ENR 1 GENERAL RULES AND PROCEDURES

ENR 1.1 GENERAL RULES

1. INTRODUCTION

The air traffic rules and procedures applicable to air traffic within the Kuala Lumpur FIR and Kota Kinabalu FIR conform with Annexes 2 and 11 to the Convention on International Civil Aviation, Civil Aviation Act 1969, Malaysian Civil Aviation Regulation 1996 and to those portions of the Procedures for Air Navigation Services - Rules of the Air and Air Traffic Services, and the Regional Supplementary Procedures applicable to the region, except for the differences as listed in GEN 1.7.

2. FLIGHTS ON AIRWAYS (AREA CONTROL)

2.1 Introduction

2.1.1 Areas of responsibility for the control of flights on airways and the units providing this service are shown in ENR 2.1.

2.1.2 Separation is based on:

a) Estimated and actual times over position reporting points; or
b) Reports of visual sighting; or
c) Radar identification; or
d) Distance reports.

Note. *As position reports are most commonly used for separation, it is therefore important that any revision in estimates of 3 minutes or more, must be notified to ACC.*

2.2 Communications And Radio Navigation Requirements

2.2.1 All aircraft operating under IFR or VFR within controlled airspace shall be equipped with appropriate communications and navigation equipment enabling them:

a) To maintain two-way communication with the appropriate ATC unit. The minimum requirement is VHF RTF equipment suitable for communicating on ATC frequencies.
b) To maintain track within the lateral limits of the airway and to navigate in accordance with ATC instructions. The minimum requirement is one radio compass.

2.2.2 The pilot- in command shall maintain continuous listening watch on appropriate ATC frequencies.

2.3 Air Traffic Control Clearance

2.3.1 The pilot-in-command shall obtain an air traffic control clearance prior to operating in a controlled airspace.

2.3.2 An air traffic control clearance is an authorisation by ATC for an aircraft to proceed under specified conditions within controlled airspaces. If for any reason an air traffic control clearance is not acceptable to the pilot-in-command, he may request an alternative clearance.

2.3.3 An air traffic control clearance will contain the following items:

a) Aircraft identification ;
b) Clearance limit and route instruction ;
c) Level assignment ;
d) Departure instruction when necessary ;
e) Approach instruction when necessary ;
f) Clearance expiry time when necessary ; and
g) Any special instructions and information.

2.3.4 Request for Amended Clearance.
If the amended clearance is requested at a time a position report is made the information contained in that report shall be given on the assumption that the aircraft is proceeding in accordance with the current clearance, and not with that which is being requested.

2.3.5 The contents of an air traffic control clearance or any revisions thereto shall apply only to those portions of the flight conducted within controlled airspace.

2.3.6 An air traffic control clearance may be issued direct to an aircraft by an ACC or through an aerodrome control unit or an air-ground HF RTF communications unit.

2.3.7 Phrases used in air traffic control clearances will have the following meanings:

a) "Clearance expires at..... (time)". If the aircraft is not airborne by the time stated, the clearance will be automatically cancelled and a fresh clearance shall be obtained.
b) "Depart not before..... (time)". An aircraft will not be cleared for departure until the time specified.
c) "Unable to approve..... (flight planned level)". When ATC is unable to approve the flight planned level, an alternative level will be offered whenever possible, to avoid or reduce delay.

2.3.8 A pilot-in-command operating under VFR in controlled airspace shall not enter instrument meteorological conditions without first obtaining an ATC clearance in accordance with the procedure laid down for flights joining airways. Until such clearance is received, the aircraft must remain in VMC.

2.3.9 Aircraft on flight plan specifying that the first portion of the flight will be subject to air traffic control, and that the subsequent portion will be uncontrolled, shall normally be cleared to the point at which the controlled flight terminates.

2.3.10 If an ATC clearance stipulates VMC climb or descent and it becomes evident to the pilot-in-command that VMC cannot be maintained, he shall hold in VMC and request an alternative clearance.

2.3.11 The pilot-in-command having acknowledged an air traffic control clearance shall not deviate from the provisions of the clearance unless an amended clearance has been obtained.

2.3.12 ENR 1.6 provides guidance to pilot-in-command compelled to deviate from the provisions of an air traffic control clearance because of communications failure.

2.3.13 A flight shall normally be cleared to the aerodrome of first intended landing, the point of leaving controlled airspace or in the case of a flight where prior coordination with an adjacent unit cannot be established, the FIR boundary. This is known as the clearance limit.

2.3.14 When an aircraft is cleared to an intermediate point en-route and further ATC clearance is required, this will, wherever possible be issued at least 5 minutes before the aircraft arrives at the clearance limit, unless the pilot-in-command is instructed to hold over the intermediate point until a specified time.

