

出國報告（出國類別：其他）

出席第 22 次國際機場協會亞太區

營運安全委員會會議報告書

(The 22nd ACI Asia Pacific Regional Operational Safety Committee Meeting)

服務機關：桃園國際機場股份有限公司

姓名職稱：航務處朱助理工程師維婷

派赴國家：南韓首爾

出國期間：2018 年 10 月 7 日至 10 月 11 日

報告日期：2018 年 12 月 4 日

出國報告重點提要

出國目的：出席第 22 次國際機場協會亞太區營運安全委員會議

（The 22nd ACI Asia Pacific Regional Operational Safety Committee Meeting）

主辦單位：國際機場協會亞太區營運安全委員會（ACI Asia-Pacific Regional Operational Safety Committee）與韓國機場公司（Korean Airports Corporation, KAC）

出國人員姓名：航務處朱助理工程師維婷

服務機關：桃園國際機場股份有限公司

職稱：助理工程師

出國類別：5.其他(參加國際會議)

出國期間：民國 107 年 10 月 7 日至 10 月 11 日

分類號：目：

關鍵字：國際機場協會亞太區營運安全委員會議（ACI Asia-Pacific Regional Operational Safety Committee Meeting）

內容摘要：本公司為提昇國際能見度，並致力於持續強化本機場空側營運與安全管理，持續積極出席國際機場協會亞太區營運安全委員會議，俾利取得國際營運規範與各國際機場之空側營運經驗。此次會議議程包含國際機場協會與國際民航組織工作進展報告；安全績效指標、意外事件調查與原因分析、空側作業人員資格及條件要求工作分組討論與報告；泰國曼谷蘇旺那蓬機場

（Suvarnabhumi Airport）FOD 偵測系統建置分享；國際駕駛員協會代表空側營運實務與意見交流等。

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壹、 目的:

自 2015 年本公司出席國際機場協會亞太區營運安全委員會以來，透過出席該會議取得國際營運規範與各國際機場之空側營運經驗，並與各會員機場保持友好關係及交流，進而回饋與強化本機場空側營運及安全管理。

貳、 會議行程、出席名單

一、 奉核出國行程一覽表

日期	行程
107 年 10 月 7 日	自桃園國際機場搭機啟程 抵達仁川機場
107 年 10 月 8 日至 107 年 10 月 10 日	出席第 22 次委員會議
107 年 10 月 11 日	自仁川機場搭機返程 抵達桃園國際機場

二、 奉核出席人員名單：航務處朱助理工程師維婷。

參、 第 22 次國際機場協會亞太區安全委員會議概要

一、 出席會員機場與議程

今年度（2018）國際機場協會亞太區（Airport Council International Asia-Pacific，以下簡稱 ACI Asia-Pacific）營運安全委員會（Regional Operational Safety Committee，以下簡稱 ROSC）10 月 8 日至 10 月 10 日第 22 次例行委員會議於南韓首爾召開，由韓國機場公司（Korea Airports Corporation, KAC）擔任協辦單位。本公司出席該委員會之代表為本公司航務處陳處長志嘉，朱助理工程師維婷為執行有關該委員會與本公司之例行工作事項承辦人，此次會議經奉核後，由朱助理工程師維婷代表出席與會。此次會議出席之會員機場包含日本東京成田機場（Japan Narita Airport）新加坡樟宜機場（Singapore Changi Airport）、香港國際機場（Hong Kong International Airport）、仁川國際機場（Incheon International Airport）、韓國機場公司（Korea Airports Corporation, KAC）、馬來西亞機場公司、澳門國際機場（Macau International Airport）、印度機場管理局（Airports Authority of India）、杜拜國際機場（Dubai International Airport）、巴林機場公司（Bahrain Airport Company）、印度海得拉巴機場（Hyderabad International Airport）、泰國機場（Airports of Thailand）、北京首都機場（Beijing Capital International Airport）、阿曼機場（Oman Airports）、緬甸仰光機場（Yangon International Airport）、杜拜機場（Airports of Thailand）、沙烏地阿拉伯機場與本機場等代表與會。



▲ 各會員機場出席與會代表合影

此次會議共計為期三天，經委員會核定之議程如附件一，概要如下：

1. 第 21 次委員會議紀錄確認；
2. ACI 與 ICAO 工作進展報告；
3. 工作分組討論與報告（工作小組 1: 安全績效指標 WG1：Safety Data Sharing／工作小組 2: 意外事件調查與原因分析、空側作業人員資格及條件要求 WG2：Accident Investigation and Root Cause Analysis Review, Aerodrome Operations Personnel Competency Requirement）；

4. 會員機場議題分享：泰國曼谷蘇旺那蓬機場
(Suvarnabhumi Airport) FOD 偵測系統建置分享
5. 國際駕駛員協會 (International Federation of Air Line Pilots' Association, IFALPA) 意見交流
6. 第 23 次會議地點與協辦機場。

二、會議結論概要

1. 第 21 次委員會議紀錄定稿：

該次會議紀錄無任何會員表達異議，委員會通過確認。

2. 本委員會之主席馬來西亞機場公司代表 Mr. Cheng Ling Perng 屆期任滿，經委員會同意由副主席印度海得拉巴機場 (Hyderabad International Airport) 代表 Mr. Narayanasamy Venkatachalapathy 自 2019 年 1 月起擔任主席，後續另由委員會執行副主席改選事宜。

