

# Regional Runway Safety Seminar (Asia Pacific)

Airport Operator's perspective on Incursion Hazards and proposed Mitigation strategies

Session 6

Presentation 3

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# **RUNWAY INCURSION AIRPORT PERSPECTIVE**

Malaysia Airports Holdings Berhad  
ICAO Regional Runway Safety  
Seminar

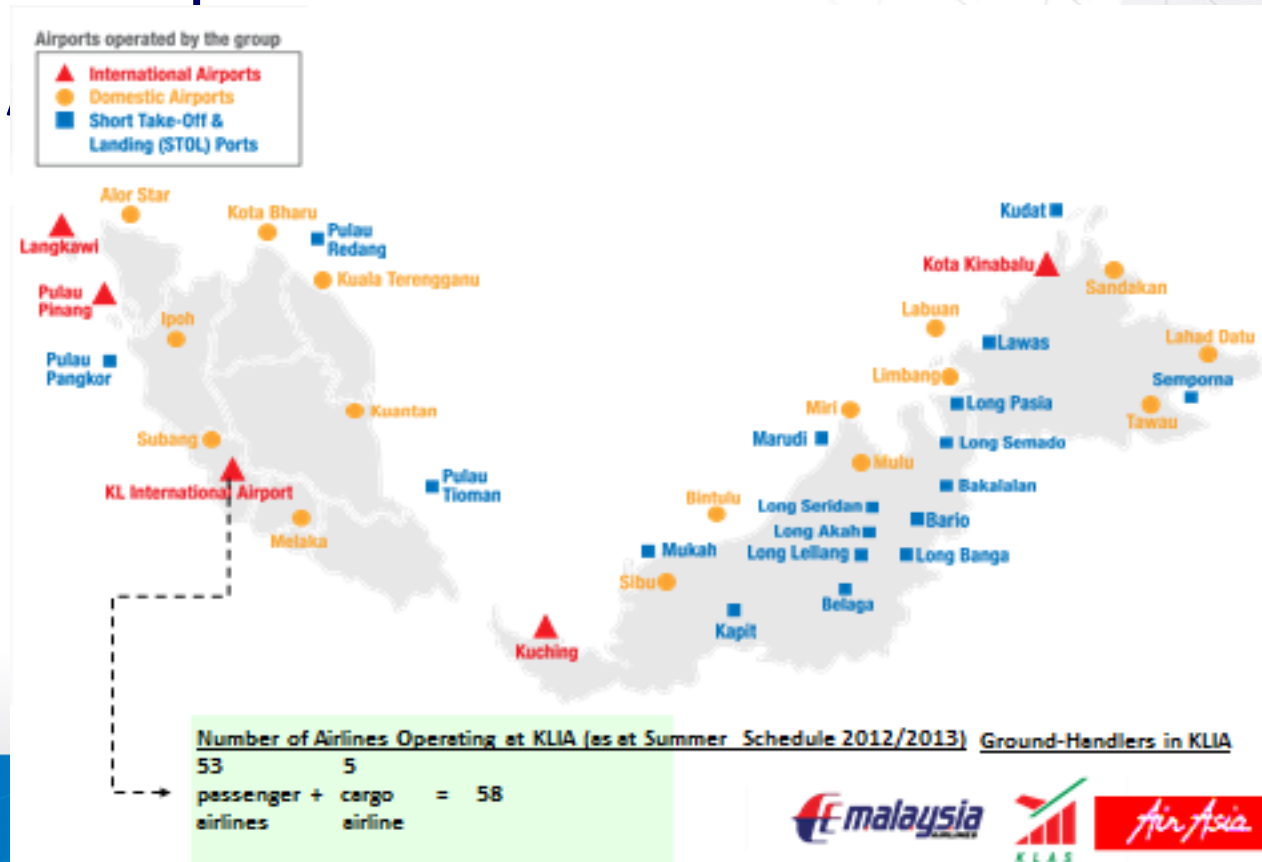
# Presentation Outline

- Airports in Malaysia
- Getting the Basics Right
- Runway Incursion Preventive Measures
- Case Studies



# Airports in Malaysia

- Total : 39 Airports
- 5 International Airports
- 16 Domestic Airports
- 18 STOLs



