

# Airside Safety Catch Edition 7

Welcome to the 7th Edition of **Safety Catch**, from the Aerodrome Safety & Assurance Team.

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Aerodrome Safety



**Safety Catch** is intended purely for the advancement of learning. It is designed to stimulate thinking around safety issues, highlight scenarios which may not have occurred before and encourage discussion. It is not intended to apportion blame or liability on the part of any individual or team and endeavour to ensure the information published is correct. Our aim is to share learning from safety occurrences in a manner that is responsible, neutral in tone, and accessible to all colleagues. Staff should always refer to the latest procedures, instructions and training which takes precedence over safety promotion material.

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- AIR update
- Use of radios
- Learning from recent safety investigations
- Standard works procedures
- What happens to your reports?
- And finally

If you have any ideas for future editions, or perhaps a safety event you think others could learn from, please feel free to get in touch.

## Contact us:

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## Did you know?

All safety promotion material, investigations and lesson learning content is available on the Aerodrome Safety SharePoint site.



Heathrow

## AIR update

AIR was specifically designed for aviation incidents and as such allows the Safety and Assurance team to draw data from it in a more intelligent and efficient manner than before.

It's meant trend analysis and monitoring can be performed, allowing the team to focus on those areas for improvement where they'll be most beneficial.



### AIR Stats

- AIR was introduced as an OMRA replacement in January 2019
- Since its introduction 1,630 reports have been raised (a 20% increase from last year)
- 256 were safety observations
- 30 improvements have been made to AIR as part of 2 main upgrades – V.3 is planned for 2020
- 896 reports have investigated and closed

### Tips for improved reporting:

- Remember to place personal details in the boxes provided, please refrain from inputting names in the free text boxes.
- When inputting environmental incidents, use the tab provided and enter the details which have spilled to the ground/ entered the drainage system – not total volume lost (i.e. collected in a bowser).
- All times entered should be in Zulu.
- The reporting of incidents which have occurred is great, however reporting of observations really helps the Safety and Assurance team spot trends and stop incidents occurring, we encourage you to report any procedural or operational concerns you may have.

If you have any thoughts on how AIR can be improved, please bring this to the attention of the Safety and Assurance Team

## Use of radios

Concise and unambiguous phraseology used at the correct time is vital to the smooth, safe and expeditious running of an aerodrome.



Standards of radio transmissions vary across Heathrow. Air Traffic Control almost exclusively use standard phraseology, this is due to the highly predictable nature of aircraft movements. The requirement for non-standard phraseology may sometimes exist in emergency or unusual situations. Within Airside Operations the use of standard and correct phraseology on the domestic frequency is important. The standards and professionalism used on the domestic radio should be the same as that of the ATC frequency, particularly when performing safety critical activities.

### Before transmitting you should always:

- Check the correct frequency/ Channel is selected.
- You have planned what you are going to say (Remember the ABC of Transmitting and standard message format).
- You are permitted to carry out the action you have requested (ADP is valid etc..).
- Listen for a natural break in other communications – don't 'step' on other transmissions.
- Remember RSVP and the 4 x W's.



Standard Message Format	
Whom	You are calling (i.e. Ground)
Who	You are (i.e. Leader 8)
Where	You are (i.e. Link 35)
What	Your intentions are / Request is



### 💡 Useful Tips:

- The ATIS can be listened to if you if you need to know about weather information such as cloudbase, visibility and temperature. The ATIS may also contain other information about taxiway closures and wildlife activity.
- Remember to check the Airfield State screen displayed in the entrances to the AOF. If you're on the AfCR desk, remember to always keep these up-to-date.
- The CAA have produced a Reference Guide to UK Radiotelephony Phraseology for Aerodrome Drivers. It is a supplement to CAP 413 and be found online.

The ABC of Transmitting	
A: - Accuracy	Ensure the correct information is contained in your message (Use the standard message format).
B: - Brevity	Do not transmit for longer than required, if you need to explain or discuss a situation – use a different communication method.
C: - Clarity	Speak Clearly (Use RSVP).