2.3.15 In the event of an aircraft arriving at the clearance limit without having received a further clearance, the pilot-in-command shall immediately request a further clearance and hold in accordance with the specified holding pattern where one is established or otherwise the standard holding pattern maintaining the last assigned cruising level until further clearance is received. Where no direct ATS coordination facilities between Regional Area Control Centres exist, pilots on such routes must endeavour, when airborne, to contact the Area Control Centre of the next FIR which the aircraft is entering and obtain clearance to enter its Control Area before reaching the transfer point of the two ACCs.

2.3.16 When a flight operates successively in a controlled area and subsequently along an advisory route or area, the clearance issued for the flight or any revisions thereto will only apply to those portions of the flight conducted within controlled airspaces.

2.3.17 A time check shall be obtained prior to operating a controlled flight and at such other times during the flight as may be necessary.

Note. *Such time check is normally obtained from an air traffic services unit unless other arrangements have been made by the operator or by the appropriate ATS authority.*

2.3.18 Wherever time is utilized in the application of data link communications, it shall be accurate to within 1 second of UTC.

2.3.19 Acrobatic Flight

2.3.19.1 No aircraft shall be flown acrobatically except under conditions prescribed by the appropriate authority and as indicated by relevant information, advice and/or clearance from the appropriate air traffic services unit.

2.3.20 Formation Flights

2.3.20.1 Aircraft shall not be flown in formation except by prearrangement taking part in the flight and, for formation flight in controlled airspace, in accordance with the conditions prescribed by the appropriate ATS authority (ies). These conditions shall include the following:

a) the formation operates as a single aircraft with regard to navigation and position reporting;
b) separation between aircraft in the flight shall be the responsibility of the flight leader and the pilots-in command of the other aircraft in the flight and shall include periods of transition when aircraft are manoeuvring to attain their own separation within the formation and during join-up and break-away; and
c) a distance not exceeding 1 km (0.5 NM) laterally and longitudinally and 30 m (100 ft) vertically from the flight leader shall be maintained by each aircraft.

2.4 Route And Level Assignment

2.4.1 The pilot-in-command shall fly in strict accordance to the route specified by ATC. Deviation from the specified route may be permitted by ATC if traffic conditions permit.

2.4.2 Traffic permitting, ATC will assign the flight planned level in accordance with the table of semi-circular system of Cruising Levels. Cruising levels below the minimum specified in ENR 3.1 will not be assigned.

2.4.3 Cruise climb techniques are not permitted on all routes within the Kuala Lumpur and Kota Kinabalu FIRs.

2.4.4 Stepped climb cruising techniques by jet aircraft will be approved whenever possible.

2.5 Essential Traffic Information

2.5.1 Essential traffic is that controlled traffic to which the provision of separation by ATC is applicable but, which in relation to a particular controlled traffic, does not have the required minimum separation.

2.5.2 Essential traffic information shall be issued to controlled flights concerned whenever they constitute essential traffic to each other.

Note. *This information will normally relate to controlled flights which are cleared subject to maintaining own separation and remaining in visual meteorological conditions.*

2.5.3 Essential traffic information shall include:

a) Direction of flight of aircraft concerned;
b) Type of aircraft concerned;
c) Level(s) of aircraft concerned and estimated time of passing or if this not available, the estimated time of arrival for the reporting point nearest to where the level will be crossed.

2.6 Departure Instructions

2.6.1 ATC may specify any or all of the following items when issuing clearance to departing aircraft:
a) turn after take-off;
b) track to make good before turning on to desire heading;
c) level(s) to maintain before continuing to climb to assigned level; and
d) time or point at which altitude changes shall be made.

2.6.2 ATC may instruct a departing aircraft to leave a reporting point at a specified time or to be at a specified level at a specified point or time. The pilot-in-command shall notify ATC if these instructions cannot be complied with.

2.6.3 To expedite departure, ATC may require a succeeding aircraft to do a 'step-up' climb beneath the altitude or level of preceding aircraft, maintaining at least 1000 or 2000 ft vertical separation, as applicable.

2.7 Approach Instructions

2.7.1 ATC clearance or control instructions for approach to an aerodrome or holding point will be issued to an arriving aircraft on initial contact with the appropriate ATC unit.

2.7.2 The clearance will specify the clearance limit, route and level to be flown. An Expected Approach Time will be included if it is anticipated that the arriving aircraft will be required to hold.

2.7.3 An arriving IFR flight shall not be cleared for an initial approach below the appropriate minimum altitude unless :

a) the pilot has reported passing an appropriate point defined by a radio aid; or
b) the pilot reports that he has and can maintain the aerodrome in sight; or
c) the aircraft is conducting a visual approach; or
d) the aircraft's position has been positively determined by the use of radar.

2.8 Visual Approach

2.8.1 An IFR flight may be cleared to execute a visual approach provided that the pilot can maintain visual reference to the terrain and:

a) the reported ceiling is at or above the approved initial approach level for the aircraft so cleared ; or
b) the pilot reports at the initial approach level or at any time during the instrument approach procedure that the meteorological conditions are such that, with reasonable assurance, a visual approach and landing can be accomplished.

2.8.2 Separation shall be provided between an aircraft cleared to execute visual approach and other arriving and departing aircraft.

