Seletar Airport Category 1 / 1R Airside Driving Theory Handbook

October 2026



Driving Into Manoeuvring Area and Standard Phraseology

Table of Contents

INTRODUCTION

Purpose

Review and Revision of Contents

Legislation

Jurisdiction

Related Reference Documents

TERMINOLOGY
Definitions

Abbreviations

1: Familiarizations of Seletar Airport layout

2: General Instructions

3: Movement Instructions

4: Language of Communication

5: TIME SYSTEM

6: TRANSMISSION TECHNIQUES

7: BEFORE TRANSMISSION

8: MICROPHONES

9: PRONOUNCIATION

10: VOICE CONTROL

11: PHRASEOLOGY

12: SOME GENERAL TIPS BEFORE YOU START DRIVING ONTO THE MANOEUVRING AREA

13: PRONUNCIATION OF LETTERS

14: TRANSMISSION OF DIGITS

15: RADIOTELEPHONY CALLSIGNS (EXAMPLES)

16: STANDARD WORDS AND PHRASES

17: REQUIREMENTS TO OBTAIN CAT 1/1R ADP FOR DRIVERS ENTERING MANOEUVRING AREAS

18: REQUIREMENTS FOR INSTALLATION OF RADIO TELEPHONY (RT) SETS IN VEHICLES ENTERING THE MANOEUVRING AREAS

19. OTHER REQUIREMENTS FOR CAT 1/1R AVP VEHICLES ENTERING MANOEUVRING AREAS

20: IMPORTANT POINTS TO REMEMBER WHEN WORKING IN THE MANOEUVRING AREA

21: MARKINGS, LIGHTS AND SIGNS ON THE MANOEUVERING AREA

INTRODUCTION

Purpose

The requirements, rules and standard operating procedures for any driver who operates within the manoeuvering area of Seletar Airside are contained within this CAT 1 Airfield Driving Theory Handbook. The contents also include vehicular requirements for any vehicle operating in the manoeuvering area.

Considering that the manoeuvering area is a highly controlled and critical operating area with heavy movement of aircraft, the rules stated in this CAT 1 Airfield Driving Theory Handbook, in addition to those already published in the Airside Driving Theory Handbook (for apron drivers), shall be strictly adhered to ensure the safety of aircraft, vehicles, working personnel and passengers.

Review and Revision of Contents

The contents of this handbook will be reviewed on a regular basis. A "Seletar Airport Airside Operations Notice" shall also be published to keep the airside community informed of the supplement or revision.

Drivers shall keep an active lookout for such updates and ensure they comply with the rules published in the supplement or revision notice.

Legislation

All personnel operating in the airside of Seletar Airport are governed by the following:

(a) The Civil Aviation Authority of Singapore Act 2009 (Act 17 of 2009)
(b) The Civil Aviation Authority of Singapore (Seletar Airport) By-Laws 2009
(c) The Civil Aviation Authority of Singapore (Composition of Offences) Regulations 2009
(d) Protected Areas and Protected Places Act (Chapter 256)
(Note: In addition, the Penal Code applicable in certain traffic accidents determined by State Police)
(e) Workplace Safety and Health Act
(f) AC 139-7-2

Jurisdiction

All vehicles and handling operations at the airside, apron, and designated roadways are under the control and jurisdiction of Changi Airport Group (S) Pte Ltd ("CAG"), the airport licensee. CAG has also authorized its contracted enforcement staff from the Auxiliary Police, Airport Police and Airport Emergency Service to act on behalf of CAG in respect of security matters and to check vehicles and persons as may be allowed within the provisions of the law.
The control of aircraft taxiing and vehicular movements within the maneuvering area of Seletar Airport is under the control and jurisdiction of Air Traffic Services (Seletar Airport), Civil Aviation Authority of Singapore.

Related Reference Documents

- (a) International Standards and Recommended Practices for Aeronautical Communications in ICAO Annex 10 Vol 2 (Comms/ Procedures)
- (b) ICAO Annex 14
- (c) ICAO Document 9432 (Manual of Radio Telephony)
- (d) ICAO Document 9870 (Manual on the Prevention of Runway Incursions)
- (e) Seletar Aerodrome Manual
- (f) AC 139-7-2

TERMINOLOGY

Definitions

Accident means an occurrence associated with the operation or handling of an aircraft in which a person is fatally or seriously injured, or the aircraft sustains damage (adapted from the definition in ICAO Annex 13).

Aerodrome means Seletar Aerodrome and any other aerodrome maintained or managed by the Authority and include any road or uncovered area which is within the limits of the aerodrome but does not include any road or uncovered area to which the public has access.

Aircraft stand means an area on an apron for parking of aircraft.

Airfield Driving Permit means an airfield driving permit issued to the airport licensee under Seletar By-Law 54.

Airfield Vehicle Permit means an airfield vehicle permit issued by the airport authority under Seletar By-Law 51.

Airside means the movement area of the airport and the adjacent terrain and buildings or parts thereof, access to which is controlled, but does not include the cargo handling area.

Apron means that part of the airport, other than the maneuvering area, to be used for accommodating aircraft for the purposes of embarkation or disembarkation of passengers, loading or unloading of mail or cargo, or refueling, parking or maintenance of aircraft.

Authorized person means –

(a) any other officer or employee of the airport licensee; or

(b) any person duly authorized by the airport licensee to act on its behalf

CAG means Changi Airport Group (S) Pte Ltd

CAAS means Civil Aviation Authority of Singapore.

Category 1 Airfield Driving Permit means the holder of this permit is allowed to operate a vehicle on the taxiways subject to approval from Seletar ATC.

Category 1R Airfield Driving Permit means the holder of this permit is allowed to operate a vehicle on the runway subject to approval from Seletar ATC.

"**Follow Me**" **Vehicle** means a vehicle used to guide aircraft or other vehicles in the maneuvering areas.

Incident means an occurrence, other than an accident, associated with the operation or handling of an aircraft, which affects or could affect the safety of operation.

Lightweight transport machine means any mechanically propelled or electrically operated lightweight transportation machine intended for short distance commuting and includes the buggy.

Maneuvering area means that part of the airport to be used for the taking off, landing and taxiing of the aircraft, but does not include areas set aside to accommodate aircraft, for the embarkation or disembarkation of passengers, for the loading or unloading of mail or cargo, or for fueling, parking or maintenance of aircraft.

Movement area means that part of the airport to be used for the taking off, landing and taxiing of the aircraft, consisting of the maneuvering area and the apron.

Notice of Offence means Notice of Composition of Offences is a report of any violations of the **Civil Aviation Authority of Singapore (Composition of Offences) Regulations 2009.**

Perimeter Roadway means that road within the airside that allows vehicles to move around the airport clear of apron, taxiways and runways.

Primary Roadway means an established surface route on the movement area meant for exclusive use of vehicles and equipment. In Seletar Airport, the roadways were marked with continuous white lines on the apron areas.

Runway means a defined rectangular area prepared for the landing and take-off of aircraft.

Runway incursion means any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing and take-off of aircraft[1].

Runway Strip means a defined area, including the runway and stop way, if provided, that is intended:
a) to reduce the risk of damage to aircraft running off a runway; and
b) to protect aircraft flying over the area during take-off and landing operations[2].

Secondary Roadway means An established surface route situated alongside a taxiway for access into parking stands and other locations on the airfield. Drivers are required to maintain a look out and give way to both aircraft taxiing and on tow. The roadways are painted in broken white line located in front of aircraft parking stands.

Vehicle means any vehicle whether mechanically propelled or otherwise, and includes bicycle, tricycle, cart, buggy, light weight transport machine, trailer, forklift, tractor, passenger loading bridge and any movable equipment, and vehicular traffic "shall be construed accordingly".

Abbreviations

ADC → Airfield Driving Control

CAG → Changi Airport Group

CAT 1 ADP → Category 1 Airfield Driving Permit

CAT 1R ADP → Category 1R Airfield Driving Permit

CAT 1 AVP → Category 1 Airfield Vehicle Permit

FOD → Foreign Object Damage/Debris/Deposit

ILS → Instrument Landing System

OFZ → Obstacle Free Zone

REP → Runway Entry/Exit Point

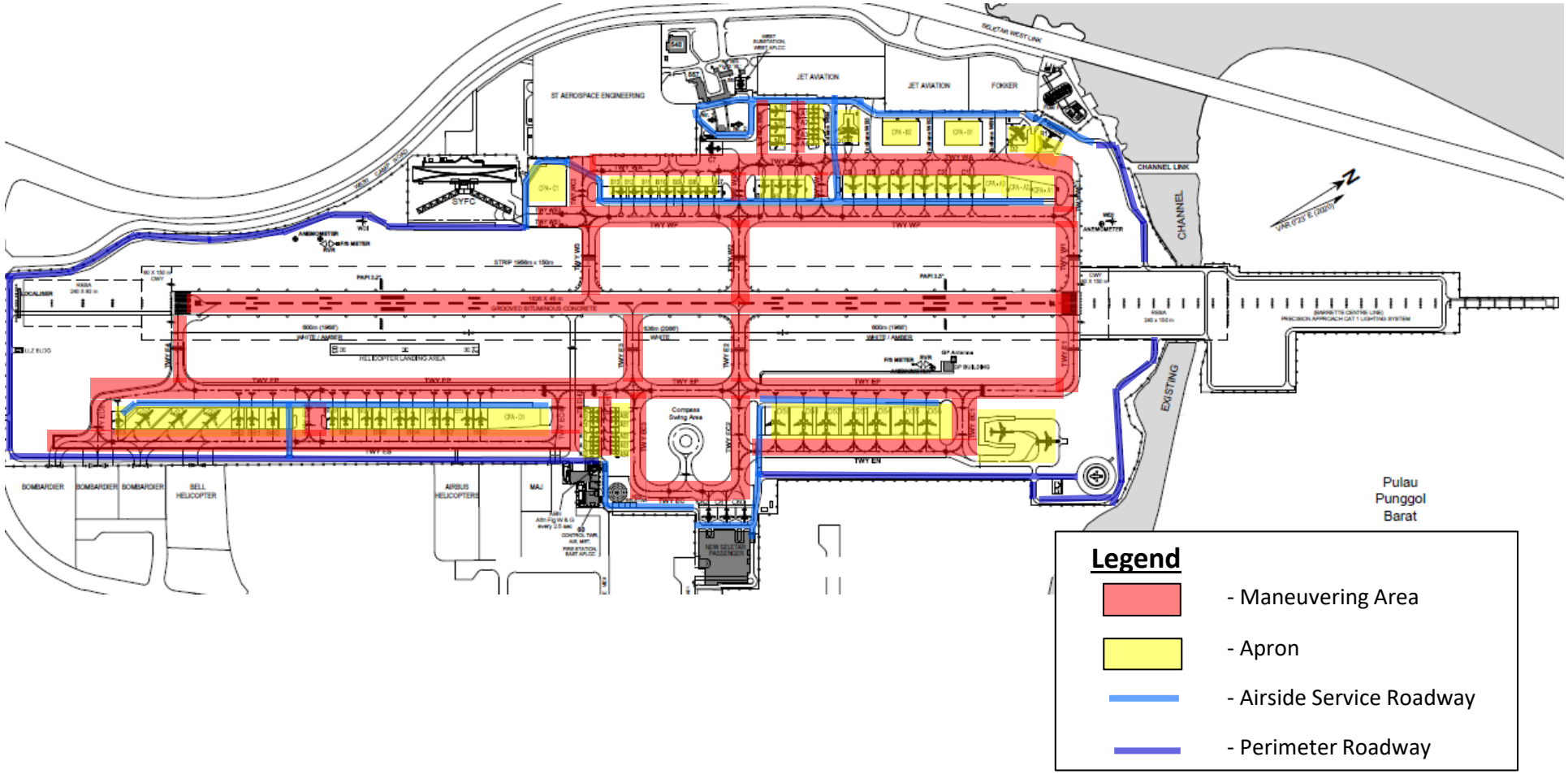
RT → Radio Telephony

SAO → Seletar Airport Operations

SOP → Standard Operating Procedures

1: **FAMILIARIZATIONS OF SELETAR AIRPORT LAYOUT**

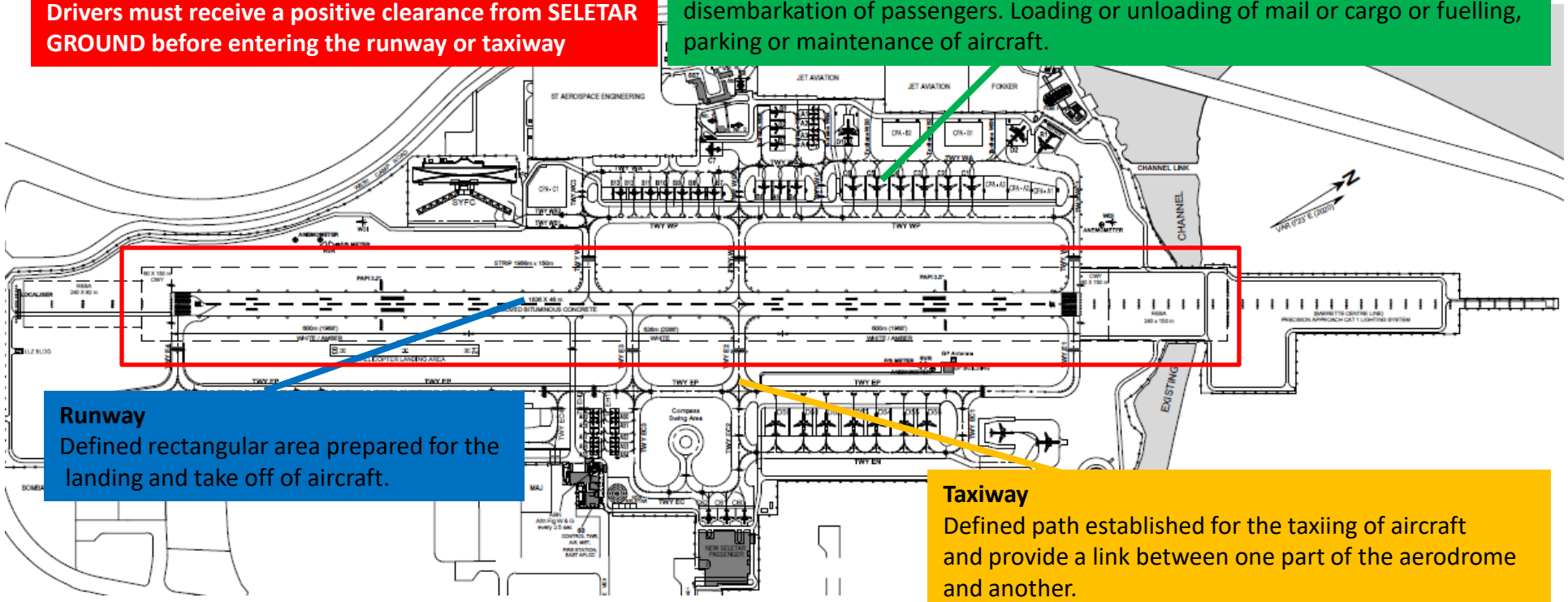
Seletar Airport Layout



Seletar Airport
Movement Area (Runway, Taxiway and Apron)

Drivers must receive a positive clearance from SELETAR GROUND before entering the runway or taxiway

Apron
Area of on airport where aircraft are parked for the purpose of embarkation or disembarkation of passengers. Loading or unloading of mail or cargo or fuelling, parking or maintenance of aircraft.



