

# SELETAR AIRPORT

## ***AIRFIELD DRIVING THEORY HANDBOOK***

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**SELETAR AIRPORT OPERATIONS**

## FOREWORD

This Airfield Driving Theory Handbook contains relevant aspects of the apron operational and safety procedures and extracts from the Civil Aviation Authority of Singapore (Seletar Airport) By-Laws 2009. The contents are structured in a simplified format to serve as an easy guide for airside personnel on the rules and regulations governing the airside of Seletar Airport. The objective of this handbook is to safeguard the safety of aircraft, personnel, drivers, vehicles and mobile equipment operating in the movement areas. All airside operators shall abide by the rules and regulations stipulated in this handbook. A copy of which is given to the management of airside organisations to ensure their staff's compliance.

This handbook should also be read in conjunction with the CAG Airside Notices, Airport Information Circulars, latest copy of the CAAS (Seletar Airport) By-Laws and CAAS (Composition of Offences) Regulations which is issued from time to time. These notices consist of information requiring airside personnel compliance to safety rules or regulations arising from changes to infrastructures, procedures, operations or existing rules.

Any recommendation towards the improvement to the handbook should be forwarded to:

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## **DEFINITION OF TERMS**

### **(In alphabetical order)**

In these By-laws, unless the context otherwise requires:

1. “aircraft stand” means an area on an apron for parking an aircraft;
2. “airfield driving permit” means an airfield driving permit issued by the airport licensee under by-law 54;
3. “airfield vehicle permit” means an airfield vehicle permit issued by the airport licensee under by-law 51;
4. “airport” means Seletar Airport;
5. “airport licensee” means the airport licensee for Seletar Airport;
6. “airside” means the movement area of the airport and the adjacent terrain and buildings or parts thereof, access to which is controlled;
7. “apron” means that part of the airport, other than the manoeuvring area, to be used for accommodating aircraft for the purposes of embarkation or disembarkation of passengers, loading or unloading of mail or cargo, or fuelling, parking or maintenance of aircraft;
8. “authorised person” means:
  - a. any officer or employee of the airport licensee; or
  - b. any person duly authorised by the airport licensee to act on its behalf;
9. “driver” means:
  - a. in relation to a trailer, includes a driver of a vehicle by which the trailer is drawn;
  - b. where a separate person acts as a steersman of a vehicle, includes that person as well as any other person engaged in the driving of the vehicle;
  - c. includes the rider of a bicycle and any person propelling a tricycle or pushing or pulling a cart; and
  - d. in relation to a passenger loading bridge, includes the operator manning the console by which the bridge is activated, and “drive” shall be construed accordingly;
10. “manoeuvring area” means that part of the airport to be used for the taking off, landing and taxiing of aircraft, but does not include areas set aside to accommodate aircraft, for embarkation or disembarkation of passengers, for loading and unloading of mail or cargo, or for fuelling, parking or maintenance of aircraft;
11. “motor vehicle” means a mechanically propelled vehicle intended or adapted for use on roads;

12. “movement area” means that part of the airport to be used for the taking off, landing and taxiing of aircraft, consisting of the manoeuvring area and the apron;
13. “owner”, in relation to a vehicle which is the subject of a hiring agreement or hire purchase agreement, means the person in possession of the vehicle under that agreement;
14. “park” means to bring a vehicle to a stationary position and cause it to wait for any purpose other than that of immediately taking up or setting down passengers, goods or luggage;
15. “permit” includes any permit issued under the former Civil Aviation Authority of Singapore (Aerodrome) Regulations (Cap. 41, Rg 2) which, by the operation of regulation 3 of the Civil Aviation Authority of Singapore (Savings and Transitional Provisions) Regulations 2009 (G.N. No. S 300/2009), is deemed to have been issued under the corresponding provisions of these By-laws;
16. “Seletar Airport” means the airport declared under the Civil Aviation Authority of Singapore (Seletar Airport) Notification 2009 (G.N. No. S 294/2009);
17. “traffic sign” includes all signals, warning and other signs, directional and other posts, lines, lamps and any other devices for the guidance or direction of persons using the airport;
18. “vehicle” means any vehicle whether mechanically propelled or otherwise, and includes a bicycle, tricycle, cart, buggy, trailer, forklift, tractor, passenger loading bridge and any movable equipment, and “vehicular traffic” shall be construed accordingly.

## KEY CONTACT NUMBERS

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Airport Emergency Service	6481 3377
Seletar Airside Operations Unit	6481 5077
Airport Police Division	6546 0000
Certis Cisco	6482 4870

## **CHAPTER 1 INTRODUCTION**

### **1.1 Citation**

The following rules and regulations govern all users of traffic-ways in the non-public operational areas of Seletar Airport: -

- 1) Civil Aviation Authority of Singapore (Seletar Airport) By-Laws 2009
- 2) The Civil Aviation Authority of Singapore (Composition of Offences) Regulations 2009
- 3) Protected Areas and Protected Places Act (Chapter 256)

(Note: In addition, the Penal Code is applicable in certain traffic accidents determined by the State Police).

- 4) Factories (Crane Drivers and Operators) Act
- 5) Factories Act

### **1.2 Jurisdiction**

The control of the airside with regards to operational activities and discipline is the responsibility of the CAG Seletar Airport Operations (SAO).

The control of aircraft taxiing from runway to aircraft stands and vice versa comes under the Seletar Control Tower.

The security of the airside comes under the charge of the Airport Police Division.

### **1.3 Traffic Control**

The Airport Police is responsible for the control of passenger and vehicle traffic entering and exiting the airside of Seletar Airport.

All drivers entering the airside shall present their valid Airfield Driving Permit (ADP) and Airfield Vehicle Permit (AVP) to the Auxiliary Police Officer at the guard post without request.

Where in force, a temporary entry permit is issued to a vehicle, the driver without an Airfield Driving Permit (ADP), shall be escorted by a holder of the Airfield Driving Permit (ADP) who shall act as a steersman.



## **1.4 Suspension or Cancellation of Permits**

CAG(S) may suspend or revoke an ADP if:

- (a) There has been a contravention of any condition of the permit.
- (b) The person to whom the permit has been issued is not competent to drive the relevant vehicle.
- (c) It would not be in the interest of public safety for him/her to hold a driving permit.

The airport licensee may at any time in its discretion cancel any AVP or ADP without assigning any reason therefore under By-Law 60 and 61 of the CAAS (Seletar Airport) By-Laws 2009.

## **1.5 Surrender of ADP**

The ADP holder must return the ADP to the CAG(S) Seletar Airside Operations Unit within 72 hours of the cessation of driving duties for his employer. The vehicle operator must also ensure that the ADP holder complies with this clause. Failure to do so may at the discretion of the airport licensee to suspend the ADP applicant or reject reapplication of ADP.

## **1.6 Action against Violators**

Any person who contravenes a by-law shall be guilty of an offence and shall be liable on conviction to a fine which may extend to \$2000, and a police officer may use such force as is reasonable and necessary to arrest and detain the person for the purpose of removing the person from or preventing his entry or re-entry to the airport, or to remove the person from the airport.

## **1.7 Notice of Offence (NOO)**

Any person who contravenes the CAAS (Seletar Airport) By-Laws 2009 or fails to comply with the conditions of any permit or pass issued under the CAAS (Seletar Airport) By-Laws 2009 will be issued a Notice of Offence. See Annex A. The regulations do not restrict the CAG(S) from suspending an ADP when it is deemed necessary.

## **1.8 The CAAS (Seletar Airport) By-Laws 2009**

A copy of the CAAS (Seletar Airport) By-Laws is available on the CAAS website.

Please refer to Annex A for the composition of offences under the CAAS (Seletar Airport) By-Laws:

**Annex A**

**CAAS (Seletar Airport) By-Laws 2009**

S/No.	By-Law No.	Offence	Composition Amount
<b>Low Severity</b>			
1	10	Driver failing to allow free and uninterrupted passage to aircraft passenger within the airside or failing to give precedence to aircraft passenger.	\$50
2	19	Driver failing to keep the vehicle to the right side of the runway or taxiway, in so far as it is practicable, when proceeding along a runway or taxiway.	\$50
3	26	Vehicle towing another vehicle within the airside without the use of a suitable tow bar for that purpose.	\$50
4	31(2)	Parking a vehicle, or cause or permit a vehicle to remain at rest, in a parking place within the airside in such a condition or circumstances as to appear to the airport licensee to have been abandoned without lawful authority.	\$100
5	36	Person in charge of any equipment or vehicle used in connection with the servicing of the aircraft failing to immediately remove equipment or vehicle from the aircraft stand and any other related parking space, after the servicing of an aircraft, the aircraft has taxied or been towed away.	\$50
6	40	Passenger embark onto or disembark from an aircraft entering the airside without being escorted by an employee or agent of an airline.	\$50
7	14	Driver reversing vehicle towards an aircraft in the movement area, except where the vehicle is used for servicing that aircraft and such reversing is carried out under the direction of a vehicle marshaller.	\$50
8	16(1)	Driver failing to keep the vehicle at least 5 metres away from any wing-tip of a stationary aircraft (shall not apply where the vehicle is directly below the wing-tip of the aircraft).	\$50
9	15	Driver causing a vehicle to approach an aircraft which has its engines running.	\$50
10	32	Person walking within or crossing the movement area at any time, unless he is permitted by the airport licensee to do so.	\$50
11	33	Person (other than a member of the maintenance staff working on an aircraft), failing to keep clear of the aircraft's engines and passing within a radius of 7.5metres from the air intake of the aircraft or within a radius of 76metres from the rear of a running jet engine of the aircraft.	\$50
12	43(1)	Person entering or performing work within the apron, including aircraft stands and compass swing area, failing to wear a high visibility safety vest at all times.	\$50
13	43(2)	Person cycling on any roadway within the airside failing to wear a high visibility safety vest.	\$50
<b>Mid Severity</b>			
14	5(1)	Driver failing to comply with the directions or verbal instructions given by an authorised officer regulating traffic within the airside.	\$120
15	5(2)	Driver failing to comply with restrictions on and stipulations for vehicle loads (relating to height, weight, distribution, packing, adjustment of vehicle loads and no. of passengers allowed to be carried in vehicles).	\$150
16	5(4)	Driver failing to obey all traffic signs placed or erected in the movement area, or on or along the road or other part within the airside.	\$120
17	7	Driver leaving broken-down vehicle unattended within the airside, failing to immediately inform Duty Apron Controller (if breakdown occurs in apron) and Duty Tower Controller (if breakdown occurs in manoeuvring area) and the owner of the vehicle and failing to arrange for immediate removal of the vehicle or failing to ensure aircraft or other vehicles are not obstructed by the breakdown.	\$120

S/No.	By-Law No.	Offence	Composition Amount
18	27	Owner of vehicle failing to ensure that a vehicle used within the airside is maintained in good working condition or failing to ensure that condition and all its parts and accessories is such that no danger is caused or likely to be caused to any person in or on the vehicle, or any person on any road within the airside.	\$120
19	31(1)	Parking a vehicle or causing or permitting a vehicle to remain at rest, on any road within the airside in such a position, condition or circumstances as to be likely to cause danger, obstruction or undue inconvenience to other users of the road or to traffic within the airside.	\$120
20	41	Person driving or employing or permitting another person to drive, any vehicle within the airside unless the person driving the vehicle has been properly trained and certified to meet the standards approved by the airport licensee for driving within the airside.	\$120
<b>High Severity</b>			
21	4(1)	Driving at a speed exceeding the speed limit of 30 km/h on roads in the vicinity of aircraft parking stands or 50 km/h on roads away from vicinity of aircraft parking stands or 5km/h within 10 metres from an aircraft parked at aircraft stand.	\$170
22	6	Driver failing to give way to an aircraft at all times or give maximum clearance to the aircraft.	\$170
23	8	Driver failing to obtain prior clearance from the Duty Tower Controller before proceeding to any part of the manoeuvring area.	\$170
24	9	Driver failing to stop at point of entry to the manoeuvring area or failing to ascertain that there is no aircraft movement before driving into the manoeuvring area.	\$170
25	12	Driver starting up a motor vehicle in the movement area within 15 metres of any aircraft that is being refuelled.	\$170
26	17	Driver failing to keep the vehicle within the red apron boundary line that separates the taxiway from the apron and away from the manoeuvring area when driving the vehicle in the movement area parallel to an aircraft taxiing on the taxiway or driver failing to keep the vehicle in the movement area at safety distance of at least 200 metres in front of or at least 250 metres behind any aircraft taxiing on the taxiway.	\$170
27	34	Person proceeding onto the apron without obtaining prior clearance from the Duty Apron Controller.	\$170
28	37	Person leaving or causing or permit to be left, any material, handling or transporting equipment, refuse or litter on any roadway, driveway or vehicular ramp, on in any other part in the airside.	\$200
29	44(1)	Person using a mobile telephone while driving a vehicle or operating equipment within the airside.	\$200
30	46(1)	Any person who drives a vehicle or operates any equipment in any part of the airport shall do so with care and attention and with reasonable consideration for other persons in the airport.	\$170
31	47	Person consuming any food or beverage in the movement area except in the offices located on the apron or on board an aircraft or feeding any bird or animal within the airside.	\$170

## CHAPTER 2 TRAINING AND CERTIFICATION OF AIRSIDE DRIVERS

### 2.1 Driving Permit Requirements

Airport personnel who are required to drive Airside for official duties should possess:

- (a) a valid Class 3 driving license issued by the Singapore Traffic Police (TP) or an international license equivalent to Class 3; and
- (b) an Airfield Driving Permit (ADP) which gives permission to operate a vehicle Airside.



