

WMKK AD 2.1 AERODROME LOCATION INDICATOR AND NAME

WMKK - KL INTERNATIONAL / SEPANG

WMKK AD 2.2 AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	ARP coordinates and site at AD	LAT 024436 N LONG 1014153E Site: RWY 14R threshold centerline.
2	Direction and distance from city	Bearing 180 deg/43 KM from Kuala Lumpur.
3	Elevation / Reference temperature	[WGS84] 21.15M (70 feet) / 32° C
4	Geoid Undulation (ARP)	-2.859 M
5	MAG VAR / Annual change	07 min 12 sec East (2008)
6	AD Administration, address, telephone, telefax, telex, AFS	Operator : Malaysia Airports Berhad. Malaysia Airports (Sepang) Sdn. Bhd. KL International Airport 64000 KLIA Selangor Darul Ehsan. Tel : 603 - 87769106 Fax : 603 - 89265012 ATC Services : Department of Civil Aviation Malaysia Air Traffic Control Tower Complex KL International Airport 64000 KLIA Selangor Darul Ehsan Tel : 603 - 87874118 (General Office) 603 - 87874230 (ATC Tower) Fax : 603 - 89265989 (General Office) 603 - 89265758 (ATC Tower) AFS/AFTN : WMKKZTX
7	Types of traffic permitted (IFR/VFR)	IFR category : Approved international and domestic flights. VFR category : Approved helicopter operations.
8	Remarks	Nil

WMKK AD 2.3 OPERATIONAL HOURS

1	AD Administration	H24
2	Customs and immigration	H24
3	Health and sanitation	H24
4	AIS Briefing Office	H24
5	ATS Reporting Office	H24
6	MET Briefing Office	H24
7	ATS	H24
8	Fuelling	PETRONAS Refuelling : H24 SHELL Refuelling : H24 ESSO Refuelling : H24
9	Handling	Prior arrangement.
10	Security	H24
11	De-icing	Not available
12	Remarks	Nil

WMKK AD 2.4 HANDLING SERVICES AND FACILITIES

1	Cargo handling facilities	Forklift max 6 tonnes. Up to 20 tonnes handling capability.
2	Fuel types	Jet A1, AVGAS
3	Fuelling facilities / capacity	Hydrant refuelling.
4	De-icing facilities	Not avbl.
5	Hanger space available for visiting aircraft	2 x B747 and 2 x B737
6	Repair facilities for visiting aircraft	Commercial aircraft up to and including B747.
7	Remarks	Handling svcs avbl H24 & by prior arrangement with the aerodrome administration.

WMKK AD 2.5 PASSENGER FACILITIES

1	Hotels	At the airport and in the City.
2	Restaurants	At the airport and in the City.
3	Transportation	Trains, buses, taxis and car for hire from the Airport.
4	Medical facilities	First aid at the Airport. Hospitals in the City
5	Bank and Post Offices	At Airport. Open within Airport HR.
6	Tourist Office	At the Terminal Building.
7	Remarks	Nil

WMKK AD 2.6 RESCUE AND FIRE FIGHTING SERVICES

1	AD category for fire fighting	CAT 9
2	Rescue equipment	Type of Vehicles : a) Ultra Large Foam Tender (Z8) (7 units) b) Water Tender (2 units) c) Rescue Vehicle (1 unit) d) Mobile Command Post (1 unit) e) Turntable Ladder (TTL) (1 unit)
3	Capability for removal of disabled aircraft	Lifting bags and hydraulic jacks avbl.
4	Remarks	Nil

WMKK AD 2.7 SEASONAL AVAILABILITY - CLEARING

NOT APPLICABLE

WMKK AD 2.8 APRONS, TAXIWAYS AND CHECK LOCATIONS DATA

1	Apron surface and strength	Surface : Concrete Strength : PCN 90/R/C/W/T
2	Taxiway width, surface and strength	Width : 24.20 M Surface : Asphalt Strength : PCN 100/R/C/W/T
3	ACL location and elevation	Elevation and geo position. Shown on the Aircraft Parking and Docking Charts.
4	VOR / INS checkpoint	Not avbl.
5	Remarks	Twy B from int B14 till int N2 and Twy L avbl for aircraft type A320 and below only

WMKK AD 2.9 SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS

1	Use of aircraft stand ID signs, TWY guide lines and visual docking / parking guidance system of aircraft stands	Taxiing guidance signs at all intersections with TWY and RWY and at all holding positions. Guide lines at apron. Nose - in guidance at aircraft stands.
2	RWY and TWY markings and LGT	RWY : Designation, THR, TDZ, Centreline, Edge, RWY End as appropriate, marked and lighted. TWY : Centreline, holding positions at all TWY/RWY intersections, marked and lighted.
3	Stop bars	Stop bars on all Rwy / Twy intersections.
4	Remarks	Surface movement surveillance radar in use.

WMKK AD 2.10 AERODROME OBSTACLES

In APCH/TKOF areas			In circling area and at AD		Remarks
	1		2		3
RWY / Area effected	Obstacles Type Elevation Markings / LGT	Coordinates	Obstacles Type Elevation Markings / LGT	Coordinates	
a	b	c	a	b	
14R/APCH 32L/TKOF	LLZ antennas: 19.75 M Red/Red obstruction lights	024443.7N 1014147.4E	Glide path aerial 32.15 M Red/white Red obstruction lights IWDI 22.60 M	024425.6N 1014154.8E 024432.1N 1014158.7E	Nil
32L/APCH 14R/TKOF	LLZ antennas 17.64 M Red/Red obstruction lights AWOS No.7 22.3M AWOS No.8 22.1 M AWOS NO.9 23.5 M	024241.7N 1014309.2E 024254.7N 1014255.5E 024339.7N 1014225.6E 024424.2N 1014155.8E	Glide path aerial 30.90 M Red/white Red obstruction lights IWDI 20.95 M Hill - Bukit Lada 110.048 M AMSL Red obstruction lights Hill - Bukit Sungai Lanau 100.890 M AMSL Red obstruction lights	024254.0N 1014256.7E 024256.2N 1014255.9E 024232.7N 1014356.6E 024158.1N 1014304.7E	Nil