3. ACI 與 ICAO 工作事項報告：

A. Asia Pacific Regional Aviation Safety Team (以下簡稱 APRAST)

APRAST 為 ICAO 亞太區域持續推動各會員國機場建置安全管理系統及相關事項之工作小組，每年召開 2 次會議，亞太區域內目前共有 38 個會員國參加，至本委員會議召開前之近期會議於 2018 年 5 月在 ICAO 在亞太區域辦公室泰國曼谷召開。此次會議議程結論包含項：

- a. 修訂亞太區安全目標文件。

b. 建立亞太區航空安全計畫。

本委員會同意 ACI 建議安全績效指標分享機制應為優先推動執行項目，並且每年必須至少透過研討會形式宣導與提倡跑道安全。

區域亞太區航空安全計畫目標短期年期為 2022 年、中期為 2028 年、遠期為至 2030 年，初步提出較能順利推動建置之安全目標包含建議降低飛航作業風險、空側作業人員要求與訓練、空側規劃與營運規範定期檢視與修正、建立安全績效指標分享機制等。本委員會目前積極支持其安全績效指標分享機制，並已開始執行相關分享機制與後續分析回饋等事項，有助於會員機場檢視其安全營運表現。

B. Aerodrome Operations and Planning Sub-Group (以下簡稱 AOP SG)

ICAO AOP SG 每年召開例行會議，主要針對空側營運及規劃項目提供相關政策方針與建議，主要議題包含擬定空側作業人員訓練及考核機制等指導原則草案、野生動物防治、場面設施建置、會員國機場認證、A-CDM、空側營運之環境議題等。

ICAO AOP SG 近期會議已針對空側作業人員訓練及考核機制等指導原則草案 (Aerodrome Personnel Competencies) 進行審查，待後續會議討論與同意。ACI 針對其負責項目例如機坪安

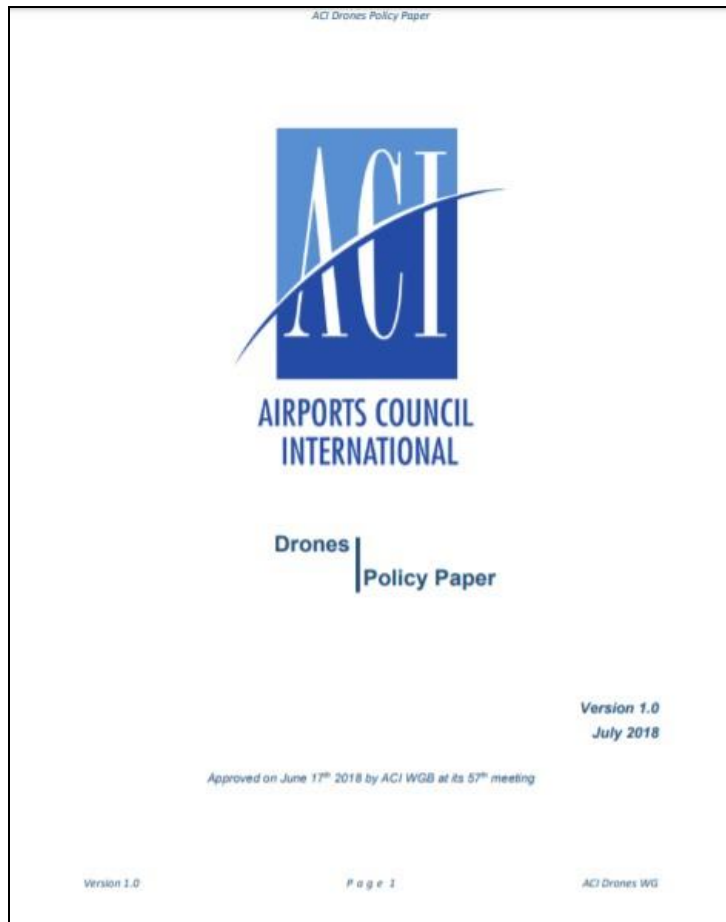
全、跑道安全等，已於本委員會第 21 次會議蒐集會員代表意見，並確保其立場皆依循 ACI 所發布之空側作業安全指導原則，將於 2018 年底提供相關建議予 ICAO 執行後續修正。

AOP SG 另成立野生動物防治工作小組，期望透過成立更高層級之野生動物防治管理委員會，並召開技術會議蒐集各國機場之執行策略與建議，本委員會也將透過後續例行會議積極邀請會員代表機場提供具體實際案例與野生動物防治措施。

此外，AOP SG 成立空側規劃與營運特別工作小組等推動有關場面設施建置及機場認證等優先事項，ACI 將持續推廣其 APEX in Safety 以支持 ICAO 執行相關計畫。有關空側營運環境議題部分，ACI 亦提出因應氣候變遷之相關原則與立場，細節部分另針對消防泡沫種類是否影響環境等議題邀請會員機場提出初步建議。此外，未來本委員會建議邀請環境委員會（ACI Asia Pacific Regional Environmental Committee）召開聯合會議討論相關議題。

C. 無人航空器（drones）議題

有鑑無人航空器使用日漸普及，一旦操作範圍進入航機使用之航路、機場範圍等將影響航機運作甚鉅，甚至可能造成重大飛航安全事件，ACI 發布 ACI Drones Policy Paper，提出制定規範無人航空器使用之相關標準及建議。



▲ ACI Drones Policy Paper

現行市面上多種無人航空器之種類繁多，對於各國民航主管機關所核准與登記操作之無人航空器應具體律定之，也必須透過國家規範來管制、追蹤與識別其飛航活動等。ACI 建議未來民航主管機關、機場管理當局及航管單位等應更加積極針對無人航空器操作議題強化其飛航管理標準及規範，以降低飛航安全潛在風險。

此外，ACI 亦發布 **Advisory Bulletin**，敦促各國民航主管機關重視無人航空器影響飛航安全及制定相關管理標準及規範，例如律定機場禁止使用範圍等保障飛航安全。

Drones, or Remotely Piloted Aircraft Systems

Montreal, 26 July 2016 – Small recreational “hobby” drones, also known as Remotely Piloted Aircraft Systems, have emerged as a significant hazard to aircraft operations in the vicinity of airports. ACI considers that rule-making and enforcement activity with regard to recreational drone operations, as with any other unauthorized flying object (e.g. captive balloons or manned light aircraft), is the responsibility of the relevant Civil Aviation Authority (CAA) and law enforcement agencies.