RSVP	
R: - Rhythm	Maintain the natural rhythm used in conversation to help make the message intelligible. Avoid saying 'er' or 'um'.
S: - Speed	Speak steadily and at medium speed so as to avoid an unintelligible jumble of words from speaking too quickly or losing rhythm when too slow.
V: - Volume	Speak at an ordinary conversational level to avoid distortion with the mike-to-mouth distance kept constant. Without sacrificing rhythm, every word should be clearly spoken, and the voice must not fade away on the last part of the phase.
P: - Pitch	Use a pitch that is a little higher than usual to aid reception, especially in poor conditions. Maintain an even pitch, being especially conscious of the last syllable of words where the natural tendency is to lower the pitch.



The use of Pro-words is encouraged to maintain discipline when communicating with ATC and on Domestic radios. Pro-words are common phraseology that help prevent misunderstanding, reduce the need for additional transmissions and reduce congestion on busy frequencies.

Examples of Commonly Used Pro-Words	
Affirm	Yes
Approved	Permission for proposed action granted
Disregard	Ignore
Say Again	Repeat your last transmission
Affirm	Correct
Negative	No or Permission not granted or that is not correct or not capable
Rodger	I have received all your last transmission
Hold Position	Do not proceed until you have received permission
Hold Short	Stop before reaching the specified location

A readability scale exists to describe the quality of transmissions and should be used whenever a radio check is requested.

Readability Scale	
Scale:	Meaning:
1	Unreadable
2	Readable now and then
3	Readable but with difficulty
4	Readable
5	Perfectly readable

### Other Information:

- Microphones in the vehicles should always be correctly stowed in the appropriate place to avoid inadvertent transmissions or a stuck PTT switch.
- Radio units should be faulted via the Heathrow IT Help Desk.
- OSI ASDRVE\_OSI\_074 (ATC Recognised Callsigns for Vehicles) V3.0 published 16th January 2018 contains the list of approved callsigns for use of on the manoeuvring area.
- Faults with radio units should also be reported on AIR if the problem or failure with the unit is experienced during an operational task.
- ALOP Airside\_ASD\_ALOP\_20 (Radio Procedures) v1.0 describes the standard operating protocols and etiquette for use of radios.
- Radio frequencies (HAL and ATC) are recorded and may be listened to and transcribed for safety investigation purposes.

### Summary

Maintaining professional R/T standards is very important. It improves safety by reducing the potential for miscommunication. Transmissions should be short, simple and always read back in full.



### The Do's

- Use standard phraseology as much as possible.
- Use plain language when required.
- Keep messages as brief as possible, if a discussion needs to take place – a different form of communication should be considered.
- Provide full readbacks, including your callsign at the end of the readback where appropriate.

### The Dont's

- Do not contact Tower when they are likely to be giving take-off or landing clearance.
- Do not contact Airfield Operations during FOD radar activations or emergency inspections unless your message is relevant to those activities.
- Do not use slang, profanities or names whilst transmitting.
- Do not acknowledge 'Standby' instructions.

## Vehicle Runway Incursion at S4E during the set-up of a temporary worksite

### What happened

During the set-up of a temporary work site adjacent to Runway 09R, a contractor's vehicle entered at S4E without clearance. An A300-600F lining up on Runway 09R from S11 was in receipt of a take-off clearance but had not yet commenced its take-off run.

ATC were immediately notified that there was a vehicle on the runway by the Leader vehicle that was co-ordinating the work site set-up. Take-off clearance was cancelled, and the aircraft held position on the runway until ATC were notified the vehicle had vacated.

**The runway incursion was assessed as Category D. Five findings and required outcomes were made.**

### What the Investigation Found

The immediate cause of the runway incursion was a loss of situational awareness by the driver. The root cause of the runway incursion was identified as an inconsistent approach to the set-up of work sites.

The contractor/driver's level of understanding with regard to runway access and awareness of safety features associated with runway entry points was extremely limited. The driver did not intend to cause a runway incursion but was not informed enough of the context and consequences of his actions to prevent him doing so. There was no evidence of any formal runway safety awareness training having been undertaken at any point during the driver's extensive period of employment at the airport.