Runway
Defined rectangular area prepared for the landing and take off of aircraft.

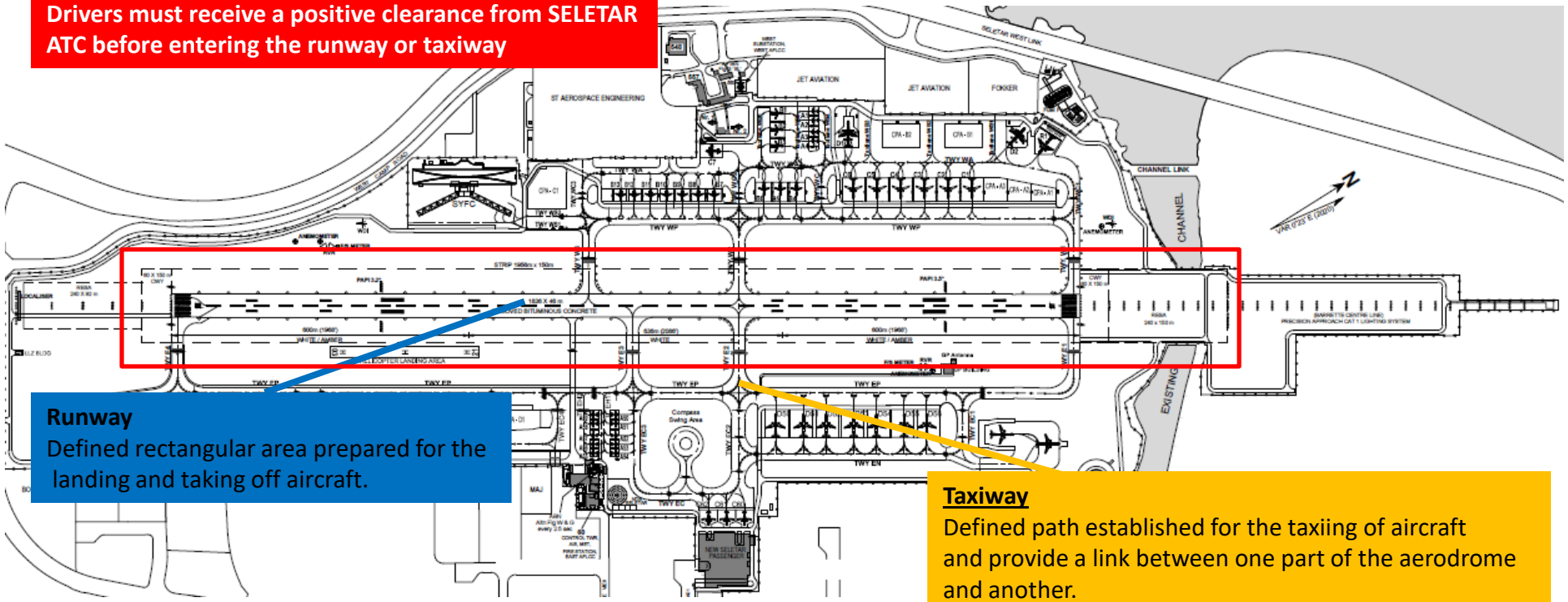
Taxiway
Defined path established for the taxiing of aircraft and provide a link between one part of the aerodrome and another.

Always Look out for Aircraft Taxiing, Towing and on Approach.

SELETAR AIRPORT

Seletar Airport
Manoevring Area (Runway and Taxiway)

Drivers must receive a positive clearance from SELETAR ATC before entering the runway or taxiway



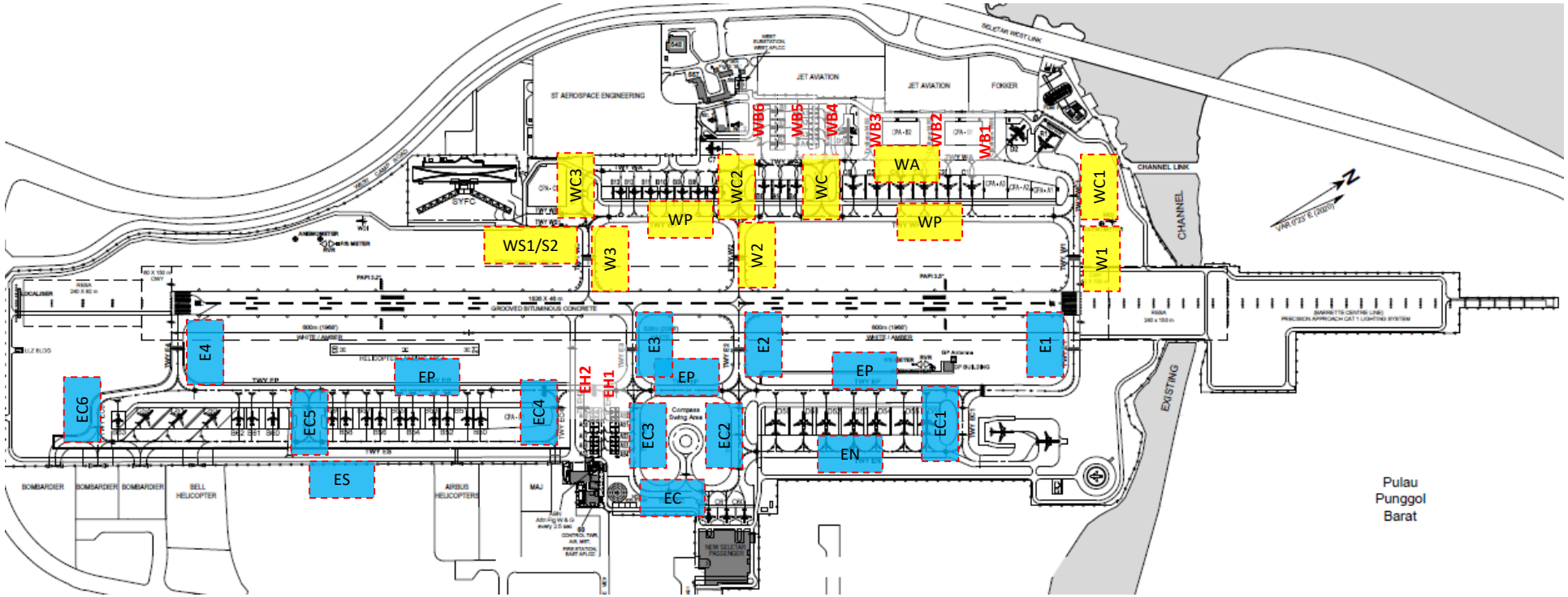
Runway
Defined rectangular area prepared for the landing and taking off aircraft.

Taxiway
Defined path established for the taxiing of aircraft and provide a link between one part of the aerodrome and another.

Always Look out for Aircraft Taxiing, Towing and on Approach.

SELETAR AIRPORT

Seletar Airport Taxiway/Taxilane System



SELETAR AIRPORT

2: GENERAL INSTRUCTIONS

The Seletar Control Tower is responsible for the control of the movement of vehicles on the manoeuvring area in Seletar Airport vicinity. To maintain such control, vehicles operating on the manoeuvring area shall be fitted with a fixed radio -telephony facility (RTF) on the appropriate channel (i.e., 122.9 MHz & 118.9 MHz) or closely escorted by a fixed RTF equipped vehicle.

- Drivers intending to drive onto the manoeuvering area (taxiways) must possess a Seletar Airport CAT 1 Airfield Driving Permit (ADP) except runway. **Only CAT 1R ADP holders are allowed to enter runway.**
- Drivers shall attend a course conducted by Seletar Airport Operations (SAO), Airfield Driving Control prior to undergoing the tests. The course is classroom-based and covers basic radio telephony, rules and regulations of driving in the manoeuvering area.
- Drivers shall undergo and pass a written theory test, followed by an oral test on radiotelephony (RT) communication skills. Finally, drivers are required to undergo a practical test where he/she will be assessed on his/her competence to drive in the manoeuvering area.
- Upon passing all the above tests, the driver will be issued with a Seletar Airport Category 1 ADP.
- Vehicles intended to be driven onto the manoeuvering area must meet the conditions and be issued with a Seletar Airport CAT 1 Airfield Vehicle Permit (AVP).
- ATC is responsible for the vehicle movement on the manoeuvering area under the callsign “Seletar Ground” on VHF 122.9MHz or “Seletar Tower” on VHF 118.45Mhz



- All vehicles operating in the manoeuvering area must be fitted with a Radio Telephony Facility (RTF).
- The RTF must be fixed on the same frequency as SELETAR GROUND.
- Drivers must obtain positive clearance from SELETAR GROUND before entering the manoeuvering area.
- A positive clearance must be obtained, before the driver can proceed onto the taxiway.
- Extreme vigilance and full compliance with instructions from SELETAR GROUND or SELETAR TOWER is required when operating in the manoeuvering area.
- Always apply correct RT operating techniques.
- Drivers must not use/ operate any mobile communication devices when the vehicle is in motion.
- Drivers must stop their vehicles in a safe location if they wish to communicate on RTF and through any other mobile communication devices.
- If a vehicle is not CAT 1 compliant but is required to be operated into the maneuvering area, it must be escorted by a Category 1 vehicle.





3. MOVEMENT INSTRUCTIONS

1. Drivers on first call must identify themselves using their assigned call sign. The following are standard phraseologies to be used during various operating scenarios on the manoeuvering area. Drivers shall apply these standard phraseologies.

Performing Radio Check

Seletar Ground	Mobile
	Seletar Ground, Mobile 4. Radio check on 122.9Mzh. How do you Read?
Mobile 4, Seletar Ground. Read you strength five	
	Read you strength Five, Mobile 4

Note:

Readability of transmissions to be reported on the following scale:

Strength 1 (One) - Unreadable

Strength 2 (Two) - Readable now and then

Strength 3 (Three) - Readable but with difficulty

Strength 4 (Four) - Readable

Strength 5 (Five) - Perfectly readable

Minimum strength of 4 (Four) is required.

If read level is 3 (three) or below, move to a different location and perform another radio check with Seletar Ground.

If read level remains at 3 (three) or below, DO NOT USE VEHICLE. Send RT for servicing.

Authorization request and response to enter Taxiway

Seletar Ground	Mobile
	Seletar Ground, Mobile 3
Mobile 3, Seletar Ground	Mobile 3 location at bay C3, request to proceed to Taxiway WA between Bays C4 and C5 for rectification work. Duration One Zero minutes.
Mobile 3 enter Taxiway WA between bays C4 and C5 for rectification work. Duration One Zero minutes.	
	Enter taxiway WA, between bay C4 and C5 for rectification work. Duration One Zero minutes.
Mobile 3 (reply not required if response is correct)	

Authorization request and response to escort convoy

Seletar Ground	Mobile
	Seletar Ground, Mobile 26
Mobile 26, Seletar Ground	Mobile 26, location below Tower. Escorting convoy of 02 vehicles. Request to enter Taxiway, EP via EC3 near drain to dump soil at work site.
Mobile 26, enter Taxiway, EP via EC3	Enter Taxiway, EP via EC3. Escorting 2 vehicles, Mobile 26
Roger, Mobile 26	

Acknowledging movement instructions to standby

Seletar Ground	Mobile
	Seletar Ground, Mobile 4
Mobile 4, Seletar Ground	Mobile 4 location below tower, request to enter Taxiway EP for inspection.
Mobile 4, Standby.	Stand By, Mobile 4.

Acknowledging movement instructions to vacate runway (Refer to CAT1R ARRC Training Material)

Seletar Ground	Mobile
Mobile 39, Seletar Tower. Vacate Runway by E3	Mobile 39. Vacate Runway by E3
	Mobile 39 Vacated Runway.
Roger, Mobile 39.	

Read back instructions to hold short of runway (Refer to CAT1R ARRC Training Material)

Seletar Ground	Mobile
	Seletar Ground, Mobile 4.
Mobile 4, Seletar Ground.	Mobile 4 Location below tower requests to enter Runway for Runway inspection.
Mobile 4 Proceed to E3 holding point	Proceed to holding point, E3, Mobile 4.