As CAAs work to advance regulations and develop programmes to educate drone operators on safe operating practices, it is incumbent on all industry stakeholders to take action to protect the safety of aircraft operations. Stakeholders include air navigation service providers, local governments, police, drone operator associations, air carriers and neighbouring airports.

This advisory bulletin is addressed to ACI members and proposes that they initiate a dialogue with the CAAs and law enforcement agencies, especially where there are no laws or regulations in place, about recreational drones. It identifies a number of leadership initiatives that should be considered to reduce the risk presented by drones operating at, or in the vicinity of, their airport to a level that is as low as reasonably practicable.

In addition, ACI, the International Air Transport Association and the International Federation of Air Line Pilots Associations have released a joint safety awareness bulletin directed to operators of recreational drones which is attached. It can also be accessed at www.aci.aero/RPAS.

Actions that airport operators may consider include:

- Advising their regulator promptly of all drone activity on or in the vicinity of the airport, and if considered to pose a serious risk, sending formal notification of concerns for flight safety. This is particularly important in jurisdictions where there is little if any regulation of drone operations. A series of other possible actions with the regulator are listed below.
- Collaborating with their local government(s) and lobbying them on the creation of bylaws governing the operation of drones in the vicinity of the airport.
- Collaborating with their air navigation service provider on the development of a process for the approval of drone operations on or in the vicinity of the airport if appropriate, and on standard procedures to deal with an event where a drone is found to be operating close to an airport.
- Publishing information on the airport's website on safe drone operating practices and a link to national regulations.

Other possible actions may include encouraging the national CAA to:


▲ ACI Advisory Bulletin on Drones or RAS

4. ACI 亞太區於 2014 年至 2015 年曾經執行安全文化調查問卷，對於提升作業安全與整體安全文化帶來極大助益，因此本委員會擬於 2019 年初重新開始執行該問卷調查機制，初步將邀請亞太區及中東區域內之航空公司與地勤單位填報。
5. 工作分組討論與結論（工作小組 1: 安全績效指標 WG1 : Safety Data Sharing, Runway Safety Team (RST) / 工作小組 2: 意外事件調查與原因分析、空側作業人員能力要求 WG2 : Accident Investigation and Root Cause Analysis Review, Aerodrome Operations Personnel Competency Requirement) :

A. 工作小組 1: 安全績效指標與跑道安全小組建立指導原則

WG1 : Safety Data Sharing :

本公司於第 21 次委員會議後已提交 2017 年度安全績效指標數據，並於此次會議前已取得相關分析報告，為維本機制保密與公正性，未來本機場取得後續分析報告後僅供內部參考與檢視，不另於後續出國報告呈現與論述。有關安全績效指標分享表格如下所示。

KPI		2017	2016	2015	2014	2013	2012	2011	Major Causes of Incidents/Accidents (if any)
 ACI Asia-Pacific Safety KPI Survey Complete and return form to sl@aci-asiapac.aero by XXXXX Enquiry: +852 2989 8001									
Airport Name:									
Airport Code (IATA):									
Name of person submitting:									
e-mail address of person submitting:									
*Note: No need to fill out the figures for 2011-2015 if the figures were already submitted in the survey last year.									
Runway Safety									
KPI		2017	2016	2015	2014	2013	2012	2011	Major Causes of Incidents/Accidents (if any)
Runway Incursion¹		0	0	0	0	0	Optional	Optional	
	Aircraft ²						Optional	Optional	
	Vehicle ³						Optional	Optional	
	Person ⁴						Optional	Optional	
*1: Any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing and take-off of aircraft *2: The incorrect presence of an aircraft under its own power on the runway surface *3: The incorrect presence of any other vehicle on the runway surface, including aircraft being towed *4: The incorrect presence of any individual(s) on the runway surface									
KPI		2017	2016	2015	2014	2013	2012	2011	Major Causes of Incidents/Accidents (if any)
Runway Excursion¹⁰		0	0	0	0	0	Optional	Optional	
	Overrun ¹¹						Optional	Optional	
	Weer-off ¹²						Optional	Optional	
*10: An overrun or veer-off of an aircraft from the runway surface during take-off or landing *11: Aircraft that goes within or outside of the RESA *12: Aircraft that departs the side of the runway surface									
KPI		2017	2016	2015	2014	2013	2012	2011	Major Causes of Incidents/Accidents (if any)
Foreign Object Debris		0	0	0	0	0	Optional	Optional	
	Damage to Aircraft ¹³						Optional	Optional	
	Debris Found ¹⁴						Optional	Optional	
*13: Any occurrence of damage to an aircraft due to FOD on the runway *14: Number of FOD found during runway inspections									