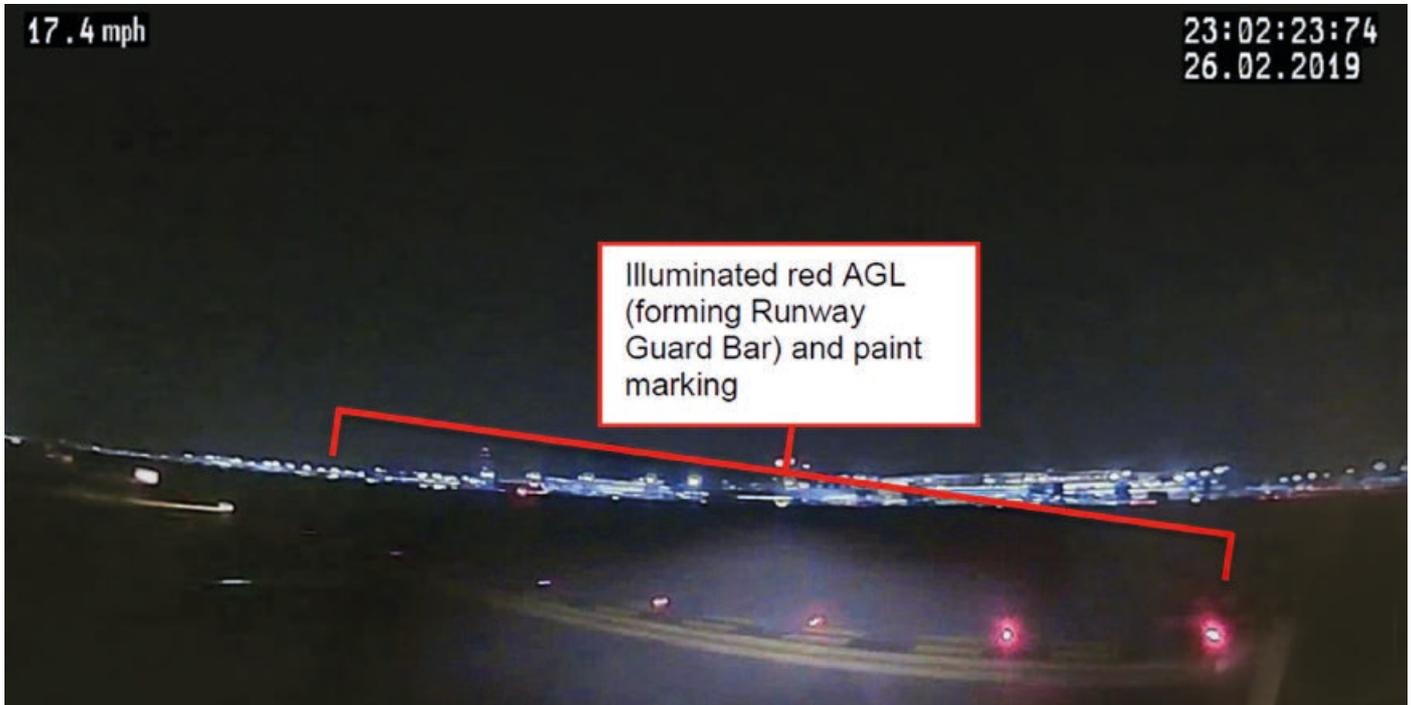
The Baines Simmons Fair Tool Behaviours Analysis Flowchart was used to determine the behavioural classification for the driver involved in the runway incursion. The outcome was Mistake. A 'mistake' is characterised by the CAA as "Typically, knowledge or rule-based and involve failures in planning or decision making. Either an individual does not possess the knowledge to undertake a task or there are issues with inadequate or ambiguous rules and procedures."

The absence of runway safety awareness training for drivers who operate in close proximity to live runways as part of their job role, but do not hold 'M' (Manoeuvring Area) or 'R' (Runway) class ADPs was a contributory factor. The driver did not intend to cause a runway incursion, but had insufficient knowledge and awareness to prevent him from doing so.

The version of the ALOP current at the time was not explicit with regard to when the Bolton Barriers should be placed into position.

