

Session 2

Presentation 2

The airport operator's perspective on runway incursion hazards

Mr. Henning Pfisterer MSc
Senior Manager Safety and Airside Operations



Runway Incursion Hazards

Doha International Airport Qatar

Mr. Henning Pfisterer – Senior Manager Safety and Airside Operations



Runway Incursion Hazards

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Introduction to Incursion Hazards

1. Airport Design Hazards

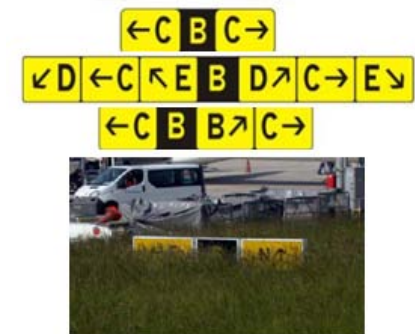
1. Runway and taxiway intersections
2. Intersections at various angles
3. Multiple runways and taxiways intersecting
4. Runways in close proximity to terminals



2. Signage Hazards

Signage may be complex, inadequate or not clearly visible

1. Complex signage
2. Bad positioning / bad environment
3. Inadequate signage for closed runway / taxiway
4. Inadequate signage at hot spots



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Introduction to Incursion Hazards

3 Communication Hazards

1. non use of standard phraseology
2. Lack proficiency in ATC terminology and instructions
3. Multiple tower / ground frequencies



4. Visibility Hazards

Reduced visibility increases potential for ground crew disorientation

1. Not only fog, also glare/reflection from snow or water, sand/dust, condensation on windows
2. Ground staff have a different perspective of airport layout from the cockpit or tower



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Introduction to Incursion Hazards

5. Construction Hazards

1. create unanticipated “hot spots”
2. need for vehicles/equipment to cross runways (more crossings, higher risk)
3. Maintenance activities impact on the runway

6. Operational Hazards

Hazards that result from operational factors

1. Managing contingencies (e.g.):
 - aircraft emergencies
 - Ad-hoc vehicle movements
2. Unidentified hotspots



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Introduction to Incursion Hazards

7. People Hazards

1. Unpredictable
2. Erratic
3. Inquisitive
4. Complacent
5. Get tired
6. Can't be bothered
7. Require constant supervision
8. Unsafe acts (going against codes of practice)



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Let's Go To Doha International Airport



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Background DIA Challenges

1. 18.125 Million Passengers Per Annum
2. 165.000 Aircraft Movements
3. Single (1) Runway 4570m length.



21% growth p.a



18% growth pa

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Background DIA Challenges

6. Home base and Hub of Qatar Airways with a fleet of 106 aircraft
7. Qatar Amiri Flight 12 aircraft A340, A330, A320, Global.
8. Qatar Amiri Air Force 20 Fighter Aircraft and 15 helicopters
9. Gulf Helicopters Off-Shore operations 15 helicopters (AW 139 and Bell 412)



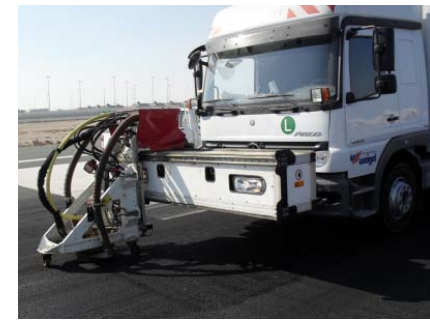
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Particular Runway Incursion Challenges at Doha International Airport

1. Aerodrome Layout involving multiple runway crossings and backtracking by taxiing aircraft and towing movements
2. Language issues due to multicultural workforce environment.
3. Airside Work in Progress to be accommodated on a single runway / no curfew



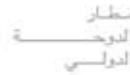
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Particular Runway Incursion Challenges at Doha International Airport

4. Runway crossings required by emergency responders
5. Traffic Mix Fixed Wing/Rotary. Civil / Military
6. Low Visibility Dust. Fog, Mist, Haze



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Particular Runway Incursion Challenges at Doha International Airport