2.8.3 When the pilot of an IFR flight reports that he has and can maintain the aerodrome in sight, the flight may be cleared for visual approach provided the conditions of para 2.8.1 are met.

2.9 Weather Information

2.9.1 Weather information shall be passed to inbound aircraft on request or when conditions fall below the following:

a) Scattered cloud at or below 1500 ft ; or
b) Visibility 5 km or less.

2.9.2 Weather deterioration and improvement reports and significant weather information, e.g. severe turbulence, thunderstorms, icing conditions etc. will be passed to all aircraft concerned.

2.10 Aircraft Joining Or Crossing Airways

2.10.1 Pilot-in-command of aircraft joining or crossing an airway will :
a) When flying under VFR outside the Terminal Areas and CTRs, notify the appropriate authority ; or
b) When flying under IFR, or when joining or crossing the Terminal Areas and CTRs, request clearance from the appropriate authority not latter than 10 minutes on VHF RTF or 20 minutes on HF RTF before joining or crossing.

2.10.2 An in-flight request or notification of intention to join an Airway shall include the following information, as appropriate:

a) Aircraft Identification;
b) Aircraft Type;
c) Position and heading;
d) Level and flight conditions;
e) Estimated time at point of joining;
f) Desired level;
g) Point of departure, route and point of first intended landing;
h) True airspeed;
i) The words 'Request joining clearance'.

2.10.3 An in-flight request or notification of intention to cross an Airway shall include the following information:

a) Aircraft Identification;
b) Aircraft type;
c) True track or position and heading;

d) Place and estimated time of crossing;
e) Desired crossing level;
f) Ground speed;
g) The words 'Request crossing clearance'.

2.11 VFR Flight Crossing Airways

2.11.1 VFR flights intending to cross Airways below FL 150 outside the Terminal Areas/CTRs shall only cross them at various levels plus 500 ft at an angle of 90° to the direction of the Airway/CTRs, or as close as possible to this angle.

2.11.2 In an emergency, where neither a radar nor a procedural crossing can be obtained, an Airway may be crossed at various levels plus 500 ft. The various levels referred to are flight levels of whole thousands in feet.

2.12 Temporary Danger Areas On Airways

2.12.1 Military operations, both air and ground frequently take place within the Kuala Lumpur and Kota Kinabalu FIRs. Danger areas will be promulgated by NOTAM, giving the reference point, vertical extent, radius and duration of the operation.

2.12.2 Where danger areas infringe controlled airspace, the areas will not be available for use by civil aircraft at the levels affected.

2.13 IFR Flights Outside Terminal Areas And CTRs In VMC

2.13.1 The pilot-in-command operating under IFR outside the Terminal Areas/CTRs at or below FL 150 may request a VFR clearance for any portion of the flight. In the absence of such a request, ATC will issue a full IFR clearance regardless of weather conditions.

2.13.2 Outside the Terminal Areas/CTRs when necessary to expedite traffic, ATC may request a pilot-in-command operating under IFR at or below FL 150 to conduct portion of the flight under VFR. An alternative clearance will be issued if the pilot-in-command has any doubt as to his ability to maintain VFR.

2.13.3 VFR flights shall NOT be operated:

a) between sunset and sunrise in all airspace ;
b) by day above FL 150 in all controlled airspace;
c) by day above FL 250 in uncontrolled airspace.

2.14 Aerodromes Located Below Airways - Special Requirements

2.14.1 Airways traffic using aerodromes located beneath an airway shall call Aerodrome Control when within VHF range and, after obtaining all necessary information, shall contact the ACC for descent clearance, leaving the airway as instructed. On leaving the airway, or when clear of other airways traffic, the aircraft will be transferred to aerodrome control for further instructions.

2.14.2 Upon request the aircraft will be cleared to remain on the airway and commence descent from the Navaid serving the destination airfield.

2.14.3 Aircraft departing from an unmanned aerodrome beneath an airway shall obtain an air traffic clearance by notifying the ACC of ETD, route and desired level as early as possible. If the clearance is not received when ready for departure, the pilot-in-command may take off but shall repeat his request and shall maintain VFR outside the airways and obtain ATC clearance prior to entering airways.

2.15 Kuala Lumpur Terminal Area And Control Zone - Special Requirements

2.15.1 All flights, IFR or VFR, conducted within the Kuala Lumpur Terminal Area/Control Zone are subject to an Air Traffic Control Clearance.

2.15.2 Lumpur Control/Radar performs Area Control functions, and Lumpur Director, Lumpur Approach South and Lumpur Approach North perform Approach Control functions for all aircraft arriving or departing from KL International Airport, Subang - Sultan Abdul Aziz Shah Airport or RMAF Aerodrome Simpang. Traffic will be released according to traffic circumstances to the respective Towers (Lumpur, Subang or Simpang), at the time, level or place specified by Lumpur Approach/Director.