**Airfield Driving Permit**



**CAT 1 Airfield Driving Permit**

They should also note that:

- (a) The ADP is valid for ONE year.
- (b) All holders of this permit shall produce the ADP upon request by authorised officers.
- (c) All ADP holders are required to change their ADP if it is faded or torn due to wear and tear.

## **2.2 Airside Driver Training**

Before applying for an ADP, interested candidates are required to:

- (a) Attend and complete the Airfield Rules and Regulation Course (ARRC), pass the theoretical Airfield Rules Test and practical Airfield Driving/Safety Compliance Test (ADSCT) conducted by Seletar Airfield Driving Centre and
- (b) Be knowledgeable of the contents stated in the Rules and Regulations Handbook for Airside Drivers

## **2.3 Airfield Rules Tests**

Applicants for an ADP are required to pass the theoretical Airfield Rules Test (ART). This is to ensure that all drivers operating vehicles and/or equipment in the airside understand the safety procedures and regulations. ART consists of 25 multiple-choice questions to be completed in an hour. A maximum of 2 attempts will be allowed; The applicant can only re-attempt the ART after undergoing another ARRC.

## **2.4 Airfield Driving/Safety-Compliance Test (ADSCT)**

ADSCT is a practical demonstration of competency in Airfield Rules, which consists of a practical driving test conducted on a test route in the airside. Each test may take approximately 20 minutes.

Applicants must pass the ADSCT within 3 months from the date of passing the ART. Otherwise, the applicant is required to retake the ART. A maximum of 2 attempts will be allowed; After which, the Applicant will be able to re-attempt only after re-completing ARRC and ART.

## **2.5 Eyesight Requirement**

Applicants applying for ADP are required to have normal colour vision and be able to recognise the different coloured marking in apron regardless of day or night.

## 2.6 Rules Governing Airside Vehicle Operations

### 2.6.1 License/Permits Required

Drivers who are required to operate a vehicle or mobile equipment Airside must:

- (a) Possess a valid Class 3 driving license issued by the Traffic Police (TP) or an international license equivalent to Class 3.
- (b) Possess an Airfield Driving Permit (ADP); For driving on Service and Perimeter roads.
- (c) Possess a Cat1R Airfield Driving Permit (Cat1R ADP); For driving on Taxiways or Runway.

Drivers who are required to operate an Aircraft Towing tractor Airside must:

- (a) Possess a valid Class 4 driving license issued by the Traffic Police (TP).
- (b) Possess a Cat1R Airfield Driving Permit (ADP)

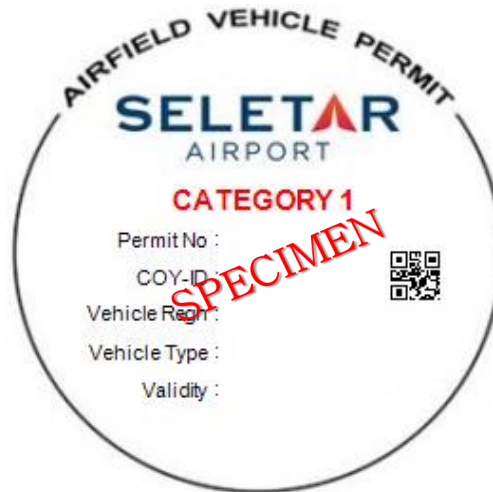
### 2.6.2 Airfield Vehicle Permit (AVP)

All vehicles or mobile equipments are required to attain an AVP in order to operate in the airside. The AVP must be displayed on the windscreen or prominently on airside vehicles. Vehicle specifications for an AVP are reflected on the application form.





**AVP**




**CAT 1 AVP**

### 2.6.3 Temporary Entry Permit (TEP)

Temporary Entry Permit (TEP) is type of AVP which allows vehicles to operate in the airside for a limited period of time as indicated on the TEP for purposes such as emergency maintenance. An ADP holder who will act as the escort must:

- (a) the driver holding a valid ADP; or
- (b) be present in the vehicle, seated on the front passenger seat; or
- (c) Escorted by an AVP vehicle driven by an ADP holder.

<b><u>SELETAR VEHICLE TEMPORARY ENTRY PERMIT (TEP)</u></b>	
Vehicle Reg No:	_____
Name of Company:	_____
Effective Date:	_____
Date of Expiry:	_____
<b>Issued By :</b> _____	
<b>Date of Issued :</b> _____	<b>Permit No :</b> _____
	
<b>*Please Display Permit On The Left Hand Corner Of The Front Windscreen*</b>	

## CHAPTER 3 SAFETY RULES WITHIN THE AIRSIDE

When operating a vehicle in the airside, the driver of the vehicle must hold a valid Airfield Driving Permit (ADP) which authorises him/her to drive a vehicle of that description. The driver is required to adhere to the conditions stipulated in this handbook and to follow the code of conduct when driving in the airside.

### 3.1 General Driving Conduct

For safety purpose, all drivers in the airside shall adhere to the following driving conducts:

- (a) no person under the influence of alcohol, medicine or drugs is to operate a vehicle in the airside;
- (b) no consumption of food and/or drinks, in any form, within the airside;
- (c) smoking is strictly prohibited in the airside;
- (d) use of any mobile devices while operating the vehicle is strictly prohibited;
- (e) care and vigilance when driving/operating a vehicle in the airside must be exercised at all times;
- (f) Vehicles and Mobile Equipment are to be left unattended.

### 3.2 Classification of Vehicles

The classification of vehicles in the ADP is similar to those of the Land Transport Authority which are as follows:-

- |           |  |
|-----------|--|
| Class F   | Forklift or Fork Truck   |
| Class 3A  | Motor Cars and Motor Tractors with auto-transmission (unladen weight less than 2500 kg)                |
| Class 3   | Motor Cars and Motor Tractors (unladen weight less than 2500 kg)                                       |
| Class 3C  | Motor Cars and Motor Tractors except light good vehicles, mini vans and small buses.                   |
| Class 3CA | Motor Cars and Motor Tractors only automatic vehicles covered under the Class 3C licence.              |
| Class 4   | Heavy Motor Cars and Motor Tractors (unladen weight more than 2500 kg)                                 |
| Class 5   | Motor Vehicles which are not constructed to carry any load and the unladen weight is more than 7250 kg |



### 3.3 Speed Limit

Drivers shall be familiar with the speed limits for the airfield and obey all regulatory signs in the airside and adhere to the speed limits of:

- (a) **5 km** per hour within 10m of an aircraft;
- (b) **30 km** per hour on roadways within 15 metres of an aircraft stand; and
- (c) **50 km** per hour on roadways situated more than 15 metres away from any aircraft stand.

<sup>1</sup> Adapted from CAAS (Seletar Airport) By-Laws 4(1)



**30 km/h**



**50 km/h**

### 3.4 Speed Limit Exemption

Emergency or CAG vehicles such as fire vehicles, ambulance, police vehicles and airside operations vehicles on call must be given priority to move ahead quickly and safely. Any indication of their approach such as sirens should prompt the driver to give way by moving to the left, slowing down or stopping if necessary.

<sup>1</sup>'Follow Me' and emergency vehicles with a flashing blue, red or yellow light signal, including the vehicles they escort are exempted from the speed limit when attending to an emergency. They may leave the established roadways if necessary.

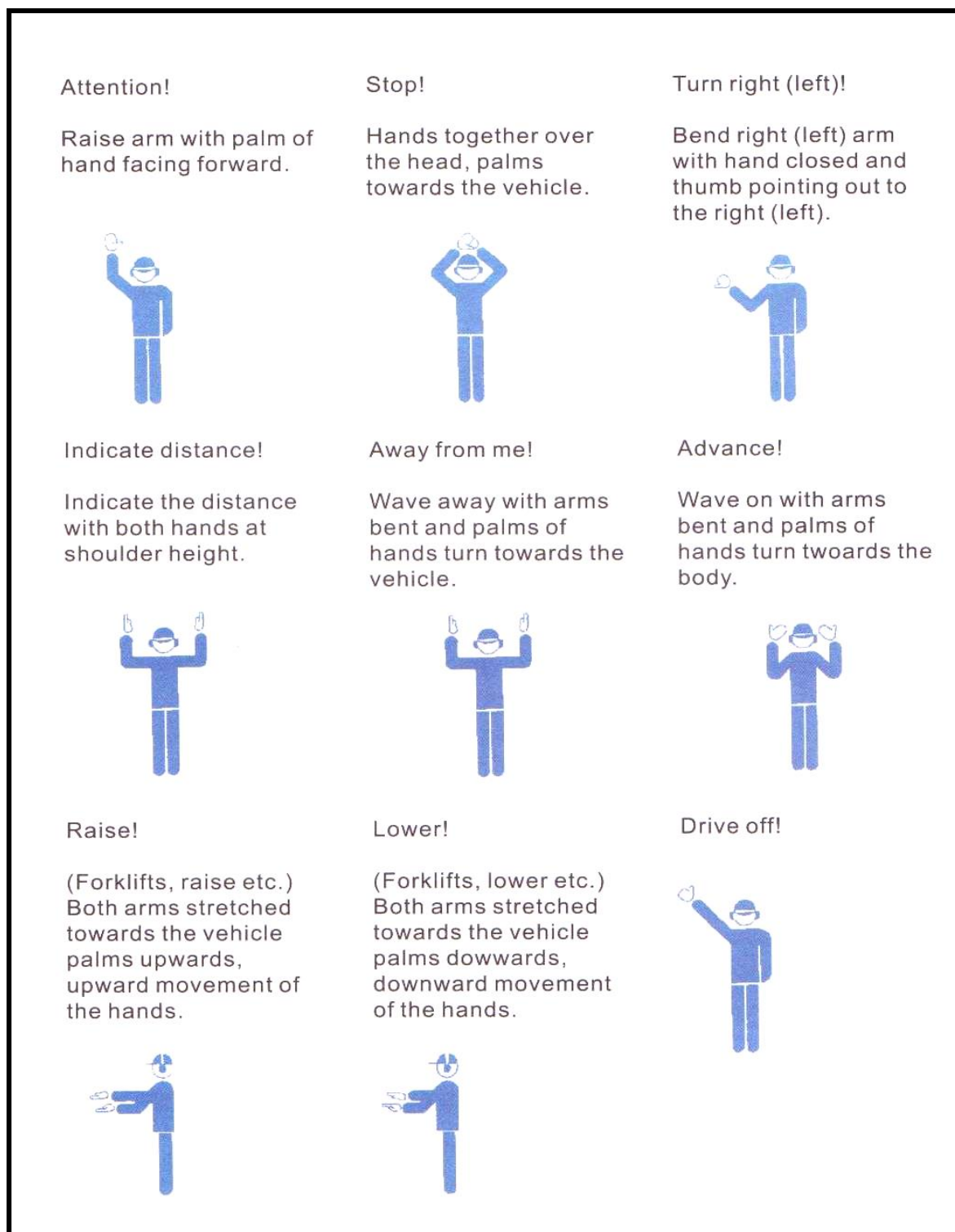
All vehicles operating on an Apron are required to give way to an emergency vehicle and aircraft taxiing, about to taxi, or being pushed or towed.