▲ 表 1-ACI 安全績效指標 1 資料來源：ACI

Manoeuvring Area Safety (Other than runways)									
KPI	2017	2016	2015	2014	2013	2012	2011	Major Causes of Incidents/Accidents (if any)	
Taxiway Incursion¹⁵	0	0	0	0	0	Optional	Optional		
Aircraft ¹⁶						Optional	Optional		
Vehicle ¹⁷						Optional	Optional		
Person ¹⁸						Optional	Optional		
<p>*15: An incorrect presence of an aircraft, vehicle or person on the designated taxiway surface *16: An aircraft under its own power on the taxiway surface *17: Any other vehicle on the taxiway surface, including aircraft being towed *18: Any individual(s) on the taxiway surface</p>									
KPI	2017	2016	2015	2014	2013	2012	2011	Major Causes of Incidents/Accidents (if any)	
Taxiway Excursion¹⁹						Optional	Optional		
*19: An aircraft on the taxiway surface departing from the side or the end of the paved surface									
KPI	2017	2016	2015	2014	2013	2012	2011	Major Causes of Incidents/Accidents (if any)	
Foreign Object Debris	0	0	0	0	0	Optional	Optional		
Damage Occurrence ²⁰						Optional	Optional		
*20: Any damage to an aircraft due to FOD on the taxiway									
KPI	2017	2016	2015	2014	2013	2012	2011	Major Causes of Incidents/Accidents (if any)	
Collision on Taxiway²²						Optional	Optional		
*22: Any accident between two aircraft, aircraft and vehicle or aircraft and person									
Apron Safety									
KPI	2017	2016	2015	2014	2013	2012	2011	Major Causes of Incidents/Accidents (if any)	
Collision on Apron	0	0	0	0	0	Optional	Optional		
Aircraft - Aircraft (one is parked) ²³						Optional	Optional		
Aircraft - Aircraft (both moving) ²⁴						Optional	Optional		
Aircraft - Vehicle (refer to note) ²⁵						Optional	Optional		
Aircraft - Fixed Object ²⁶						Optional	Optional		
Vehicle - Vehicle (refer to note) ²⁷						Optional	Optional		
Vehicle - Fixed Object ²⁸						Optional	Optional		
Near Hits ²⁹						Optional	Optional		
Fuel Spillage³⁰						Optional	Optional		
<p>*23: Any occurrence between a moving and stationary aircraft *24: Any occurrence between two moving aircraft *25: Any occurrence between aircraft and vehicle (inc. GSE) *26: Any occurrence between aircraft and fixed object *27: Any occurrence between vehicle and vehicle (inc. GSE) *28: Any occurrence between aircraft and fixed object *29: Any occurrence that did not result in incident or accident but had the potential to do so *30: spillage of fuel and oil in conjunction with the re-/de-fuelling and handling of aircrafts on the apron. Exceptions: Any fuel/oil spillages of vehicles operating outside aircraft stands and adjacent airside roads. Fuel spillages (>1m² and cleaning by the fire brigade)</p>									

▲ 表 2-ACI 安全績效指標 2 資料來源：ACI

Wildlife Management								
KFI	2017	2016	2015	2014	2013	2012	2011	Major Causes of Incidents/Accidents (if any)
Wildlife Strike by phase of flight	0	0	0	0	0	Optional	Optional	
Taxiing ³¹						Optional	Optional	
Take-off Run ³²						Optional	Optional	
Initial Climb ³³						Optional	Optional	
Final Approach ³⁴						Optional	Optional	
Landing Roll ³⁵						Optional	Optional	
*31: The movement of an aircraft on the ground, under its own power *32: The movement of an aircraft to take-off on the runway *33: When the aircraft is airborne, after taking off, inside the aerodrome perimeter *34: When the aircraft is lined up with the runway and descending for landing *35: The movement of an aircraft on the runway after touchdown								
KFI	2017	2016	2015	2014	2013	2012	2011	Major Causes of Incidents/Accidents (if any)
Wildlife Strike	0	0	0	0	0	Optional	Optional	
Confirmed Stakes ³⁶						Optional	Optional	
Unconfirmed stakes ³⁷						Optional	Optional	
Serious incidents ³⁸						Optional	Optional	
Definitions from ICAO Doc 9137 Part 3 (Wildlife Control and Reduction) *36: Confirmed stakes: Any reported collision between a bird or other wildlife and an aircraft for which evidence in the form of a carcass, remains or damage to the aircraft is found *37: Unconfirmed stakes: Any reported collision between a bird or other wildlife and an aircraft for which no physical evidence is found. *38: Serious incidents: Incidents where the presence of birds/wildlife on the airfield has any effect on a flight whether or not evidence of a strike can be found.								
KFI	2017	2016	2015	2014	2013	2012	2011	Remarks
Cost of Wildlife Strikes³⁹	0	0	0	0	0	Optional	Optional	
*39: The total cost incurred by all confirmed wildlife strikes of the year.								