2.15.3 SIDs and STARs will be issued for departing and arriving aircraft, as appropriate, in accordance with ENR 1.5.

2.15.4 All aircraft operating under IFR or VFR will call the appropriate authority not later than 10 minutes on VHF RTF or 20 minutes on HF RTF before joining or crossing the Lumpur Terminal Area/Control Zone.

2.15.5 VFR routes and Access Corridors.

VFR routes and Access corridors have been established to permit flights to and from the Lumpur Control Zone without entering the overlying Terminal Control Area (TMA). The vertical limits provide separation from overlying control or restricted areas. When using these lanes, pilots shall:

a) Operate under VFR;
b) Conform with the rules regarding terrrain clearance, and minimum heights over congested areas of cities, towns or settlements, or over an open air assembly of persons.
c) Operate not higher than the altitude specified for use in the VFR route unless with ATC approval.

3. AIR TRAFFIC ADVISORY SERVICE

3.1 Introduction

3.1.1 Air Traffic Advisory service is provided in areas or airspace where it is desirable to make information on collision hazards more effective than FIS provides, but facilities for the introduction of positive control are inadequate, or positive control cannot be applied for some reason; for example, inability to resolve airspace utilisation problems with other authorities concerned.

Note. *Air Traffic Advisory Service is normally implemented as a temporary measure pending the implementation of positive control.*

3.1.2 In addition to the provision of information on known traffic, Advisory Service offers suggestions and advice to assist the pilot-in-command to avoid collision with other aircraft.

3.1.3 Generally, procedures in advisory areas or airspace are similar to those in control areas.

3.1.4 Air Traffic Advisory Service does not provide for terrain clearance since this is the responsibility of the pilot-in-command.

3.1.5 There is no obligation on the part of a pilot-in-command to make use of this service and it does not therefore afford the same degree of safety and cannot assume the same responsibilities as air traffic control service since there may be unknown or unreported traffic operating in the advisory area or airspace.

3.1.6 The words 'Advise' or 'Suggest' will be used in advisory messages passed to the pilot-in-command by ATC. The pilot-in-command shall then indicate whether he intends to comply with the advice or suggestion.

3.1.7 A flight in an advisory area or airspace will not be subject to an air traffic clearance, but any changes in flight plan or flight progress should be notified to ATC.

3.2 Procedures

3.2.1 In electing to use the air traffic advisory service within the specified advisory areas and airspace, the pilot-in-command shall comply with the procedures applicable to flights within controlled airspace.

3.2.2 Requirements for the submission of a flight plan prior to departure or in flight are similar to those for flights in controlled airspace.

3.2.3 Traffic intending to cross an advisory area or airspace should request the permission of ATC. If unable to effect direct contact, notification should be relayed by another unit.

3.2.4 In crossing the advisory area or airspace the pilot-in command should, in so far as is possible, select a point associated with a radio facility to assist accurate navigation; and should cross as nearly as possible at right angle to minimize the time spent in the advisory area or airspace and at a level, appropriate to its track selected from the table of quandrantal cruising levels for use by flights operating outside controlled airspace.

3.2.5 If operating IFR in an advisory area or airspace but not electing to use the air traffic advisory service, the pilot-in-command should maintain a listening watch on the appropriate frequency and notify ATC of :

a) Position, true airspeed, cruising level and route, at hourly intervals; and
b) Any intended change in route or cruising levels.

3.2.6 The clearance limit of a flight will be the point at which the aircraft leaves the advisory area or airspace. Where the destination airfield is situated on an advisory area or airspace in the Kuala Lumpur or Kota Kinabalu FIRs the clearance limit will be the destination airfield.

3.3 Aircraft Operating Into Non - ATC Manned Rural Aerodrome In Kota Kinabalu FIR

3.3.1 Aircraft operating into non - ATC manned rural aerodromes are required to transmit on VHF Common Traffic Advisory Frequency (CTAF) 133.3 MHz for the purpose of carrying out airport advisory practices while operating to or from an airport without an ATS unit to enhance safety of flight in and out of these aerodromes.

1. Remark: The following procedures are mandatory and pilots who monitor/communicate on this frequency are not relief of their responsibilities to comply with the Air Navigation Order 1961.
2. All inbound traffic shall monitor and communicate on the designated CTAF 133.3 MHz from 10 miles to landing, on descend from cruising level, 5 minutes out and on Long Final approach to land.

3. Departure aircraft shall monitor/communicate on the appropriate frequency from start-up, during taxi and until10 miles from airport.
4. Pilots operating within this CTAF areas must also maintain two-way radio contact with Flight Information Service (FIS).

4. FLIGHT INFORMATION SERVICE

4.1 Introduction

4.1.1 Flight Information Service is provided to all flights.

4.1.2 Units providing FIS and the areas they serve are shown in ENR 3.

4.2 Provision Of Flight Information Service

4.2.1 Under this service the following information is provided to pilots by the FIC or at the request of the pilot:

a) SIGMET Information concerning tropical revolving storm, active thunderstorm area, severe line squall, heavy hail, severe turbulence, severe icing and marked mountain waves.
b) Special Air-Report as available.
c) Landing Forecast (Trend Type) for KL International Airport and Sultan Abdul Aziz Shah, Subang (H24). These landing forecast are provided to turbine operations when approximately one hour from the aerodrome of intended landing.
d) Aerodrome Forecasts and Amended Aerodrome Forecasts are readily available on request from Singapore for Kuala Lumpur (H24), Singapore (H24) and Soekarno-Hatta (H24).