<sup>1</sup> Adapted from ICAO Document Annex 14 Volume I

### 3.5 Reversing

Vehicles operating in the apron should not be reversed, unless necessary and a marshal/ guide must be present to ensure the vehicle can reverse safely. (Refer to Illustration 1 for Hand Signals to Guide Vehicle)

**Illustration 1: Hand signals to guide vehicles**



## 3.6 Safety in the Vicinity of Aircraft

### 3.6.1 When Aircraft is Stationary with Engines Running

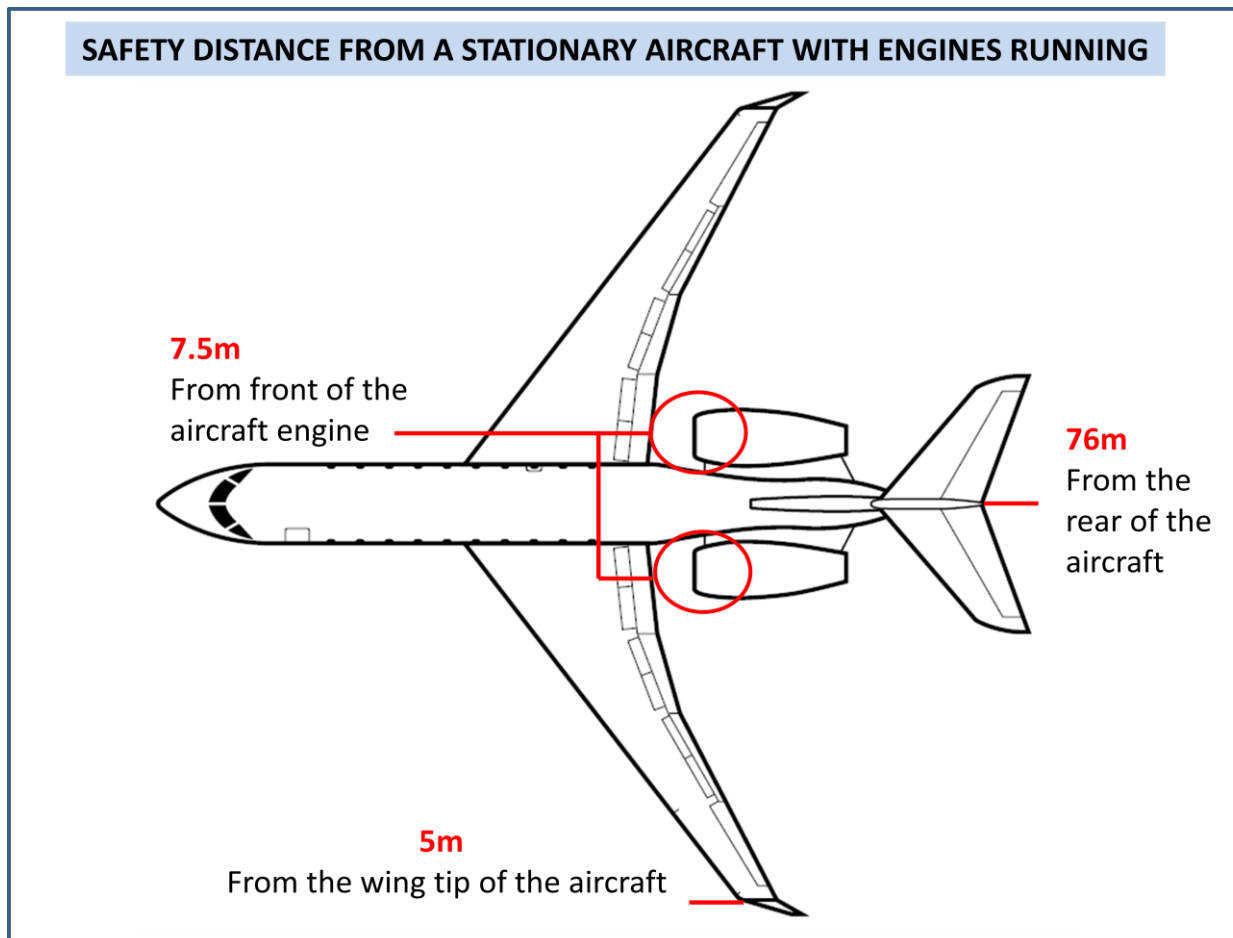
Drivers and airside personnel must be aware of the dangerous effects of jet/ prop blast injuries that could be caused by being behind rotating propellers and jet/ turbofan engines. There is also potential for engine ingestion when in close proximity to aircraft with its engine running.

They shall not cross in front or behind a taxiing aircraft that would subject oneself and/or the aircraft in danger.

No driver shall drive a vehicle towards an aircraft with its engine running. An aircraft with its engine running will have its red anti-collision light switched on.

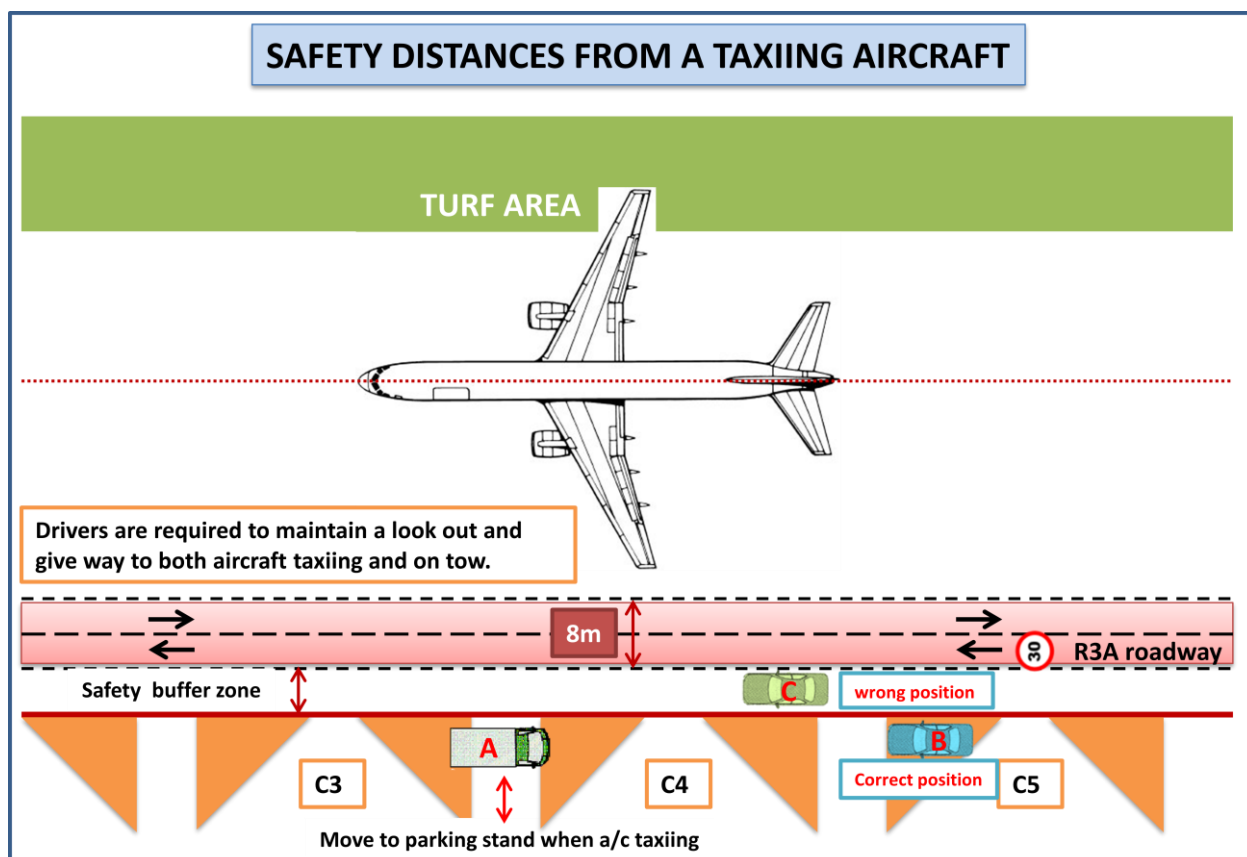
Any person except maintenance staff working on a **stationary** aircraft with its engine running:

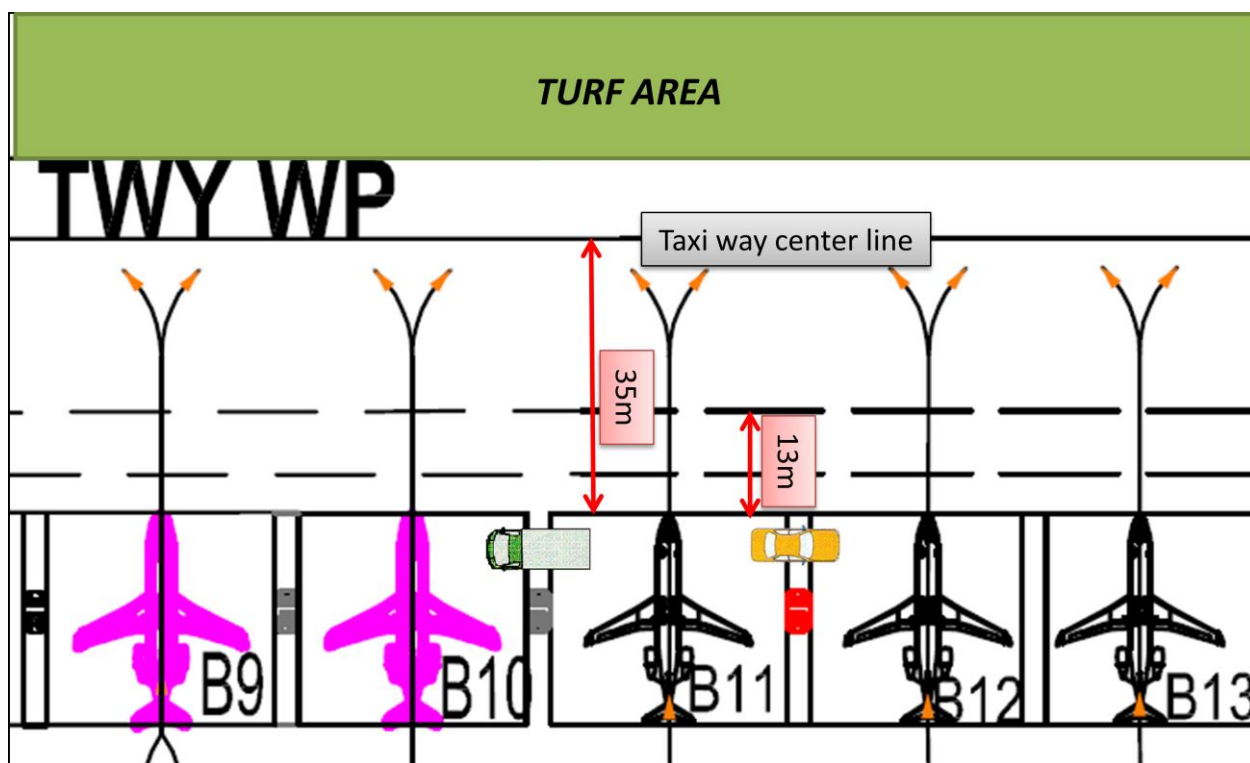
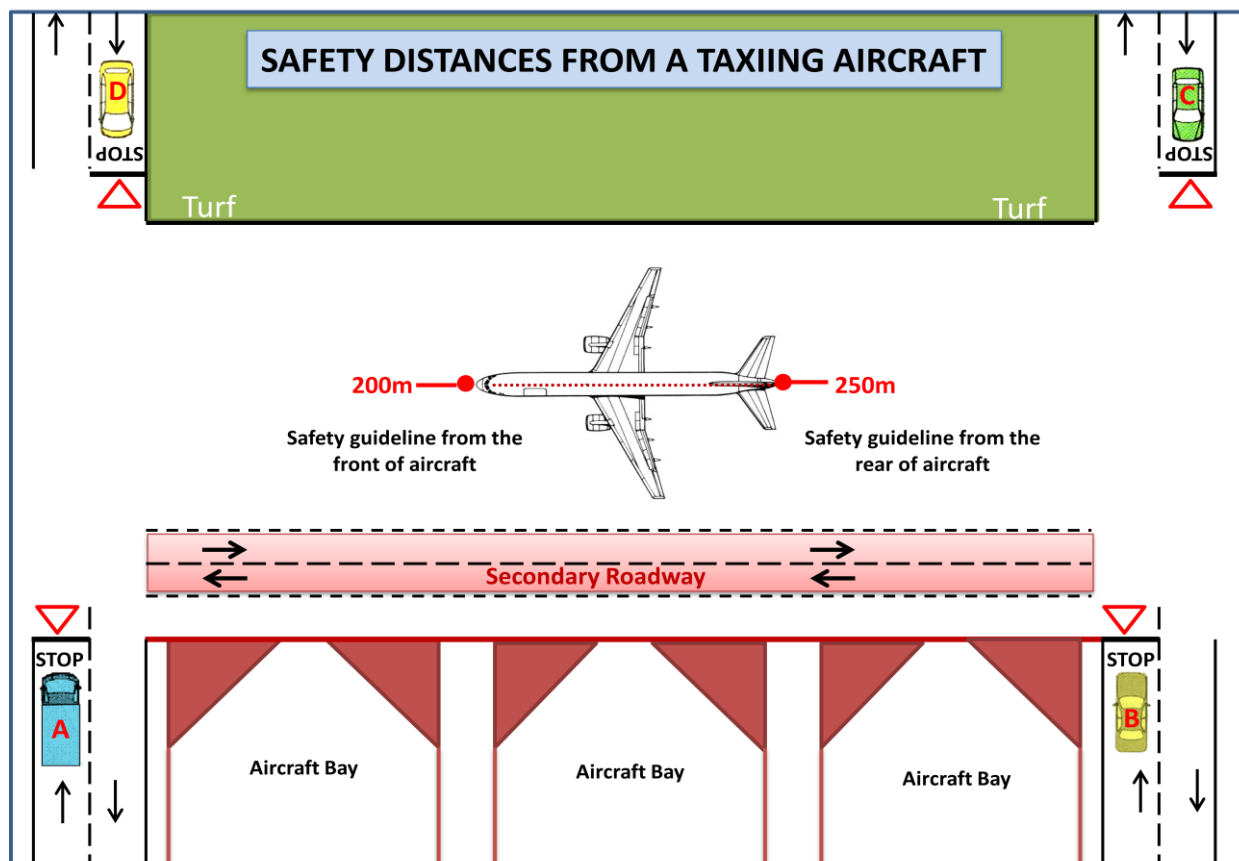
- (a) shall not pass within **7.5 metres** from the intake of the aircraft engine;
- (b) shall not pass within **76 metres** from the rear of an aircraft jet engine; and
- (c) must be at least **5 metres** clear from the wing tip of a parked aircraft.