In APCH/TKOF areas			In circling area and at AD		Remarks
	1		2		3
RWY / Area effected	Obstacles Type Elevation Markings / LGT	Coordinates	Obstacles Type Elevation Markings / LGT	Coordinates	
a	b	c	a	b	
14L/APCH 32R/TKOF	LLZ antennas 19.4 M Red/Red obstruction lights AWOS No.2 24.9 M AWOS No.3 25.3 M AWOS No.4 27.6 M	024648.7N 1014202.5E 024635.0N 1014216.4E 024550.5N 1014245.7E 024506.0N 1014316.1E	Glide path aerial 32.8 M Red/white Red obstruction lights IWDI 23.65 M Control tower 141.45 M Red obstruction lights Radar sensor 69.8 M Red obstruction lights	024636.6N 1014215.3E 024638.9N 1014215.8E 024525.5N 1014208.8E 024630.0N 1014124.0E	Nil
32R/APCH 14L/TKOF	LLZ antennas 24.94 M Red/Red obstruction lights	024445.3N 1014325.3E	Glide path aerial 36.2 M Red/white Red obstruction light IWDI 26.56 M	024504.9N 1014316.8E 024457.9N 1014313.4E	Nil

WMKK AD 2.11 METEOROLOGICAL INFORMATION PROVIDED

1	Associated MET Office	KL International Airport, Sepang
2	Hours of service MET Office outside hours	H24
3	Office responsible for TAF preparation Periods of validity	KL International Airport, Sepang 0024 0606 1212 1818
4	Type of landing forecast Interval of issuance	Trend Half hourly
5	Briefing / consultation provided	Flight level Wind/Temp, SIGWX, Volcanic eruption, Tropical storm, SIGMET.
6	Flight documentation Language(s) used	Charts, abbreviated plain language text English
7	Charts and other information available for briefing or consultation	P85, P70, P50, P40, P30, P25, P20, U85, U70, U50, U30, U20. SIGWX, Tropical storm track.
8	Supplementary equipment available for providing information	GMS Satellite receiver, Weather Radar, Self briefing terminals.
9	ATS units provided with information	Subang ATSC. KL International Airport TWRs. KL International Airport Pilot Briefing Office. Subang Pilot Briefing Office.
10	Additional information	Nil

WMKK AD 2.12 RUNWAY PHYSICAL CHARACTERISTICS

Designation RWY NR	TRUE and MAG BRG	Dimensions of RWY (M)	Strength (PCN) Surface of RWY and SWY	THR Coordinates	THR elevation and highest elevation of TDZ of precision APP RWY
1	2	3	4	5	6
14R	146° T	4000 x 60 (displaced THR 56 x 60)	90/R/C/W/T - 241M conc 100/F/C/W/T - 3519M flex 240M conc	024435.84N 1014152.63E	THR : 16.50M 54.13 FT
32L	326° T	4056 x 60	90/R/C/W/T - 241M conc 100/F/C/W/T - 3519M flex 297M conc	024247.86N 1014305.03E	THR : 14.50M 47.57 FT
14L	146° T	4124 x 60	90/R/C/W/T - 241M conc 100/F/C/W/T - 3537M flex 346M conc	024642.52N 1014206.67E	THR : 16.6M 54.46 FT
32R	326° T	4019 x 60 (displaced THR 105 x 60)	90/R/C/W/T - 241M conc 100/F/C/W/T - 3537M flex 241M conc	024454.03N 1014319.41E	THR : 21.15M 69.39 FT

Slope of RWY - SWY	SWY Dimensions (M)	CWY Dimensions (M)	Strips Dimensions (M)	OFZ	Remarks
7	8	9	10	11	12
0.05%	Nil	Nil	4176 x 300	Provided	RESA RWY 14R : 120M X 120M
0.05%	Nil	Nil	4176 x 300	Provided	RESA RWY 32L : 120M X 120M
0.12%	Nil	Nil	4244 x 300	Provided	RESA RWY 14L : 120M X 120M
0.12%	Nil	Nil	4244 x 300	Provided	RESA RWY 32R : 120M X 120M

WMKK AD 2.13 DECLARED DISTANCES

RWY Designator	TORA (M)		ASDA (M)	TODA (M)	LDA (M)	Remarks
1	2		3	4	5	6
	FROM	TORA				
14L	THRESHOLD	4019 (13,186 FT)	4124 (13,530 FT)	4124 (13,530 FT)	4019 (13,186 FT)	Nil
	TWY A2	3604 (11,824 FT)				Nil
	TWY A3	2832 (9291 FT)				Nil
	TWY A4	2520 (8268 FT)				Nil
	TWY A5	2070 (6791 FT)				Nil
32R	RWY EXTREMITY	4124 (13,530 FT)	4124 (13,530 FT)	4124 (13,530 FT)	4019 (13,186 FT)	32R THR displaced 105M
	TWY A6	2065 (6775 FT)				Nil
	TWY A7	2574 (8445 FT)				Nil
	TWY A8	2887 (9472 FT)				Nil
	TWY A9	3634 (11922 FT)				Nil
	TWY A10	3954 (12972 FT)				Nil
14R	RUNWAY EXTREMITY	4056 (13,307 FT)	4056 (13,307 FT)	4056 (13,307 FT)	4000 (13,123 FT)	14R THR displaced 56M
	TWY C2	3887 (12,752 FT)				Nil
	TWY C3	3566 (11,699 FT)				Nil
	TWY C4	2820 (9252 FT)				Nil
	TWY C5	2507 (8225 FT)				Nil
	TWY C6	2050 (6725 FT)				Nil
32L	THRESHOLD	4000 (13,123 FT)	4056 (13,307 FT)	4056 (13,307 FT)	4000 (13,123 FT)	Nil
	TWY C7	2048 (6719 FT)				Nil
	TWY C8	2500 (8202 FT)				Nil
	TWY C9	2812 (9225 FT)				Nil
	TWY C10	3585 (11,762 FT)				Nil