# Getting the Basics Right

- Good Leadership – Drives the initiatives
- Competency = Knowledge + Skills + Attitude
- Implementation – Putting concepts & ideas into reality
- Good Collaboration between stakeholders – Good working relationship gets the job done easier
- Taking Ownership - It is more than taking responsibilities & accountabilities.
  - Help and lookout for safety hazard regardless of whose problem it may be. Work as a team
  - Mutual Respect – Focus on the issues and not who created it
  - No Blame culture – To resolve issues & not to point fingers

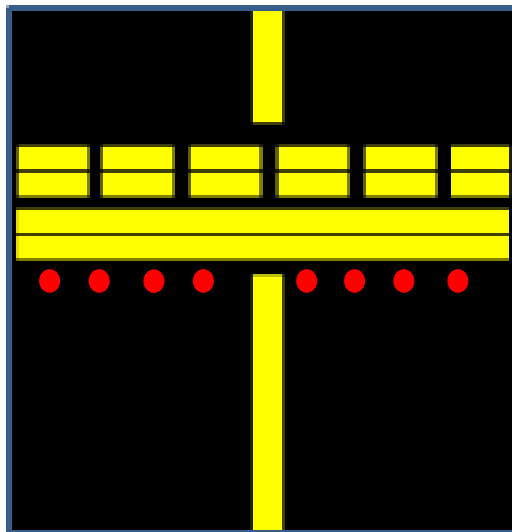
# Getting the Basics Right

- Need to have Patience, Persistence & Perseverance
  - Do Not let the actions of others demotivate you
  - Be prepared to answer a lot of questions from people who do not share your views
- Inculcate a Good Safety Culture
  - Good Safety Culture is the foundation to the success of good runway safety team and SMS.
  - Report hazards and also provide feedbacks/suggestions
- Continuously Seeking for Improvement
  - Regardless how good you are, there is always room for Improvement
- Passion – Really believe that it can be done & be strongly committed

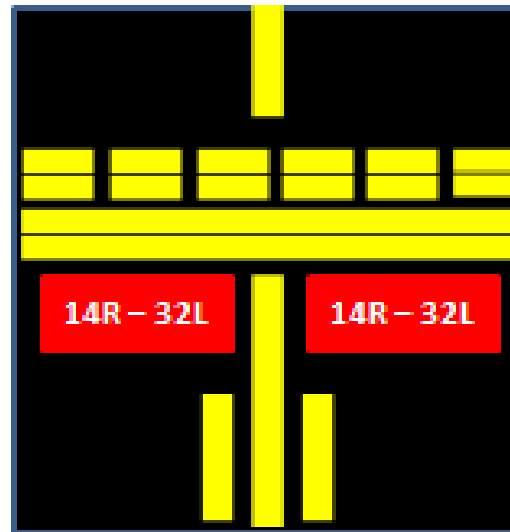


# Visual Aids (Markings)

- Ensure visual aids are ICAO compliant and visible to pilots and drivers in all weather conditions
- Examples are:
  - Controllable stop bar lights at Runway Holding Positions
  - Mandatory Instruction Markings on Runway Holding Positions for KLIA



(A)



(B)



# Visual Aids (Markings)

- Ensure visual aids are visible to pilots and drivers in all weather conditions. Examples are:
- Runway Holding Positions with **black borders** to give better clarity
- Runway Guard Lights – create awareness for pilots approaching Runway Holding Positions



(A)