### 3.6.2 Giving way to Aircraft

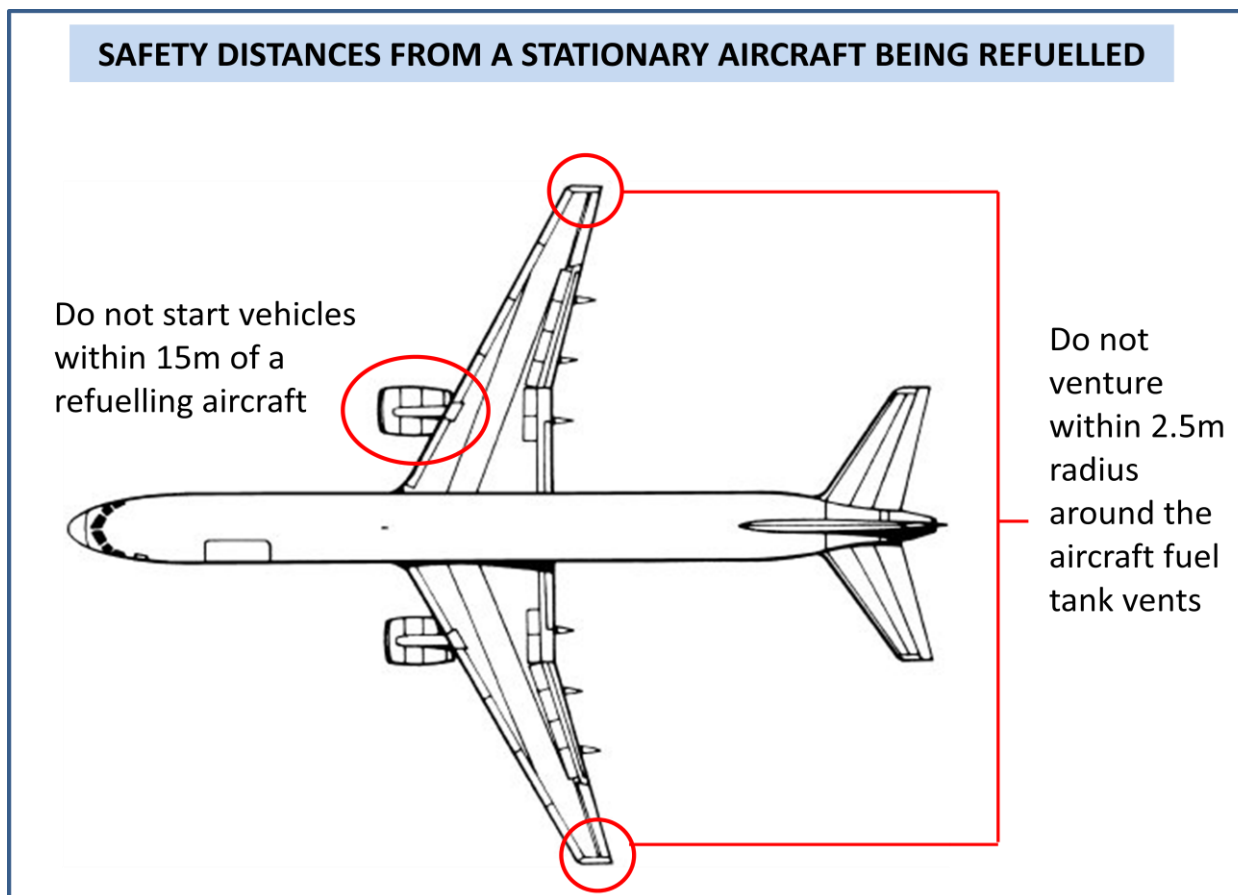
Vehicles shall give way to aircraft at all times irrespective of whether the aircraft is taxiing or being towed. The picture below provides a guide to the safety distances which vehicles shall maintain from aircraft taxiing or on tow.





### 3.6.3 Aircraft Refuelling

- (a) Drivers shall not start their vehicles when within **15<sup>1</sup> metres** of a refuelling aircraft.
- (b) Drivers of vehicles shall keep clear of the aircraft engines and shall not pass within **2.5 metres** radius around the aircraft fuel tank vents.
- (c) Drivers of vehicles shall not drive over any hose or bonding cable which is laid across the surface during aircraft refuelling.



<sup>1</sup> Adapted from CAAS (Seletar Airport) By-Laws (12

## 3.7 Seat Belts

All drivers and passengers must fasten seat belts on vehicles which are fitted with one. Drivers shall ensure that all passengers have fastened their seat belts before operating the vehicle.

### 3.8 Safety Vest

All personnel entering/performing work at all apron areas, including all aircraft stands and the compass swing area are always required to wear the high visibility (hi-vis) safety vest.

The specifications for the high visibility (hi-vis) safety vest to be used at Seletar Airport are as follows:

- (a) The basic colour of the background material of the high visibility (hi-vis) safety vest shall be yellow or lime green.
- (b) Comply with Class 2 in the European Standard EN 471, British Standard BS EN 471 or American Standard ANSI 107 in the following aspects:
  - i) minimum area of 0.5m<sup>2</sup> of background material.
  - ii) minimum area of 0.13m<sup>2</sup> of retro reflective material.

The airport pass should be visible when wearing the high visibility (hi-vis) safety vest.

The high visibility (hi-vis) safety vest shall be imprinted with the respective organizations' logo for easy identification.



**Front**



**Back**

All airside workers are required to wear safety vest at all times when operating in the aircraft stand.

#### 3.8.1 High Visibility Raincoat/Rain Suit

When raincoats/ rain suits are used during inclement weather, the following specification guide should be observed:

- (a) The basic colour of the background material of the high visibility (hi-vis) raincoat / rain suit shall be yellow or lime green.



- (b) Comply with Class 3 in the European Standard EN 471, British Standard BS EN 471 or American Standard ANSI 107 in the following aspects:
  - i) minimum area of **0.8m<sup>2</sup>** of background material
  - ii) minimum area of **0.2m<sup>2</sup>** of retro reflective material.

The airport pass should be visible and shall be imprinted with the respective organisations' logo for easy identification. It is also acceptable if the high visibility (hi-vis) safety vest is worn over a non-high visibility (hi-vis) raincoat / rain suit.

### **3.9 Right of Way for Passengers**

The driver of a vehicle within the airside shall allow free and uninterrupted passage to all aircraft passenger embarking or disembarking an aircraft and such passengers shall have precedence over all vehicular traffic. However, all passenger embarkation and disembarkation must be escorted by an employee or agent of an airline.

### **3.10 Safety around Aircraft Parked at the Stand**

- (a) Vehicles should not enter or park in an aircraft stand unless they are required for ground operations of the aircraft;
- (b) Vehicles must not enter an aircraft stand when an aircraft is entering the stand or performing pushback operations;
- (c) Vehicles moving in the aircraft stand must keep a safe distance from the aircraft and other equipment;
- (d) Vehicles operating on a secondary roadway may enter a parking stand in order to give way to aircraft taxiing or being towed.
- (e) Do not drive behind an aircraft when its engines are running or when the red aircraft anti-collision light is still on;
- (f) Do not approach an aircraft until the ground engineer gives the 'thumbs up' signal when the aircraft has come to a complete stop, the wheels have been chocked and the engines shut down;
- (g) Do not walk or drive in front of an aircraft when its engines are running. Maintain at least 7.5 metres clearance of the front of its engine. Beware of engine ingestion and to keep clear of propellers;



- (h) Do not drive or park under aircraft or aircraft wings unless the vehicles are used for servicing the aircraft with presence of at least one service personnel whom is qualified to operate the vehicle;
- (i) Do not obstruct the path of an aircraft waiting for push back;
- (j) Vehicles and equipment not involved in docking must approach the aircraft at an angle so that the vehicle can be steered away from the aircraft to prevent collision with the aircraft in the event a vehicle brake failure;
- (k) Overtaking is strictly prohibited on aircraft stands;
- (l) Use a marshal or guide when reversing towards aircraft;
- (m) Do not leave vehicle unattended with the engine running;
- (n) Check for and remove all Foreign Object Debris (FOD) before and after handling each flight;
- (o) Report all fuel, hydraulic fluid, oil and other chemical spillages;
- (p) All personnel including crew shall wear high visibility safety vest at all times in the airside; and
- (q) To engage the handbrake whenever the vehicle is stationary.

### **3.11 Driving Areas**

#### **3.11.1 Airside Secondary Roadways**

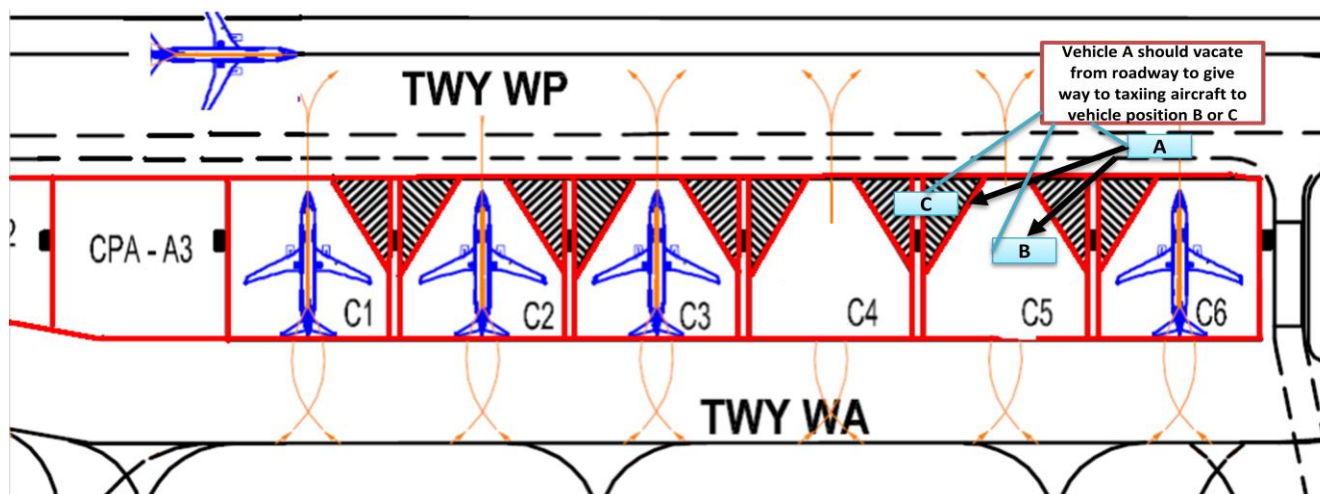
The airside secondary roadway is a service road way that shares a part of the taxiway and located in front of aircraft parking stands. It is meant for movement of vehicles and equipment. The speed limit is 30 km/h.