▲ 表 3-ACI 安全績效指標 3 資料來源：ACI

ACI Asia-Pacific Safety Data Sharing Rules	
	
Approved by 20 th ROSC Meeting, November 2017	
<p>Participants in the ACI Safety Data Sharing Program are to comply with the rules listed below. The rules below have been drafted based on the principles of <u>confidentiality</u>, <u>trustworthiness</u> and <u>equitability</u>. Participants failing to comply with the rules without adequate excuse will be expelled from the program:</p>	
<p>1. Confidentiality</p> <ul style="list-style-type: none"> The Secretariat shall collect, analyze data from voluntary participants of the data sharing program and provide a data summary to them in a useful format to assist them to improve safety without revealing the identities of the participant airports. The participants or any recipient of the data summary shall strive not to divulge or refer to it, or part of it, to any non-participant organizations or parties without explicit approval of the Committee. Participants or recipients of the data summary, found willfully breaching this rule, for example, referring to the relative performance of his or her airport compared to airports especially for the purpose of self-promotion, marketing or gaining economic advantage, will be expelled from the data sharing program. 	
<p>2. Trustworthiness</p> <ul style="list-style-type: none"> Participants of the data sharing program shall strive to ensure that the data provided is accurate and true to the extent of his or her knowledge. Unavailable data should be so noted by putting a dash ("-") in the data collection form in the box concerned. Participants should not input "zeros" or fabricate statistics that are not available. 	
<p>3. Equitability</p> <ul style="list-style-type: none"> To encourage participation in the program, participants will only receive a data summary for a period equivalent to the amount of data they provided unless otherwise approved by the Committee. 	
- End -	

▲ ACI 安全績效指標分享機制原則

B. 工作小組 2: 意外事件調查與原因分析、空側作業人員資格及條件 (WG2 : Accident Investigation and Root Cause Analysis Review, Aerodrome Operations Personnel Competency Requirement)

a. 意外事件調查與原因分析 (Accident Investigation and Root Cause Analysis Review) :

此次會議工作分組 2 再次檢視意外事件調查與原因分析指導原則草案，另針對內容調查目的、蒐集證據和調查方式等提出修訂建議，該草案待本委員會後續召開之例行會議另更新其進度及公布。

b. 空側作業人員資格及條件要求 (Aerodrome Operations Personnel Competency Requirement)

有關 ACI 於 ICAO AOPG SWG 工作小組內負責擬定有關機坪安全、跑道安全之各職級人員訓練項目、程度及考核要求等，此次委員會議分組針對前次針對各自其空側作業之條件與程序等提出分享與建議，確保於遵循一致之 ICAO 規範下可落實具體之職前訓練，並有效執行安全文化及強化安全管理。有鑑於亞太區域各國所使用之語言不同，若僅以英文為主要語言，各會員機場代表皆一致指出語言將可能成為執行面較為困難之項目。

6. 會員機場議題分享：泰國曼谷蘇旺那蓬機場 (Suvarnabhumi Airport) FOD 偵測系統建置

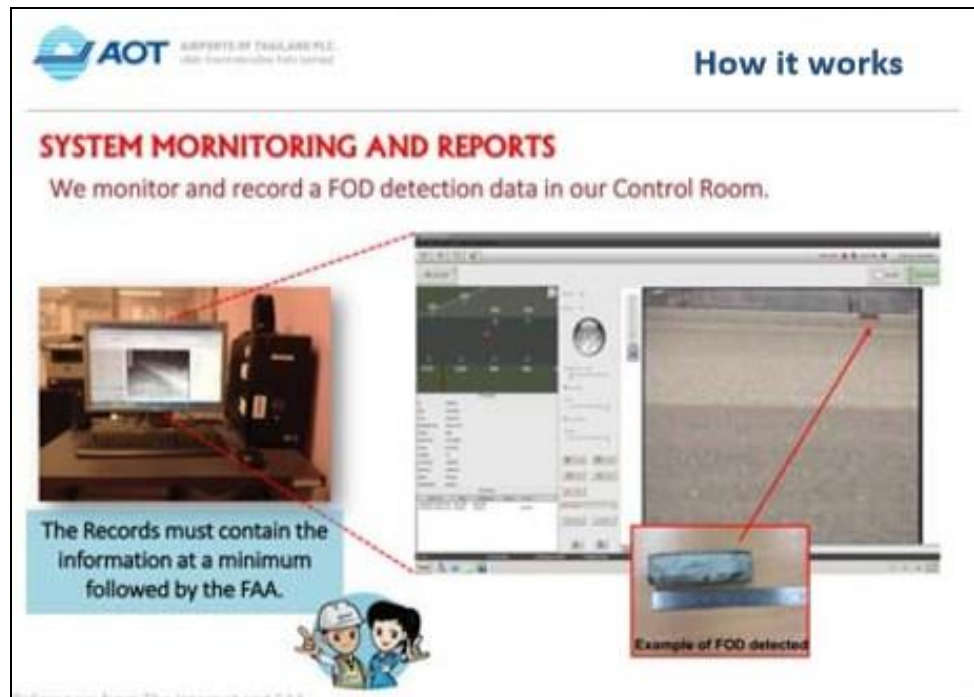
曼谷蘇旺那蓬機場 (Suvarnabhumi Airport) 每日平均航機起降架次約為 947 架次，泰國機場公司 (Airports of Thailand，以下簡稱 AOT) 於曼谷蘇旺那蓬機場 (Suvarnabhumi Airport) 已建置 FOD 偵測系統以輔助其場面 FOD 巡視作業，降低 FOD 影響跑道運作與飛航操作之潛在風險，其系統裝設於跑道邊燈，24 小時持續運作，並於各種天候狀況皆可正常進行偵測作業。



▲ FOD 偵測系統 資料來源: <https://www.xsightsys.com/>

AOT 於其空側作業中心配置 FOD 偵測系統之監控站，監控其系統所發出訊號，並透過專責人員評估所偵測到之物件是否為立即影響跑道安全運作之外來異物。AOT 針對其過去所偵測到之訊號與物件進行分析，其所偵測到之物品包含航機輪胎胎皮、螺絲、