The sequencing of tasks (performed by the Airfield Operations Leader as part of the work site set-up) was not in contravention to the version of the ALOP that was current at the time. However, it was unusual and presented an unfamiliar situation to the contractor. There was a mismatch of understanding between the Airfield Operations Leader and the contractor as to the order, and way in which the work site would be set-up (i.e. which vehicle would lead).





Dashcam footage from contractor's vehicle

## Learning Points & Best Practice

- ALOP Airside\_ASD-O\_ALOP\_011 (Management of Airfield Works) Version 3.0 (effective 16 May 2019) covers the procedure for work site set-up. Additional information is also published in ALOP Airside\_ASDO\_ALOP\_006 (Applying Restrictions and Closures) version 2.0 (effective 3 June 2019). The changes have been made following this event.
- Airfield Operations do not require contractors to apply additional physical protection (cones) across RGBs that have already been safeguarded with Bolton barriers.
- The key learning point is that when a work site is adjacent to a live runway, before the contractor is led out to apply physical protection (cones), Bolton barriers should be placed across the full length of the Runway Guard Bar (RGB). These are to be lit in the hours of darkness.
- Lead the coning team to each stop bar during the set up. Avoid positioning the vehicle in the middle of the closed area, and allowing the coning team to apply the closures. The Leader vehicle should be proactively leading the contractor throughout the task.
- Additionally, before you lead the contractor out to apply physical protection (cones) to the remainder of the work site, brief the contractor (Site Supervisor and coning team) at the muster point. This is to ensure the coning team stays with the Leader vehicle, and applies the physical protection (cones) as directed.
- Always use the 'Follow Me' board on the vehicle and check all vehicles are following.
- Promote the Runway Safety Awareness Package to contractors and other parties who operate on or close to the runway.

## Runway Incursion – Vehicle crossed Runway 09R/27L at S5W without ATC clearance

### What happened

A Campus Security vehicle crossed Runway 09R/27L without ATC clearance. The Campus Security vehicle was responding to a breach of security (Code 97) by a recovery truck towing a ULD elevator. This was under a leader escort from Airfield Operations.

There was no operational impact and at the time there were no aircraft movements on the runway.

**The runway incursion was assessed as Category D. Six findings and required outcomes were made.**



### What the Investigation Found

Miscommunication occurred between the parties involved (between the recovery truck driver and Campus Security Duty Manager, and then between the Airfield Operations Officer and recovery truck driver).

There was limited understanding of security protocol (requirement for a remote search) by the recovery truck driver. This allowed for a false belief that alternative arrangements may in place, or that a search may not be required.

There is no written information or published training material describing the security co-ordination process for Airfield Operations/ Aircraft Operations Unit to follow when allocating or providing leader escort resource originating outside (but requiring entry) to the CPSRA (Critical Part of the Security Restricted Area). This generated the circumstances in which it was likely that misunderstanding and miscommunication would occur.

The Campus Security patroller had incomplete knowledge of runway access protocol. The Behaviours Analysis Flowchart was used to determine the behavioural

classification for the runway incursion driver (Campus Security patroller). A situational violation was the result. This is characterised by the CAA as occurring when 'there is a gap between what the rules or procedures require and what you think is available or possible'. There was no conscious and unjustifiable disregard for risk on the part of the Security patroller, nor was there any personal gain associated with their actions. Whilst applicable rules (in the form of the Local Operating Instruction) were available, and the action was beneficial to the organisation, this was not considered a 'violation for organisational gain'. This was because awareness of the local operating instruction was poor, and the Security Patroller had incomplete knowledge of runway access protocol.



The illuminated 'Follow Me' board displayed by the Leader vehicle was a factor in the Security Patroller's decision to follow the vehicles onto the runway. It was interpreted as the provision of a leader escort/convoy service, meaning it would be acceptable for her to join. Although aware of the unusual nature of the situation, and the Local Operating Instruction detailing an alternative course of action, the Security Patroller believed following 'the convoy' to be a safe and acceptable course of action. This was on the basis the vehicles had permission from ATC, the runway guard bar (red stop bar) had been suppressed, and there was a green AGL route across the runway.