PROXIMITY OF RUNWAY TO HANDLING AREAS



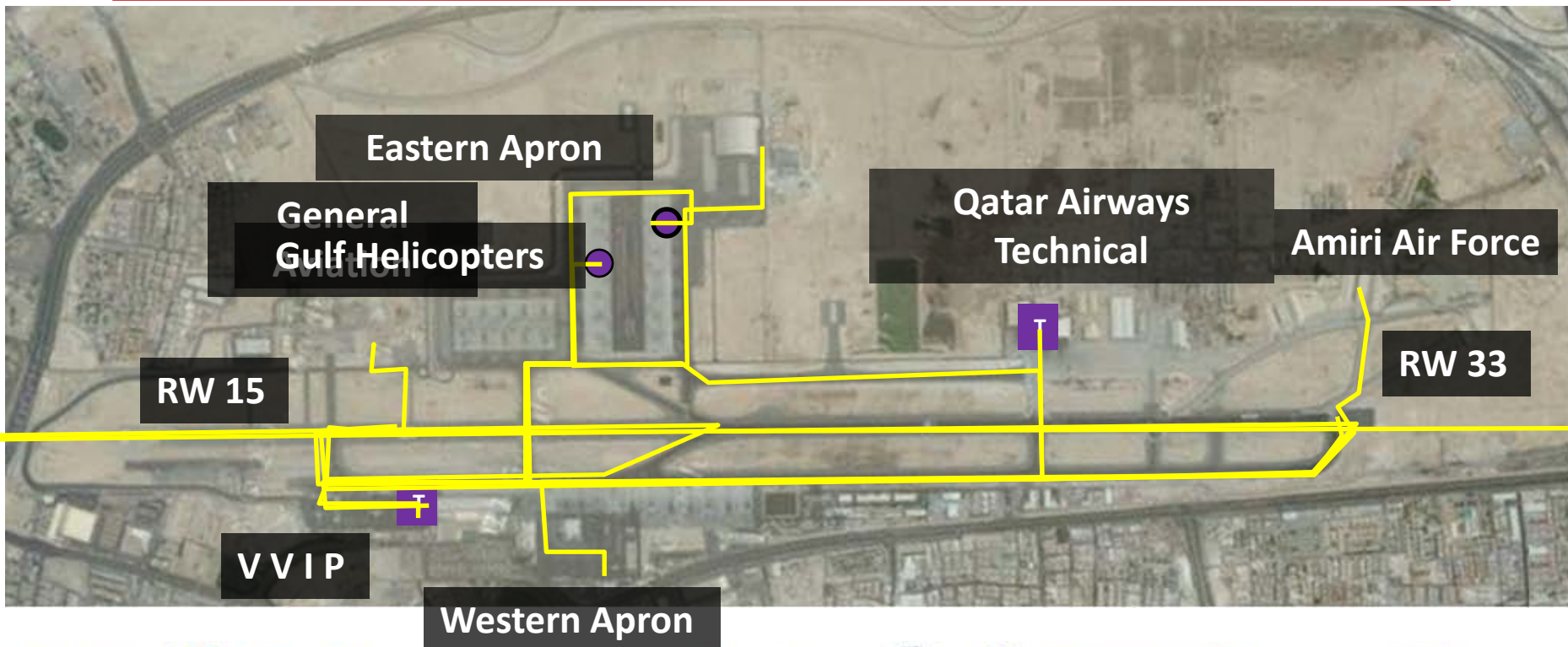
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Particular Runway Incursion Challenges at Doha International Airport