航機掉落之零件等。然而，其系統亦曾偵測到例如樹葉、鳥類、爬蟲類等對無立即影響跑道安全運作之物件。



▲ AOT FOD 偵測系統監控站與相關工作畫面 資料來源: AOT

AOT 代表分享於系統建置過程中，系統建置者必須充分了解該機場環境特性、天候等，於前期建置作業期間調整偵測參數等，後續之運作也較能減少無效之異常訊號。AOT 指出其 2016 所統計之 FOD 系統偵測警訊高達 6,388 次，高達 60% 為來自鳥類活動所引起之訊號。有鑑於其 FOD 偵測系統可偵測小至 2 公分之物品，因此 AOT 提出未來擬放寬調整其偵測大小至少 4 公分以上之 FOD，以降低偵測頻率。此外，因為系統可以偵測靜態與動態之 FOD，AOT 指出對於人員判斷與評估系統所偵測到外來異物之風險之訓練非常重要，過度或輕微低估 FOD 所可能造成之危害對於

跑道安全運作皆可能帶來飛航作業之風險，或影響其跑道運作效率。

未來 AOT 擬於其所管理之普吉島（Phuket International Airport）、廊曼機場（Don Mueang International Airport）建置 FOD 系統，此外，目前於蘇旺那蓬機場（Suvarnabhumi Airport）所建置之系統也計畫提升擴充，擬結合鳥種辨識及擴音功能以驅離系統所偵測到之鳥類活動，並有助執行其野生動物防治。



▲ AOT FOD 偵測系統所偵測到於跑道鋪面活動之野生動物 資料來源: AOT

7. IFALPA 意見交流

因應本委員會積極針對空側作業及跑道安全等議題進行討論，許多會員機場亦提出駕駛員操作與建議對於提升空側作業安全可帶來極大助益，因此，本次會議 ACI 邀請國際駕駛員協會

(International Federation of Air Line Pilots' Associations, IFALPA) 與會，討論場面設施及作業議題。

IFALPA 下設之 Aerodrome and Ground Environment Committee (AGE Commitee) 定期出席 ICAO 工作小組或會議並提供駕駛員飛航操作之專業建議，協助 ICAO 制定機場設計與營運相關標準與建議，共同推動與建立安全之空側營運環境，AGE Committee 亦定期發布 Safety Bulletin 或其它文件，提醒駕駛員有關影響飛航操作之場面環境變更或潛在風險等。

IFALPA

The Global Voice of Pilots



Safety Bulletin

18SAB048 May 2018

Suvarnabhumi International Airport (BKK)

This Safety Bulletin is a reissue of IATA Operations Notice (ON 002/2018)
First Issued: 25 February 2014
Revised: 7 May 2018
Expiry date: 30 November 2019
IATA contact email: aspacsf@iata.org

This reissued Operational Notice alerts airlines of the on-going risk to aircraft operations at BKK airport due to soft ground conditions affecting the taxiways, taxi lanes and aircraft stands. Soft ground conditions or "soft spots" have been encountered and reported by flight crews and ground service providers at BKK since at least 2008.

Airports of Thailand (AOT) have previously advised that the root cause of the pavement failures and reports that the two main causal factors are deficiencies in the asphalt materials used in pavement construction and the height of the water table below the airport. These factors have resulted in soft spots and failures on heavily transited areas after about two years, which is well below the expected pavement life of around seven years.

Short term mitigation measures implemented by AOT include:

- a. temporary and semi-permanent pavement repairs;
- b. a 24 hour on-call pavement team for quick repairs to minimize disruption to operations

AOT have recently advised that the contract to carry out permanent repairs was cancelled in the design phase, therefore permanent repairs are further delayed and not expected to commence until at least late 2019.

Member airlines are invited to note the following:

- Alert flight crews of the existing hazards related to push back and taxi operations at BKK, and to apply appropriate operating procedures to mitigate the associated risks;
- Flight crews are strongly encouraged to report all soft spot occurrences immediately to ATC; AOT personnel will be dispatched to investigate and assist with recovery as needed;
- Airlines are also advised to follow up with a formal report to AOT safety (suvarnabhumisafety@airportthai.co.th) for tracking and further action, with copies to IATA ASPAC (aspacsf@iata.org) and BKK AOC (aoc.bkk@hotmail.com).

▲ IFALPA Safety Bulletin 範例- 泰國曼谷機場空側設施潛在風險

資料來源: IFALPA

此次 IFALPA 與會之日本與南韓代表提出，場面設施建置與設計等皆必須納入駕駛員操作建議，才能避免於安全事件發生，具體有效降低作業風險，改善設計與實際操作之落差之處。本委員會之會員機場對於此次 IFALPA 與會之討論與交流給予正面之評價，希望未來定期邀請 IFLAPA 派員出席本委員會議，持續討論空側營運及安全管理等議題。



▲ IFALPA 日本代表提出指示牌設置不符合駕駛員判讀視角之案例

資料來源: ALPA Japan



▲ 各會員機場針對安全事件進行討論



▲ IFALPA 日本與南韓出席代表分享空側營運建議

8. 第 23 次委員會議地點第 23 委員會議地點預計於明年度（108 年）4 月於香港配合 ACI Asia Pacific 年會召開。

肆、心得與建議

因應本機場空側施工持續進行中，空側營運環境長期與頻繁變動對於本機場之空側營運管理為一大挑戰，透過本公司持續積極參與該委員會之例行會議取得國際空側營運標準及規範，並可直接掌握營運規範更新之情形，實際運用於例行營運管理。歷次會議以來，本機場亦透過與其它會員機場交流，獲得許多其空側營運或發展建置經驗，例如此次泰國機場公司所分享之 FOD 偵測系統，提供本公司評估建置相關系統具體之執行建議與方向。