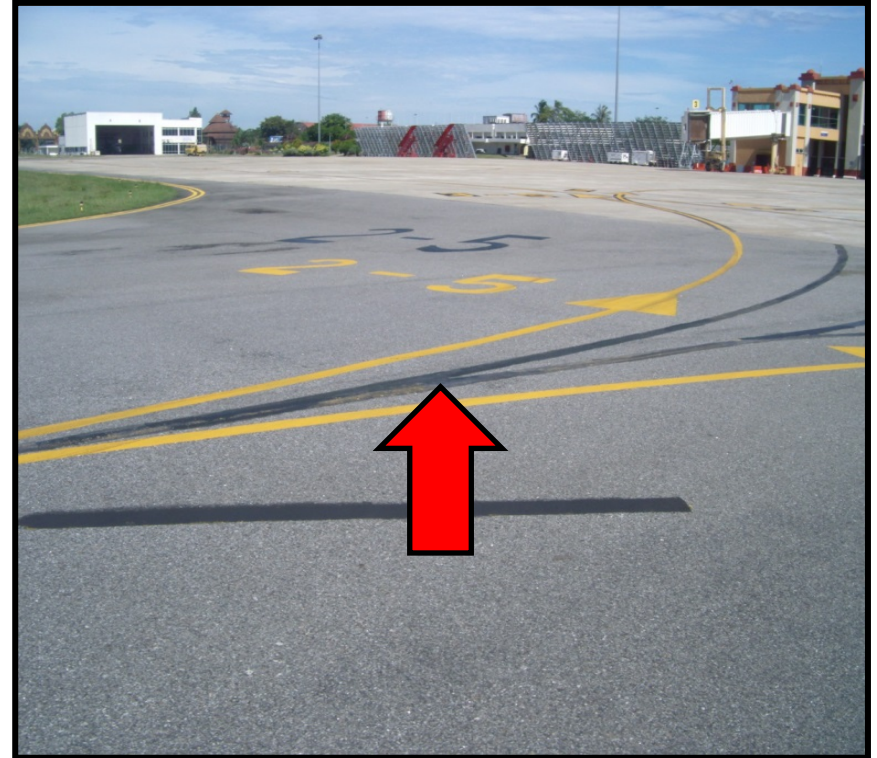
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# Visual Aids (Markings)

- Ensure visual aids will not cause confusion to pilot
- Examples are:
  - Old marking permanently removed instead painted over with black paint to obscured the old/obsolete markings



(A)



(B)

# Visual Aids (Signage)

- Ensure visual aids are visible to pilots are not obstructed
- Examples are:
  - Well maintain grass/turf area



(A)



(B)

# Visual Aids (Lighting)

- Examples are (cont'd):
  - Mandatory instructions Signage (Runway Designation Signs)
  - Runway Guard lights at runway holding positions as an indicator for pilots that they are approaching Runway Holding Position.
  - Runway Entry Sensor – gives alarm to unauthorized entry



# Control Of Aerodrome Works on Runway

- Minimize the possibility of runway incursion during runway related project and by maintenance contractors
- Examples :
  - Established scheduled runway closures for inspections and maintenance (AGL, Friction test, De-rubberize)
  - Entry to runway and work SOP are established for works on runway such as placing marker boards, flags, hazard lights, contractors safety briefing, procedures for normal/emergency opening of runway.



# Control Of Aerodrome Works on Runway

- All roadways leading to runway are armed with marker board and hazard lights with flags to prevent runway or taxiway incursion
- All taxiway lead in and out lights to the closed portion of runway shall be switched off to avoid confusion or possible incursion
- All unwanted pavement markings cannot be erased by painting black as it will resurfaces again.



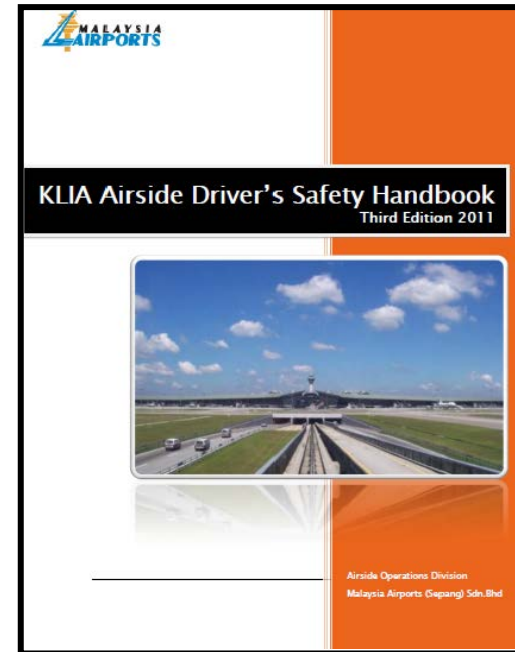
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# Control Of Airside Drivers

- Education and Exams for Airside drivers
  - Possess a State license, Class D
  - Attend and complete Airside Rules & Regulations Course
  - Require to pass a theory and oral test
  - Attend refresher course (annually prior renewal)



# Control Of Airside Drivers

- Licensing of drivers [Class A, B & C Airfield Driving Permit(ADP)]
  - Employers to support and justify staff to apply Class A ADP
  - Applicant must be holder of Class B ADP for 1 year before he can be allowed to apply for Class A ADP
    - Class A ADP – Movement Areas (runway & taxiways)
    - Class B ADP – Apron & Service Roads
    - Class C ADP – Service Roads only