Design that requires multiple runway crossings by taxiing aircraft or tows



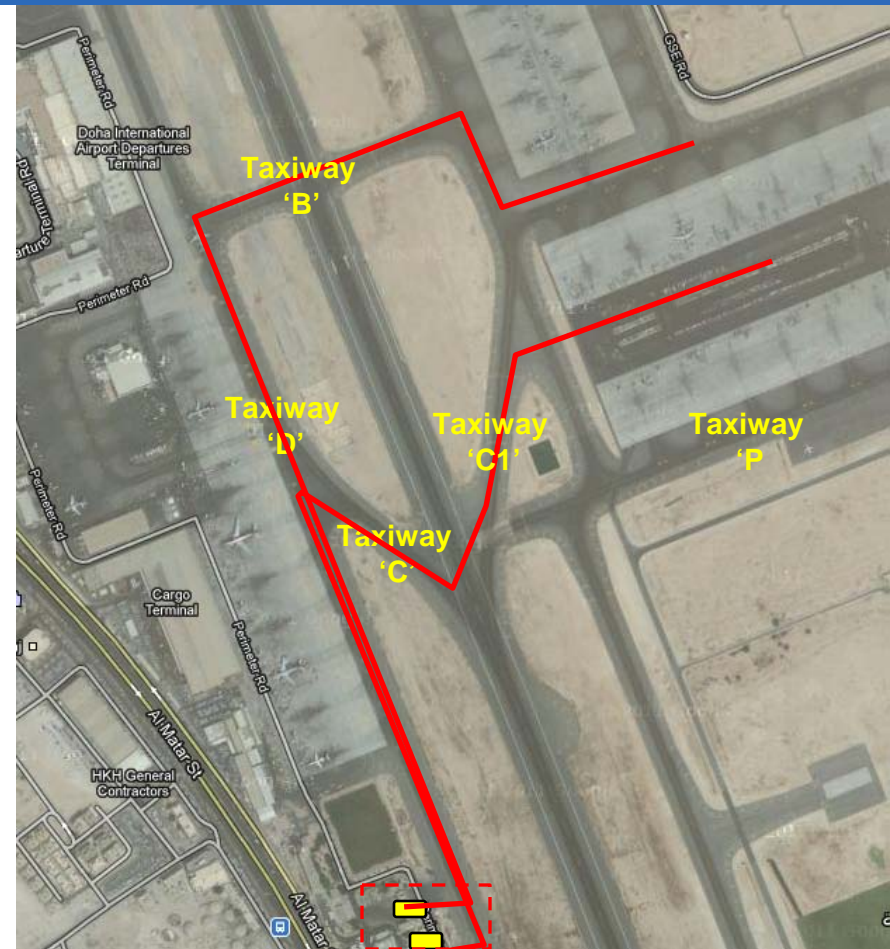
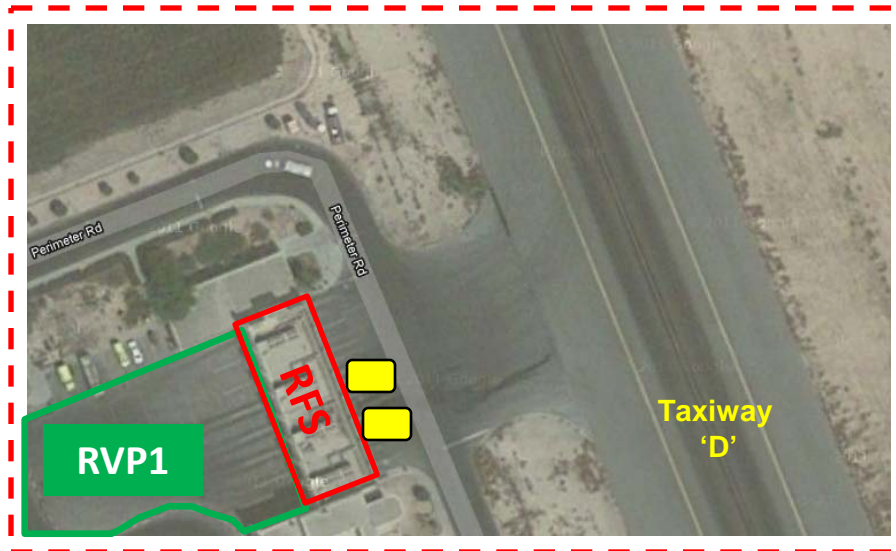
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Particular Runway Incursion Challenges at Doha International Airport