Request to procced to Ground Run Enclosure (GRE)

Seletar Ground	Mobile
	Seletar Ground, Tow-tug 1.
Tow-tug 1, Seletar Ground.	Tow-tug 1 Location parking stand Bravo 55, request to tow N1234X to apron boundary line of GRE.
Tow-tug 1 tow forward Echo Papa, Echo Charlie 1, to apron boundary line of GRE.	Tow forward Echo Papa, Echo Charlie 1 to apron boundary line of GRE, Tow-tug 1.

Seletar Ground	Mobile
	Seletar Ground, Tow-tug 1.
Tow-tug 1, Seletar Ground.	Tow-tug 1 Location , Apron boundary line of GRE request to tow N1234X to parking stand Bravo 55.
Tow-tug 1 tow, Echo November, Echo Charlie 2, Echo Papa, Echo 4, Echo Sierra to parking stand B55.	Tow Echo November, Echo Charlie 2, Echo Papa, Echo 4, Echo Sierra to parking stand Bravo 55, Tow-tug 1.

Request to proceed to Compass Swing Area (CSA)

Seletar Ground	Mobile
	Seletar Ground, Tow-tug 1.
Tow-tug 1, Seletar Ground.	Tow-tug 1 Location parking stand Delta 50, request to tow N1234X to Compass Swing Area.
Tow-tug 1 tow forward Echo Papa, Echo Charlie 2, Echo Charlie to Compass Swing Area.	Tow forward Echo Papa, Echo Charlie 2, Echo Charlie to Compass Swing Area, Tow-tug 1.

Seletar Ground	Mobile
	Seletar Ground, Tow-tug 1.
Tow-tug 1, Seletar Ground.	Tow-tug 1 Location Compass Swing Area, request to tow N1234X to parking stand Delta 50.
Tow-tug 1 tow, Echo Charlie, Echo Charlie 2, Echo November to parking stand Delta 50.	Tow, Echo Charlie, Echo Charlie 2, Echo November to parking stand Delta 50, Tow-tug 1.

Requesting to repeat instructions.

Seletar Ground	Mobile
	Seletar Ground, Mobile 4
Mobile 4, Seletar Ground	Mobile 4 at Compact Parking D1 Say again last instruction
Mobile 4 Proceed to E3 holding point via EP and stand by	Proceed to holding point E3 via EP and stand by, Mobile 4

1. The driver shall not proceed until he has been given a positive clearance by SELETAR GROUND followed by a correct read back.
2. If the request is to enter the **runway,** positive clearance is required by **SELETAR TOWER.**
3. Clearance to proceed into the maneuvering area may include such information pertaining to other relevant traffic (aircraft or other vehicles) to maintain the driver's situational awareness and in ensuring safety of all traffic.
4. If there is an RTF failure, drivers must immediately vacate the manoeuvering area and inform SELETAR GROUND by the most expeditious means i.e., Mobile or fixed line Phone to Seletar Air Traffic Control at 64815076 or by using RTF mounted in another vehicle.

ENTERING OR CROSSING RUNWAYS

1. Under no circumstances shall a driver attempt to enter or cross a runway without a positive clearance from SELETAR TOWER.

2. Ensure that you have obtained a positive clearance and that the illuminated stop bar has been turned off before proceeding into the runway.

3. You shall report that you have vacated the runway only when your vehicle is completely clear. This is when your vehicle has crossed the 4 yellow lines (2 broken and 2 continuous).

Authorizations request and response to enter Runway (Refer to CAT1R ARRC Training Material)

Seletar Ground	Mobile
	Seletar Ground, Mobile 39
Mobile 39, Seletar Ground	Mobile 39, location below Tower. Request to enter runway for inspection
Mobile 39, standby	Standby By, Mobile 39
Mobile 39, Seletar Ground	Seletar Ground, Mobile 39
Mobile 39, proceed to holding point Echo 3 via Echo Charlie 3	Proceed to holding point Echo 3, Mobile 39.
	Mobile 39 holding point Echo 3.
Mobile 39, Monitor/ Contact SELETAR TOWER 118.45	Monitor/ Contact SELETAR TOWER 118.45 Mobile 39.
Mobile 39, SELETAR TOWER enter runway via Echo 3	Enter the runway via Echo 3, Mobile 39. *Note: If the read-back is correct, Seletar Tower is not required to acknowledge the read-back

4: LANGUAGE OF COMMUNICATION

English Language is used internationally for ground radio telephony communication. Avoid the use of other languages to prevent any form of confusion.

5: TIME SYSTEM

The 24-hour system is used. 0000 hours for the beginning of the day and midnight is designated as 2359 hours for the end of the day

6: TRANSMISSION TECHNIQUES

User's articulation of RT communication can affect the quality of speech and the effectiveness of the intended.
Poor delivery can cause confusion or misunderstanding that potentially creates hazardous situations.

7: BEFORE TRANSMISSION

1. Check that you are tuned to the correct and exact frequency so that you do not receive interference to transmissions from another frequency.

2. Conducting a radio readability check with SELETAR GROUND on 122.9MHz. For CAT 1R operations, you are required to switch to SELETAR TOWER 118.45 MHz and listen out for any transmission. You are not required to perform a readability check on 118.45MHz.

3. Do not interrupt if a station is making a transmission that requires a reply. You may continue with your transmission when the station calling and station receiving have completed their transmission.

4. You may interrupt only if you are in distress or have an urgent message to transmit.

5. Do not attempt to transmit during another station's transmission.

6. Determine what to say before you begin to transmit to ensure that there is no hesitation in your message and that your intended message is transmitted clearly and quickly to minimize airtime. If you are unclear, cancel your transmission, stop, think, and retransmit.

8: MICROPHONES

1. Do not turn away from the microphone or vary the distance between your mouth and the microphone during transmission.

2. Distortion to speech can be caused by:
   a) Talking too closely into the microphone.

   b) Your lips touching the microphone.

   c) Covering the microphone partially with your hand; and

   d) Not positively activating the transmit switch.

3. Ensure that the transmit switch (PTT) is fully released after each transmission to prevent frequency jamming.



CORRECT DISTANCE



PRESS BUTTON FIRMLY DURING TRANSMISSION



FULLY RELEASE PTT AFTER COMPLETION OF TRANSMISSION

9: PRONOUNCIATION

1. It is necessary to pronounce each word clearly
2. DO NOT mispronounce or omit consonants as it would make mutual understanding difficult or impossible over RT.

10: VOICE CONTROL

1. Speak normally, it is not necessary to whisper or shout through the microphone.
2. Avoid lowering the tone of your voice during transmission.
3. It is recommended to maintain an even speech rate of 100 words a minute.
4. DO NOT talk rapidly or rush through a transmission.
5. Speak slightly slower if you know that the contents of your transmission needs to be written down by the receiving party.
6. Make a slight pause in between numbers so that the receiving party does not miss any detail.

11: PHRASEOLOGY

1. Always use standard phraseology
2. Transmit in plain language if by transmitting in RT phraseology may create confusion or misunderstanding.
3. Always be concise.
4. Avoid asking questions using an inflection of the voice. Phraseology such as “Request” or “Confirm” should be used instead.
5. Always use correct interrogative words or standard phrases.
6. It is not necessary to use expressions of politeness.

12: SOME GENERAL TIPS BEFORE YOU START DRIVING ONTO THE MANOEUVRING AREA

1. Familiarize yourself with the maneuvering area.
2. Familiarizes yourself with all the necessary procedures
3. Be patient and precise.
4. Comply with instructions
5. Keep your eyes open and stay alert
6. Always maintain a listening watch.
7. Never leave behind any equipment, tools or any other objects that may cause damage to aircraft.

13: PRONUNCIATION OF LETTERS

1. The following is how letters are pronounced over RTF. We pronounce for example ‘D” as Delta over the RTF to prevent ambiguity from other letters. Letter ‘D’ is often mixed-up letter ‘B’ therefore Delta and Bravo are used accordingly.

LETTER	WORD	PRONUNCIATION IN ENGLISH
A	ALFA	AL FAH
B	BRAVO	BRAH VOH
C	CHARLIE	CHAR LEE
D	DELTA	DELL TAH
E	ECHO	ECK OH
F	FOXTROT	FOKS TROT
G	GOLF	GOLF
H	HOTEL	HOH TELL
I	INDIA	IN DEE AH
J	JULIET	JEW LEE ETT
K	KILO	KEY LOH
L	LIMA	LEE MAH
M	MIKE	MIKE
N	NOVEMBER	NO VEM BER
O	OSCAR	OSS CAR
P	PAPA	PAH PAH
Q	QUEBEC	KEY BECK
R	ROMEO	ROW ME OH
S	SIERRA	SEE AIR RAH
T	TANGO	TANG GO
U	UNIFORM	YOU NEE FORM
V	VICTOR	VIK TAH
W	WHISKEY	WISS KEY
X	X-RAY	ECKS RAY
Y	YANKEE	YANG KEY
Z	ZULU	ZOO LOO

14. TRANSMISSION OF DIGITS

1. Every digit of a number is normally spoken separately up to 3 digits. '20' is spoken as "two zero" and '150' is spoken as "one five zero".

2. If the number is 4 digits, each digit is spoken separately. For example, '3000' is spoken as "Three Thousand"

3. A Decimal Point within a number is indicated by the word 'Decimal' (pronounced as 'day-see-mal'). For example, the frequency '122.9Mhz' is pronounced as "one two two decimal niner".

THE FOLLOWING WORDS ARE USED WHEN TRANSMITTING SINGLE DIGITS

15: RADIOTELEPHONY CALLSIGNS (EXAMPLES)

NUMBER	WORDS	NUMBER	WORDS
0	ZERO	5	FIFE*
1	WUN	6	SIX
2	TOO	7	SEVEN
3	TREE	8	AIT
4	FOWER	9	NINER*

*Note – 5 & 9 are spoken as "FIFE" & "NINER" respectively as they are easily confused when spoken normally.

CALLSIGN SUFFIX	IDENTIFICATION
SELETAR GROUND	**Seletar Air Traffic Control responsible for ground movements**
SELETAR TOWER	**Seletar Air Traffic Control responsible for runway movements**
MOBILE 4	**Airport Operations Rover**

16: STANDARD WORDS AND PHRASES

The following words and phrases shall be used in RT communication as appropriate.

WORDS/PHRASE	MEANING
ACKNOWLEDGE	Let me know that you have received and understood this message
AFFIRM	Pronounced as **A – FIRM.** Yes, what you said is correct
APPROVED	Permission for proposed action granted
BREAK	I hereby indicate the separation between portions of the message. (To be used where there is no clear distinction between the text and other positions of the message)
BREAK BREAK	I hereby indicate the separation between messages transmitted to different aircraft in a very busy environment
CANCEL	Annul the previously transmitted clearance
CLEARED	Authorized to proceed under the conditions specified
CONFIRM	a) Have I correctly received the following? b) Did you correctly receive my message?

CONFIRM	**a) Have I correctly received the following?** **b) Did you correctly receive my message?**
CONTACT	Establish radio contact with ….
CORRECT	That is correct
CORRECTION	An error has been made in this transmission. The correct version is……
DISREGARD	Consider that the transmission was not sent
WORDS/PHRASE	MEANING
GO AHEAD	Proceed with your message Note: The phrase Go Ahead is not to be used in surface movement communications. Use the phrase “Pass your message” instead.

HOW DO YOU READ	**What is the readability of my transmission**
I SAY AGAIN	I repeat for clarity or emphasis
MONITOR	Listen out on (frequency)
NEGATIVE	No or Permission not granted or that is not correct
OUT	This exchange of transmission is ended and no response is expected, Note: The word OUT is not normally used in civil VHF communications
OVER	My transmission is ended and I expect a response from you Note: The word OVER is not normally used in civil VHF communications
READ BACK	Repeat all, or the specified part, of this message back to me exactly as received
RECLEARED	A change has been made to your last clearance, and this new clearance supersedes your previous clearance or part thereof

REPORT	**Pass me the following information**
REQUEST	I should like to know … or I wish to obtain…
ROGER	I have received all of your last transmission
SAY AGAIN	Repeat all, or the following part of your last transmission
SPEAK SLOWER	Reduce your rate of speech
STANDBY	Wait and I will call you
WILCO	Received and will comply

17: REQUIREMENTS TO OBTAIN CAT 1/1R ADP FOR DRIVERS ENTERING MANOEUVRING AREAS

APPLICANTS MUST:

1. Have held a Seletar Airport Airfield Driving Permit (ADP) for a minimum of 3 months.
2. Provide the following support documents through a formal request from Changi Airport Group (Seletar Airport):

a) Justification why a **CAT 1/1R** ADP is required that includes an official endorsement by a CAG division/ unit, Airport Emergency Services or a licensed Seletar Airport Ground Handling Agent.

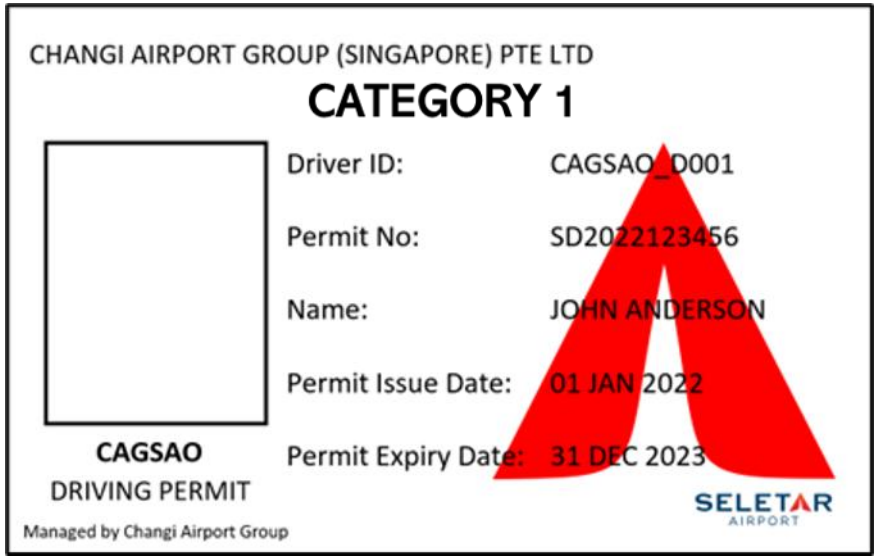
b) Certified record demonstrates the completion of 6 familiarization trips (4 day and 2-night trips) with a Seletar Airport **CAT 1/1R** ADP holder.