WMKK AD 2.14 APPROACH AND RUNWAY LIGHTING

RWY Designator	APCH LGT type LEN INTST	THR LGT colour WBAR	VASIS (MEHT) PAPI	TDZ LGT LEN (M)	RWY Centre Line Lgt Length, spacing, colour INTST	RWY edge LGT LEN Spacing, colour INTST	RWY End LGT colour WBAR	SWY LGT LEN (M) colour	Remarks
1	2	3	4	5	6	7	8	9	10
14L	CAT II 900 M LIH Sequence Flash Lights from 900M to 300M	Green	PAPI Left/Right 3° 21.5	900	4019M, 15M White: 0 -3119M Red/White: 3119M - 3719M Red: 3719M - 4019M, LIH	4019M, 60M White: 0 -3419M Yellow: 3419M - 4019M, LIH	Red	Nil	Nil
32R	CAT II 900 M LIH Sequence Flash Lights from 900M to 300M	Green	PAPI Left/Right 3° 21.5	900	4124M, 15M White: 0 - 3224M Red/White: 3224M - 3824M Red: 3824M - 4124M, LIH	4124M, 60M Red: 0 - 47M White: 47M - 3524M Yellow: 3524M - 4124M, LIH	Red	Nil	Nil
14R	CAT II 900 M LIH Sequence Flash Lights from 900M to 300M	Green	PAPI Left/Right 3° 21.5	900	4056M, 15M White: 0 -3156M Red/White: 3156M - 3756M Red: 3756M - 4056M, LIH	4056M, 60M White: 0 -3456M Yellow: 3456M - 4056M, LIH	Red	Nil	Nil
32L	CAT II 900 M LIH Sequence Flash Lights from 900M to 300M	Green	PAPI Left/Right 3° 21.5	900	4000M, 15M White: 0 -3100M Red/White: 3100M - 3700M Red: 3700M - 4000M, LIH	4000M, 60M White: 0 -3400M Yellow: 3400M - 4000M, LIH	Red	Nil	Nil

WMKK AD 2.15 OTHER LIGHTING, SECONDARY POWER SUPPLY

1	ABN / IBN location, characteristics and hours of operation	Nil
2	LDI location and LGT Anemometer location and LGT	LDI : Nil Illuminated Wind Direction Indicator (IWDI). 14L : 345M from THR at Left; Lighted 32R : 200M from THR at Left; Lighted 14R : 200M from THR at left; Lighted 32L : 310M from THR at Left; Lighted
3	TWY edge and centre line lighting	Edge : At all TWY curves and fillets Centre Line : At all TWY and taxilanes. Clearance Bar : At all TWY intersections.
4	Secondary power supply / switch-over time	Secondary power supply to all lighting: Switch over time: 1sec - All Runway, Approach, Stop Bar and PAPI 15 sec - All TWY Edge, Centre Line, Signs, Obstacles and IWDI.
5	Remarks	Stop Bar : At all TWY entering RWY.

WMKK AD 2.16 HELICOPTER LANDING AREA

1	Coordinates TLOF or THR of FATO	024550.68N 1014204.20E
2	TLOF and/or FATO elevation M/FT	22.10M/72.51 FT.
3	TLOF and FATO area dimension, surface, strength, marking	Rectangle, 30M x 30M, Asphalt, 30 Tonnes White edges and white letter H
4	True and MAG BRG of FATO	True North Bearing - 61 45 00 from ARG X-axis Magnetic Bearing - 10.69min West of True North.
5	Declared distance available	Nil
6	APP and FATO lighting	Nil
7	Remarks	Ground taxi to apron

WMKK AD 2.17 ATS AIRSPACE

1	Designation and lateral limits	Kuala Lumpur CTR Semi circle of 15 NM radius centred on Kuala Lumpur (VKL) DVOR/DME (024328N 1014417E) fm 024450N 1015913E clockwise to 023709N 1013041E thence a straight line to 030134N 1011921E thence a semicircle of 15 NM radius centred on SAAS Subang ARP (030753N 1013258E) clockwise to 032245N 1013454E thence a straight line to 032133N 1014406E thence a semi circle of 15 NM radius centred on Simpang ARP (030641N 1014209E) clockwise to 030803N 1015706E thence a straight line to 024450N 1015913E.
2	Vertical limits	SFC to 4000 FT AMSL .
3	Airspace classification	Class C (except for WMR 418/236 which is G)
4	ATS unit callsign Language(s)	Lumpur Approach North, Lumpur Approach South, Lumpur Director. Lumpur Tower. English
5	Transition altitude	11000 FT.
6	Remarks	Nil

WMKK AD 2.18 ATS COMMUNICATION FACILITIES

Service Designation	Callsign	Frequency	Hours of operation	Remarks
1	2	3	4	5
APP	LUMPUR APPROACH NORTH	124.200 MHZ 230.000 MHZ	H24	-
APP	LUMPUR APPROACH SOUTH	119.450 MHZ 232.200 MHZ		-
APP	LUMPUR DIRECTOR	125.100 MHZ		-
APP		121.250 MHZ		Spare position and frequency
AERODROME CONTROL	LUMPUR TOWER	118.800 MHZ 229.000 MHZ		RWY 14L/32R
AERODROME CONTROL	LUMPUR TOWER	118.500 MHZ 229.000 MHZ		RWY 14R/32L
SURFACE MOVEMENT CONTROL	LUMPUR GROUND	121.650 MHZ 229.000 MHZ		TWY associated with RWY 14L/32R
SURFACE MOVEMENT CONTROL	LUMPUR GROUND	121.800 MHZ 229.000 MHZ		TWY associated with RWY 14R/32L and Cargo South (CS)
GROUND MOVEMENT CONTROL	LUMPUR GROUND	122.150 MHZ		Main Terminals aprons
GROUND MOVEMENT CONTROL	LUMPUR GROUND	122.850 MHZ		North and West Satellite Terminal aprons
GROUND MOVEMENT CONTROL	LUMPUR GROUND	122.275 MHZ		East and South Satellite Terminal
GROUND MOVEMENT CONTROL	LUMPUR GROUND	123.25 MHZ		Cargo East, North and West
ACD	LUMPUR DELIVERY	126.000 MHZ		Airways clearance, SSR code allocation and departure slot time
ATIS	LUMPUR TERMINAL INFORMATION	126.450 MHZ		Synthesised voice broadcast