Note. *Aerodrome forecasts and amended aerodrome forecast for other aerodromes are also provided on request but are not readily available.*

e) Special deterioration and improvement reports available for KL International Airport, Subang, Penang, Kota Kinabalu and Kuching . These reports for other aerodromes are also provided on request but are not readily available.
f) Met Reports (routine reports for aviation) are readily available on request for KL International Airport, Subang/Sultan Abdul Aziz Shah, Soekarno-Hatta, Singapore and Bangkok (H24).

Note. *Met reports for other aerodromes are also provided on request but are not readily available.*

g) Upper-Air information - Forecasts of upper winds and temperatures in the Kuala Lumpur FIR and Kota Kinabalu FIR (dawn to dusk only) are readily available on request from Kuala Lumpur and Kota Kinabalu.
h) Any other MET Information - In addition, pilots may request for any other MET information they require. Every effort will be made to provide the required information with the least possible delay.
i) The state of serviceability of navigational aids.
j) The state of aerodromes and associated facilities.
k) Any other information which might affect the safety of an aircraft, including information to IFR flights and of collision risks with other known traffic, unmanned balloons and release of radioactive and toxic materials into the atmosphere.
l) Reports of pre-eruptive volcanic activity, volcanic eruption and volcanic ash clouds.

4.2.2 In addition, the FIC may arrange diversions of aircraft in consultation with the appropriate operating company representative.

Note. *As traffic information may be based on data of doubtful accuracy and completeness and as it may be subject to communication delay, the FIC cannot assume any responsibility by issuing information or professing advice to aircraft in an endeavour to resolve an apparent hazardous traffic situation.*

4.2.3 No information on positions of surface vessels is provided by the Kuala Lumpur and Kota Kinabalu Air Traffic Control Centres.

5. AERODROME / APPROACH CONTROL SERVICE

5.1 Introduction

5.1.1 Aerodrome/Approach Control issue air traffic control clearances, instructions and information to aircraft to ensure the safe, orderly and expeditious flow of air traffic.

5.1.2 In VMC, all aircraft flying in a Control Zone (CTR), Aerodrome Traffic Zone (ATZ) and all traffic on the manoeuvring area of the aerodrome (with the exception of the marshalling area) come under Aerodrome Control. This does not, however, relieve the pilot-in- command from the responsibility for avoiding collision.

5.1.3 In IMC, control of traffic on the runway in use and in the air is shared between Aerodrome Control and Approach Control. Normally, departing aircraft are transferred to Approach Control when air-borne, whilst arriving aircraft are transferred to Aerodrome Control when properly sequenced for approach to land. The actual point of transfer depends on traffic conditions and is arranged between the two units accordingly. Control of traffic on other parts of the manoeuvring area, with the exception of the marshalling area, is the responsibility of Aerodrome Control.

5.1.4 CTR dimensions and controlling authorities are specified in Aerodrome (AD section).

5.2 Procedures

5.2.1 Holding, flow management instrument approach, arrival and departure procedures are specified in ENR 1.5.

5.2.2 Radio communication shall be established with the appropriate Aerodrome/Approach Control Unit:

a) Prior to pushback or engine start;
b) Prior to taxying for departure ; or
c) When intending to operate in a CTR or CTA.

5.2.3 For IFR or VFR operations in a CTR, aircraft shall be equipped with appropriate two-way VHF radio apparatus, plus a radio compass. Exemptions may be granted by the appropriate Controlling Authority.

5.2.4 Aircraft shall call aerodrome/approach control on VHF approximately 10 minutes before ETA at the Zone boundary (or 20 minutes, where communications are on HF RTF).

5.2.5 A pilot-in-command under IFR or VFR about to enter, cross or operate within a CTR shall:

a) Notify aerodrome/approach control on the appropriate radio frequency of the aircraft's position, level and track;
b) Estimate time of crossing the zone boundary;
c) Maintain a continuous listening watch of that frequency while the aircraft is within the zone;
d) Navigation in accordance with the flight plan and ATC clearance;
e) Carry out instructions received from aerodrome/approach control.

5.2.6 All flights within a Control Zone, between sunset and sunrise or in IMC, shall be conducted in accordance with IFR or special authorisation by ATC. However at any time, in order to expedite traffic, ATC may authorise IFR flights to execute visual approaches if the pilot can maintain visual reference to the terrain and:

a) The reported cloud ceiling is at or above the approved initial approach level for the aircraft so cleared; or
b) The pilot reports at the initial approach level or at any time during the instrument approach procedure that the meteorological conditions are such that a visual approach and landing can be accomplished with reasonable assurance.