The Airfield Operations vehicle fleet is no longer able to receive 'All Airport/909' radio transmissions. The Security Patroller expected the Airfield Operations Officer to have heard the transmission and stopped. This did not happen, and the Leader vehicle continued to lead the recover truck and equipment across the runway to stand 301. This was significantly further than what had been anticipated by the Security patroller. Information about the Code 97 was passed to the AOO by the AfCR but the vehicles were already on the runway at the time.

Some aspects of the Leader & Escorts ALOP (required prior to the leader escort such as a safety briefing and equipment/vehicle inspection) cannot be performed in the normal manner when originating from the Cargo area. This hinders effective communication and is detrimental to safety, hence the need for a security co-ordination process. Work to resolve this problem is ongoing and likely to be communicated via an OAN. In the longer term, the cargo area is due to be redesigned and become part of the CPSRA.

## Learning Points & Best Practice

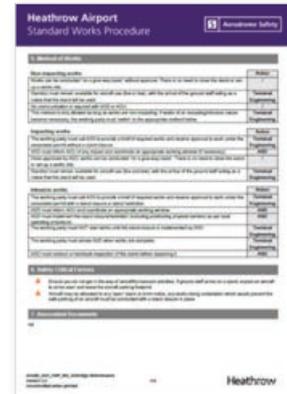
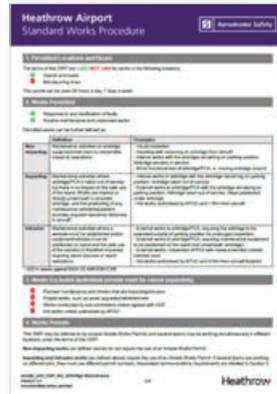
- During the planning of leader escorts originating outside (but requiring entry) to the CPSRA discuss security arrangements with all parties to prevent the likelihood of a breach of security.
- Always use the 'Follow Me' board on the vehicle and check all vehicles are following, particularly when crossing live runways. So far as possible, use the mirrors to check for other (unauthorised) vehicles that may have joined the convoy.
- Be aware that 'All Airport/909' radio transmissions are no longer received by the Airfield Operations vehicle fleet. This may reduce the situational awareness of Airside Operations drivers if they, or a vehicle they are leading are the subject of a Code 97. ALOP Airside\_ASD\_ALOP\_20 (Radio Procedures) version 1.0 (effective 21 June 2018) which states the following "The AfCR and AfDM radios are the only radios which are continuously monitoring 'All Airport 909/Ambulance Calls'

therefore it is of paramount importance that incidents affecting Airside are rebroadcast if necessary so that other Airside radio users can monitor the appropriate channel on their secondary radio's and/or switch to the nominated Incident channel'. It is at the discretion of the AfCR which messages are deemed necessary to be re-broadcast. As a minimum, any All Airport/909 calls involving the runway should be re-broadcast.



## Standard works procedures

### Standard works procedures



There are currently 14 valid Standard Works Procedures (SWP) in use at Heathrow. They have been steadily introduced since the last quarter of 2018.

A Standard Works Procedure (SWP) is a document agreed between HAL Airfield Operations and a named maintenance provider, governing how the maintenance provider will conduct routine and reactive maintenance activities in the airside environment. These will generally be low risk activities, and prior to the SWP being published, a safe system of work must be agreed in advance between Airfield Operations and the maintenance provider.

This means maintenance providers such as JSA, ThyssenKrupp, HHOpc and Terminal Engineering can carry out routine maintenance tasks without activating the corresponding Airside Works Permit or informing the Airfield Operations Control Room (AfCR).

Standard Works Permits provide flexibility in the use of the Airside Works Permit they are associated with. A maintenance provider does not need to contact ASD to advise of their works if they have a valid SWP and are carrying out non-intrusive works in accordance

with it. If the work is of an impacting or intrusive nature, the contractor needs to contact ASD, co-ordinate their work and activate the relevant Airside Works Permit.

When carrying out routine patrols there is no difference in how you should approach a maintenance provider to check they have the relevant authorisation to be operating airside. However, you need to be aware they may be working under the conditions of their SWP rather than an activated Airside Works Permit.