SERIAL NO:  
№ A007821

**MALAYSIA AIRPORTS**

AIRFIELD DRIVING PERMIT  
KL INTERNATIONAL AIRPORT SEPANG

EXPIRY DATE:

EMPLOYER:

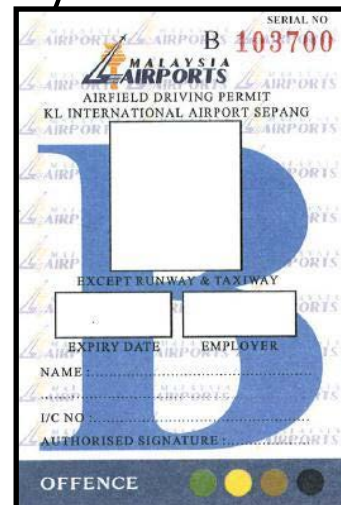
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I/C NO: .....

VALID FOR CATEGORY: **ALL A REA**

AUTHORISED SIGNATURE: .....

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SERIAL NO  
103700

**MALAYSIA AIRPORTS**

AIRFIELD DRIVING PERMIT  
KL INTERNATIONAL AIRPORT SEPANG

EXCEPT RUNWAY & TAXIWAY

EXPIRY DATE

EMPLOYER

NAME: .....

I/C NO: .....

AUTHORISED SIGNATURE: .....

OFFENCE

(B)



SERIAL NO:  
C 100103

**KLIA**

AIRFIELD DRIVING PERMIT  
KL INTERNATIONAL AIRPORT SEPANG

\* SERVICE ROAD ONLY \*

EXPIRY DATE:

EMPLOYER:

NAME: .....

I/C NO: .....

AUTHORISED SIGNATURE: .....

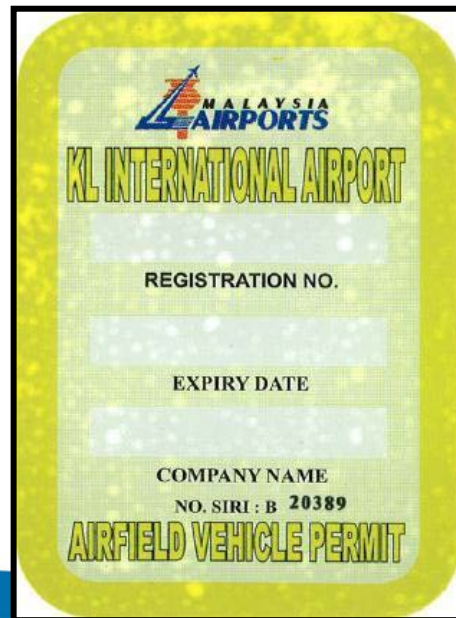
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# Control Of Airside Vehicles

- Licensing of vehicles:
  - There are 2 types of Airfield Vehicle Permits (AVP)
    - RED is for vehicle operating within 15m of an aircraft
    - YELLOW is for non – servicing aircraft vehicle
  - All vehicle need to comply with color scheme
  - Temporary Vehicle Permit Holders need to be escorted



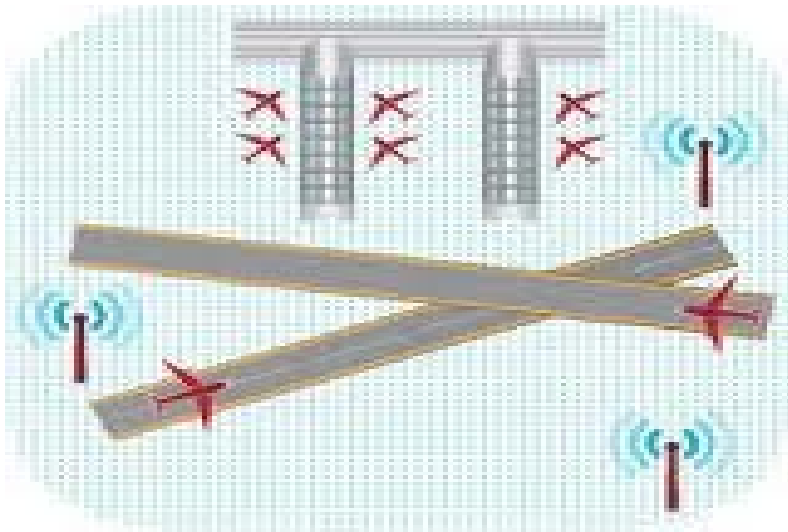
# Control Of Airside Vehicles

- Traffic Signage For Airside Drivers
  - Caution signage “STOP, Give way to aircraft”
  - Speed limit markings & signage
  - For authorized vehicles only
  - Height clearance



