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HIGH INTENSITY RUNWAY OPERATION (HIRO) AT KUALA LUMPUR INTERNATIONAL AIRPORT (KLIA)

1 INTRODUCTION

- 1.1 This Aeronautical Information Circular (AIC) is issued to provide guidance on the procedures and operations associated with High Intensity Runway Operation (HIRO) at Kuala Lumpur International Airport (KLIA).
- 1.2 The implementation of HIRO aims to enhance runway capacity, reduce delays, and improve overall efficiency of aircraft movements.

2 BACKGROUND

- 2.1 KLIA is one of the busiest airports in Southeast Asia. With the increasing volume of air traffic, it is imperative to optimize runway operations to minimise delays and maintain safety.
- 2.2 The HIRO procedures are designed to maximise runway utilisation and reduce the time aircraft occupy the runway.

3 HIRO PROCEDURES

3.1 Runway Configuration

- 3.1.1 KLIA operates with three parallel runways:
- Runway 14L/32R
 - Runway 14R/32L
 - Runway 15/33
- 3.1.2 During HIRO, all runways will be used with any two simultaneous departures and landings to optimise capacity. When HIRO is in force, ATC will inform all stakeholders via ATIS (**Phrase: "High Intensity Runway Operation in force. Minimum Runway Occupancy Time Required"**) or via RTF.

3.2 Arrival Aircraft

- 3.2.1 The speed restriction of 250 KT IAS below 10 000 FT is now applicable unless ATC issues the instruction "maintain high speed".
- 3.2.2 Pilot cleared to proceed on RNP1 STAR and published Instrument Approach Procedure shall comply with speed restriction reported on applicable coding table.
- 3.2.3 Pilot shall maintain speed 160 KT IAS at 10 NM until 5 NM to touchdown.

3.2.4 Speed Limitation Points When STAR Is Cancelled:

3.2.4.1 Pilots shall adopt the following speeds when notified that the STAR is cancelled:

a) Under radar vectors:

- i. 185 KIAS on turning to intercept the localizer;
- ii. 160 KIAS from 10NM until 5NM to touchdown.

b) Own navigation to intercept the final approach track:

- i. 185 KIAS 15 track miles from touchdown;
- ii. 160 KIAS from 10NM until 5NM to touchdown.

3.2.4.2 ATC may issue other speeds to achieve a more accurate spacing, e.g. 220 KIAS prior to base turn.

3.2.5 Cancellation of Speed Restrictions.

3.2.5.1 Pilots need not adopt the speed restrictions at the speed limitation points when they are issued a "No ATC Speed Restriction" clearance by ATC.

3.2.6 Arriving aircraft that are unable to comply with the speed restriction must inform ATC. Pilots who are unable to comply with the requirement and do not inform ATC will result in its approach clearance being cancelled and re-sequenced for landing.

3.2.7 Pilot shall utilise Rapid Exit Taxiways (RETs) to vacate the runway quickly and safely. KLIA has designated RETs strategically located to facilitate rapid clearance.

3.2.8 During HIRO, pilots shall vacate the runway via the rapid exits and must vacate the landing runway within **60 seconds**.

3.2.9 The runway occupancy time (ROT) is observed between the time aircraft overflies the runway threshold and the time it has vacated the runway.

3.2.10 Below is the distance to turn off for taxiway exits;

RUNWAY	AIRCRAFT TYPE	TAXIWAY EXITS (*Preferred Exit)	DISTANCE TO TURN-OFF (M)
14L	All	A06*	2065
		A07	2574
14R	All	C07*	2048
		C08	2500
15	All	Y06*	2182
		Y07	2632
32R	All	A05*	2070
		A04	2520
32L	All	C06*	2050
		C05	2507
		P04* (Aircraft to T2)	3030
33	All	Y05*	2180
		Y04	2630

3.2.11 Once vacated, aircraft are required not to stop on the Rapid Exit Taxiways (RETs) awaiting instructions from ATC but to proceed with taxiing according to the established procedures, unless otherwise instructed by ATC.

3.3 Departing Aircraft

3.3.1 Pilots shall complete all checklists to minimise time on the runway. When the Departure Clearance is issued by ATC, pilot shall commence the take-off roll without unnecessary delay.

3.3.2 An aircraft that receives a clearance to line up conditional on another aircraft's departure shall remain behind that aircraft. The aircraft may start entering the runway after the receipt of such conditional line-up clearance when the departing aircraft on the runway passes it. However, the pilot must be cautious of the possible blast hazard as the aircraft on the runway will apply power. An example of such conditional clearance is **“VDN3650, after the departing B737, line up Runway 32R via A10 behind”**.

3.3.3 Below is the Take-Off Run Available (TORA) following to the taxiway intersections:

RUNWAY	TAXIWAY INTERSECTION	TORA (M)
14L	THRESHOLD	4019
	A02	3604
	A03	2832
	A04	2520
14R	THRESHOLD	4000
	C02	3887
	P02	3839
	C03	3566
	P03	3519
	C04	2820
15	THRESHOLD	3960
	Y02	3505
	Y03	3400
	Y04	2630
32R	THRESHOLD	4019
	A10	3954
	A09	3634
	A08	2887
32L	THRESHOLD	4000
	C10	3585
	C09	2812
	C08	2500
33	THRESHOLD	3960
	Y08	3827
	Y07	2632

- 3.3.4 Pilots that are unable to comply with the requirements above should notify ATC on the Tower frequency as soon as possible.
- 3.3.5 In order to maximise runway capacity, departing aircraft will be sequenced for take-off based on, but not limited to, the following factors:
- a) Aircraft's readiness to take off,
 - b) Aircraft performance category, and
 - c) ATFM measures being applied.

4 Limitation of HIRO

- 4.1 HIRO is not applicable during:
- a) Adverse weather condition;
 - b) When the runway condition is not dry and poor runway braking action;
 - c) When there is a closure on RET;
 - d) Unserviceable of visual aids;
 - e) Congested taxiway or apron areas;
 - f) Low visibility conditions; and
 - g) Emergency situations (HIRO may be suspended to prioritise safety and allow for emergency response actions).

5 SAFETY CONSIDERATIONS

5.1 Monitoring and Feedback

A continuous monitoring of HIRO operations to identify and address any safety concerns shall be carried out by all stakeholders. Pilots and ATC are encouraged to provide feedback on HIRO procedures for ongoing improvement.

5.2 Emergency Procedures

In the event of an emergency, standard emergency procedures will take precedence over HIRO protocols.

6 CONCLUSION

The implementation of High Intensity Runway Operation (HIRO) at Kuala Lumpur International Airport (KLIA) is a collaborative effort to enhance runway capacity and operational efficiency. All stakeholders are expected to adhere to the procedures outlined in this circular to ensure safe and efficient operations.

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