5.2.7 VFR flights without radio may be specially authorised by ATC and without radio, may be permitted in a CTR under special circumstances, subject to traffic permitting. In this case, permission shall be obtained before departure and the flight shall be conducted in strict accordance with such conditions as may be specified.

5.2.8 VFR flights within a CTR may be specially authorised by ATC when weather conditions fall below the minima for VFR flights. Such flights when so authorised, shall be flown clear of cloud and in sight of the ground or water.

5.2.9 Separation shall be effected between all specially authorised flights and between such flights and all IFR flights.

5.3 Separation Standards

5.3.1 Vertical or horizontal separation shall be provided between :

a) all aircraft operating in Class A and B airspace;
b) IFR flights in Class C airspace;
c) IFR flights and VFR flights in Class C airspace;
d) IFR flights and special VFR flights;
e) Special VFR flights.

5.3.2 Wake Turbulence separation standards will be applied as follows:

LEAD	FOLLOW	DEPARTURE		ARRIVAL	DISPLACED LANDING THRESHOLD	OPPOSITE DIRECTION RUNWAY	RADAR
AIRCRAFT	AIRCRAFT	FULL LENGTH	INTER-MEDIATE				
(note 1)	(note 1)	TIME	TIME	TIME	TIME	TIME	DISTANCE (note 2)
HEAVY	HEAVY MEDIUM LIGHT	- 2 2	- 3 3	- 2 3	- 2 2	- 2 2	4 5 6
MEDIUM	HEAVY MEDIUM LIGHT	- - 2	- - 3	- - 3	- - 2	- - 2	- - 5

Note 1. *For the application of wake turbulence separation, aircraft are grouped into three categories, as follows*:
a) **HEAVY** - aircraft types of 136,000kg or more:
b) **MEDIUM** - aircraft types less than 136,000kg but more than 7,000kg; and
c) **LIGHT** - aircraft types of 7,000kg or less.

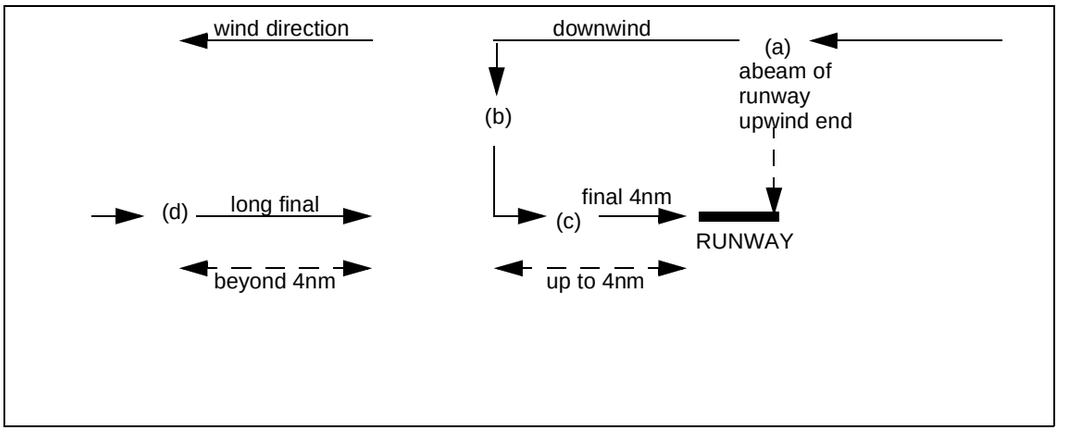
Note 2. *The minimum radar standard or the applicable wake turbulence standard, which ever is the greater, will be applied.*

5.3.3 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 shall apply:

a) The pilot-in-command shall expressly initiate the request for 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.

5.3.4 When a pilot-in-command accepts responsibility for wake turbulence separation from another aircraft, the pilot acknowledges that air traffic control will no longer be responsible for the application of wake turbulence separation standards to that specific flight operation.

5.4 Visual Circuit Reporting Procedure



5.4.1 The pilot-in-command shall report position in accordance with the diagram above.

a) Downwind
Aircraft shall report 'Downwind' abeam the upwind of the runway.

b) Base Leg
Aircraft shall report 'Base Leg' on completion of the turn on to the base leg.

c) Final
Aircraft shall report 'Final' after completion of the turn on to final approach, not more than 4 NM from the approach end of the runway.

d) Aircraft flying a straight-in approach shall report 'Long Final' 8 NM from the approach end of the runway, and 'Final' when at 4 NM.

Note. *At grass aerodromes, the area to be used for landing is regarded as the runway for the purpose of reporting position in the circuit.*

5.5 Use Of Runway

5.5.1 The Aerodrome/Approach Controller will nominate the runway direction according to prevailing conditions.

5.5.2 Notwithstanding the runway direction nominated by ATC, the pilot-in-command shall ensure that there is sufficient length of run and that the crosswind or downwind component is within the operational limits of each particular operation. If the nominated runway direction is not suitable for these reasons or for any other safety reason, he may request for an alternative runway direction. ATC will grant the use of an alternative runway direction but the flight may be subject to delay because of other traffic.