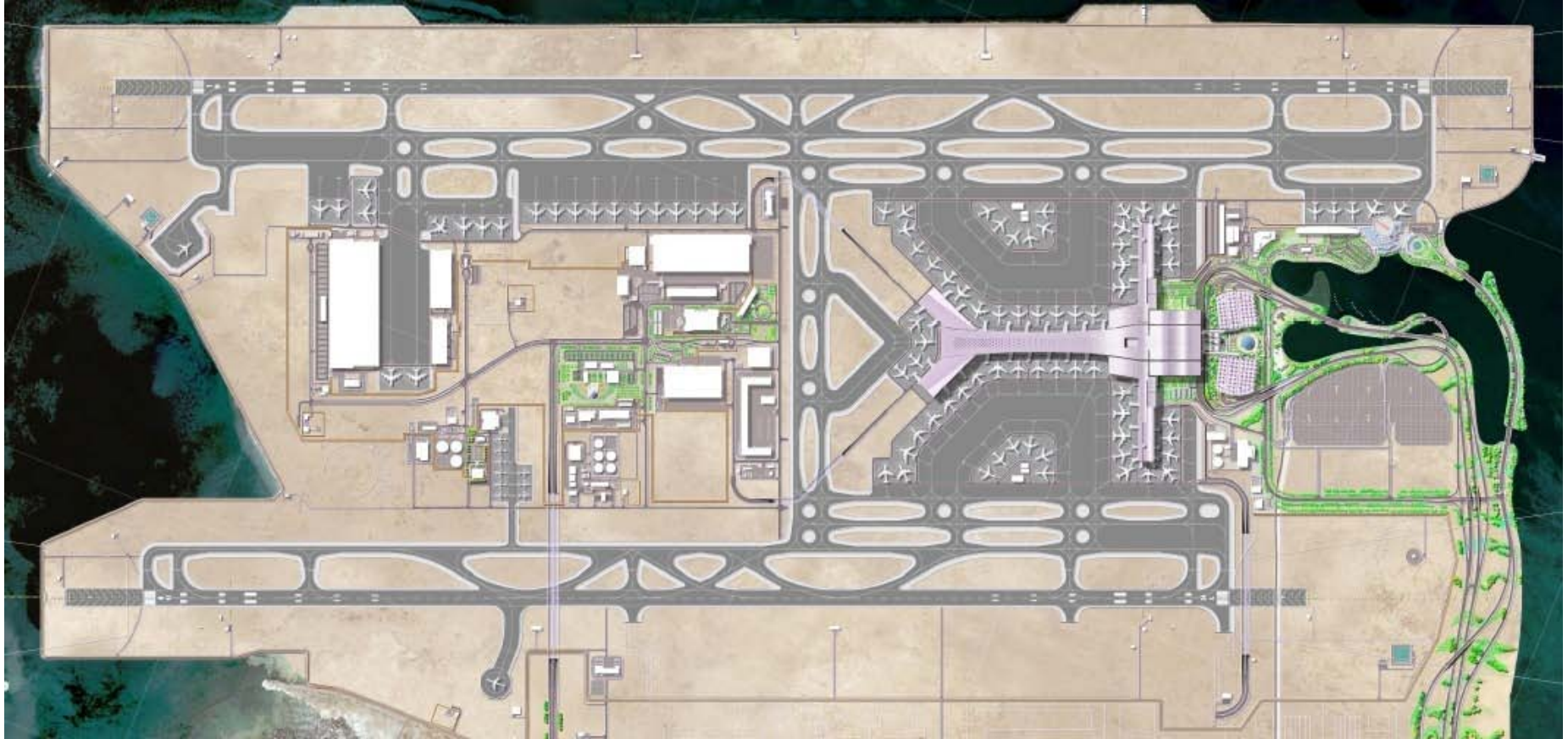
Location of fire stations and emergency responders RVP



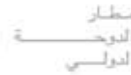
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Incursion Hazard Control/Defense Factors



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Incursion Hazard Control/Defense Factors

Provision of Visual Aids

1. Mandatory Instruction Marking & Signage
2. Runway Guard Lights H24 Operation



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Airside Driver Training

There are three categories of AVOP at DIA

Category 1 = Service roads

Category 2 = service roads and aircraft Stands

Category 3 = Cat 1 and 2 areas = access to taxiways and Runway

Valid for three years



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Incursion Hazard Control/Defense Factors