Drivers shall;

- a) not cut across aircraft parking stands to get to their intended destination;
- b) not enter the aircraft stand when aircraft is taxiing into or out of the stand; and
- c) In addition, drivers are to look out and give way to aircraft powering out from the aircraft stands whilst travelling along the apron secondary roadway.

All drivers operating along the airside secondary roadway are to vacate and turn into the nearest aircraft stand if an aircraft is taxiing or being towed on the taxiway parallel to the airside secondary roadway.

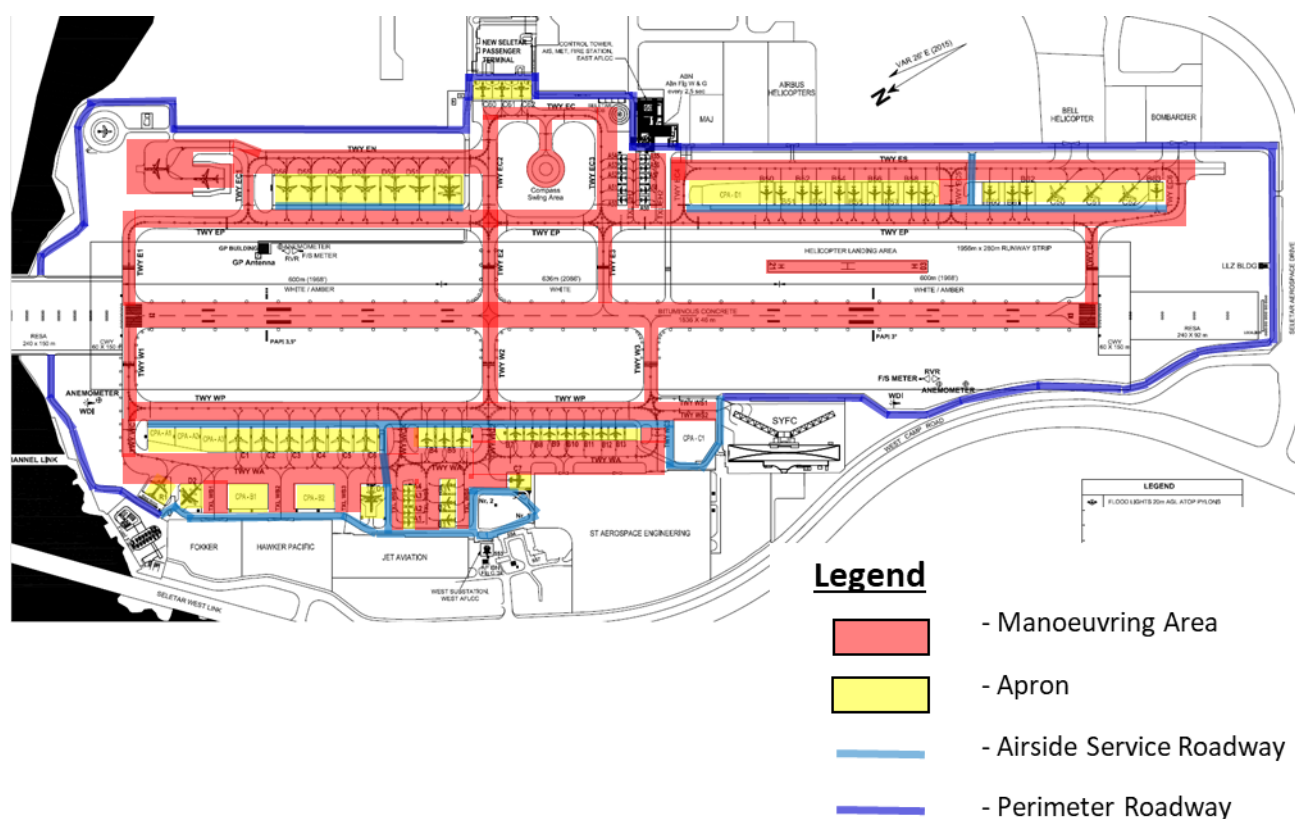
Drivers shall wait at the edge of the aircraft stands within the red Apron Boundary Line till the aircraft clears the taxiway.



### 3.12 Manoeuvring Area (Runway and Taxiways)

Drivers who are required to enter the manoeuvring area for official duties must possess a Seletar Airport CAT 1R ADP. A driver who is required to proceed to any part of the manoeuvring area shall obtain prior approval from the Air Traffic Controller (ATC) over the radio telephony set on VHF 122.9MHz before proceeding to his destination. Walking across taxiways and the runway is strictly prohibited.

All vehicles must be equipped with a fixed two-way radio communication system that is powered by the vehicles own power source. Correct RT phraseology shall be used at all times to communicate with ATC. Only after obtaining positive clearance, entering the runway or taxiways are permitted. During a communication failure/emergency, the driver should vacate the manoeuvring area immediately and contact ATC via mobile phone accordingly.



### 3.13 Procedure for Vehicle Entering Airside with Temporary Entry Permit

Owners of vehicles and equipment which do not belong to airside organisation intending to operate in the airfield for adhoc matters are required to apply for a Temporary Entry Permit. The vehicle must possess adequate insurance coverage for Seletar Airside. Documentary proof is required for such applications.

For AVP, please refer to the application for more information

### 3.14 Parking of Vehicles

Vehicles and equipment should be parked only at designated areas approved by CAG or driven out of the airfield

### 3.15 Vehicle Lighting

Vehicle yellow flashing lights must always be turned on when operating in the airside. During hours of darkness or low visibility, all vehicles must ensure that headlights including tail lights must be switched on and dipped at all time.

## Characteristics of Yellow Flashing Light

1	2	3	4	5	6	7	8	9	10	11	12
Light Type	Color	Signal Type/ (flash rate)	Peak intensity (cd) at given Background Luminance			Vertical Beam Spread (c)	Intensity (cd) at given Elevation Angles When the light unit is leveled (d)				
			Above 500 cd/m <sup>2</sup>	50-500 cd/m <sup>2</sup>	Below 50 cd/m <sup>2</sup>		10°(e)	1°(f)	±0°(f)	+6°	+10°
Low-intensity Type C (mobile obstacle)	Yellow/Blue(a)	Flashing (60-90fpm)	N/A	40mm (b) 400 max	40mm (b) 400 max	12°(h)	-	-	-	-	-

### 3.16 Passenger Transportation

Passengers may be transported only in vehicles licensed for that purpose. Vehicles can carry only the approved number of passengers as stated in the Vehicle Registration details.

### 3.17 Vehicle Roadworthiness

The driver must ensure that his vehicle is in a roadworthy condition to prevent breakdowns in the airside that could result in obstruction to operations. Vehicles intending to operate in the airfield under an Airfield Vehicle Permit must be under a structured maintenance regime carried out by the vehicle owners or the vehicle lessee.

### 3.18 Forklift

The fork should be kept at the lowest practical position (approximately 10cm above ground) when it is not engaged in lifting operations. Forks must be lowered completely when parked. Forklifts can only be operated by trained personnel holding a Seletar Airport ADP. Forklifts are not permitted to enter the manoeuvring areas in normal operations. In the event a forklift is required in the manoeuvring area for recovery purposes, the operation must be coordinated with Seletar Airside Operations.

### 3.19 Freight / Cargo Transportation

The driver should ensure that the freight/ cargo loaded on dollies/ trailers/ trolleys are secured to prevent them from toppling. Incidents/accidents arising from unsecured loads during carriage poses danger to personnel and vehicles.

### **3.20 Towing Rules**

No vehicle shall be towed by another vehicle unless a suitable tow bar is used for that purpose. Drivers are to ensure that the towing connections for multiple trolleys are secured to prevent runaways. It is important that they are not overloaded and if defects are spotted during towing, drivers are to stop to rectify the defect at the nearest suitable area. If the defects cannot be rectified immediately, the equipment shall be deemed unserviceable and not to be used.

### **3.21 Alcohol and Drugs**

No person under the influence of alcohol, drowsy medication or drugs shall operate a vehicle or equipment in the airside.

### **3.22 No Smoking**

Smoking is strictly prohibited in the airside.

### **3.23 Safe Distance**

Vehicles must not tailgate and shall maintain a safe distance by applying 2 second rule

### **3.24 Right-Of-Way**

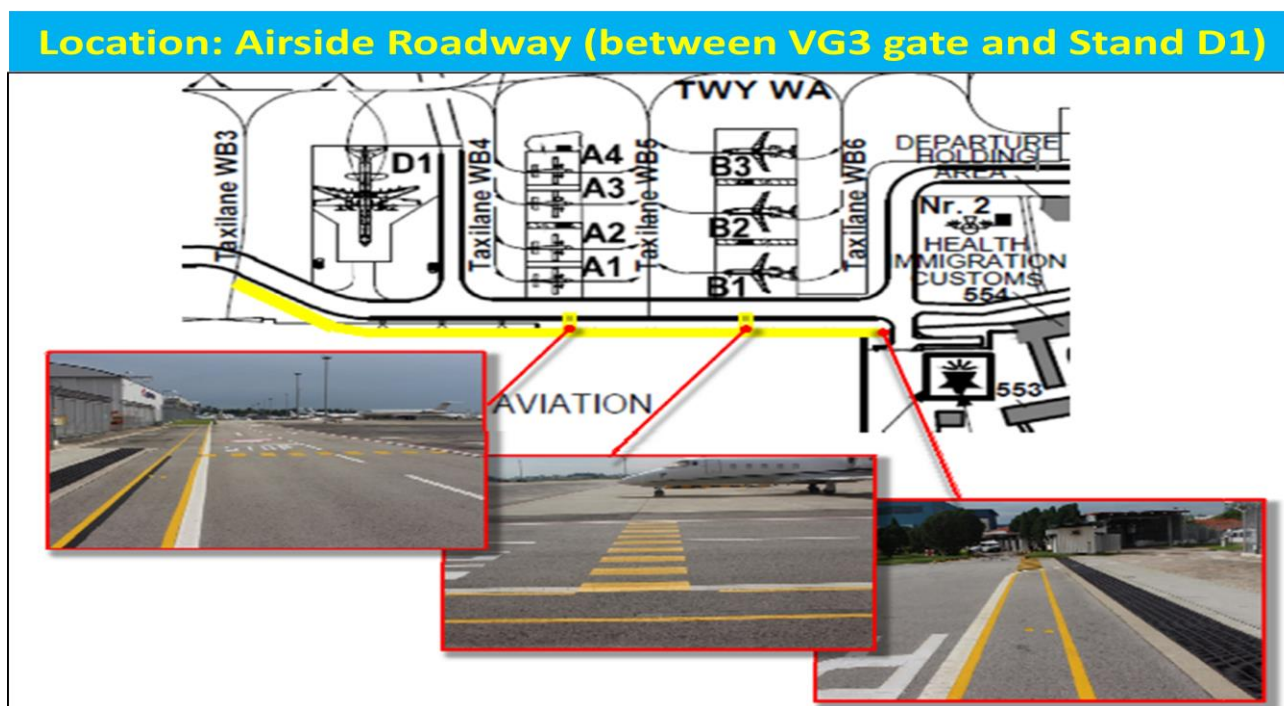
The following priorities shall apply:

- (a) Aircraft which are being taxied under their own power or towed or otherwise moved, including their towing and guiding vehicles;
- (b) Vehicles proceeding with a blue or red flashing lights and sirens on;
- (c) Emergency or CAG vehicles (e.g. Airside Operations, Fire vehicles, Police vehicles and ambulances) on call;
- (d) CAG SAO Vehicle Escorts proceeding with Flashing Yellow Light Bar on, including the vehicles it is escorting;
- (e) Drivers travelling on a secondary roadway must position within Red Apron Boundary Lines whenever there is an aircraft on the adjacent taxiway;
- (f) At road intersections or junctions, the right-before-left principle shall apply, unless prescribed otherwise by traffic signs; and
- (g) To traffic in all other areas, the right-left principle shall apply.