# Tracking Airside Vehicles on Radar

- All Airside vehicles equipped with Multilateration (MLAT) system
  - Vehicles to switch on MLAT before entering movement areas
  - ATC Tower can track vehicles on SMC radar



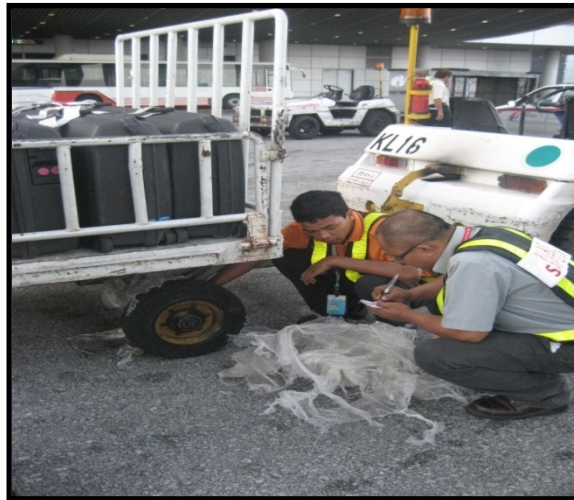
# Airside Traffic Enforcement

- Enforcement of aerodrome regulations
  - Dealing with non compliances to rules and regulations
    - Demerit Licensing System
      - Deduct point from errant airside drivers
      - Exceed 20 points, Airfield Driving Permit will be suspended
    - Purchase of Radar Gun to enhance enforcement on airside speed limit



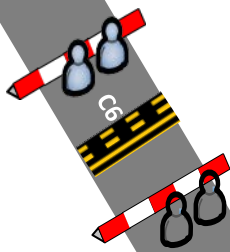
# Airside Traffic Enforcement

- Enforcement of aerodrome regulations
  - Enforcing compliances to rules and regulations
  - Examples are:
    - Bi-annually vehicle inspection for vehicles more than 10 years and above.
    - Random spot checks on Airside vehicles
    - Joint enforcement activities with stakeholders



# Case 1 - Closing a defect taxiway

- Engineering and contractors has approval from Tower to proceed into taxiway C6 to place markers boards
- Engineering request Tower's permission to enter taxiway C6 to place marker boards
- After putting the marker boards at one end of taxiway, the contractors went across the runway holding point to place the other set of marker boards
- An approaching aircraft was on finals and had to go round on sighting people moving towards the runway
- Taxiway C6 is the adjoining taxiway to runway. Approval must be obtained from Tower when crossing beyond the runway holding position.