3. Have attended a course that covers contents stipulated in this handbook.

4. Pass a written test, oral and an airfield practical test that includes the Runway or Taxiway.

5. Upon satisfying all the conditions stated above, successful applicants will obtain an endorsement on their existing Seletar Airport ADP.
(Refer to illustration below)

DURING THE PRACTICAL TEST, ENTRY INTO RUNWAY/TAXIWAY ARE SUBJECTED TO CLEARANCE FROM SELETAR GROUND



18: REQUIREMENTS FOR INSTALLATION OF RADIO TELEPHONY (RT) SETS IN VEHICLES ENTERING THE MANOEUVRING AREAS

1. The vehicle must possess a valid Seletar Airport Airfield Vehicle Permit (AVP).
2. The vehicle owner shall request formally for an RT set to be installed in the vehicle from Changi Airport Group (Seletar Airport).
3. The vehicle owner shall formally request for a call sign from Changi Airport Group (Seletar Airport).
4. The vehicle's entire body shall be painted yellow.

19. OTHER REQUIREMENTS FOR CAT 1/1R AVP VEHICLES ENTERING MANOEUVRING AREAS

1. A warning sign (Not smaller than 15mm tall by 10mm in width) to be displayed on dashboard so that it is conspicuous to the driver.

NO ENTRY INTO RUNWAY/TAXIWAY WITHOUT CLEARANCE FROM
SELETAR AIR TRAFFIC CONTROL (ATC)
SELETAR GROUND 122.9 MHz
SELETAR TOWER 118.45 MHz

- A set of yellow flashing lights shall be fitted on top of the vehicle. (Refer to AVP application form for details)
- The call sign must be black, each letter no smaller than 60cm tall and 45cm wide positioned on the vehicle's roof or vehicle's hood.
- A copy of the Works Order on radio installation must be submitted to Seletar Airfield Driving Centre during CAT 1/1R AVP application.
- Once the CAT 1/1R AVP is issued, it should be prominently displayed on the left-hand side of the vehicle's wind screen.
- Prior to the initial issuance of the permit, the vehicle is to be inspected by Seletar Airfield Driving Centre for compliance.
- A vehicle issued with an AVP is required to always carry an updated airfield map in the vehicle. Refer to the map if you are unsure of your position.
- The driver is to use the RT set according to procedures stipulated in this handbook



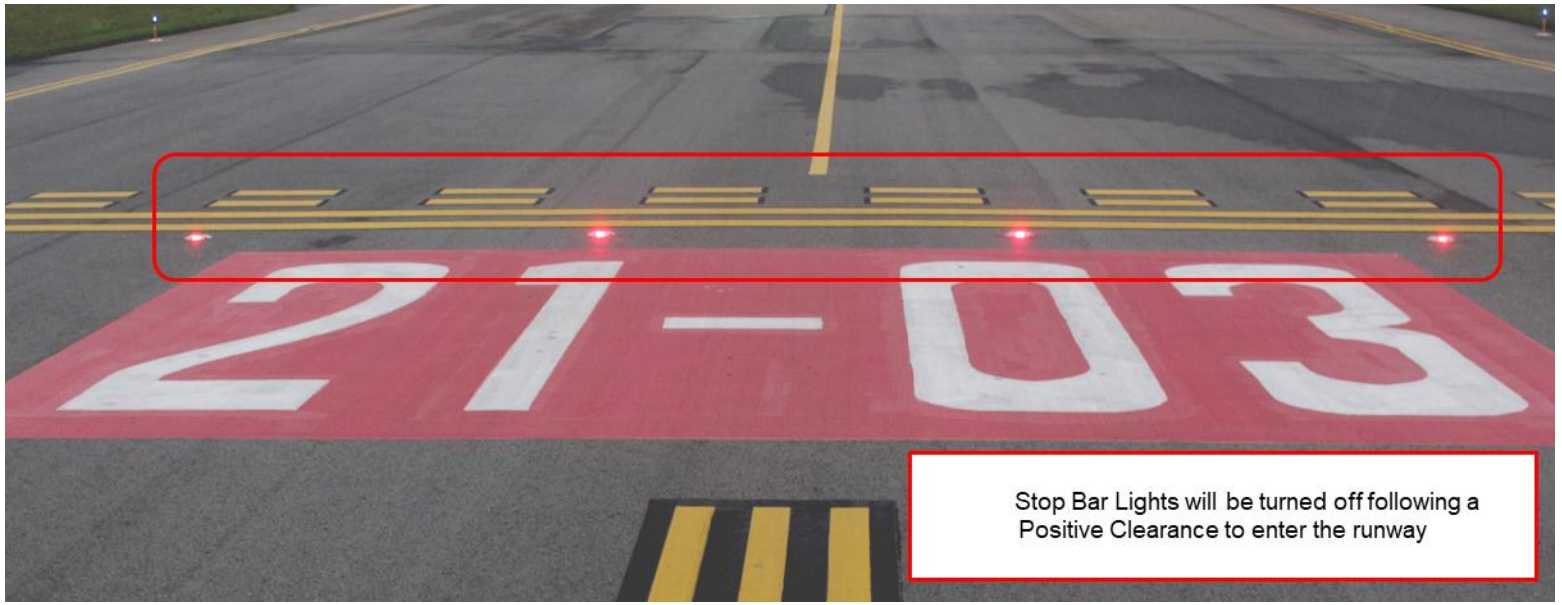




Call sign in black and Yellow Flashing Light on the vehicle's roof or bonnet.

20: IMPORTANT POINTS TO REMEMBER WHEN WORKING IN THE MANOEUVRING AREA

1. Never leave your vehicle unattended.
2. Leave your RT set on and maintain a listening watch on 122.9Mhz at all times.
3. Faulty RT sets must be rectified before proceeding to the airfield. Always conduct readability checks before use.
4. Do not enter the Taxiway until you have received a positive clearance from Seletar Ground or Seletar Tower. If you are entering the runway from a Runway Holding Position, the respective Stop Bar will be turned off in conjunction with this positive clearance to enter the runway. You must ensure that both Positive Clearance is obtained and that the Stop Bar is turned off before proceeding. Confirm with Seletar Tower if you are not sure.



- After receiving clearance to enter the runway, it is good practice to scan both ends of the runway to ensure that there are no aircraft approaching the runway.
- When on the Runway or Taxiway it is the driver's responsibility to always lookout for aircraft taxiing and on tow.
- Always give way and stay clear of taxiing aircraft in the maneuvering area.
- When on the Runway, keep a lookout for aircraft at both ends of the Runway and its approach paths.
- After leaving the Runway or Taxiway, report to Seletar Tower or Seletar Ground that you have vacated the Runway or Taxiway.
- When asked by Seletar Ground to vacate the Runway, Taxiway do so promptly. If you have other staff working on the Runway, Taxiway it is your duty to expeditiously board staff onto your vehicle and vacate the Runway Taxiway as instructed.
- When the radio set becomes faulty while on Runway Taxiway and 2-way communications is lost with Seletar Tower, contact Seletar Tower Seletar Ground via cell phone and look out for flashing white light from the control tower cabin. Keep a constant look out for aircraft.
- All vehicles must be equipped with two-way radio communication system before entering the runway or taxiway. During a communication failure/emergency, ATC may use lights signals to give instructions to the drivers. Drivers should look out for the following light signals from the Seletar Control Tower cabin and react accordingly.

Light Gun Signals

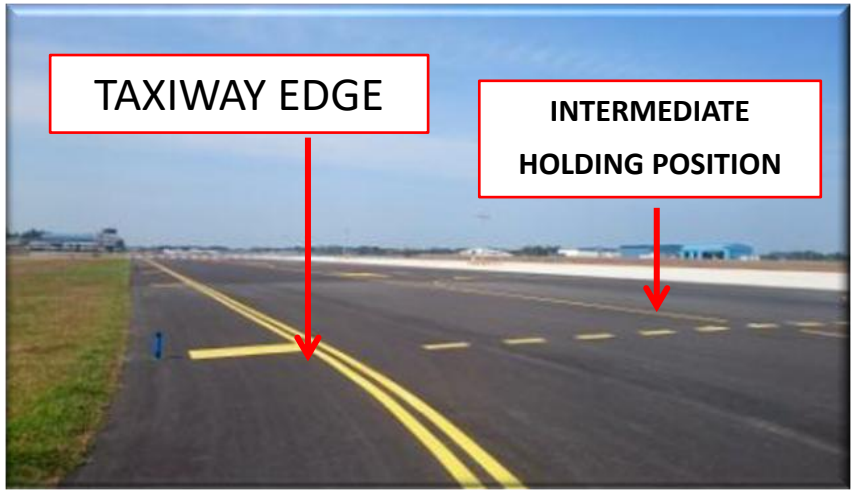
Colour and Type of Signal	Movement of Vehicles, Equipment and Personnel	Aircraft on the Ground	Aircraft in Flight
Steady green	Cleared to cross, proceed or go	Cleared for takeoff	Cleared to land
Flashing green	Not applicable	Cleared for taxi	Return for landing (to be followed by steady green at the proper time)
Steady red	Stop	Stop	Give way to other aircraft and continue circling
Flashing red	Clear the taxiway/ runway	Taxi clear of the runway in use	Airport unsafe, do not land
Flashing white	Return to starting point on airport	Return to starting point on airport	Not applicable
Alternating red and green	Exercise extreme caution	Exercise extreme caution	Exercise extreme caution

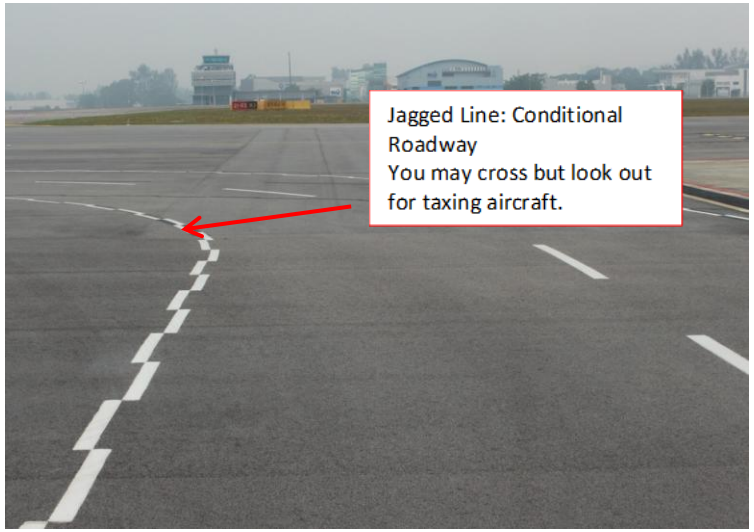
21: MARKINGS, LIGHTS AND SIGNS ON THE MANEUVERING AREA

The following are the markings, lights and signs found on the maneuvering area.

a) Markings







b) Lights

i) Taxiway Edge Lights (Blue),



ii) Taxiway Centre Lane Lights (Green)



iii) Runway Lights (White)



c) Signs

Taxiway Crossings

The “Give Way to Aircraft” sign painted on the roadway warns driver of taxiway crossing ahead and potential aircraft movement. Driver shall stop at the “STOP” marking and visually check that the area is clear of aircraft movement before moving onto the crossing.



ii) Direction and Location Signs

A direction sign – comprises an alpha or alphanumerical message identifying the taxiway(s) including arrows appropriately oriented. It consists of an inscription in black on a yellow background.



A location sign – Indicates the location of taxiway, runway or another pavement which the aircraft is on or is entering. It consists of an inscription in yellow on a black background.