透過參與本委員會議，本公司有機會直接與許多重要國際組織或其它單位進行意見交流，例如此次首次參與本委員會議之國際駕駛員協會，有機會使本機場與國際上重要之駕駛員代表交換場面營運建議，更能充分了解與提升整體空側環境，進而回饋及提升本機場營運表現，未來本機場應積極加強與本國、外國駕駛員或組織之溝通與交流，以改善現有空側作業瓶頸與困境。



**22nd Meeting of ACI Asia-Pacific Regional Operational Safety Committee
(ROSC)**

Lotte City Hotel Myeong-Dong

Seoul, Republic of Korea

8 to 10 October 2018

Preliminary Agenda as at September 2018

Day 1 - Monday, 8 October 2018

Morning Session (Plenary) 9:00 a.m. – 12:30 p.m.

- 1. Opening and Welcome**
- 2. Approval of Meeting Agenda**
- 3. Approval of Minutes of the 21st ROSC Meeting**
- 4. Engagement with ICAO**

4.1. Report on Recent Meetings. The Secretary will report on the outcomes of the following meetings and invite the Committee to discuss and comment.

4.1.1. APRAST/12 (May 2018) and RASG-APAC/8 (Sept 2018). The 21st ROSC meeting held in Narita one month before APRAST/12, discussed ACI's position on the revision of the [ICAO Asia Pacific Regional Safety Targets and Priorities](#). APRAST/12 did propose and agree to a number of revisions, by and large as expected by ROSC with some exceptions, notably the removal of the target to establish predictive safety management capability by 2027 and a new requirement to establish National Aviation Safety Plan (not SSP) by 2025. The 2025 target for SSP remains. These revisions were approved RASG-APAC/8 in September 2018. The Secretary will report on the outcomes of the two meetings. Meeting report downloads: [APRAST/12](#) and [RASG-APAC/8](#).

4.1.2. AOP-SG/2, June 2018. The 2nd meeting of the ICAO Asia-Pacific Aerodrome Operations and Planning Subgroup (AOP-SG) decided to create two working groups to assist States with the establishment of National Wildlife Strike Hazard Committee and aerodrome certification, and a Task Force for aerodrome design and operations. The meeting agreed to the nine competency areas proposed by AOPC-SWG/1 and postponing its target date to complete the competency requirements from 2018 to September 2019. The meeting report can be downloaded [here](#).

4.1.3. RASG-MID RSC/6, June 2018. The 6th meeting of the ICAO Middle East Regional Aviation Safety Group Steering Committee endorsed the [2018 Middle East Annual Safety Report](#), reviewed the Middle East Safety Targets, and discussed the establishment of the Regional Safety Oversight Organization. Meeting report for download [here](#) (revised safety advisory on safeguarding in Appendix 3N).

4.1.4. RPAS/3, September 2018. The third Remotely Piloted Aircraft Systems (drones) discussed, inter alia, the regulation of RPAS operations. The Secretary will also report on a new [ACI Policy on drones](#) recently approved by the ACI World Governing Board.

4.2. **Upcoming Meetings.** The Secretary will brief the Committee on the background of the ICAO safety-related regional meetings from Q4 2018 to Q1 2019, suggest ACI interventions and invite comments.

4.2.1. APRAST/13, Dec 2018. APRAST/13 is expected to discuss the implementation of the revised safety targets and priorities and the establishment of the new Regional Aviation Safety Plan as instructed by RASG-APAC/8.

4.2.2. AOPC-SWG/2, Q2 2019. The ACI Secretariat has submitted ACI's input to aerodrome personnel competencies as per the discussions of 22nd meeting of ROSC. The Secretary will report on the feedback, if any, from ICAO on ACI's input.

4.2.3. Regional Global Reporting Format Workshops. The Global Reporting Format for assessing and reporting runway surface conditions (GRF), aimed at reducing runway excursions will become applicable on 5 November 2020. ICAO is organizing a GRF Symposium in Montreal, March 2019, following which, a series of regional workshops on the same topic. Industry associations, such as ACI, IATA and CANSO, are being consulted on the content of the global symposium and regional workshops. The Committee will be invited to provide inputs to the regional workshops in Asia Pacific and the Middle East, in particular, issues on runway surface condition reporting specific to these regions. An ICAO explanatory presentation on Global Reporting Format can be downloaded [here](#).

5. **Environmental Impact of Firefighting Foams.** The 16th ROSC meeting held in Bangalore in October 2015 discussed the toxicity and environmental impact of PFOS, a category of chemicals commonly contained in airport firefighting foams. The Secretary will update the Committee on this matter and invite Members to discuss.

12:30 p.m. – 2:00 p.m. Lunch

Afternoon Session 2:00 p.m. – 5:00 p.m.

6. **Working Group Sessions.** Before the breakout sessions, the Committee will first meet in plenary to review the outcomes of the working group discussions at the 21st meeting.

6.1. Plenary Session

6.1.1. Safety Data Sharing. The Secretary will present the results of the annual safety data survey, with the 2017 data included, based on a data collection form amended as per the decision of the 21st meeting for the Committee's review and discussion.

6.1.2. Safety Guidance Materials. The Secretary will present the revised draft guidelines on "Accident Investigation and Root Cause Analysis" and "Runway Safety Team" as per the discussions of the 21st meeting for the Committee's review.