WMKK AD 2.19 RADIO NAVIGATION AND LANDING AIDS

Type of aid CAT of ILS	ID	Frequency	Hours of operation	Site TX antenna coordinates	Elevation of DME transmitting antenna	Remarks
1	2	3	4	5	6	7
DVOR	VKL	116.100 MHZ	H24	024328N 1014417E	-	Nil
DME	VKL	CH 108X		024328N 1014417E	79.65 M	Nil
ILS CAT I	IEL	108.500 MHZ		GP : 024636.6N 1014215.3E LLZ : 024445.3N 1014325.3E	-	14L
DME	IEL	CH 22X		024636.6N 1014215.3E	18 M	14L
ILS CAT I	IER	109.100 MHZ		GP : 024504.9N 1014316.8E LLZ : 024648.7N 1014202.5E	-	32R
DME	IER	CH 28X		024504.9N 1014316.8E	21 M	32R
ILS CAT I	IWR	110.700 MHZ		GP : 024425.55N 1014154.81E LLZ : 024241.66N 1014309.19E	-	14R
DME	IWR	CH 44X		024425.55N 1014154.81E	23.97 M	14R
ILS CAT I	IWL	111.900 MHZ		GP : 024254.00N 1014256.69E LLZ : 024443.6N 1014147.43E	-	32L
DME	IWL	CH 56X		024254.00N 1014256.69E	24.77 M	32L

WMKK AD 2.20 LOCAL TRAFFIC REGULATIONS

1 Start Up And Push Back

- 1.1 Air traffic control will authorise the initiation of engine start up and aircraft push back in order to regulate the movement of aircraft with respect to other aircraft on the apron edge and apron centre lane taxiways.
- 1.2 The pilots-in-command of all aircraft require clearance from air traffic control for both engine start up and push back. All departing aircraft shall contact LUMPUR DELIVERY for ATC clearance 5 minutes before engine start.
- 1.3 When air traffic control provides the pilot-in-command with approval to push back, this approval may also contain an expectation to exit the apron via a specified apron taxiway if the intended taxiing route is not a standard taxiing route. Whether complying with a standard taxiing route or a special taxiing route, the pilot-in-command shall ensure that the direction of push back enables the aircraft to taxi via the specified apron access taxiway.
- 1.4 During engine start up, it shall be the responsibility of the pilot-in-command and the aircraft marshaller to ensure that the area of the blast cone is clear.
- 1.5 During aircraft push back, it shall be the responsibility of the pilot-in-command and the aircraft marshaller to ensure that the area behind the aircraft is clear of vehicles and other objects.
- 1.6 Prior to, and during engine start up, the pilot-in-command and aircraft marshalls shall be responsible to ensure that the aircraft is towed to the correct position for engine start and that the appropriate blast zone behind an aircraft is clear during engine start up.
- 1.7 The following requirements and restrictions shall apply to aircraft for engine start up:
 - 1.7.1 For contact stands at the Main and Satellite Terminal Buildings, engine start is permitted for B737 aircraft type variants whilst at the aircraft stand.
 - 1.7.2 For contact stands at the Main Terminal Building, engine start by wide body aircraft (A300 and above) shall not be commenced until after the aircraft is pushed back on to the taxilane.
 - 1.7.3 For parking bays at the Low Cost Carrier Terminal (LCCT), engine start shall not be commenced until the aircraft is pushed back on to the taxi lane except for Bays F57, F58, F67, F68, F77, F78, F87, F88, F97 and F98.
 - 1.7.4 Aircraft at the LCCT may be permitted to be towed onto taxiways L or K for start up with prior approval from ATC.
 - 1.7.5 Cross-bleed starts for aircraft at the LCCT is not permitted on the parking bays and taxilanes.
- 1.8 Idle power engine run is allowed only on Bays F51, F53 and F55 (if F23 is vacant) with aircraft repositioned nose out facing taxilane K2. Idle power runs are not permitted on Bays F75 and F96 due to the covered walkway.
- 1.9 Self manoeuvring (Power In Power Out) is permitted only in Bays F57, F58, F67, F68, F77, F78, F97 and F98.
- 1.10 In addition to the engine start requirements for wide-body aircraft, aircraft with tail mounted engines (MD11, DC10, L1011) parked at stands A2, B2, the top engine is to be at no more than idle power until the aircraft has a clear distance of 250 metres behind the aircraft.
- 1.11 Power back at KL International Airport is not permitted.

2 Taxiing Routes - Departing Aircraft

- 2.1 The routes to be used by aircraft taxiing after landing or when taxiing for departure will be specified by air traffic control. The issuance by air traffic control of a taxi route to an aircraft does not relieve the pilot-in-command of the responsibility to maintain separation with other aircraft on the movement area or to comply with air traffic control directions intended to regulate aircraft on the manoeuvring area.
- 2.2 For each aircraft apron, access and exit taxiways are defined (shown on the Aerodrome Ground Movement Chart) and are included in the standard taxiing routes. In conducting engine start and push back, pilots-in-command should be aware that they will be required to proceed by a specified exit or access taxiway.
- 2.3 Taxiing clearance limits may be applied.

2.4 Standard Taxi Routes

Standard outbound taxiing routes will be used under most operating circumstances. A standard outbound taxiing route identifier consists of taxiing route identification based on :

Terminal identification	Main
Apron identification	South
Departure runway	32R

Standardised route identifiers and associated routes are provided in the Tables attached to the Aerodrome Ground Movement Chart. Example of the Phraseology that may be used is as follows:

*"C/S, taxi to holding point ...Runway ...via route **Mike Sierra, 32R**right"*

3 Intersection Departures

- 3.1 Departing aircraft will normally be directed by ATC to use the full length of the runway for take-off. Pilots-in-command may request an intersection departure or ATC may propose an intersection departure to a pilot-in-command to resolve a particular runway or manoeuvring area conflict. The final decision whether to make an intersection departures rests with the pilot-in-command.