A list of current SWP's is held on the Airside share point page:  
<https://heathrowportal.sharepoint.com/teams/Airside/AirsideWorks/SWPs/Forms/Current%20SWPs.aspx?web=1>

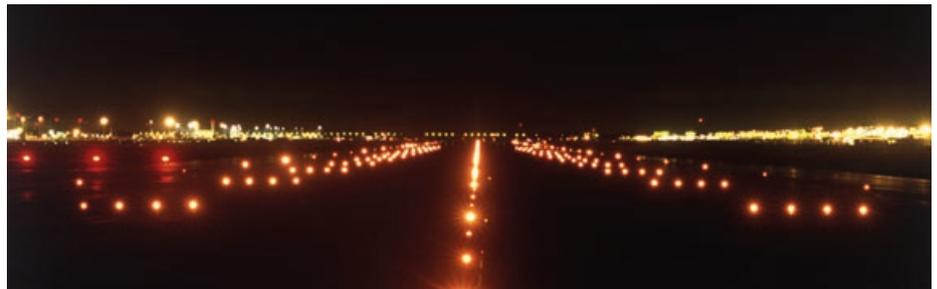
## What happens to your reports?

Sometimes it's not always apparent that outcomes from safety reports have followed. Whilst in some cases, no follow-up is required as the matter's been dealt with at the time, in other cases there's a need to achieve an outcome to close the report.

Below is a small selection of examples to show what's taken place as a result of a safety report.

### Report 1

Lack of procedure for MALMS (Mobile Airfield Lighting Monitoring System) checks



This is an engineering task conducted by Airside Engineering checking the runway lighting is functioning correctly and involves several runs up and down the runway with the brilliancy turned up.

#### Analysis:

As the task is conducted on the live runway (overnight) and the engineers do not hold 'R' Airside Driving Permits, Airfield Operations are required to provide R/T cover. Reporters have explained it was unclear where the Airfield Operations vehicle should be positioned (i.e. on or off the runway). There was also confusion regarding runway guard bars (RGBs) in the event that the Airfield Operations vehicle was to change over due to the inability to suppress the RGB with the 'MALMS Test Mode' activated in the Tower.

#### Outcome:

An SWP (Standard Work Permit) has been issued which clarifies how the task should be conducted. It states that, "Both (engineering) operatives will wear specialist protection glasses to protect them from the brilliancy of the AGL – this will severely restrict their ability to see outside the vehicle and situational awareness of any obstacle or other vehicle on the runway. It is therefore critical that the runway surface remains sterile at all time; this includes the ASD vehicle that must be positioned outside of the runway shoulder (on a turnoff)." It goes on to say "If a handover is required between ASD Leaders to facilitate a break, this must be coordinated with the MALMS testing crew and ATC and the crossing of the RGB should take place between runs (data cannot be used if a run is interrupted)".

## Report 2

Disagreement with the Tower Supervisor regarding the requirement for a runway inspection after emergency traffic

### Analysis:

Three reports have been received over the past 6 months in relation to this topic. The ALOP and MATS Part 2 documents were not aligned which meant there was lack of process outlining how and by whom the decision to inspect the runway was undertaken. Situations where the two parties entered a protracted debate as to whether an inspection was required generated confusion and additional stress/workload.

### Outcome:

Documents and procedures were reviewed jointly between HAL and NATS to bring them into alignment. A Supplementary Instruction (SI) was issued by NATS for this purpose and a Lesson Learning Toolbox Talk and AfDM Watch Briefing note issued to Airfield Operations staff. This states: In the event of emergency landing traffic, except for medical emergencies, the VCR Supervisor must co-ordinate with ASD. If either the VCR Supervisor or ASD believe a runway inspection is required, a runway inspection must be carried out. It should be expected that ASD will require a runway inspection behind all declared emergency traffic regardless of category, excluding medical emergencies.

## Report 3

Windsleeves tangling up on a regular basis



### Analysis:

Reporters pointed out that incorrect windspeed indication may be given to pilots by windsleeves that are unable to rotate fully. Untangling them could also present a health and safety hazard.

