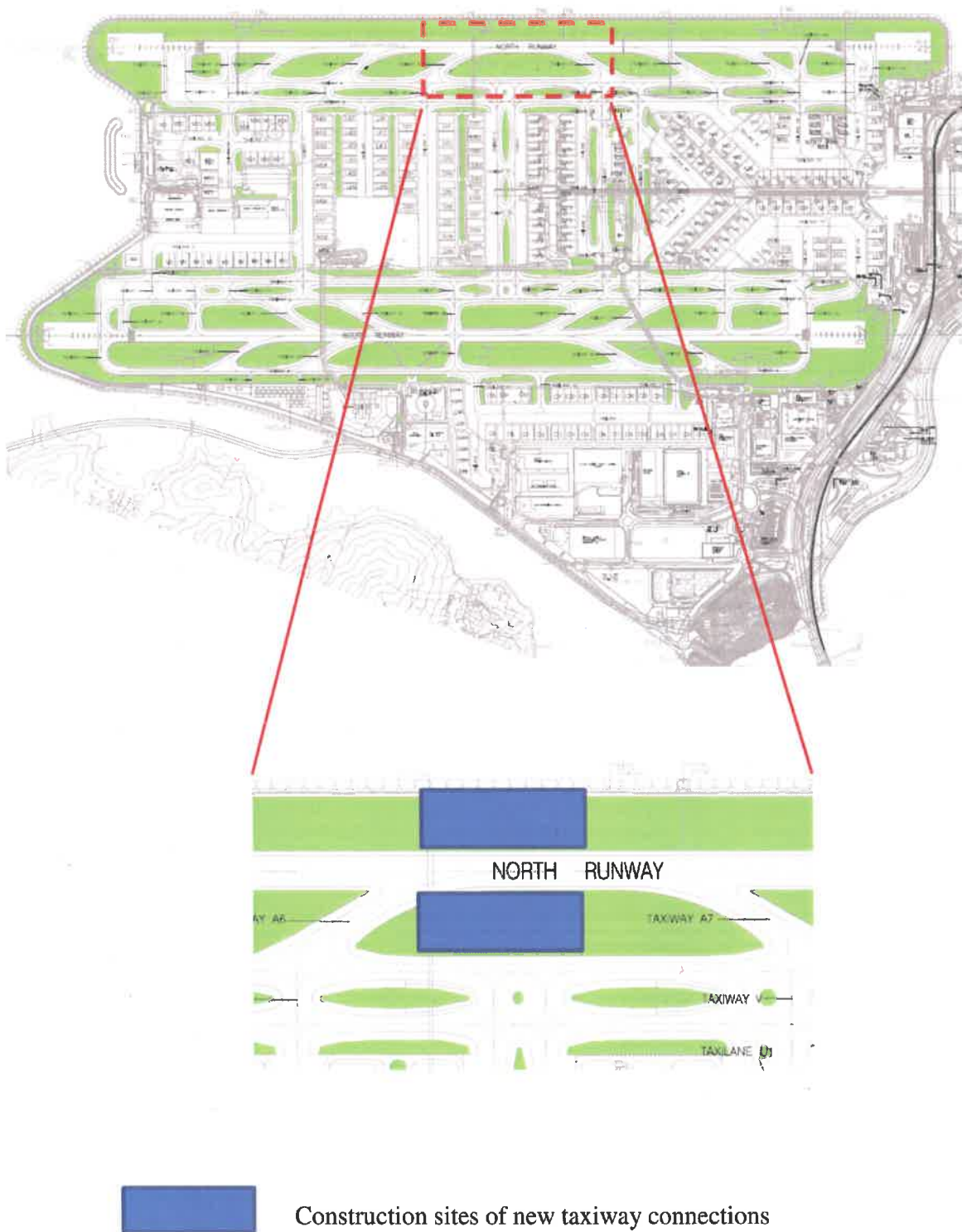
AIR TRAFFIC MANAGEMENT DIVISION
CIVIL AVIATION DEPARTMENT
HONG KONG INTERNATIONAL AIRPORT

AIC
13 / 20
27 April 2020

HONG KONG INTERNATIONAL AIRPORT
CONSTRUCTION WORKS ADJACENT TO THE NORTH RUNWAY

1. New taxiway connections are being constructed at the landscaping area adjacent to the existing North Runway for the future Three-Runway System of the Hong Kong International Airport (HKIA). The locations are shown on the attached plan. Works will only be conducted outside North Runway operation hours.
2. While works are progressing, there may be temporary changes in the surface conditions of the concerned landscaping areas.
3. The planned construction works are further extended to completion by Q4 2020.
4. **AIC 10/19 is hereby superseded. This AIC will remain valid until further notice.**

This Circular is issued for information, guidance and necessary action
by direction of the Director-General of Civil Aviation
Victor LIU



HONG KONG SPECIAL ADMINISTRATIVE REGION
PEOPLE'S REPUBLIC OF CHINA
AERONAUTICAL INFORMATION SERVICE
(ISO 9001 CERTIFIED)

PHONE +852 2910 6174
FAX +852 2910 1180
AFS address VHHHYOYX
E-mail aic@cad.gov.hk

AIR TRAFFIC MANAGEMENT DIVISION
CIVIL AVIATION DEPARTMENT
HONG KONG INTERNATIONAL AIRPORT

AIP SUPPLEMENT
14/21
2 DEC 21

HONG KONG INTERNATIONAL AIRPORT
PAVED AREAS ADJACENT TO THE CENTRE RUNWAY

1 Introduction

- 1.1 In preparation of the commissioning of the runway and taxiway systems under the Three-runway System (3RS) at the Hong Kong International Airport, various modification works of the systems, including re-designation of runway, have progressed in phases. With effect from 0000 UTC, 2 December 2021, the former RWY 07L/25R has been re-designated as the Centre Runway (RWY 07C/25C). Upon the commissioning of the third runway in 2022 (exact date to be announced), paved areas adjacent to the Centre Runway will be commissioned for use as new taxiways. The locations of the paved areas are shown on the attached plan.

2 Detailed Arrangement

- 2.1 The above-mentioned paved areas do not form part of the standard taxiing routings under the current Two-Runway System at the Hong Kong International Airport. However, in preparation of the commissioning of the paved areas for use as new taxiways, the required visual aids, including the taxiway centre line and edge markings, taxiway centre line and edge lights and information signs, will be provided progressively. During the process, marker boards had already been placed to indicate that the paved areas are not for aircraft use currently. As the provision of the required visual aids has already commenced (such as the painting of taxiway edge markings and other markings on the paved areas), cross-marks had also been painted for the same purpose.

3 Cancellation

- 3.1 This AIP SUP supersedes NOTAM A0900/21 with immediate effect.
- 3.2 The contents of this AIP Supplement will remain effective until replaced by updated information.
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