4 Departure Sequencing

- 4.1 In order to reduce congestion at the holding points during peak hours, a procedure to regulate departures will be enforced. Departing aircraft may expect delays at start-up. Aircraft with ATC time restrictions will be afforded priority for start and push back.

5 Parking Area For General Aviation Aircraft

- 5.1 The Gate Allocation Unit of Airside Operations, Malaysia Airport Sepang Sdn. Bhd. will allocate parking stands for General Aviation and other approved flights.

6 Helicopter Operations

- 6.1 All helicopter operations should land at, and take-off from, the Helipad.
- 6.2 Pilots-in-command of helicopters wishing to depart from KL International Airport shall call the Ground Movement frequency (121.65 MHz) for ATC clearance prior to commencing any taxiing movement. Clearance for take-off will be provided by Aerodrome Control. The take-off clearance may be accompanied by an initial tracking clearance to resolve aerodrome traffic conflicts.
- 6.3 Pilots-in-command of arriving helicopters will be issued with tracking instructions to avoid aerodrome traffic conflicts and a clearance to the helipad.
- 6.4 After landing at the helipad, the pilot-in-command will be issued with a parking position within the vicinity of the helipad. The pilot-in-command shall taxi the aircraft to the parking position. Parking on the marked helipad landing area is not permitted.

7 Jet Blast Procedures

7.1 Jet Blast Procedures for KL International Airport are as follows :

Aircraft Stand	Standard Departure Taxi Routes	Non Standard Departure Taxi Routes
A03 and A05 B03 and B05	Aircraft to be pushed back and towed forward to breakaway point 100 metres from blast fence before taxiing out.	
A02 and A04	Aircraft to be pushed back and towed forward to breakaway point abeam A06 before taxiing out.	
B02 and B04		Aircraft to be pushed back and towed forward to breakaway point abeam B06 before taxiing out
C02, C04, C06, C13 and C15	Wide body aircraft at Bay C06 to be pushed back and towed forward to breakaway point abeam Bay C04 before taxiing out. Wide body aircraft at Bay C13 to be pushed back and towed forward to breakaway point abeam Bay C15 before taxiing out.	Wide body aircraft at Bays C02 and C04 to be pushed back and towed forward to breakaway point abeam Bay C06 before taxiing out.
C03, C07, C34 and C36	Wide body aircraft at Bays C34 and C36 to be pushed back and towed forward to breakaway point abeam Bay C36 before taxiing out.	Wide body aircraft at Bays C03 and C07 to be pushed back and towed forward to breakaway point abeam Bay C07 before taxiing out.
C14, C16, C23 and C25	Wide body aircraft at Bays C23 and C25 to be pushed back and towed forward to breakaway point abeam Bay C25 before taxiing out.	Wide body aircraft at Bays C14 and C16 to be pushed back and towed forward to breakaway point abeam Bay C16 before taxiing out.
C24, C26, C33 and C35	Wide body aircraft at Bays C33 and C35 to be pushed back and towed forward to breakaway point abeam Bay C35 before taxiing out.	Wide body aircraft at Bays C24 and C26 to be pushed back and towed forward to breakaway point abeam Bay C26 before taxiing out.
CARGO BAYS	All wide body aircraft at cargo bays are to be pushed back and aligned on taxiway centreline before taxiing out.	

WMKK AD 2.21 NOISE ABATEMENT PROCEDURES

NIL

WMKK AD 2.22 FLIGHT PROCEDURES

1 General

- 1.1 All operations into and out of KL International Airports shall be in accordance with the Instrument Flight Rules. Helicopter flights to and from KL International Airport may be in accordance with the Visual Flight Rules.

2 Clearance Delivery

- 2.1 Pilots-in-command shall request from Lumpur Clearance Delivery an airways clearance 5 minutes before engine start-up. Slot departure times, if in effect, will also be provided from Lumpur Clearance Delivery.

3 Aerodrome Control And Apron Services

- 3.1 Aerodrome control services at KL International Airport are provided by air traffic control from the Main Control Tower and a separate subsidiary Control Tower. Regulation of aircraft movement within the aprons are provided from the Main Control Tower for aprons MN, MS, ME, MW, SW, SN & CS and from a separate Surface Movement Control Tower (commonly referred to as the Apron Control Tower) for aprons SS, SE, CN, CE and CW.
- 3.2 Aerodrome control services at KL International Airport are provided for all runways, designated taxiways and on apron edge taxiways and apron centre lane taxiways.
- 3.3 On runways and designated taxiways air traffic control controls and regulates :
- a) Aircraft with respect to other aircraft, vehicles and obstructions;
 - b) Vehicles with respect to aircraft.
- 3.4 On apron edge taxiways and centre lane taxiways, and other designated parts of the movement area, air traffic control regulates aircraft with respect to other aircraft and fixed obstructions. Air traffic control does not provide regulation or control of aircraft with respect to vehicles or people movement on this areas.
- 3.5 The pilot-in-command and aircraft marshallers shall be responsible for the safety of aircraft with respect to all vehicles during push back, engine start up and taxiing. Prior to, and during, engine start up, the pilot-in-command and aircraft marshallers shall be responsible to ensure that the aircraft is towed to the correct position for engine start and that the appropriate blast zone behind an aircraft is clear during engine start up.

4 Communication Services

- 4.1 On the movement area, all communications between air traffic control and pilots and between air traffic control and drivers of vehicles is on VHF. The functions and associated VHF frequencies are indicated in para WMKK AD 2.18. **ATS COMMUNICATION FACILITIES.** UHF communications are available for non- VHF equipped aircraft, with prior notification.

5 Runway Operations

5.1 Holding

- 5.1.1 All holding points on taxiways at runway entrances are sited at, or greater than the distance required for CAT II holding points.