***Note: Emergency vehicles must give way to aircraft at all times.***

### 3.25 Pedestrians

Personnel are allowed to walk on areas marked by personnel walking paths, crossings and in aircraft stand areas. Drivers must watch out for all personnel, crew and passengers. All vehicles and equipment shall reduce speed on approaching pedestrian crossings and stop to give way to anyone using such crossings.



### 3.26 Littering

No person shall place, discharge or deposit any refuse or litter on the apron except in the bins provided, if any, or removed to be discharged at an appropriate place.

All ground handling agents engaged in the servicing or handling of aircraft shall inspect the aircraft stands to ensure that foreign objects debris and other litter arising from their handling are removed from the aircraft stand.

### **3.27 Instruction of Authorised Officer**

Drivers must comply with the instructions given by an authorised officer. Authorised officers are from the following organisations:

1. Changi Airport Group, Seletar Airport Operations
2. Airport Emergency Services
3. Police / Auxiliary police

### **3.28 Reporting of Airside Incident / Accident**

Step 1. Report immediately to Seletar Airport Operations (Tel: 64815077) with details of the occurrence of such accident/incident. Failing to report an accident is an offence under the CAAS (Seletar Airport) By-Laws (42).

Step 2. Provide transport for any medical services available prior to the arrival of the ambulance.

Step 3. All persons involved in an accident and witnesses thereof shall remain at the scene of the accident until an officer from Seletar Airport Operations arrives. If witnesses cannot remain at the scene of accident for reasons of other urgent duties, they shall report to Seletar Airport Operations office immediately upon accomplishing these duties.

Step 4. Drivers involved in an accident shall not remove the vehicle/ equipment until permission has been granted by Seletar Airport Operations except in situations where it endangers surrounding aircraft.

Step 5. In the case of accidents involving casualties, please contact Seletar Airport Operations immediately of its occurrence.

Step 6. The details of a person alleged to have been driving or in charge of any vehicle at the time of occurrence of an accident or have committed an offence, shall provide relevant information and details to Seletar Airport Operations immediately.

### **3.29 Procedure for Entry of Ambulance in the Airside during emergency**

In the event an ambulance is required, the following apply:

- Step 1. Inform Seletar Airport Operations (Tel: 64815077) giving the same information and advise them that an ambulance will be entering the airside.
- Step 2. Ambulance Emergency Responding lights have to be turned on.
- Step 3. The ambulance shall be escorted to and back from the aircraft.
- Step 4. Ambulance drivers shall maintain a safe distance of 15m from an aircraft which is being refuelled.

### **3.30 Vehicle Breakdown**

In the event of a vehicle breakdown at the aircraft movement area, the driver concerned shall:-

- (a) In the case of a CAT 1R vehicle, the driver shall report the location to ATC over RT on 122.9MHz;
- (b) Inform Seletar Airport Operations at Tel 64815077 immediately to report location of vehicle breakdown in the Airside and planned recovery procedures; If possible, push the vehicle to where it does not cause obstruction to aircraft and other vehicular operations;
- (c) Ensure aircraft operations are not obstructed by the breakdown;
- (d) Provide a marshal to direct traffic;
- (e) Inform the respective company maintenance section to recover the vehicle; and
- (f) Do not leave the vehicle unattended.

### **3.31 Procedures in Event of Spillage**

This procedure applies to all spills including aviation fuel, hydraulic oil, chemical and sewerage.

#### **3.31.1 Aviation Fuel**

- Step 1. Do not drive through the spilled liquid. Report to Seletar Airport Operations (Tel. 64815077) to provide location and area of spillage.
- Step 2. Engines of motorised equipment within spill areas should not be started before the spill is cleaned up. However, if the engine is already running and the hazard to personnel is diminished gradually, the vehicle may be driven out of the area.



Step 3. No ground equipment / vehicle shall be permitted to come within 15m of the spillage area.

Step 4. Remain at the scene of spillage

Step 5. No vehicle or mobile equipment should come within 15 metres of the spillage area.

Step 6. No vehicle or mobile equipment should be started until the spillage has been cleaned.

Step 7. Personnel involved in the spillage should cordon off the area and divert traffic.

#### **3.31.2 Hydraulic Fluid Spillage**

In event of Hydraulic Fluid spillage, it is necessary to scrub the affected area. Contact Seletar Airport Operations (Tel: 64815077) with the following information:

- (a) Caller should identify yourself and leave your contact number in case confirmation is required; and
- (b) Caller should provide location and extent of the spill and whether it affects aircraft and personnel.

In case of smaller oil spillage, the driver responsible is required to immediately mop up the area with an approved absorbent material (except sawdust).

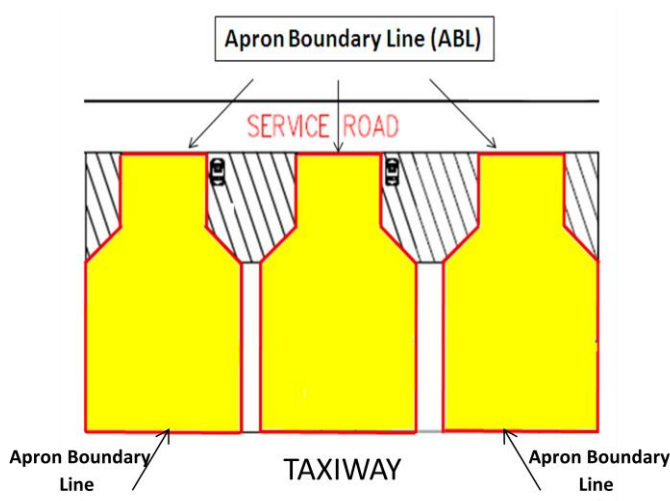
### **3.32 Refuelling of Vehicle**

Refuelling of vehicles should not be conducted in the airside. In the event refuelling is necessary for a vehicle that has been disabled due to fuel, the ground handling agent must arrange for the said vehicle to be towed out of the airside for refuelling.

## CHAPTER 4 AIRSIDE MARKINGS AND SAFETY SIGNS

### 4.1 Apron Boundary Line (ABL)

Demarcated by a continuous red line marking the boundary between aircraft stand and taxiways



#### *Warning Note:*

*Failure to comply with this limit lines can result in an accident when aircraft enters the aircraft stand.*

### 4.2 Lead-In Line & Stand Indicators

Aircraft lead-in line is painted in yellow with the corresponding stand indicators.



### 4.3 Service Roadway

These are roads marking with white lines on the apron areas to allow the movement of vehicles and equipment clear of parked aircraft.



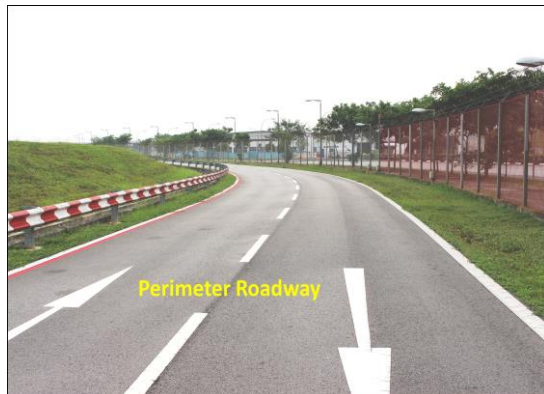
### 4.4 Secondary Roadway

Roadway painted in broken white line located in front of the aircraft parking stands