# Recommendations :

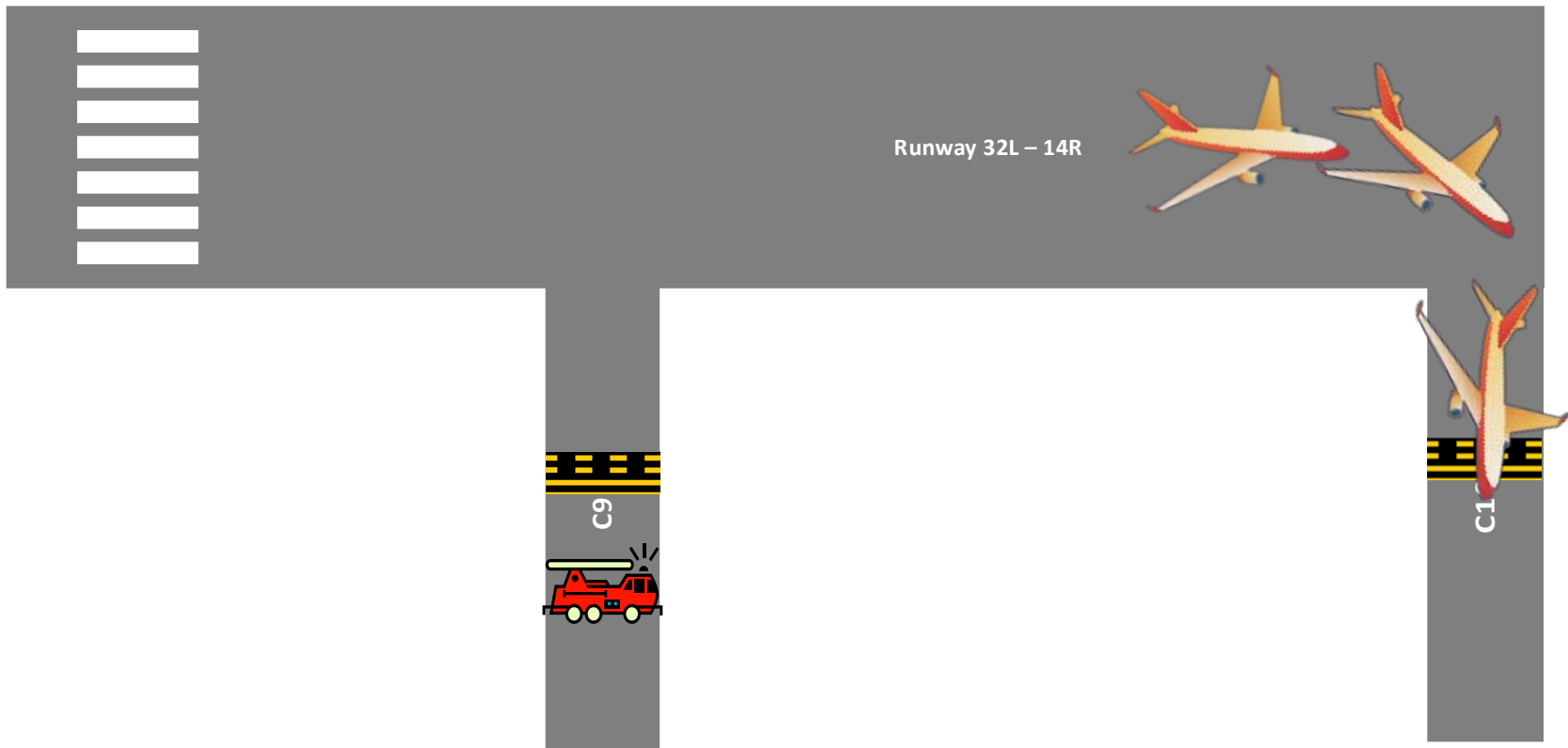
- Safety briefing to be given to contractor before entering site
- Contractor to follow instructions by Airside Officer and cannot act on their own initiative
- Contractor to be escorted by Engineering personnel when crossing the RHP
- Engineering personnel to be in communications with Tower at all times



# Case 2- AFRS Vehicle Entered Runway to Escort “Troubled” Aircraft

- Aircraft call ATC Tower for AFRS’s assistance when fire alarm is triggered in aircraft’s cargo compartment
- ATC Tower call AFRS to inform aircraft need assistance & to escort aircraft to bay
- Aircraft landed and AFRS entered runway behind landing aircraft to escort the aircraft to bay
- The subsequent aircraft on finals had to go round as runway is occupied by AFRS vehicle.
- What Tower meant was to escort the aircraft after it had vacated from the runway