6 Approach And Departure Procedures

6.1 Departing Aircraft

- 6.1.1 The order in which aircraft are given take-off clearances will be determined on the basis of normal traffic priorities, the application of wake turbulence standard, separation standards and departure slot allocations and management. The order of departure may not be the order in which aircraft arrive at the departure queue.
- 6.1.2 When a take-off clearance is given to a pilot it will contain the runway identifier.
- Example : "(Callsign), Runway 14 Left, Cleared for take-off".
- 6.1.3 Under normal circumstances, all departing aircraft will be issued with SIDs. If, after taxi, a SID has to be cancelled for traffic management reasons, the pilot will be given a Standard Radar Departure (SRD) or a Radar Departure.

Examples:

If the aircraft is recleared with a SRD,

"...callsign, cancel SID, recleared Lumpur Radar Two Departure..."

If the aircraft is recleared with a Radar Departure

"...callsign, cancel SID, recleared radar departure, expect to maintain runway heading initially after departure..."

When the aircraft is ready for departure, ATC will issue a heading together with the "take off" clearance.

6.1.4 Examples of take-off instructions issued by ATC

6.1.4.1 If the aircraft has been issued an SID,

"...callsign, Runway 32R, cleared for take-off..."

6.1.4.2 If the SID has been cancelled and replaced with a SRD,

"...callsign, assigned heading 340, runway 32R, cleared for take-off..."

6.1.4.3 If the SID has been cancelled and replaced with a Radar Departure,

"...callsign, maintain runway heading, runway 32R, cleared for take-off..."

6.1.4.4 If the departure frequency is different from the standard stated in para 6.1.5.2 (b) below,

"...callsign, departure frequency 119.45, runway 32R, cleared for take-off..."

6.1.5 Standard initial altitudes to climb to, change of frequency and phraseology to be adhered to on first contact

6.1.5.1 ATC will issue take-off clearance without specifying the initial altitude to climb to and the departure frequency.

6.1.5.2 Unless notified by ATC of changes to the initial altitude to climb, pilot of departing aircraft shall climb to initial altitude 6000 ft, further climb on ATC approval only.

6.1.5.3 Contact "Lumpur Approach" after airborne as soon as practicable before passing 2000 ft on the following frequency :

- i. Departing Runway 32R/32L – 124.20 MHz;
- ii. Departing Runway 14R/14L – 119.45 MHz.

6.1.5.4 On first contact with Approach after becoming airborne, advise the SID identifier or assigned heading, the last level vacated to the nearest 100ft, and the assigned altitude.

Examples:

If the aircraft is on SID,

"...(callsign)...KIMAT ALPHA Departure, leaving one thousand seven hundred, climbing to 6000..."

If the aircraft is on SRD,

"...(callsign)...assigned heading (xxx), leaving one thousand seven hundred, climbing to 6000..."

If the aircraft is on Radar Departure,

"...(callsign)...on runway heading, leaving one thousand seven hundred, climbing to 6000..."

6.1.6 Immediate Take-off Clearance

A pilot receiving the ATC instruction "cleared for immediate take-off" is required to act as follows:

- a) If waiting clear of the runway, taxi immediately on to it and begin take-off run without stopping the aircraft;
- b) if already lined up on the runway, take-off without delay;
- c) if unable to comply with the instruction, inform ATC immediately.

6.1.7 Wake turbulence waiver

6.1.7.1 Pilots-in-command of departing aircraft may choose to commence take-off without the applicable wake turbulence standard being applied. In this event the following conditions will apply:

- a) the pilot shall expressly initiate the request for waiver using the phraseology
“(callsign of aircraft), request wake turbulence waiver”;
- b) waiver on the wake turbulence standard shall apply in VMC by day;
- c) the waiver shall not apply to a LIGHT or MEDIUM aircraft taking off behind a HEAVY aircraft take-off, if the take-off by the LIGHT or MEDIUM aircraft is commenced from a point more than 150 metres along the runway in the direction of take-off, from the commencement point of the HEAVY aircraft take-off.

6.1.7.2 When a pilot-in-command requests for a wake turbulence waiver, the pilot acknowledges that ATC will no longer be responsible for the application of wake turbulence separation standards to that specific flight operation.

6.2 Landing Aircraft

6.2.1 A succeeding aircraft may be cleared to land before the preceding landing aircraft which has landed or before the preceding departing aircraft which has commenced take-off run, is clear of the runway-in-use provided the following conditions are met:

- a) In VMC, by day;
- b) ATC must have reasonable assurance that the appropriate separation will exist when the succeeding aircraft crosses the runway threshold;
- c) when issuing a landing clearance following the application of the above procedures, ATC will issue the following aircraft with the instruction below:
“... (call sign) preceding (aircraft type)[vacating runway via (taxiway designator/airborne),
Runway ... (Designator) cleared to land...”

6.2.2 When the cloud base is broken or overcast, at or below 600 feet and/or the visibility is less than 2000 metres, air traffic control will broadcast these conditions on the ATIS with an ILS approach expectation. When these conditions exist, air traffic control will ensure that preceding (landing or departing aircraft) and vehicles do not infringe the Localiser Sensitive Area (LSA) ahead of an arriving aircraft from the time the aircraft is 1 NM from touchdown until it has completed its landing run.

Note: The LSA is defined as a rectangular area contained within parallel lines 90m each side of the runway centre line and between the localizer aerial and the beginning of the runway in use.

6.3 To reduce traffic conflicts between WMKK arrivals and departures flight planned via W533 G582 VPK or G584 and vice versa, these flights may be rerouted. Expect the following SIDs or STARs from ATC.

<u>SID/STAR</u>	<u>RWY 32 In use</u>	<u>RWY 14 In use</u>
SID	KIMAT Departure W533 G582 PK	ISTAN Departure G584 VPK
STAR	ISTAN Transition NIPAR Arrival	PIBOS Transition KIDOT Arrival

6.4 Missed Approach Procedures

6.4.1 When a pilot-in-command executes a "go round", he shall comply with the published missed approach procedure for the runway unless given a specific alternate missed approach procedure by air traffic control. If the aircraft performance or weather conditions preclude the pilot-in-command from complying with this requirement he shall advise air traffic control immediately.