### 4.5 Perimeter Roadway

Located near the fences surrounding the airside boundary

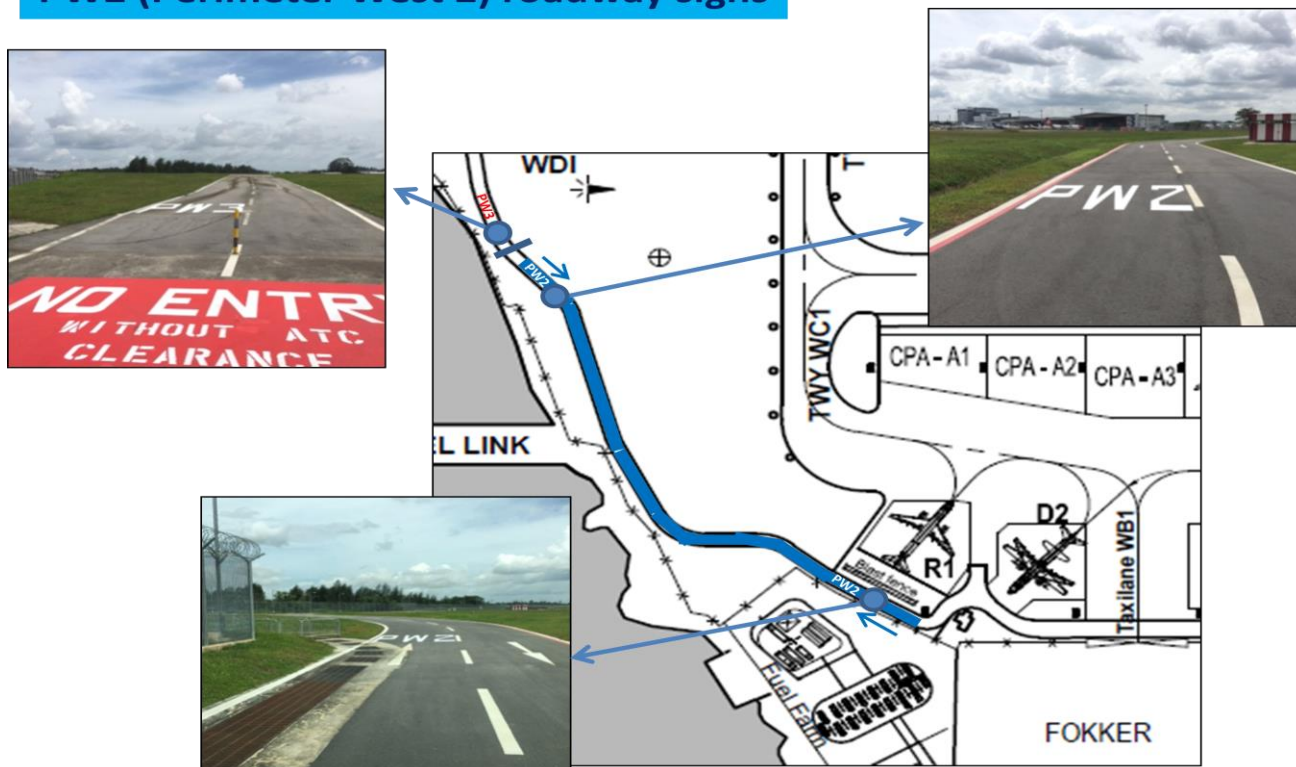






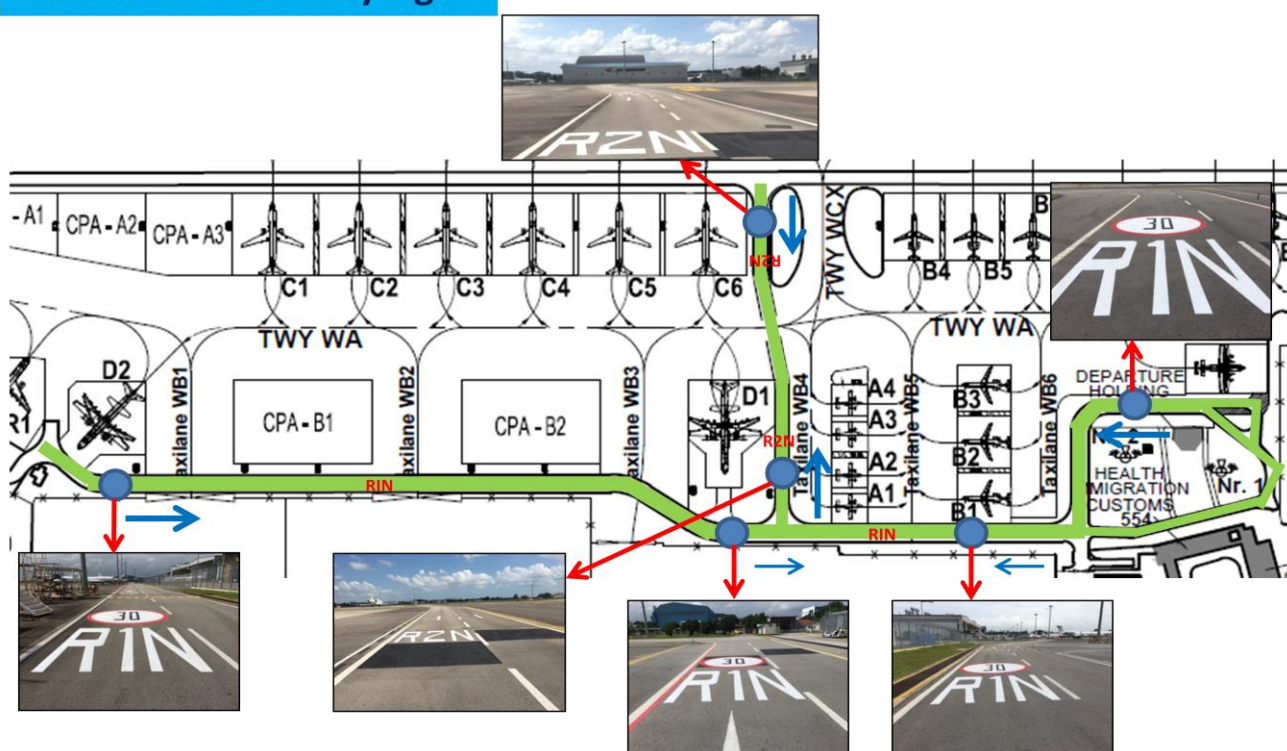
4.6.1

**PW2 (Perimeter West 2) roadway signs**



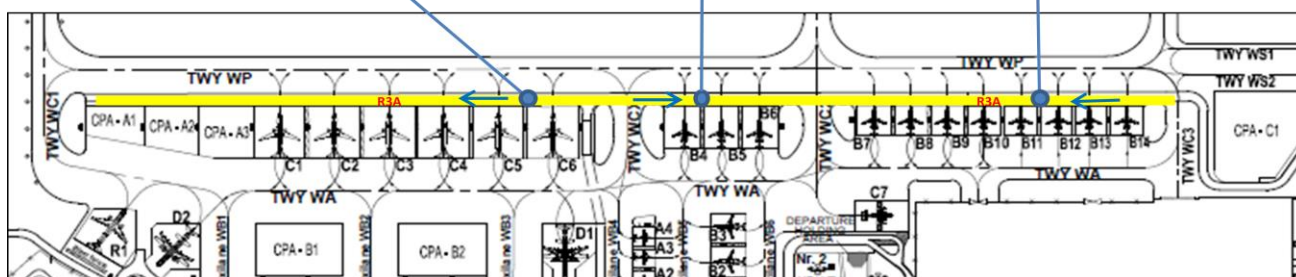
4.6.2

**R1N & R2N roadway signs**



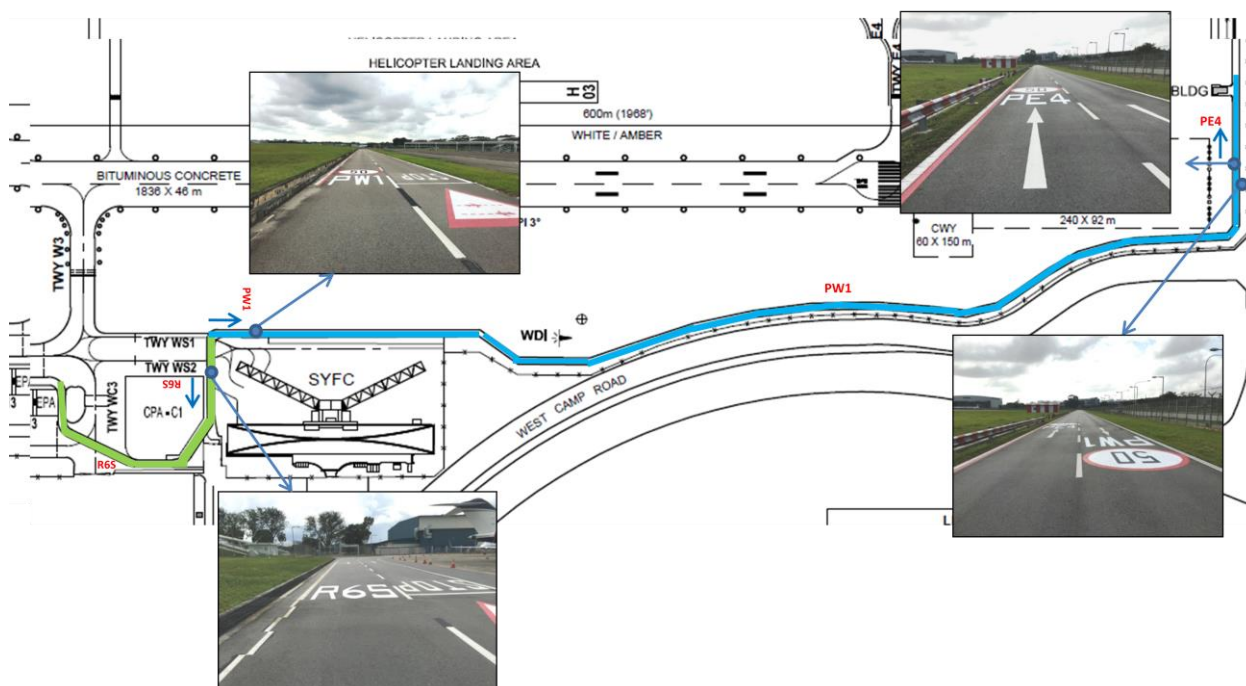
#### 4.6.3

### R3A roadway signs



#### 4.6.4

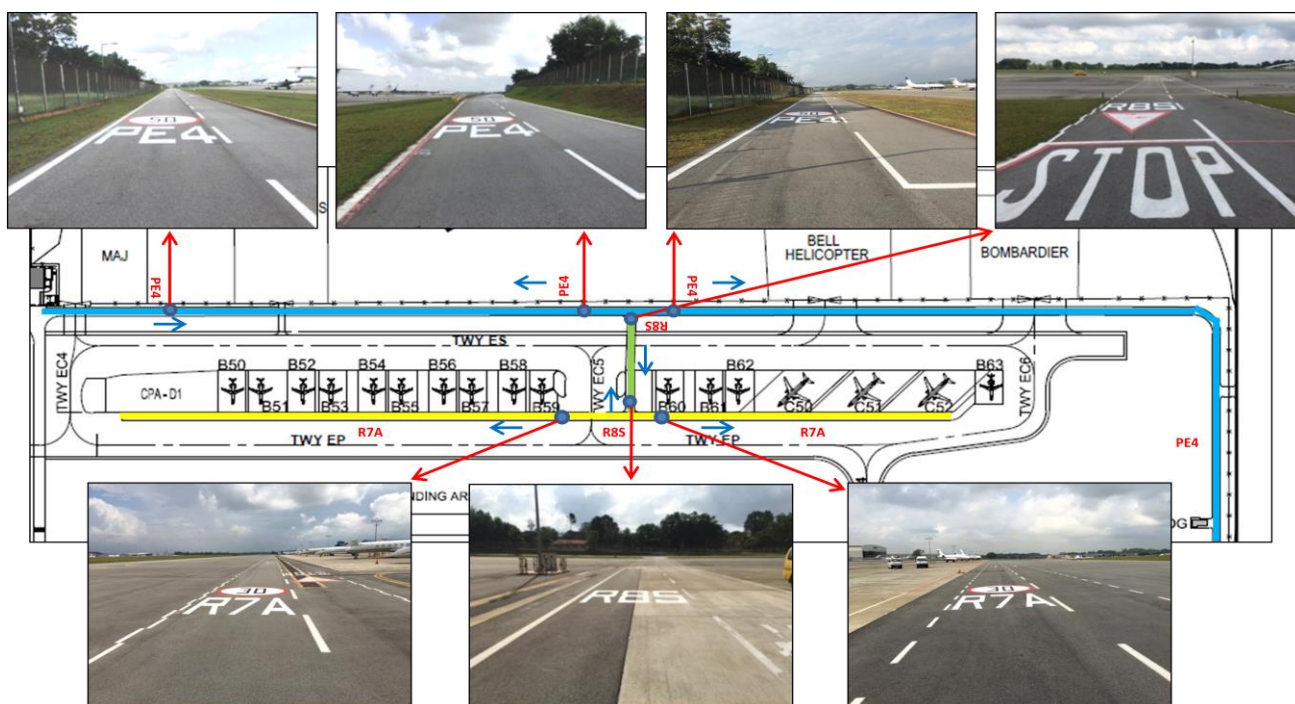
### R6S, PW1 roadway signs



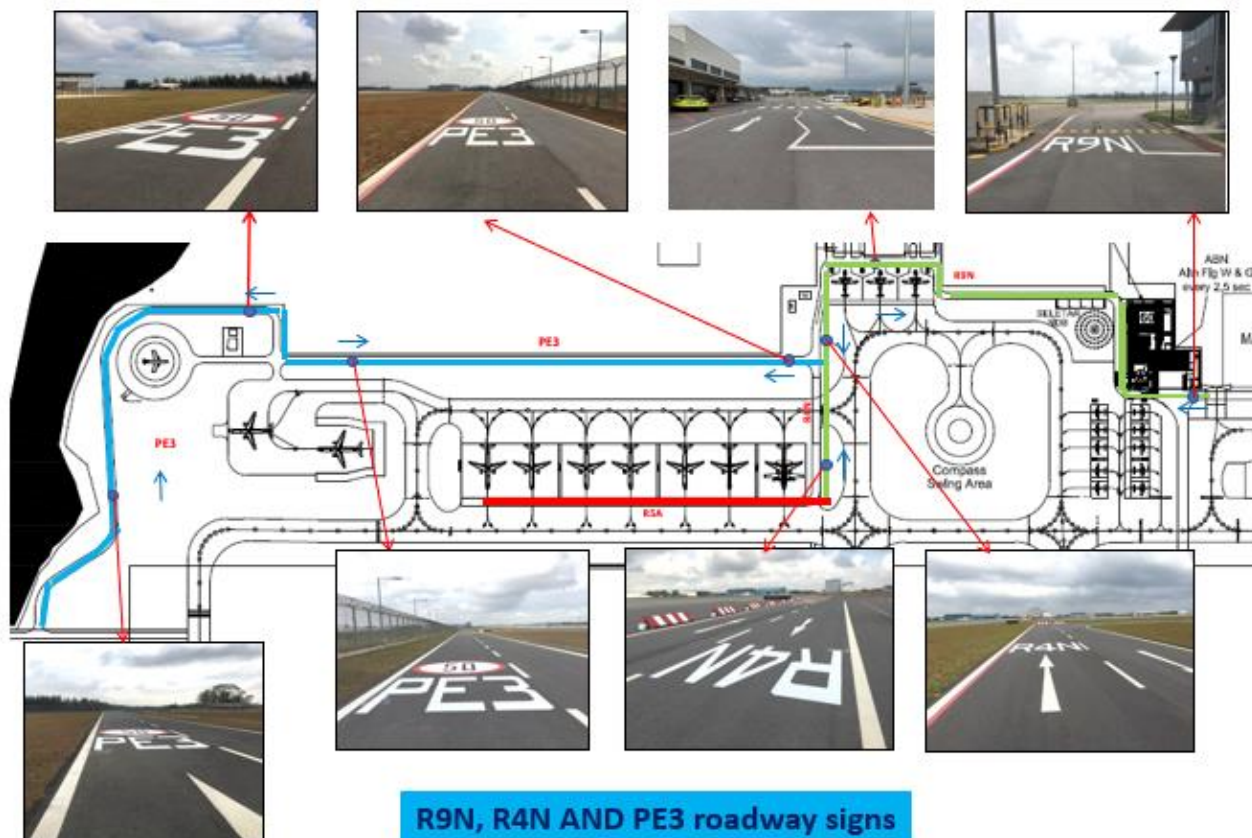


4.6.5

**PE4, R7A and R8S roadway signs**



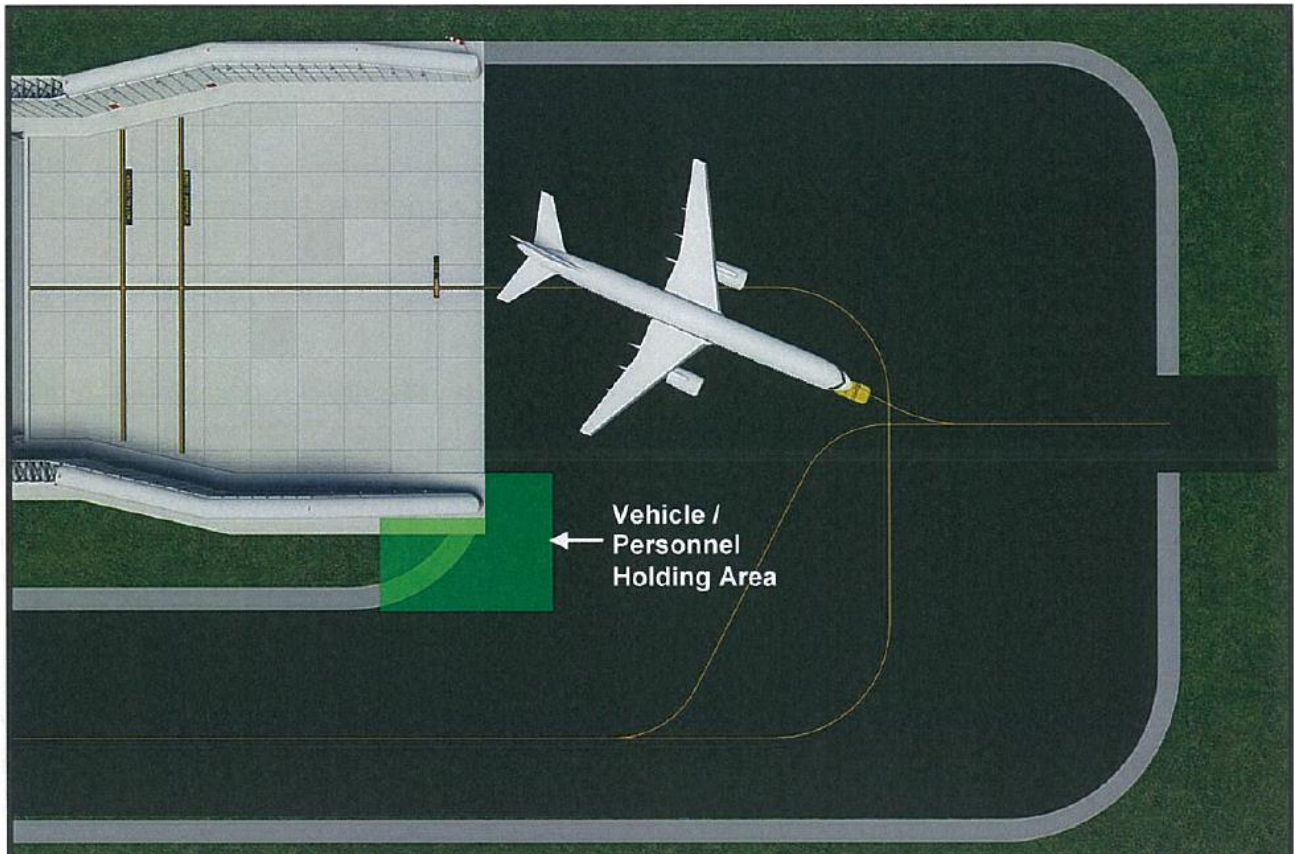
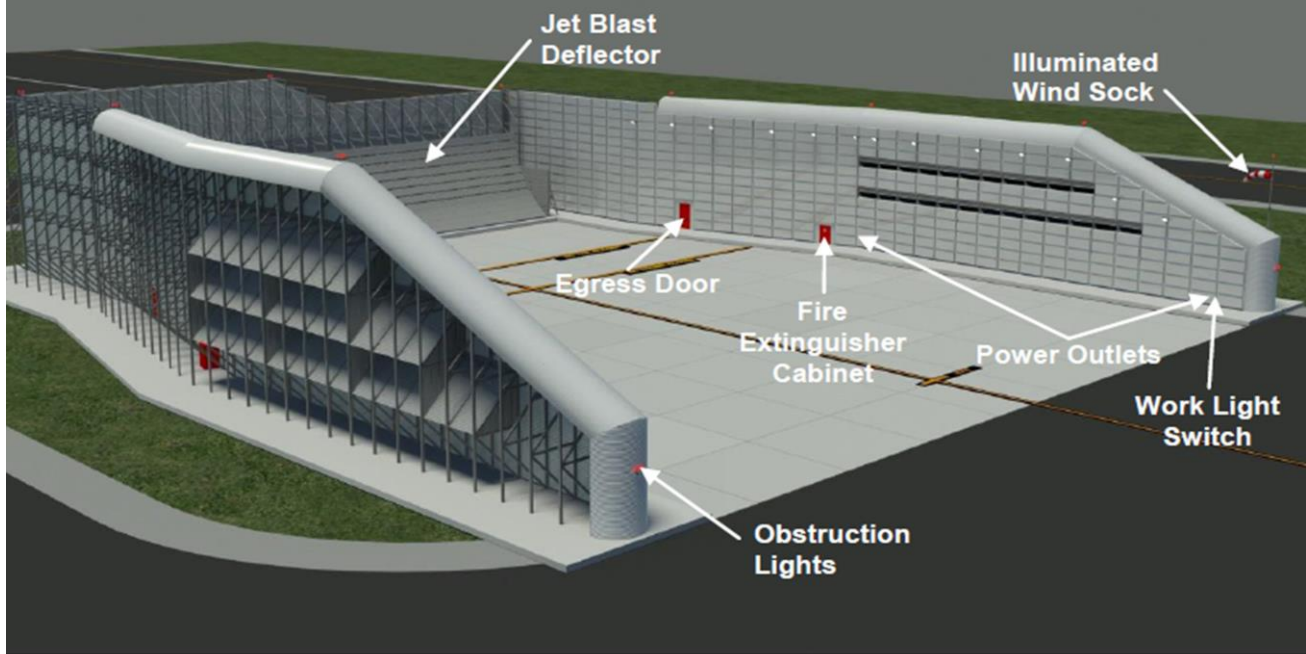
4.6.6



**R9N, R4N AND PE3 roadway signs**

4.6.7

## Ground Run Enclosure Operations for GHAs and MROs





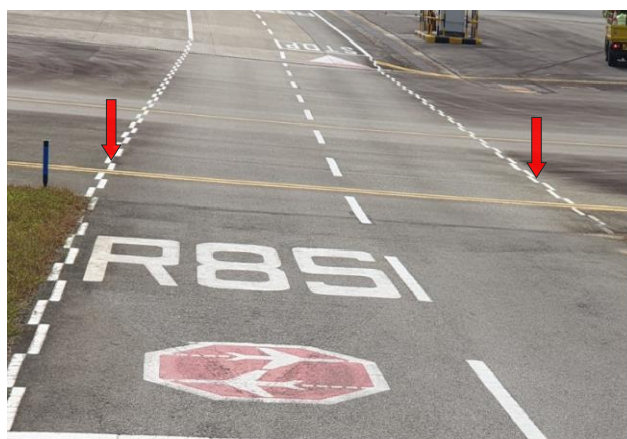
#### 4.7 “Give Way to Aircraft” warning sign (Surface Roadways)

Vehicles must give way to aircraft, even if it is being towed and/or taxiing. Look out for “Give way to Aircraft” signs which are painted on the ground to caution drivers of aircraft movements on the roadway.



#### 4.8 Safety Rules For Vehicles Crossing Taxiways

Only authorised vehicles are allowed to cross the Taxiways. All drivers must comply with all traffic signs and markings, including traffic light signals provided, at the roadway crossing. Drivers are to stop before the vehicle stop-line, look out for aircraft movements on the taxiway at all times and ensure that there is no aircraft movement before crossing the taxiway.



No vehicle is allowed to stop in any part of the roadway crossing that is within the taxiway (with jagged line on both side). In the event of a vehicle breakdown within the taxiway, the driver must ensure it is reported to Seletar Airport Operations Unit. The vehicle shall not be left unattended.