5.5.3 The decision to undertake a take-off or a landing on a water affected runway or when the presence of birds has been advised, rests solely with the pilot-in- command.

5.5.4 Unless prior permission has been obtained from ATC, the pilot-in-command of an aircraft which has been cleared for take-off' shall not hold on the runway-in- use.

5.5.5 During daylight hours, in VMC, an aircraft may be cleared to continue approach to a runway occupied by a preceeding aircraft but clearance to land will not be given until the runway is vacated.

5.5.6 Notwithstanding para 5.5.5, at KL International Airport or Subang - Sultan Abdul Aziz Shah Airport, succeeding aircraft may be cleared to land on the runway in use if the types are such that no hazard exists and if the pilot-in-command of the No. 2 aircraft advises that he can maintain adequate separation in the air and on the runway, from the preceeding aircraft.

Note. *The difference is justified by the length of runway available at KL International Airport, Subang - Sultan Abdul Aziz Shah Airport. It is applied to permit light aircraft to land when the runway is occupied by a preceeding heavy aircraft, adequately displaced down the runway. The pilot of succeeding aircraft should however, be made aware of turbulence in the wake of the preceeding aircraft.*

5.6 Closure Of Aerodromes

5.6.1 Aircraft will not be refused permission to land or take- off from airfields in the Kuala Lumpur FIR and Kota Kinabalu FIR solely because of adverse weather conditions. The pilot-in-command of public transport aircraft shall be responsible for operations in accordance with applicable company weather minima.

5.6.2 Aerodromes will be closed:

a) When the surface of the landing area is unfit e.g. soft surface or dangerous obstruction on the manoeuvring area; or
b) At such other times and in conditions specified by NOTAM.

5.6.3 In an emergency an aircraft will be permitted to land regardless of the conditions of the aerodrome or aerodrome facilities, but the pilot will be advised of these conditions.

5.7 Air Traffic Control Clearances

5.7.1 All flights within a CTR, irrespective of weather conditions require an air traffic control clearance.

5.7.2 The pilot-in-command of an aircraft departing from a CTR shall obtain an air traffic control clearance prior to departure.

5.7.3 A clearance to enter or cross a CTR will include the following information:

a) A clearance limit and holding instructions, if necessary;
b) The route to be flown; and
c) The altitude or flight level.

5.7.4 Air Traffic Control Service

5.7.4.1 Whenever an aircraft has requested a clearance involving priority, a report explaining the necessity for such priority shall be submitted, if requested by the appropriate air traffic control unit.

5.7.5 Potential Reclearance in Flight

5.7.5.1 If prior to departure it is anticipated that depending on fuel endurance and subject to reclearance in flight, a decision may be taken to proceed to a revised destination aerodrome, the appropriate air traffic control units shall be so notified by the insertion in the flight plan of information concerning the revised route (where known) and the revised destination.

Note. *The intent of this provision is to facilitate a reclearance to a revised destination, normally beyond the field destination aerodrome.*

5.7.6 Overtaking

5.7.6.1 An overtaking aircraft is an aircraft that approaches another from the rear on a line forming an angle of less than 70 degrees with the plane of symmetry of the latter, i.e. is in such a position with reference to the other aircraft that at night it should be unable to see either of the aircraft's left (port) or right (starboard) navigation lights. An aircraft that is being overtaken has the right-of-way and the overtaking aircraft, whether climbing, descending or in horizontal flight, shall keep out of the way of the other aircraft by altering its heading to the right, and no subsequent change in the relative positions of the two aircraft shall absolve the overtaking aircraft from this obligation until it is entirely past and clear.

5.8 Suspension Of VFR Flights

5.8.1 VFR flights shall not be permitted to take-off or land at an aerodrome within a control zone or enter the traffic pattern.

a) When the reported cloud ceiling is below 1,500 ft ; or
b) When the ground visibility is less than 5 KM.

5.9 Start-Up Procedures

5.9.1 For all IFR aircraft operating at the airfields within Control Zones at which Aerodrome Control Services and/or Surface Movement Control Services are provided, prescribed procedures below shall apply:

a) Obtain ATC clearance from Surface Movement Control frequency/Clearance Delivery frequency prior to starting engines;
b) On receipt of ATC clearance, obtain clearance for start up and/or push back clearance from Surface Movement Control frequency within 5 minutes;
c) Obtain taxi instructions and maintain a listening watch on the prescribed Surface Movement Control frequency while taxiing;
d) Change to Aerodrome Control frequency when instructed.