6.5 Speed Restrictions (Arriving Aircraft)

6.5.1 FLOW management is used to regulate traffic destined for KLIA. The flow control sequencing action, as described in AIP ENR 1.9 – 1, may include:

- a) speed control;
- b) radar vectoring; and
- c) holding.

6.5.2 The speed restriction of 250 kt IAS below 10,000 ft is now applicable unless ATC issues the instruction “maintain high speed”.

6.5.3 Pilots can expect the following instructions from ATC prior to top of descent.

ATC instruction	PILOT action
"Descend at (xxx) knots"	Descend at (xxx) kt IAS, reduce speed to 250 kt IAS on passing 10,000 ft and thereafter follow speeds depicted on the STAR.
"Maintain high speed"	Maintain as high a speed as possible consistent with aircraft performance profiles/airline SOPs. (Speed restriction of 250 kt IAS below 10,000 ft and speeds depicted on the STAR do not apply).
"Hold at (xxx), leave at (time)"	Hold at (xxx), leave at (time or up to a minute before) at 250 kt IAS and thereafter follow speeds depicted on the STAR.
"resume normal speed"	If below 300 kt IAS above 10,000 ft, increase speed to 300 kt IAS, reduce speed to 250 kt IAS on passing 10,000 ft and thereafter follow speeds depicted on the STAR.
No speed instructions issued	Descend at 300 kt IAS, reduce speed to 250 kt IAS on passing 10,000 ft and thereafter follow speeds depicted on the STAR.

6.5.3.1 Pilots wishing to descend at their calculated economic speeds that differ from those issued by ATC shall notify ATC. These flights may lose their slots in the flow sequence.

6.5.4 SPEED LIMITATION POINTS ON STAR

ARRIVAL	SPEED RESTRICTIONS
KIKAL TWO	Cross KIKAL 220 kt IAS 160 kt IAS from 10NM until 4NM to touchdown
DAKOR TWO ALPHA	Cross DAKOR 220 kt IAS Cross BAXEL 180 kt IAS 160 kt IAS from 10 NM until 4 NM to touchdown
SASRI TWO	Cross SASRI 220 kt IAS Cross GOMAS 180 kt IAS 160 kt IAS from 10 NM until 4 NM to touchdown
LAPIR TWO	Cross LAPIR 220 kt IAS 160 kt IAS from 10 NM until 4 NM to touchdown
NIPAR THREE ALPHA	Cross NIPAR 220 kt IAS Cross KIMAR 180 kt IAS 160 kt IAS from 10 NM until 4 NM to touchdown
KIDOT THREE ALPHA	Cross KIDOT 220 kt IAS Cross PIMAS 180 kt IAS 160 kt IAS from 10 NM until 4 NM to touchdown

6.5.5 SPEED LIMITATION POINTS WHEN STAR IS CANCELLED

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

- a) Under radar vectors
 - 250 kt IAS on passing 10,000ft;
 - 220 kt IAS on turning base;
 - 180 kt IAS on turning to intercept the localizer;
 - 160 kt IAS from 10 NM until 4 NM to touchdown.
- b) Own navigation to intercept the final approach track
 - 250 kt IAS on passing 10,000ft;
 - 220 kt IAS 20 track miles from touchdown;
 - 180 kt IAS 15 track miles from touchdown;
 - 160 kt IAS from 10 NM until 4 NM to touchdown.

6.5.5.2 ATC may issue other speeds to achieve a more accurate spacing, e.g. 220 kt IAS prior to base turn.

6.5.6 CANCELLATION OF SPEED RESTRICTIONS

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

7 Hazardous Weather Warning

7.1 Pilots will be advised when there are reported occurrences of micro burst or windshear. These alerts will be in the following form:

- a) Runway designation;
- b) Arrival or Departure;
- c) Type of alert (micro burst or wind shear);
- d) Quantified headwind loss or gain;
- e) Location of alert, in nautical mile, on final approach or departure path;

Example "C/S, Runway 14L, arrival, micro burst, headwind loss 40 knots, 2 mile final".

8 Low Visibility Operating Procedures

8.1 General

8.1.1 There are 3 visibility conditions under which the airport may be required to operate :

- a) **Condition 1.** Visibility is sufficient for pilots to taxi aircraft and to avoid collision with other traffic on taxiways and at intersections by visual reference, and for air traffic control to exercise control over all manoeuvring area traffic on the basis of visual reference. This condition shall apply when the visibility is greater than 2000 metres.
- b) **Condition 2.** Visibility is sufficient for pilots to taxi aircraft and to avoid collision with other traffic on taxiways and at intersection by visual reference, but insufficient for air traffic control to exercise control over all manoeuvring area traffic on the basis of visual reference. This condition shall apply when the visibility is 2000 metres but greater than 600 metres.
- c) **Condition 3.** Visibility is 600 metres or less.

8.2 Visibility Condition 2

8.2.1 When visibility condition is 2000 metres or less but greater than 600 metres, Condition 2 low visibility operating procedures will be applied by air traffic control.

8.2.2 Responsibility for separation and regulation of aircraft and vehicles shall be as follows :

- a) Air traffic control shall be responsible for the regulation of aircraft and vehicles with respect to other aircraft and the provision of essential traffic information on aircraft to pilots-in-command and drivers of vehicles to facilitate separation;
- b) Pilots-in-command shall be responsible for maintaining separation with other aircraft on the manoeuvring area, other than the runways;
- c) Drivers of vehicles shall be responsible for separation with aircraft and other vehicles.

8.2.3 When low visibility operating procedures are in operation air traffic control will :

- a) Broadcast on the ATIS that low visibility operating procedures are in operation.
- b) Ensure that, during the currency of low visibility operating procedures no vehicle or aircraft is permitted to infringe the Localiser Sensitive Area (LSA) ahead of an arriving aircraft from the time the aircraft is 1NM from touchdown until it has completed its landing run. Landing clearance will not be issued if the LSA is known to be infringed.
- c) Provide runway landing intervals of 6NM or more.
- d) Provide landing clearances no later than 2NM from touchdown.
- e) Provide pilot-in-command of every landing aircraft with :
 - i. The current RVR reading for the landing runway;
 - ii. Un-serviceability of any component parts of the CAT II facilities not previously broadcast on the ATIS

8.2.4 When low visibility operating procedures are in operation pilots-in-command shall :

- a) Ensure that after landing, the aircraft clears the LSA as soon as possible after landing.
- b) Be aware that any emergency conditions (brake fire etc) may not be visible to the control tower, apron control tower or AFRS.