Example 2:



Example 3:



iii) Designation Sign

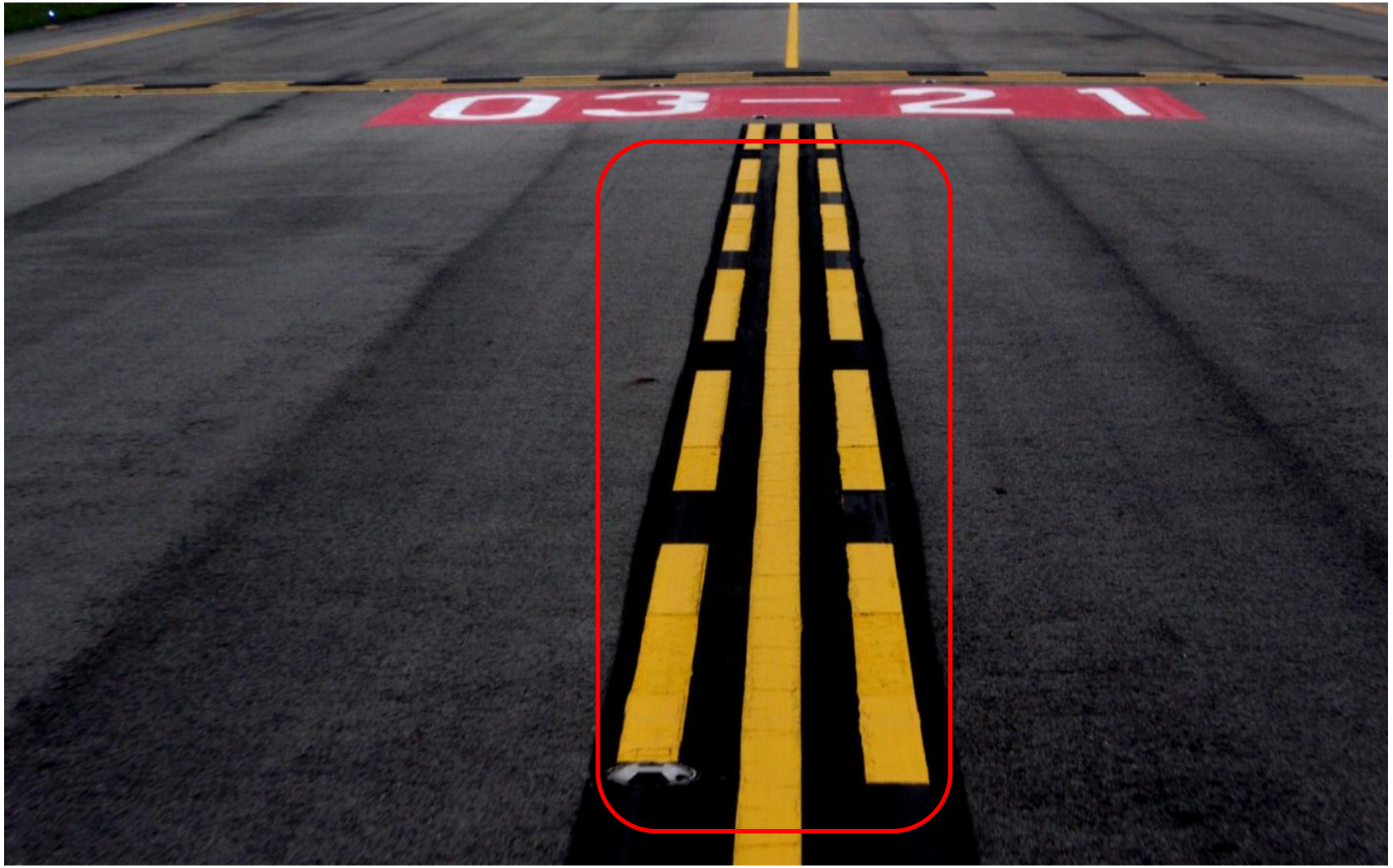


iv) Aircraft Holding Point Marking

Aircrafts B757 / C130 needs to shut down and wait for towing to parking stand or hangar.

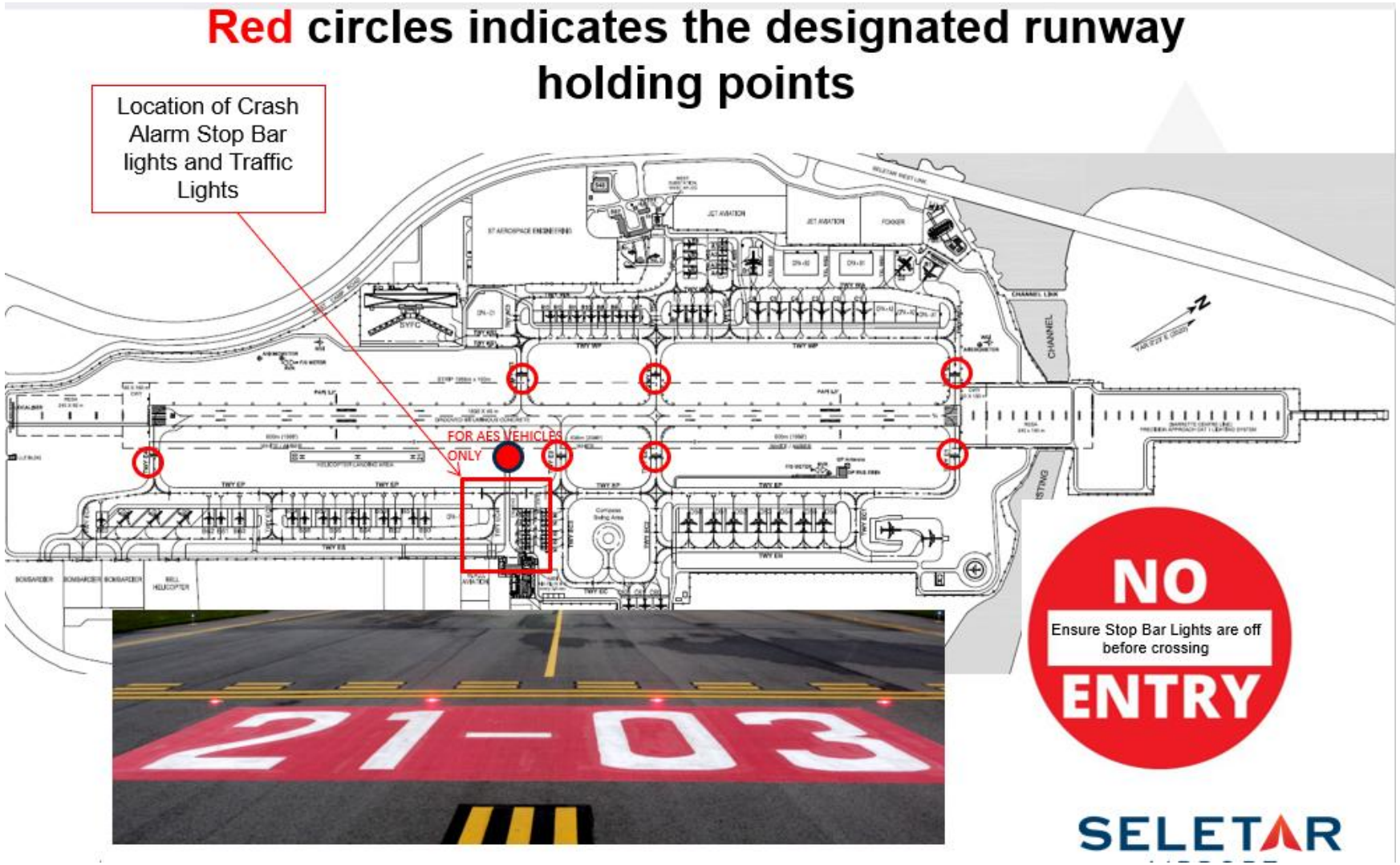


v) Enhanced Taxiway Center Line leading to a runway and Stop Bar marking




STOP BAR
2 SOLID & 2 BROKEN LINE
03

Vi) Runway holding position

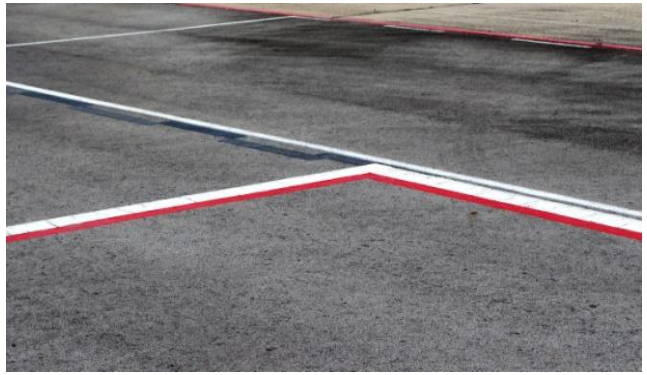


vii) Boundary Sign and Line

All personnel <u>shall not</u> cross beyond this sign or RED boundary line. It demarcates the boundary between the perimeter roadway and manoeuvering area, including turfed areas.







viii) No Entry Sign (Except with Air Traffic Control)

There are several entry points to the runway located on the perimeter roadway. Only authorized Drivers can operate a vehicle into these areas for inspections and maintenance works. Clearance from Seletar Tower is mandatory

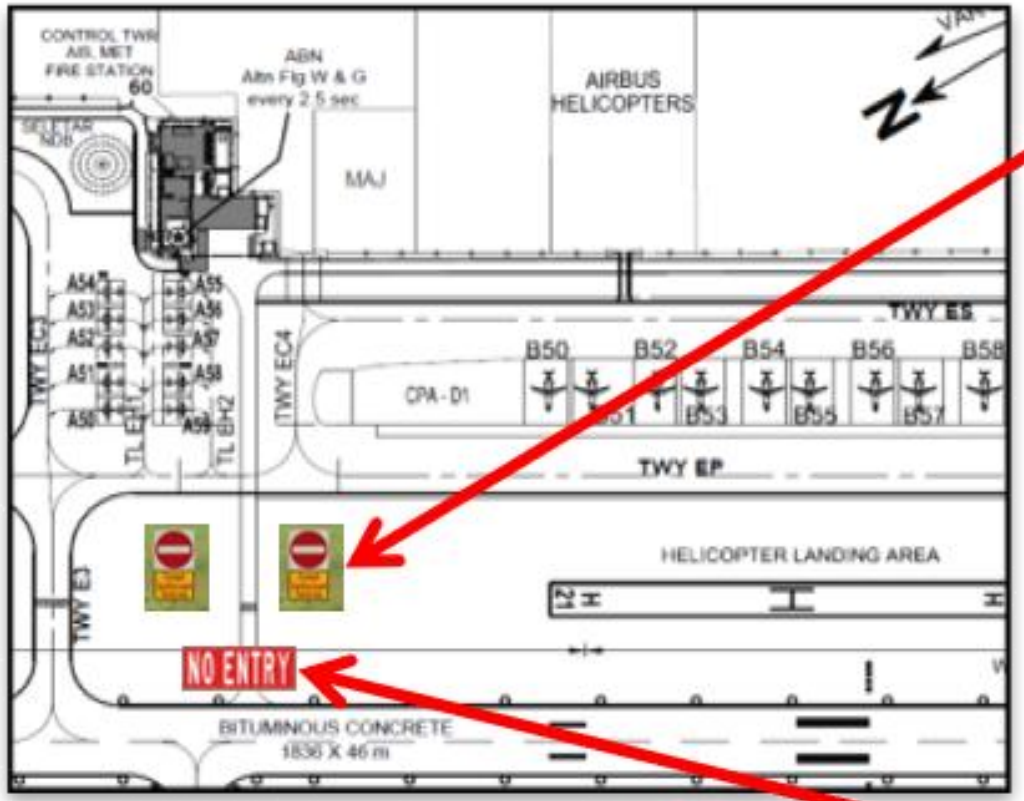






ix) No Entry Sign (Except Authorized Vehicles)

This sign is located along taxiway EP and is strictly for emergency vehicles to attend to incident at runway.





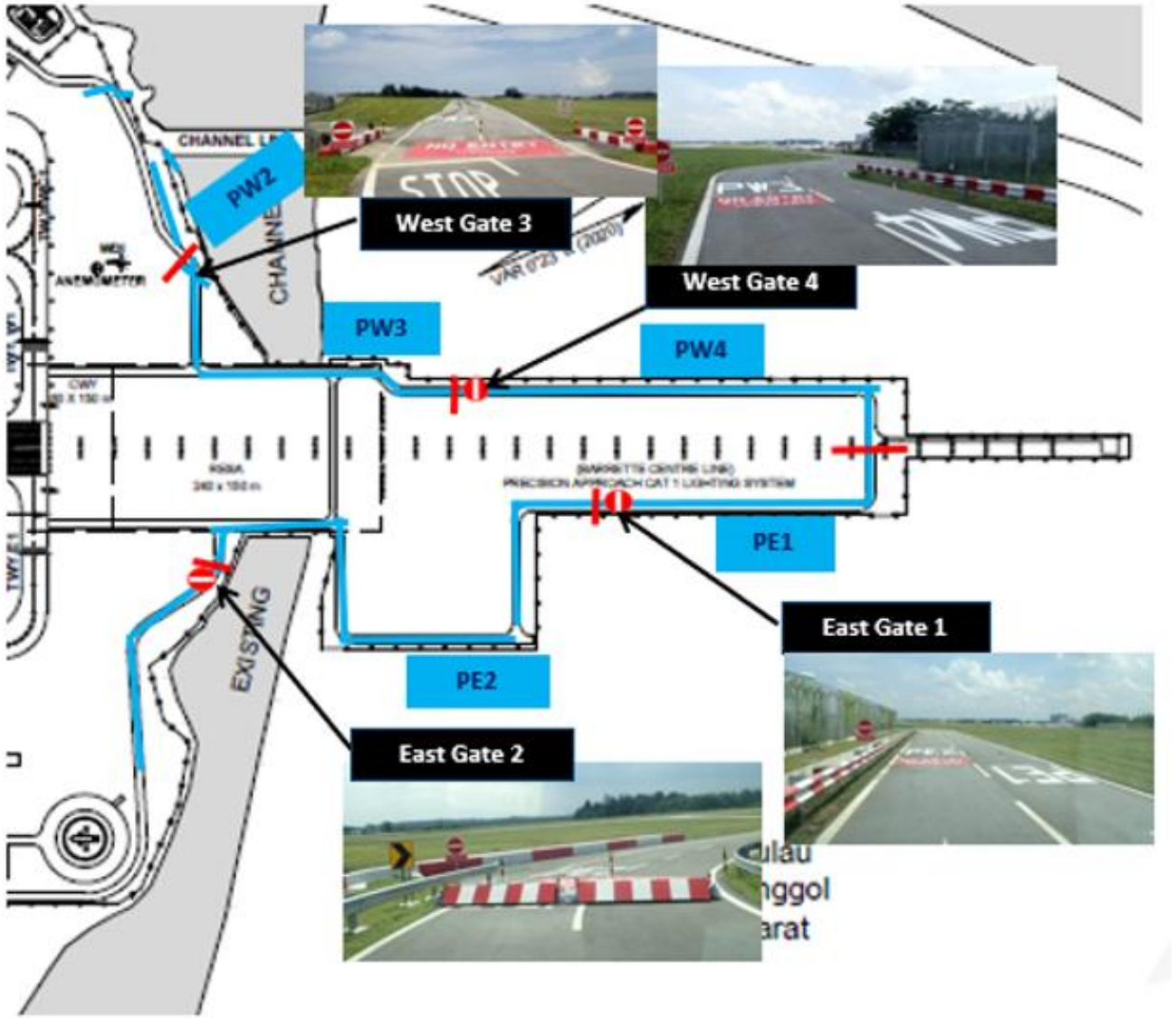


x) Marker Boards





22: Seletar Airside Northern Extension



Black boxes denote the road holding positions. Authorized users are to use these names to request entry into/ exit from the northern extension.