# Case Study 2



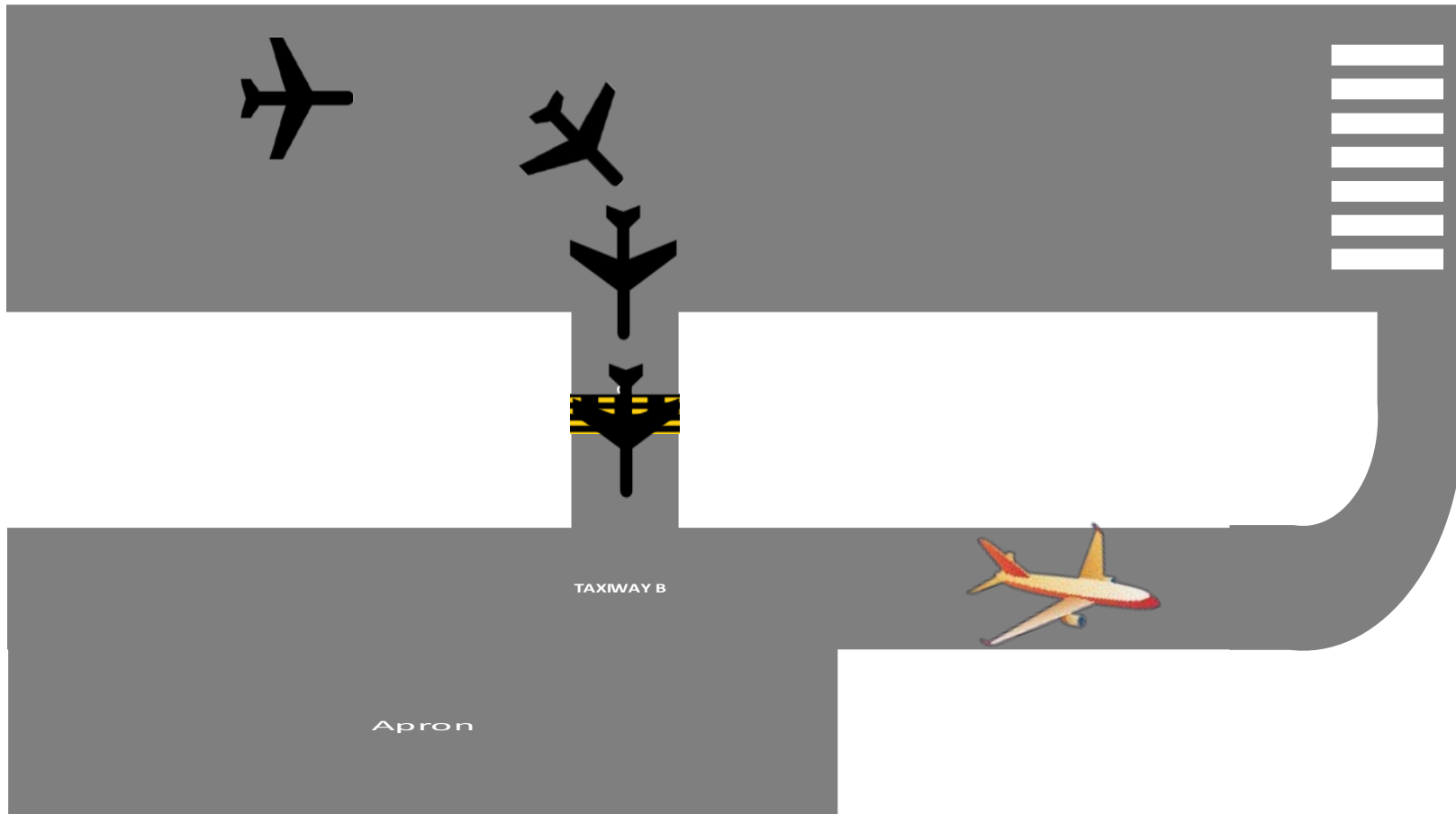
# Recommendations :

- Safety Briefing shall be attended by all units of the airport given by airside safety officers.
- All units that uses the movement areas needs to:-
  - attend refresher on R/T training & Safety training on a regular basis.
  - Ensure safety clearances between aircraft & vehicles are maintain at all time
  - Be aware of hot spots of the aerodrome & the mitigating strategies

# Case 3 – Aircraft vacated Runway & Hold Short of Taxiway Intersection

- Aircraft 'A' on apron ready for push back for departure
- ATC Tower gives clearance for aircraft 'A' to push back on to apron taxiway
- Landing aircraft 'B' is ask to hold short of taxiway intersection as aircraft 'A' on apron taxiway is taxiing out for departure.
- Aircraft 'C' is on finals and Tower gives a landing clearance.
- Aircraft 'B' holding short of taxiway intersection is not able to fully cross the RHP, while aircraft 'C' lands. It is by definition an INCURSION.

# Case Study 3



# Recommendations :

- The ATC and Airport Operator need to look at the design of airport and recalculate the separation distance to determine the type of aircraft to hold at the Intersection.
- With the emergence of longer fuselage aircraft, extra safety clearance is required.
- ATC Tower must be familiar with the local procedures
- Priority to aircraft vacating that runway intersection
- Long Term Plan– Build a main taxiway for aircraft taxi and an apron taxilane for aircraft to push back.

THANK YOU