### Outcome:

It was found that whilst the windsleeve themselves were subject to a routine inspection and replacement schedule, the poles were not listed as assets on Maximo. Subsequently they had not been subject to scheduled inspections and preventative maintenance. They have since been added to Maximo. Additionally, as the existing poles are approaching the end of their useful lifespan, replacements have been ordered and are due for installation before the end of the year.

## Report 4

Aircraft entering stands without stand entry guidance activated



### Analysis:

Reporters have pointed out the dangers associated with this and in some cases have spoken to the flight crew after the aircraft has parked to gain a better understanding. This information has been useful and helped us decide best to reduce the frequency of this.

### Outcome:

Flight crews, particularly not-native English speaking, have not fully understood the AIP (Aeronautical Information Publication) text which states aircraft must not attempt to self-park and misinterpreted what was meant. To eliminate any potential for this, we have improved the AIP text to provide clarification that aircraft must not commit to the stand, but remain on the taxiway centreline in the event that stand entry guidance is not activated. Flight crews are also reminded to inform ATC and contact company to arrange activation. Airlines and commercial flight planning providers use the AIP information for their briefing packs which are reviewed by flight crews. This should help resolve the problem and create a safer operating environment.

## And finally

### **B777-300 Auxiliary Power Unit (APU) FOD**

Sparks and smoke were observed coming from the tailpipe of an inbound B777-300 followed by several items of FOD which were ejected on the taxiway surface. Airfield Operations were made aware and an Aircraft Ground Incident (AGI) initiated by ATC.

Airfield Operations attended the stand and temporarily closed the taxiway until the FOD was removed and the area made safe. Engineers and flight crew were spoken to which gathered useful information for the follow-up, including a review of the aircraft's tech log. The airline will be conducting an engineering investigation to determine the cause of the failure which is highly unusual.



The operational response, extent of the follow-up and quality of the report by Airfield Operations was excellent. The report described how the incident had not been reported correctly via 222 meaning Airfield Operations, APOC and ATC became aware later than what should have been the case as a result of this.

This has led to follow-up with the airline to ensure that all ground staff are aware of the correct reporting process so that response from AFRS and other emergency services is not delayed. With such a detailed report submitted by Airfield Operations the follow-up process is made easier and a successful resolution more likely as a result.

## Samurai the Shiba Inu

B Watch recently responded to a call from a ground handling agent after a dog had escaped its lead and was on the loose in Terminal 4.

The dog, named Samurai, was due to be flying back home to the United Arab Emirates from the Royal Suite/Stand 457 when it broke free from its lead and made its way across several live taxiways. The call from the handling agent meant the Airfield Operations Control Room were able to send available teams to the area and alert ATC. APOC and the Police were notified, and Campus Security informed that the owners, members of the UAE Royal Family, would need to assist Airfield Operations in efforts to retrieve the dog.



Shiba Inu is a breed of hunting dog native to Japan. According to Wikipedia, they tend to exhibit an independent and inquisitive nature and much like a cat, can often be seen licking their paws and legs to maintain high standards of cleanliness. A distinguishing characteristic of the breed is the so-called “shiba scream”. When sufficiently provoked or unhappy, the dog will produce a loud, high-pitched scream. This can occur when attempting to handle the dog in a way that it deems unacceptable. The animal may also emit a very similar sound during periods of great joy, such as the return of the owner after an extended absence, or the arrival of a favoured human”.

Airfield Operations Officer Liam Garrod (pictured above) captured Samurai on Stand 407 and return

him to some very grateful and relieved owners and their entourage. Whether Samurai considered Liam to be a ‘favoured human’ remains unknown – when asked, Samurai declined to comment. Liam said “When I picked the dog up he was very content to sit on my lap and just stay there, I believe that was good behaviour for being the dog of a Sheikh”. Liam added “The owner also told me that he might change his name to ‘Sprinter’ given the how fast he ran away!” Details were recorded on AIR to enable follow-up with the handling agent to prevent similar incidents happening again. Senior Airfield Officer Steve Simmons, B Watch, said “Teamwork, communication and a co-ordinated approach meant we were able to deliver a successful outcome and re-unite this much-loved pooch with its owners”.