The roadway between West Perimeter 1 & 2 (PW3) and East Perimeter 1 & 2 (PE2) are part of the RESA and Glidepath critical areas accordingly. Therefore, users are to report clear once they have passed these points.

Example 1 :

Mobile 4: Seletar Ground, mobile 4 Location East Gate2 request to proceed to East Gate 1.

Seletar Ground: Proceed to East Gate 1. Report when clear.

Strengthening Vehicle Escort Practices – Escort Framework Purpose, Roles & Responsibilities

Drivers without a valid ADP shall be escorted at all times while operating a vehicle within the airside.

PURPOSE FOR VEHICLE ESCORT

Vehicle escort provides supervision and guidance for drivers who do not hold a valid ADP. As ADP holders are trained and certified to meet the airport's airside driving standards, they escort non-ADP drivers to support safe and compliant vehicle operations within the airside.

ROLES OF AN ESCORT DRIVER OR STEERSMAN

- ADP holders (including CAT 1 / CAT 1R) may serve as Escort Driver or Steersman
- An Escort Driver operating a vehicle with a valid AVP may lead a convoy of up to two escorted vehicles
- A Steersman providing direct guidance to a non-ADP driver shall only operate on airside roadways
- Brief escorted driver(s) on key airfield rules and regulations, such as mandatory use of high-visibility vest, compliance with stop lines and speed limits, FOD prevention, vigilance for aircraft taxing and on tow, and vehicle breakdown procedures
- Coordinate the route and destination using the latest aerodrome map, and establish a suitable communication method
- Ensure escorted vehicles has valid vehicle permits (AVP, CAT 1 AVP, TEP), unless exempted under CAG's procedures

RESPONSIBILITY OF AN ESCORT

- Ensure escorted driver(s) remain compliant and appropriately escorted while operating within the airside
- Plan the most direct and practical route, avoiding unnecessary diversions or stopovers; confirm the destination and stopping arrangements, and establish a suitable communication method
- Maintain continuous visual contact and prevent escorted vehicles from straying or separating from the convoy

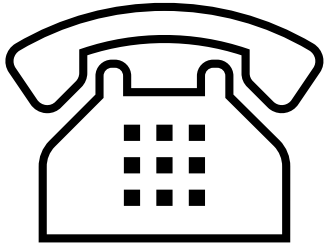
Exempted List of Vehicles (TEP Exempt)

1. Civil Defence Vehicles (Ambulance, Fire Vehicles)
2. Police Force Vehicles (SOC, SSC, SPF)
3. Private Ambulances, Hospital/Patient Transport
4. Auxiliary Police Vehicles (Certis, SATS Police, Aetos)
5. Military Vehicles (EOD, CBRE, People Defense Force)
6. Ministerial Vehicles
7. Tow Trucks
8. Undertaker / Hearse
9. Mobile Crane for Disabled Aircraft Recovery (DAR)

*All Vehicles will be Escorted by an ADP holder unless otherwise arranged. (Cat 1**/ 1R** ADP holder is required if access in Manoeuvring Area**/ Runway** is required.)

CONTINGENCIES

Useful Contact Numbers



1. Airport Emergency Services: 6481 3377
2. Seletar Airport Operations: 6481 5077
3. Seletar Tower: 6481 5076



In the Event of a Vehicle Breakdown

- Inform Seletar Airport Operations at 6481 5077 immediately to report location of the vehicle. If possible, ensure vehicle is not obstructing any aircraft path or other operations.
- For breakdown on aircraft manoeuvring area, inform Seletar ATC at 6481 5076.
- Initiate the removal of the broken down vehicle.
- Provide a marshal to direct traffic where necessary.
- Ensure vehicle is not left unattended.

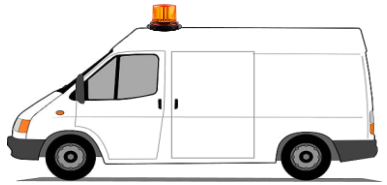
In the Event of an Errant Escorted Vehicle

- Immediately inform Seletar Airport Operations at 6481 5077 and provide the vehicle's location, direction of travel and relevant details.

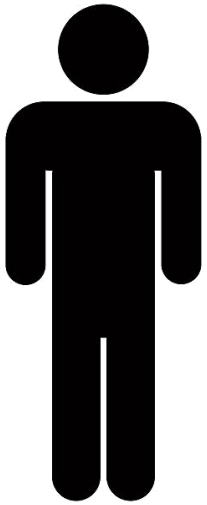
Steersman

<u>on Roadways ONlY</u>
NO TAXIWAY or RUNWAY entry allowed

NON-ADP DRIVERS



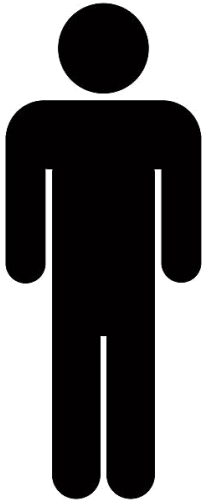
+



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ADP/CAT1 /CAT1R ADP HOLDER
STEERSMAN

+



1 Steersman
to 1 Vehicle

CAT 1 AVP Vehicle Escort

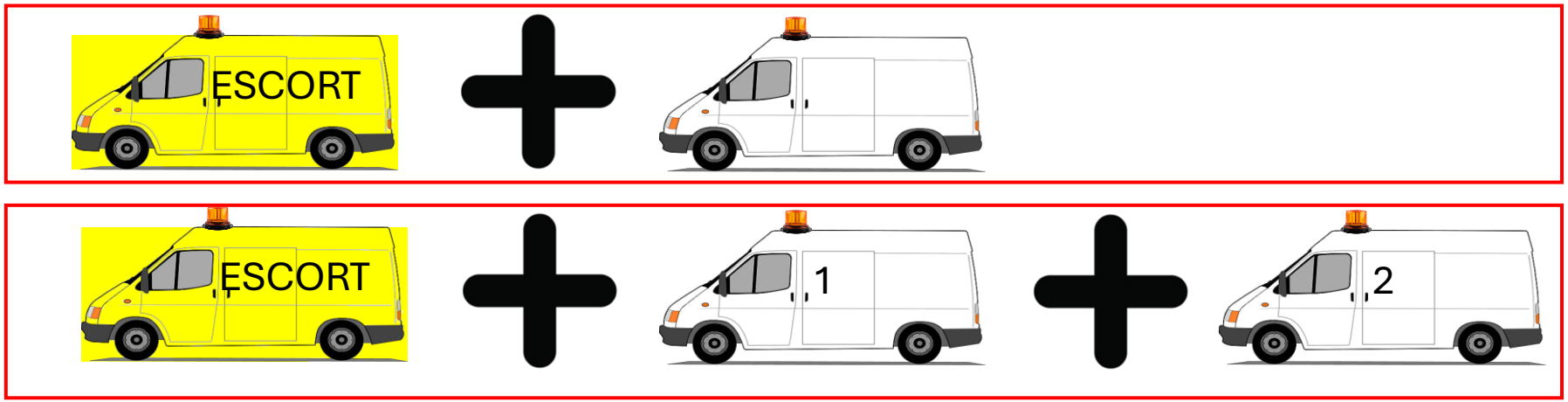
CAT 1 ADP HOLDER ESCORT
Allowed on ROADWAYS and TAXIWAYS only

CAT1R ADP HOLDER ESCORT
Allowed on ROADWAYS, TAXIWAYS and RUNWAY

What is allowed?

1. 01 CAT1/ CAT1R ADP driver driving CAT1 AVP vehicle escort 01 Non- ADP driver with vehicle.
2. 01 CAT1/ CAT1R ADP driver driving CAT1 AVP vehicle escort 02 Non- ADP driver with vehicle

NON-ADP DRIVERS



Up to 2 Vehicles can be escorted

Convoy Movement

Escort drivers shall ensure

- Continuous visual contact is maintained with all escorted vehicles
- Adequate clearance is available when the convoy crosses junctions or taxiways
- The convoy gives way to aircraft and other vehicles with right of way
- Traffic wardens or appropriate measures are deployed when the convoy requires right of way

What to Brief to Drivers under your Escort

All drivers being escorted shall be briefed prior to any vehicle movement on the following:

- Planned route to destination being taken by the convoy using latest Aerodrome Map
- Check that loose items are secured or removed to prevent FOD
- Procedures in the event of any vehicle breaking away from convoy
  - Remain on-site
  - Move to the side to avoid obstruction to other traffic
  - Switch on Hazard Light
  - Contact Escort Driver to inform of situation
- Contact Information of Escort Drivers to communicate exigencies
- It is an offence under CAAS Seletar Airport By-laws 2009, S41, for an unqualified driver to operate a vehicle within the airside.

Difference between CAT1 and CAT1R

- Taxiway Ops: 122.9MHz – Runway Ops: 118.45MHz
- CAT1 ADP holders can only operate on taxiways
- Entry into the runway requires CAT1R
- Entry into the Northern Extension requires CAT1R

CAT1R ADP is Required for entry to the RUNWAY & Northern Extension

SELETAR AIRPORT

Vehicular RT Set Requirements

- Current RT Set is only set to 122.9MHz
- For CAT1R – CAAS ATE needs to approve the use of 118.45Mhz for each Mobile/ Tug
- IMDA Licence is required for the use of 118.45MHz (for each vehicle/ base station)
- 2 Frequencies set in 1 RT Set
- CAT1 AVP - Current Procedures. RT Sets installed in vehicles intended for runway operations must be programmed with 118.45Mhz
- Must only be toggled and not tuned

Runway Incursion Prevention

- Drivers are required to undergo training to be able to drive in the runway (CAT1R ADP)
- Stop Bar Lights – illuminated
- RIPPLES
- Runway guard lights
- Controlled by ATC
- SRF

New RT Phrases

Monitor Switch frequency and wait for Seletar Tower/ Ground to call you

Contact Switch frequency, listen out and call Seletar Tower/ Ground

Clear to Land

Line Up

Clear for take off

Back Track RWY 03

Seletar Tower

SOP and Abnormal Ops

Normal Ops

1. Apply existing SOP to obtain clearance from Seletar Ground 122.9MHz for intended operations
2. Proceed to Runway Holding Point as instructed by Seletar Ground
3. You will be instructed to monitor/ contact 118.45MHz upon reaching the Holding Point Seletar Tower will contact you on 118.45MHz and give you further instructions to enter/ cross the runway
4. Aircraft Towing can proceed to cross the runway as instructed by ATC
5. Aircraft Towing - Upon completion of runway crossing report on 118.45MHz that you have vacated the runway. Seletar Tower will instruct you to contact 122.9MHz where further towing instructions will be provided
6. Maintenance, Friction and Inspection vehicles can only enter/ vacate the runway via TWY E3 unless otherwise instructed by ATC
7. Maintenance, Friction and Inspection must request to vacate the runway and report that they have vacated once the vehicle is completely clear. These vehicles can only enter/ vacate the runway via TWY E3 unless otherwise instructed by ATC

Abnormal Ops

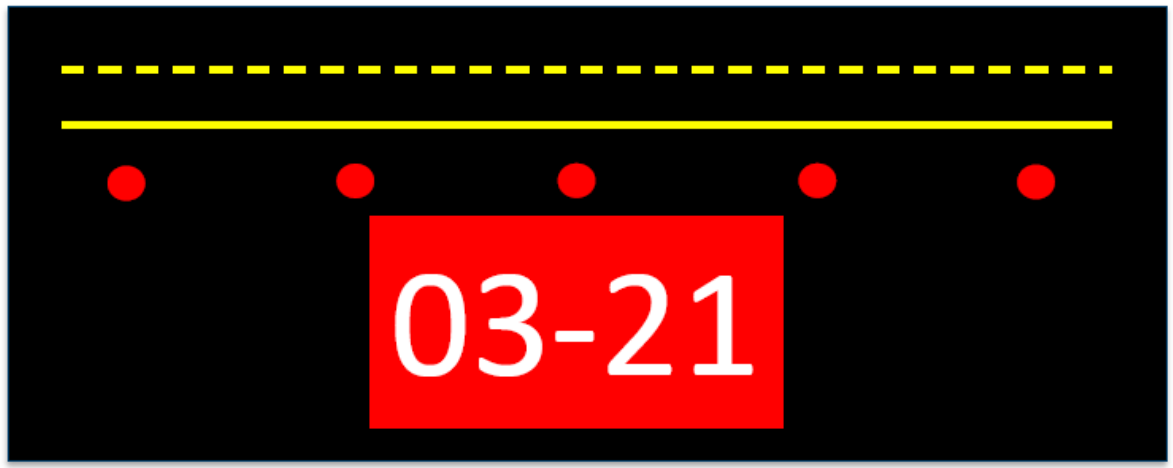
1. If you are monitoring 118.45MHz and receive no response. Assume "RT failure before entering the runway" – contact Seletar Ground on 122.9MHz to report situation
2. If no response contact ATC via mobile phone on 64815076
3. If you are on the runway experience a RT failure e.g. Unable to hear any transmissions, Transmit but no response – Perform a Radio Check. If still no response contact ATC via mobile phone on 64815076 to coordinate
4. When you report after vacating the runway but receive no response – Stay on 118.45MHz and contact ATC via mobile phone on 64815076 for instructions to return to 'Below Tower'.
5. Look out for flashing white light gun signal from the control tower
6. Inform the station that you are in contact with if your vehicle breaks down
7. Air tug RT failure at holding point – Escort by SAO