Airside Driver Training

Category 3

1. Only issued on robust justification of need
2. Practical Training and Familiarization day/night
3. Grid Maps to be provided to drivers
4. Pocket maps

Airside Vehicle Operating Permit (AVOP) Application Form
رخصة القيادة في ساحة المطار استمارة التقديم على طلب

All persons who drive vehicles or equipment on the airside of Doha International Airport must hold a current Airside Vehicle Operating Permit (AVOP). AVOPs are only issued by Doha International Airport. The requirements of AVOP holders are set out in the Airside Vehicle Operating Regulations Manual and the Doha International Airport By-law 2010.

أشخاص من يقودون المركبات أو المعدات على الساحة في مطار الدوحة الدولي يجب أن يكون لديهم رخصة قيادة ساحة المطار. رخص قيادة ساحة المطار هي فقط التي تصدرها مطار الدوحة الدولي. المتطلبات الخاصة بحاملات رخصة قيادة ساحة المطار موجودة في دليل لوائح تشغيل المركبات الموجودة في مطار الدوحة الدولي.

1. Applicant Details: To be completed by applicant

Name: Nationality:

Staff Number: Job Title:

Qatar Driving License Number: Validity:

2. Driving Requirements: To be completed by manager

Application for: ☐ New Issue ☐ Renewal ☐ Extension

Frequency of driving airside: ☐ 3-6 x per week ☐ 3-4 x per month ☐ 1 x per month ☐ Less than 1 x per month

Required validity of AVOP: ☐ Permanent ☐ Temporary

In what areas will applicant drive: ☐ Service roads ☐ Aircraft parking stands ☐ Taxiways and runway

What vehicles will applicant drive: ☐ Car, van, crew bus ☐ Equipment, Cobas ☐ Heavy vehicle, truck

3. Employer endorsement: To be completed by manager

What have you done to ensure the applicant's driving competency?

The applicant can read and understand: ☐ English ☐ Arabic ☐ Other:

I support this application and agree to the Conditions of Application (as stated overall). I confirm that the applicant's particulars given are true and correct and I will notify Doha if the applicant has ended service with our company.

أدعم هذا الطلب وأوافق على شروط (المتطلبات) العامة (كما وردت في ملخص الطلب). أؤكد أن المعلومات المقدمة عن المتقدم صحيحة وأوافق على إخطار الدوحة إذا انقطع تقديم الخدمات مع شركتنا.

Airside Vehicle Operating Permit (AVOP) Application Form

Part 2 The Test

A: Common Elements

1: Pre trip vehicle inspection

Check for Condition, adjustment and operation (as appropriate)

External	Wheels	Mirrors	Lights	Windscreen	Body
Hand brake	Seat belt	Seat	Mirrors		
Warming Lights	Beacon	Pass	Fail		

2: Road Rules

Direction signs	Road markings	Temporary Roadwork
Pass	Fail	Pass

3: Safety procedures for persons on apron and taxiway intersection markings and hold points etc.

Signage	Meaning of markings and markers e.g. taxiway intersection markings and hold points etc.
Pass	Fail

4: Unacceptable Performance

3 out of 4 Basic knowledge questions	4 out of 4 Pictorial traffic sign pictures
Pass	Fail

5: D: Unacceptable Performance

Failing to stop when instructed by road marking or signage	Driving with repeated Unlone Care and Attention	Repeated inconsideration to other road users and pedestrians
Pass	Fail	Pass

6: Failing to give way to aircraft

Unable to read a number plate or have a medical complaint detrimental to driving
Pass

7: Failing to communicate via radio

Unable to communicate via radio
Pass

8: Failing to give way to aircraft

Unable to give way to aircraft
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Incursion Hazard Control/Defense Factors

Communication Hazards

1. Mandatory Aeronautical Radio Operator Certificate for CAT3 AVOP holders
2. Look into options to perform runway inspections on Tower Frequency
3. Monitoring of TWR Frequencies and GND frequencies
4. Encourage staff to verify clearances if not perfectly understood