8.3 Visibility Condition 3

8.3.1 When visibility conditions reduce to 600 metres or less, Condition 3 low visibility operating procedures shall be applied in addition to those defined for Condition 2.

8.3.2 Responsibility for separation and regulation of aircraft and vehicles shall be as follows :

- a) Air traffic control will separate aircraft from aircraft, and vehicles from aircraft using the following methods:
 - i. Pilots-in-command will be provided with taxiing clearances and clearance limits which, in the event of a potential conflict, require the pilot-in-command to hold short of a taxiway intersection and report sighting and able to follow, or pass behind, the conflicting aircraft.
 - ii. If the pilot-in-command is not able to sight the conflicting aircraft, further clearance to proceed will be withheld until the preceding aircraft has passed, and reported passing, the next taxiway intersection.
 - iii. If the pilot-in-command, after reporting the conflicting traffic sighted, reports that visual contact has been lost, he shall be instructed to hold position and the separation procedure as in (ii) above re-established.
- b) Pilots-in-command, who have reported sighting and able to follow or pass behind another aircraft or vehicle, shall be responsible for maintaining separation with that aircraft or vehicle. If visual contact is lost, the pilots-in-command shall inform air traffic control immediately.

8.3.3 When low visibility operating procedures are in operation air traffic control will :

- a) Direct all departing aircraft to use the full length of the runway.
- b) Apply positive control techniques for separation between aircraft on the manoeuvring area.
- c) Pass essential traffic information in respect of aircraft to other aircraft that may be in conflict.
- d) Pass to aircraft approaching the holding point, essential traffic information in respect of aircraft already holding.

8.3.4 When low visibility operating procedures are in operation pilots-in-command shall adjust aircraft taxiing speeds to ensure that they are able to comply with ATC instructions.

9 Runway Operations

9.1 Modes Of Operation

9.1.1 Under normal traffic conditions, segregated operations (one runway for departures, and the other runway for arrivals) will be used at KL International Airport. Normal operating runway mode selections will be :

- a) Runway 32 Right for departures and Runway 32 Left for arrivals
- b) Runway 14 Right for departures and Runway 14 Left for arrivals

9.1.2 Under heavier traffic conditions, a semi-mixed mode of operation (2 Arrivals/1 Departure) or (2 Departures/1 Arrival) may be implemented depending on the disposition of traffic i.e. the former will be implemented if the arrivals substantially outnumber the departures or the latter will be implemented if the departures outnumber the arrivals.

9.1.3 If the arrivals and departures are equally heavy, then a mixed mode of operation will be implemented with both runways used for arrivals as well as departures..

9.2 Independent Parallel Approaches

9.2.1 When simultaneous parallel approaches are being conducted at KL International Airport, pilots will be advised either directly or through the ATIS.

9.2.2 Simultaneous parallel approaches will require all aircraft to conduct ILS approaches. When pilots are conducting simultaneous parallel approaches at KL International Airport, aircraft tracks will be monitored by radar and, in the event that an aircraft diverges from centre line towards the adjacent approach path, either a transgression warning or alert will be generated depending on the extend of the path divergence. If the divergence from centreline by the aircraft is a minor adjustment only, then a warning will be received by air traffic control. Under

these circumstances air traffic control will instruct the pilot-in-command

"Call sign, Turn Left/right and return to the localiser centre line, advise intentions".

- 9.2.3 If the pilot-in-command is able to return the aircraft to the centreline, he shall immediately advise air traffic control of this fact. If, due to the nature of the cause for divergence, the pilot-in-command has a problem and cannot return the aircraft to the centre line he shall immediately advise air traffic control of the problem and his intentions.
- 9.2.4 If the divergence from centreline is cross then an alert will be received by air traffic control. Under these circumstances air traffic control may instruct the pilots-in-command of the aircraft which are NOT DIVERGING to execute a go round and will turn those aircraft outwards, with respect to the two runways. (ie away from the diverging aircraft).
- 9.2.5 The pilot-in-command of an aircraft that is forced to make a major divergence from centreline shall advise air traffic control as soon as possible of the problem and intentions.

9.3 Change Of Runway Whilst On Final (Side Step)

- 9.3.1 Air traffic control may offer pilots-in-command a change of runway in order to resolve a problem, such as a potential missed approach. A change of runway, or side step, to the adjacent runway will not be made available once the aircraft is closer than 8NM from touchdown for the new runway. In any event, the change of runway will only be available under the following conditions:
- a) Pilot-in-command has visual contact with the terrain has the adjacent runway in sight and in-flight visibility is greater than 5000m.
 - b) Pilot-in-command agrees to, or has requested, the change.
 - c) The new localiser frequency is advised to the pilot.
- 9.3.2 The procedure is used by day only. Example of the phraseology that may be used is as follows:
- (ATC) ".....C/S, side step to Runway 32 right available, can you comply with the 32R procedure".
- (Pilot) ".....C/S, affirm/negative".
- (ATC) ".....C/S, make side step procedure to runway 32 right,
new localiser frequency.....Mhz, report re-established on final".
- (Pilot) ".....Established on final".
- (ATC) ".....C/S, Contact Lumpur Tower, frequencyMhz.

WMKK AD 2.23 ADDITIONAL INFORMATION

1 Bird Concentrations In The Vicinity Of The Airport

- 1.1 Studies show that the airport is within the flight path of seasonal migratory birds. The birds migrate from the north-east between September and November and from the south east between February and April. Height is between 100 metres to 900 metres. The most common bird types are Black Baza, Crested Honey Buzzard, Grey-faced Buzzard and Chinese Goshawk.
- 2 Touch And Go Landings
- 2.1 Touch and go landings are not permitted.