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Let's Refresh

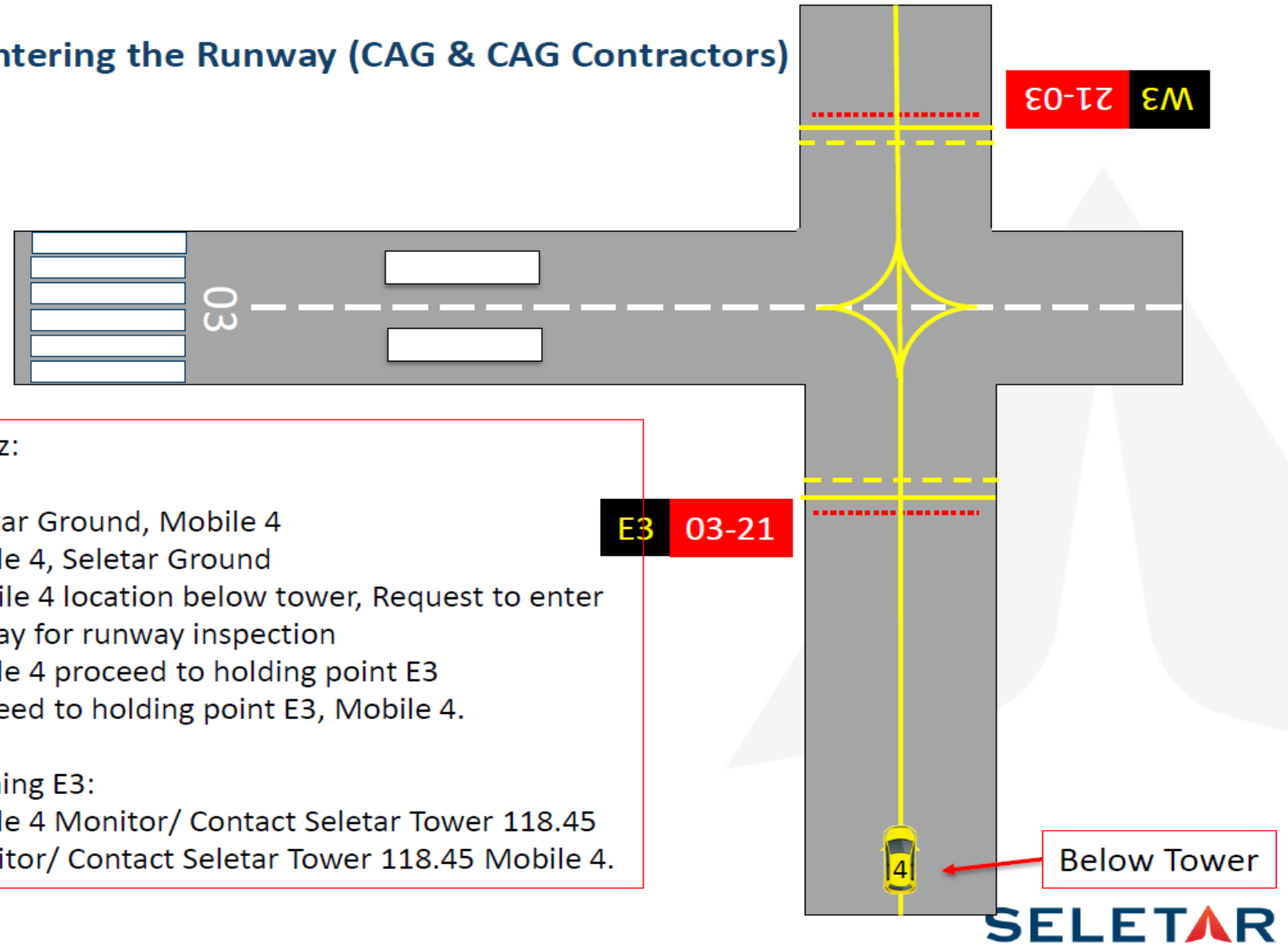
Guidance Signs and Marking







Before Entering the Runway (CAG & CAG Contractors)



122.9MHz:

M4: Seletar Ground, Mobile 4
SG: Mobile 4, Seletar Ground
M4: Mobile 4 location below tower, Request to enter the runway for runway inspection
SG: Mobile 4 proceed to holding point E3
M4: Proceed to holding point E3, Mobile 4.

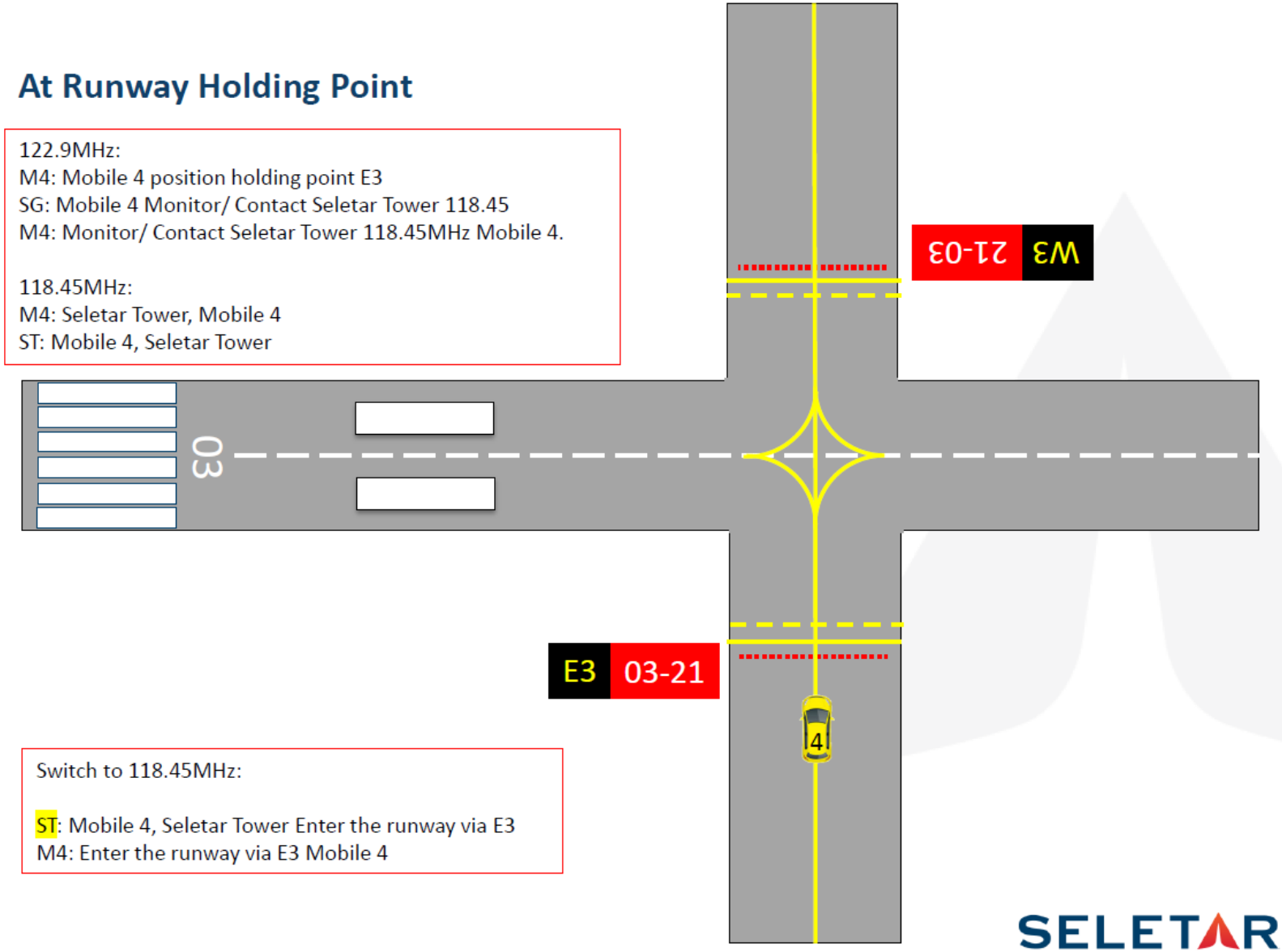
Approaching E3:
SG: Mobile 4 Monitor/ Contact Seletar Tower 118.45
M4: Monitor/ Contact Seletar Tower 118.45 Mobile 4.

SELETAR

At Runway Holding Point

122.9MHz:
M4: Mobile 4 position holding point E3
SG: Mobile 4 Monitor/ Contact Seletar Tower 118.45
M4: Monitor/ Contact Seletar Tower 118.45MHz Mobile 4.

118.45MHz:
M4: Seletar Tower, Mobile 4
ST: Mobile 4, Seletar Tower



Switch to 118.45MHz:

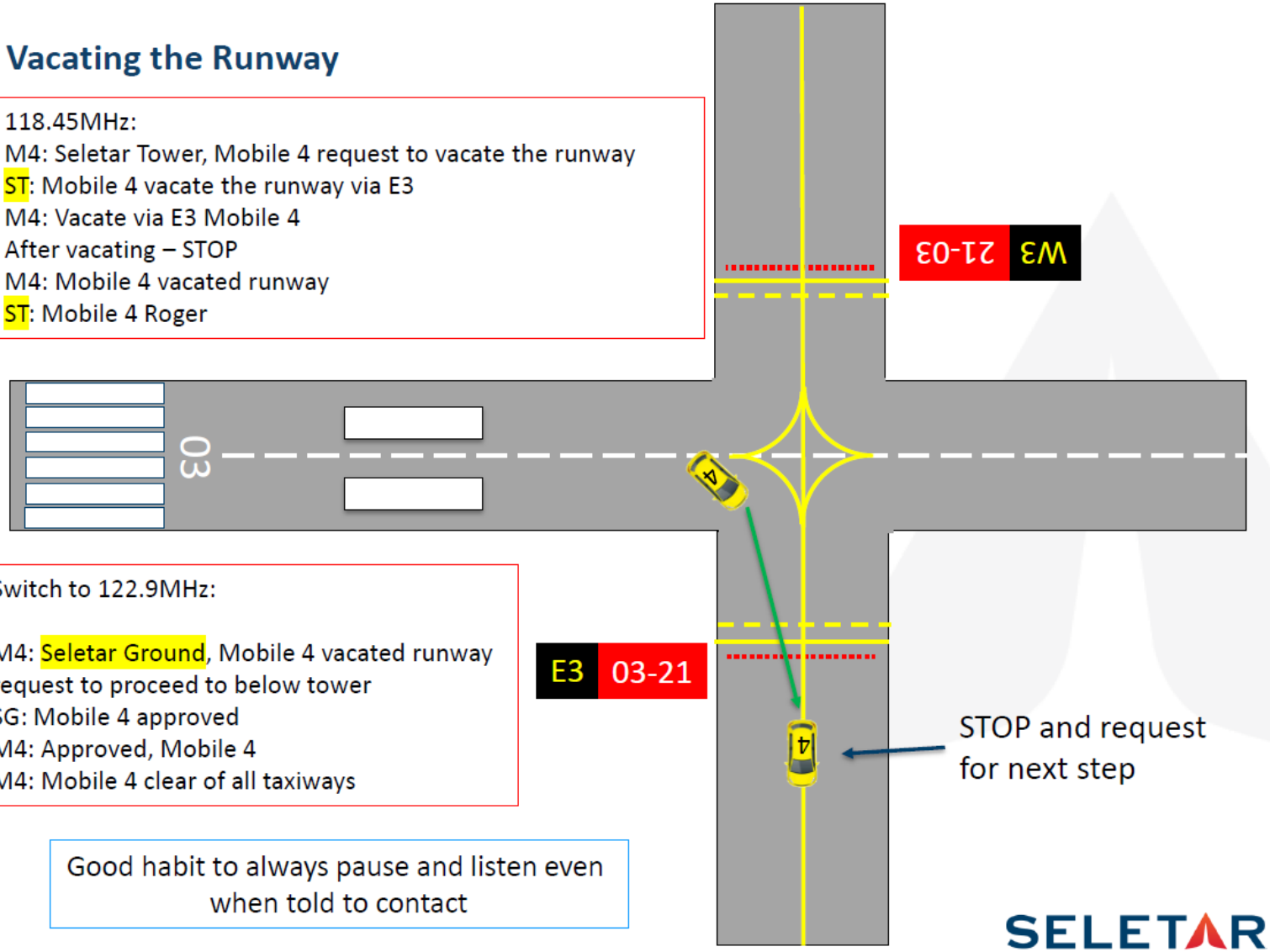
ST: Mobile 4, Seletar Tower Enter the runway via E3
M4: Enter the runway via E3 Mobile 4

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SELETAR AIRPORT

Vacating the Runway

118.45MHz:
M4: Seletar Tower, Mobile 4 request to vacate the runway
ST: Mobile 4 vacate the runway via E3
M4: Vacate via E3 Mobile 4
After vacating – STOP
M4: Mobile 4 vacated runway
ST: Mobile 4 Roger



Switch to 122.9MHz:

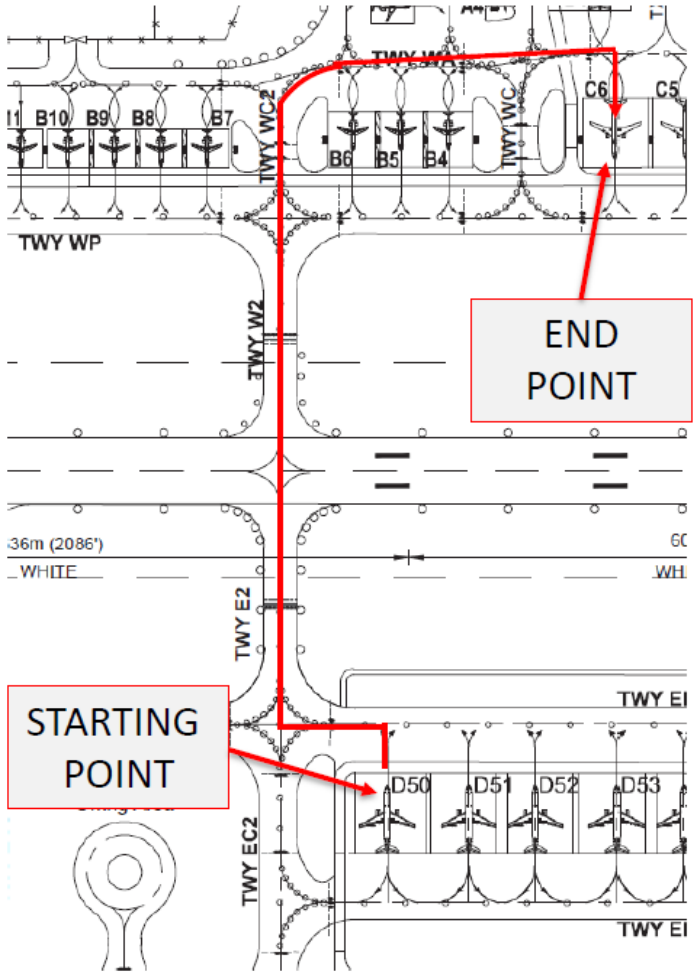
M4: Seletar Ground, Mobile 4 vacated runway request to proceed to below tower
SG: Mobile 4 approved
M4: Approved, Mobile 4
M4: Mobile 4 clear of all taxiways

Good habit to always pause and listen even when told to contact

SELETAR AIRPORT

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Aircraft Towing across Runway



122.9MHz
TUG: Seletar Ground Tow Tug 1
SG: Tow Tug 1 Seletar Ground
TUG: Tow Tug 1 current location stand D50, request to tow N1234X from stand D50 to C6
SG: Tow Tug 1 tow via EP Holding Point E2
TUG: Tow via EP Holding Point E2

Approaching/ At Holding Point E2:
SG: Tow Tug 1 monitor/ contact Seletar Tower 118.45
TUG: Monitor/ Contact Seletar Tower 118.45

118.45MHz
ST: Tow Tug 1 cross the runway vacate W2
TUG: Cross the runway vacate W2, Tow Tug 1

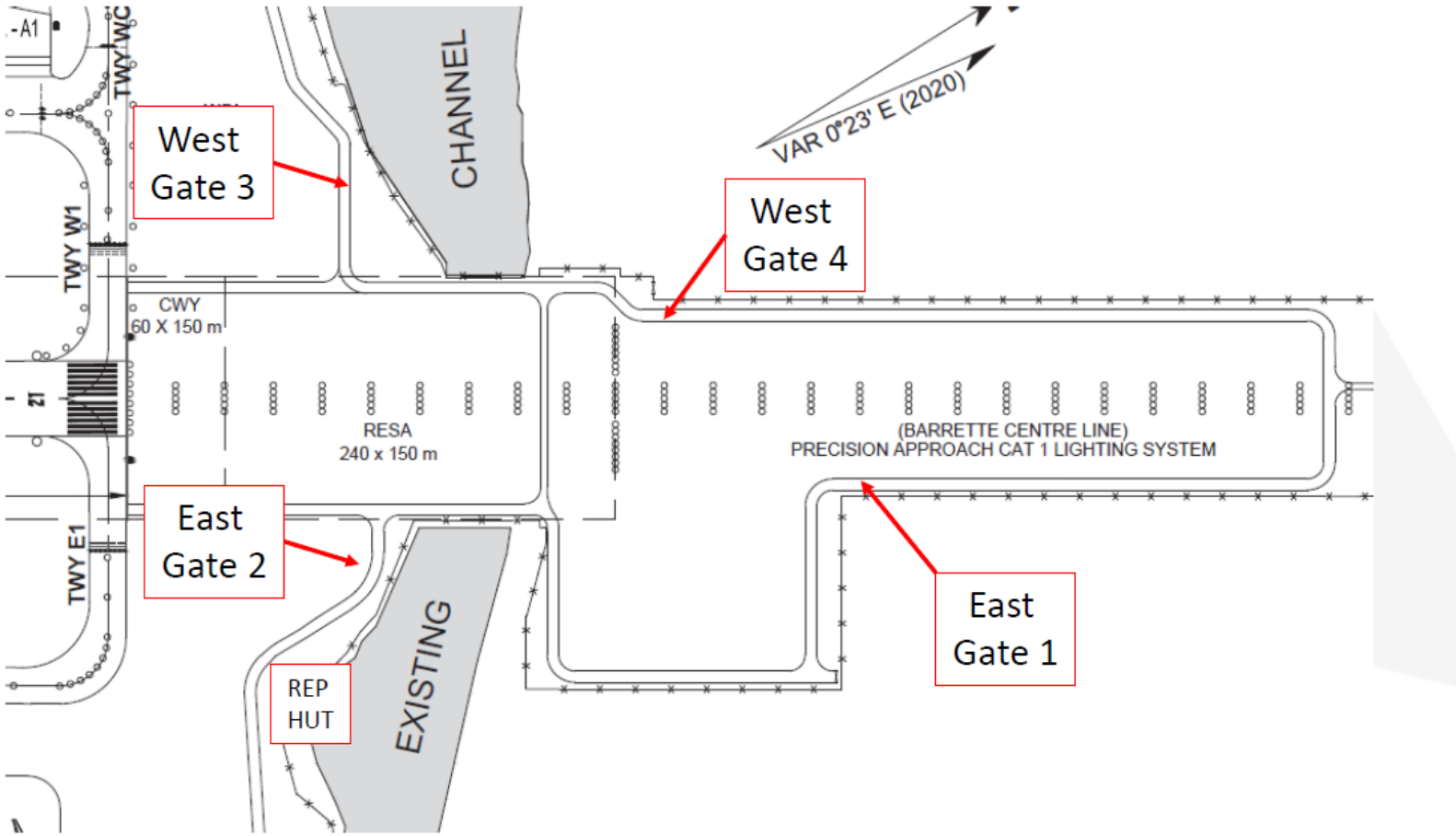
After arriving at W2
TUG: Seletar Tower Tow Tug 1 vacated runway location W2
ST: Tow Tug 1 Roger, Contact Seletar Ground 122.9
TUG: Contact Seletar Ground, 122.9 Tow Tug 1

122.9MHz
TUG: Seletar Ground Tow Tug 1
ST: Tow Tug 1 continue tow WC2, WA stand C6
TUG: Continue tow WC2, WA stand C6, Tow Tug 1
TUG: Tow Tug 1 towing completed stand C6

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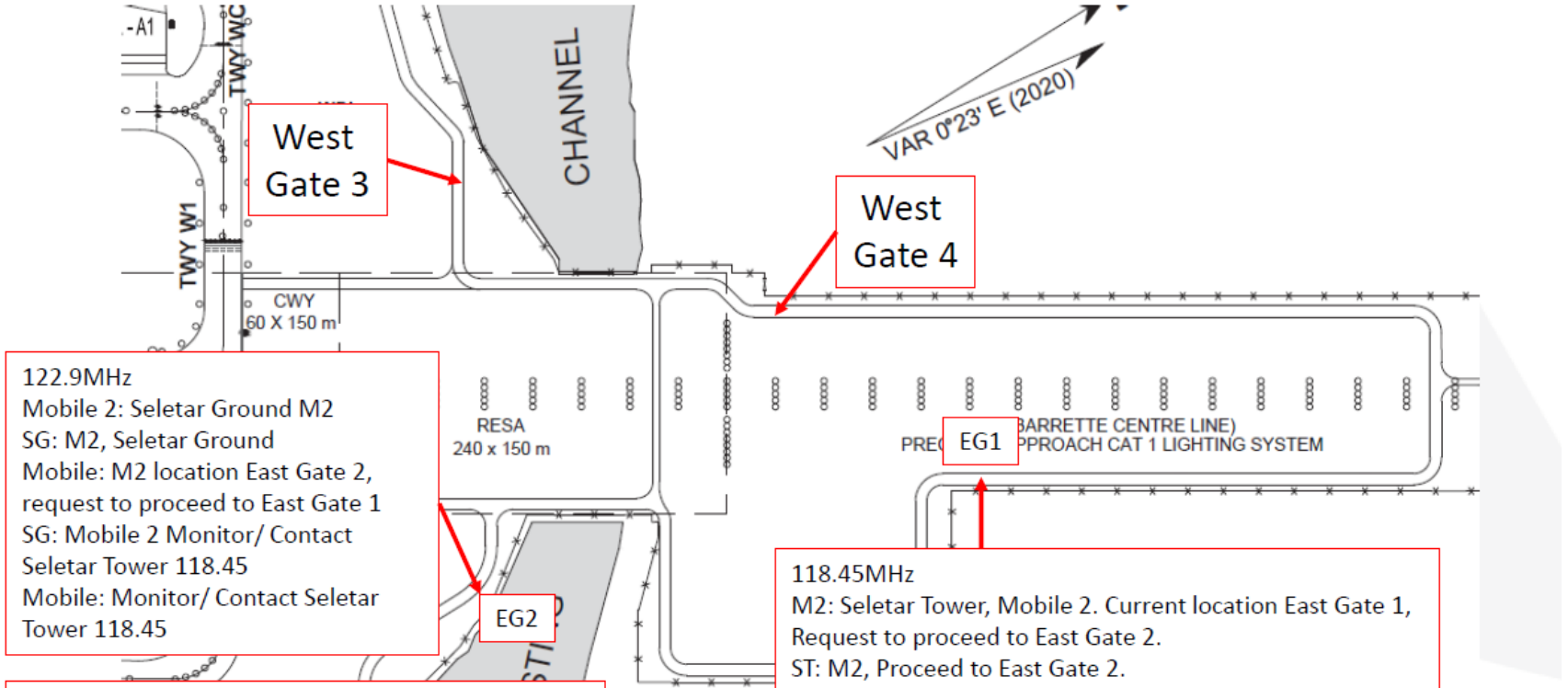
Northern Extension, Bridge Maintenance & AES Water Training



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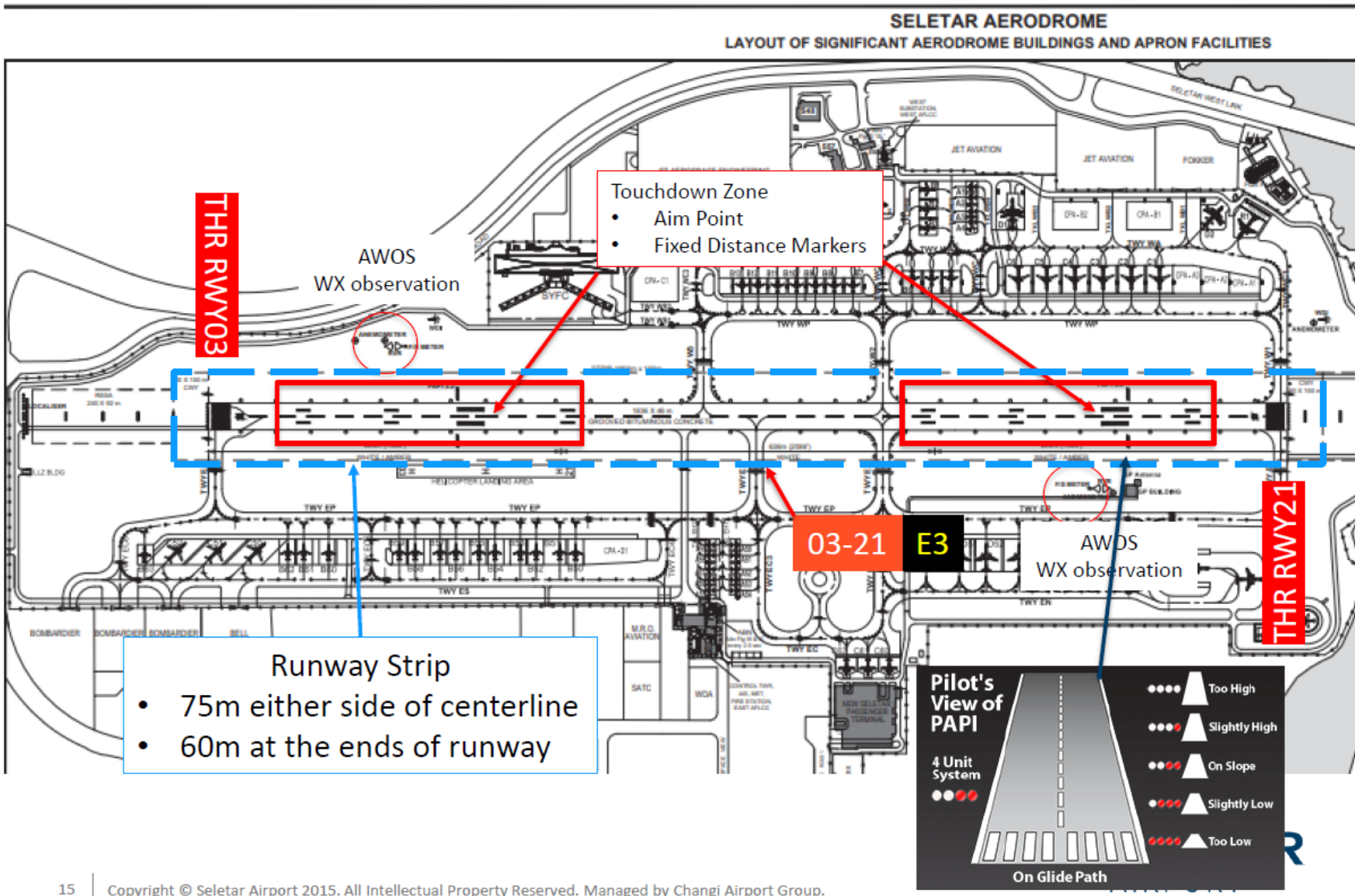
SELETAR AIRPORT

Northern Extension (For CAG, AES and Authorised Vehicles)



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THE END