All airside organisations are to ensure that their drivers are familiar with the rules and regulations governing the use of all roadways that cross the taxiways.

#### 4.8.1 Traffic Signs in airside



**No entry (For roadways)**



**No entry except with air traffic control clearance (Manoeuvring area)**



**No Entry except authorised vehicles (For emergency vehicle)**



**No right turn**



**No left turn**



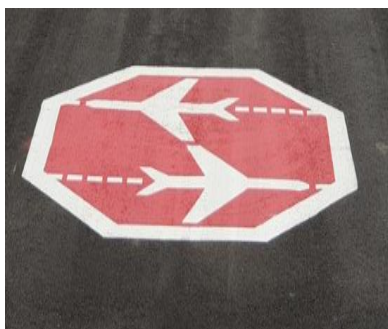
**No walking beyond this point**



**Traffic light signal**



**Jet blast caution**



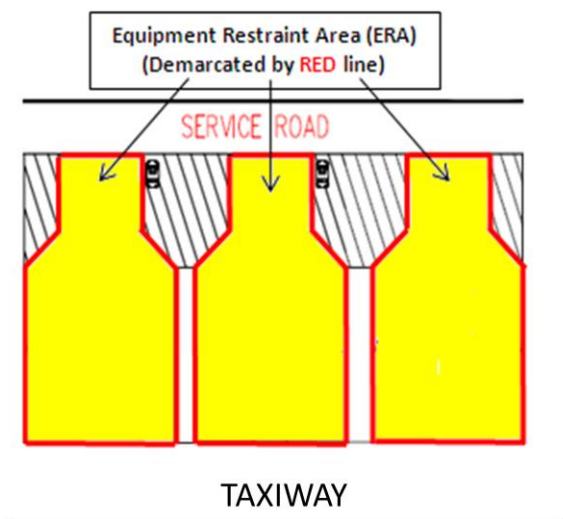
**“Give way to aircraft” warning sign (surface roadway)**



**Caution sign – Give way to aircraft**

## **4.9 Equipment Restraint Area (ERA)**

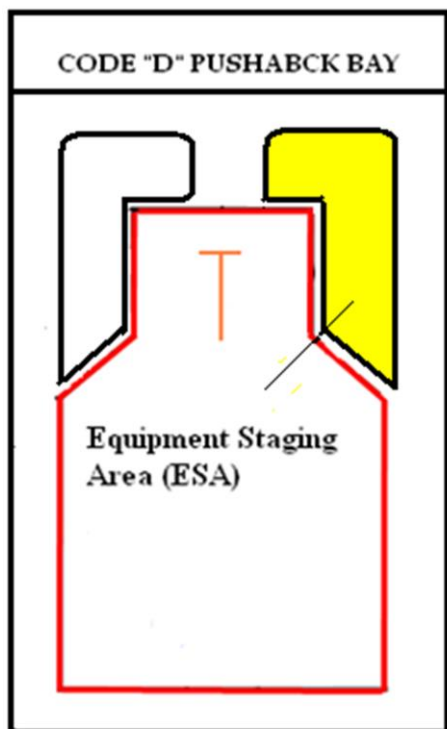
Demarcated by continuous red line outlining the area where aircraft is parked. All Ground handling equipment, vehicles and personnel must stay clear of the ERA when an aircraft is taxiing into and out of the parking stand. All equipment or vehicles shall not be parked within the ERA when unattended.



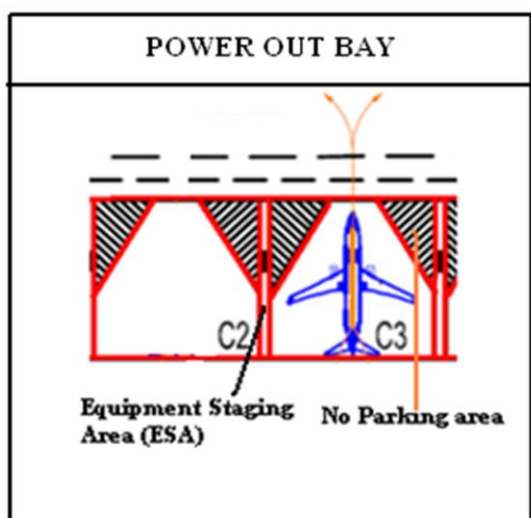
#### 4.10 Equipment Staging Area (ESA)

Demarcated by continuous white line outlining the area where ground handling equipment or pax vehicles for the serving the aircraft. All Equipment and Vehicles shall be parked only at their authorised parking area. All Equipment and Vehicles shall be removed from the ESA once serving the aircraft has been completed.





k



#### 4.11 Designated Runway Holding Position For Aircraft/Vehicles/Equipment Entering Runway

Aircraft/ vehicle/ equipment shall not cross/ pass/ touch the holding position stop bar lights when holding at the current and future Runway Holding Position priori to obtain ATC clearance as shown in the picture.



Red circle illustrates designated holding points