6.1.3. Safety Culture Survey. The last meeting agreed to discuss the need to relaunch the safety culture survey. The Secretary will review with the Committee the methodology and results of the last survey. An ICAO working paper presenting the survey results can be downloaded [here](#).

6.2. **Breakout Sessions.** The Committee will then split into two Working Groups until the lunch break on Day 2. Each group should elect a leader to facilitate the discussions and to report back on the outcomes of the breakout sessions to the plenary in the afternoon of Day 2. Members and Observers are strongly encouraged to remain in the same

Working Group as at last meeting to better ensure continuity of discussions. New comers to WG should try to choose one of the two based on interest and experience. The following suggests tasks for the two working groups during the breakout sessions:

6.2.1. Working Group 1

- 6.2.1.1. Review the data sharing form amended as per the last meeting especially those in relation to wildlife strikes and flying objects in the vicinity of the airport; review the results and analysis of the data including 2017 as per the new form; and suggest any analysis that may be useful in addition to those presented by the Secretariat.
- 6.2.1.2. Review the new draft of the Runway Safety Team guidelines, make comments, and attempt to finalize on its content.
- 6.2.1.3. Review the [report](#) on the last Safety Culture Survey, discuss the need for relaunching the survey, and if there is a need, its objectives, the questionnaire, the analyses and actions required to meet the objectives.
- 6.2.1.4. Time permitting, choose a topic, e.g. VDGS guidelines, from the list agreed at 20th meeting for developing new safety guidelines. Refer to paper in meeting documentation for list of topics.

6.2.2. Working Group 2

- 6.2.2.1. Review the guidelines on Accident Investigation and Root Cause Analysis amended as per the last meeting and attempt to finalize the content;
- 6.2.2.2. Review the draft competency requirements for apron safety and runway safety provisionally submitted to ICAO on 4 May 2018 and make minor amendments if necessary; and
- 6.2.2.3. Time permitting, choose a topic, e.g. competency definitions and checks for apron workers, from the list agreed at 20th meeting for developing new safety guidelines. Refer to paper in meeting documentation for list of topics.

7:00 p.m. to 9:00 p.m.

Committee Dinner: Korea Airports Corporation will host a dinner on 8 October. Details will be announced at the meeting. Please advise the Secretary if you require any special meal such as vegetarian or Muslim by 21 September 2018.



Day 2: Tuesday, 9 October 2018

9:00 a.m. to 12:30 p.m. (Continuation of Breakout Sessions)

The Secretary will open the session in plenary and briefly remind the Committee of the program of the day. The Committee will then split and continue its Working Group Sessions.

The Working Group should aim to finish discussions by 11:45 a.m. to allow time for the preparation of Powerpoint presentations to report back to the plenary in the afternoon.

12:30 p.m. to 2:00 p.m. Lunch

2:00 p.m. to 5:00 p.m. (Plenary)

7. Report Back from Working Groups. The leaders of the two working groups will be invited to report on the results of their discussions.

8. IATA's Live Animal Regulations. The matter was raised at the 20th ROSC meeting and further discussed at the 21st meeting. It was agreed that in view of past incidents of live animal escaping from cages in the airfield, causing aircraft operational safety hazards, the Secretariat should contact IATA Asia Pacific Regional Office in Singapore to suggest solutions, e.g. amendments to the IATA Live Animal Regulations, to reduce of the safety risk of live animals breaking out from cages on the airfield, e.g. by improving locking mechanisms such as wrapping nets around the cage, and cage design, with due consideration of animal welfare. The Secretariat will report on feedback from IATA, if any, and present a summary of practices in the prevention and handling of animal breakouts that Members contributed since the last meeting. The Committee will be invited to discuss and comment.

Day 3, Wednesday, 10 October 2018

The Committee will meet in plenary.

9:00 am – 12:30 pm

- 9. Meeting with IFALPA.** Representatives of IFALPA Korea and Japan will join the meeting and make a presentation. The topic of presentation is to be confirmed but it has been suggested to IFALPA that they should provide feedback to ACI on aerodrome safety from the perspective of pilots. Committee Members will be invited to comment and discuss with the IFALPA representatives after the presentation.

Photo Session: Meeting participants will be invited to take a group photo. Please follow the Secretary.

Coffee break

10. Regional Updates

Call for Presentations: Members will be invited to report (maximum 15 minutes each) on the safety issues, lessons learnt, safety enhancements or recent aerodrome infrastructure developments at their airports preferably with Power Point presentations. Confidentiality will be respected in accordance with Article 7 of the [Terms of Reference](#) of the Committee; sensitive safety information will be omitted or de-identified in the meeting minutes. Members are requested to advise the Secretary as soon as possible if they want to make a presentation so that time can be made available.

- 10.1. **Safety Promotion at Airports of Thailand**, Darina Kuasakul
- 10.2. **Runway Incursion Incident at Narita**, Masao Fujita
- 10.3. **Airside Driving Procedure at Bahrain**, AbdulHakim AlShaibani, Bahrain Airport Company

11. Committee Membership. The Committee will present the current list of members for the Committee's review and discussion.

12. Meeting Conclusions. The Secretary will present the key conclusions of the meeting for the Committee's review and approval.

13. Next Meeting. The Secretary will suggest the dates and location for the 23rd ROSC meeting, tentatively scheduled for the end of March to early April 2019, for the Committee's discussion and approval.

- End of Meeting -

12:30 pm – 2:00 pm Lunch