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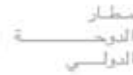
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Incursion Hazard Control/Defense Factors

Runway Inspections

1. Runway Inspection Vehicles
2. Equipped with
 - a. 2 base sets of VHF radio for TWR and GND frequency
 - b. One handheld VHF radio in charging cradle
 - c. ADS-B Transponder
3. Conspicuous Colour of Vehicles



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Incursion Hazard Control/Defense Factors

Safety Promotion

1. Safety Alert
2. Airport Grid Map
3. Emphasis paid during
 - a. Airside Safety Training
 - b. AVOP Training
 - c. Contractor induction
4. Tracked by the safety Committee



SAFETY ALERT

Control of Airside Works & Access

Originator	Ref/date	Alert Trigger
DIA Emergency and Safety Department	SAOL/26/02/12	DIA MDR 018-12 (NR 056) Contractor Incursion
Importance	Intended Audience	Related Documents
HIGH	Widest Distribution	Airside Manual
		Managers Actions
		Post on Notice Board

NOTICE TO ALL PERSONS IN-CHARGE OF CONTRACTORS OR CONTRACTING WORK TO CONTRACTORS AT THE AIRPORT

1. All issues involving works airside at the airport **MUST BE COORDINATED** through the DIA Emergency & Safety Department (ESD) for possible Air Traffic Control (ATC) clearance, issuance of an airfield works permit and Notice to Airmen (NOTAM).
2. No Contractor may work airside without
 - (a) the issuance of the correct security pass
 - (b) having had a DIA Safety Department briefing appropriate to the area of work and technical aspects of the project.
 - (c) Without the appropriate escort or level of supervision, agreed with the DIA Safety Department prior to commencement of the work
3. Note! there are no exceptions to this requirement

If you are in any doubt on the airside rules or want to arrange an Airside briefing, contact DIA Safety on

44656158/44656164

sivanov@qatarairways.com.qa / rboard@qatarairways.com.qa


Issued by the DIA Emergency and Safety Department 2011 Tel: 44621299 or 44656164



SAFETY ALERT



TAXIWAY CROSSINGS


Originator	Ref/date	Trigger
DIA Emergency and Safety Department	SAOL/04/04/11	Increased Frequency of Taxiway Incursions
Importance	Intended Audience	Related Documents
HIGH	All Airside drivers	AVORM
		Managers Actions
		Post on Notice Board and Disseminate to Drivers


1. BE ADVISED, TAXIWAY CROSSINGS
 - are not to be used as a short cut
 - only use when there is no alternative route to your destination
2. Drivers are to take Extra Care when using both **manned and unmanned** Taxiway Crossings
3. **NOTE!** GSE Road from the roundabout by the Aviation College crossing TW D1 is only to be used to access Stands E 1 to E 10
4. Be **very, very, careful** when crossing TW D2 by stands E5/E6 and E11/E 12 (aircraft rounding corner or pushing back off of stand)
5. When there is no other option and you have to cross the taxiway
 - approach the taxiway crossing and bring your vehicle to a **Complete Stop** at this Sign 
 - do not bypass any barrier and always obey any traffic light and/or signal from the those controlling the crossing
 - check both Left and Right for Maneuvering Aircraft and **REMEMBER!**

AIRCRAFT TAXIING OR BEING TOWED HAVE PRIORITY AT ALL TIMES

 - Vehicles driving off of the taxiways have priority.
 - If path is clear you can proceed.
6. **MAKE SURE**
 - you **STAY ALERT** and don't take chances
 - there is adequate distance (400 meters minimum) for you to cross **without causing the Aircraft to stop**
 - you keep clear of the jet blast (200 meters minimum) after the aircraft has passed
 - Don't become a taxiway incursion, it can put others at risk and will be **VERY EXPENSIVE FOR YOU**
7. **FURTHER INFORMATION:** -- read AVORM or call DIA ESD






Issued by the DIA Emergency and Safety Department 2011 Tel: 44621559 or 44656164

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Incursion Hazard Control/Defense Factors

Latest Technology For Aircraft Self Protection



1. *Include photographs of marking and RGL*