5.9.2 ATC clearances for VFR departures may be obtained prior to aircraft commencing taxi.

5.9.3 At KL International Airport and Subang Sultan Abdul Aziz Shah Airport, the following procedure shall apply.

The pilot-in-command shall:
a) obtain ATC clearance from Lumpur Delivery,
b) on receipt of ATC clearance, contact Lumpur Ground/Subang Ground for start-up and/or push-back clearance within 5 minutes,
c) follow the procedures in accordance with paragraph 5.10.2 sub para (c) onwards

5.10 Taxiing

5.10.1 A pilot-in-command shall obtain clearance to taxi before leaving the parking area.

Note. *Taxi clearance will relate to movement on the manoeuvring area, but excluding the marshalling area.*

5.10.2 Aircraft taxying on the manoeuvring area will be regulated by ATC to avoid or reduce possible conflict and will be provided with traffic information and alerting service.

5.10.3 The pilot-in-command shall not taxi his aircraft on to the runway in use except with the permission of aerodrome control.

5.10.4 An aircraft taxiing on the maneuvering area shall stop and hold at all runway-holding positions unless otherwise authorized by the aerodrome control tower.

5.11 Take Off And Landing

5.11.1 The pilot-in-command shall not take-off or land without a clearance from aerodrome control.

5.11.2 The pilot-in-command shall not run-up engine(s) on the runway in use unless authorised by aerodrome control. Engine run-ups may be carried out in the holding pan or taxiway holding point clear of the runway in use.

5.11.3 Departing aircraft will be instructed when to change from aerodrome/approach to approach/enroute control frequency.

5.11.4 After landing, the pilot-in-command shall vacate the runway by the shortest possible route or in accordance with instructions from aerodrome control and change to ground frequency, where available, immediately after clearing the runway. The pilot shall maintain a watch on ground frequency/frequencies for taxiing and parking instructions until the aircraft has arrived at the parking bay.

5.11.5 Non-radio equipped aircraft shall stop after vacating the runway and watch for light signals from aerodrome control tower.

5.12 Arriving Aircraft

5.12.1 The pilot-in-command of an arriving aircraft shall contact the appropriate approach control unit 10 minutes before entering the CTR, or as instructed by enroute control.

5.12.2 Arriving traffic will be issued with the following weather information except where ATIS is available:

a) Wind direction and speed;
b) Visibility;
c) Present weather;
d) Cloud base and amount;
e) QNH; (QFE on request); and
f) Any other significant meteorological information.

Note. *If the aircraft reports VMC below cloud and it is apparent that it can maintain VMC, only the surface wind and appropriate pressure need be given unless a full report is requested by the pilot.*

5.13 Instrument Approach

5.13.1 Instrument approaches are specified in ENR 1.5.

5.13.2 An expected approach time will be issued on initial contact with Approach Control. Any revisions will be notified immediately to the pilot-in-command.

5.14 Missed Approach

5.14.1 In the event of a missed approach the pilot-in-command shall initiate the published missed approach procedure.

5.15 Aerodrome Flight Information Service

5.15.1 A flight information service is provided at certain notified aerodromes where no Air Traffic Control is established.

5.15.2 This 'Service' is called 'Aerodrome Flight Information Service' and it is operated at some of the less busy aerodromes and airstrips where lack of suitably qualified staff or scarcity of movements precludes the establishment of an Aerodrome Control Service.

5.15.3 The function of the 'Aerodrome Flight Information Service' is to provide certain vital information to pilots wishing to land. It is not an air traffic control service.

5.15.4 Pilots will be given the information they require but will be expected to decide for themselves what action they should take. For example, they will be told the wind direction and speed but they will have to make up their own minds which runway should be used. They can however be advised of the direction of the runway nearest into wind, but this need not necessary be used.

5.15.5 The fundamental difference between the 'Aerodrome Flight Information Service' and an Air Traffic Control Service such as Aerodrome or Approach Control Service is that in the Aerodrome Flight Information Service, no 'Control' of aircraft is exercised nor are instructions' passed to pilots.

5.15.6 The Aerodrome Flight Information Service will operate as follows:

a) Provision of aerodrome weather information.
b) Information of the state of serviceability of the aerodrome and its facilities.
c) Relay of messages from or to respective FICs.
d) Provision of information on vehicular traffic on the manoeuvring area.
e) Provision of aerodrome crash and fire services and alerting of other local emergency services.
f) Provision of emergency aerodrome lighting.
g) Information of other traffic.

5.15.7 Right-of-way

Note1 The aircraft that has the right-of-way shall maintain its heading and speed, but nothing in these rules shall relieve the pilot-in-command of an aircraft from the responsibility of taking such action, including collision avoidance manoeuvres based on resolution advisories provided by ACAS equipment, as will best avert collision.

Note1 - *Operating procedures for use of ACAS are contained in PANS-OPS (Doc 8168), Volume I, Part VIII, Chapter 3.*

Note 2- *Carriage requirements for ACAS equipment are addressed in Annex 6, Part I, Chapter 6.*

Note1 An aircraft that is obliged by the following rules to keep out of the way of another shall avoid passing over,

under or in front of the other, unless it passes well clear and takes into account the effect of aircraft wake turbulence.

5.15.8 Approaching Head-on

5.15.8.1 When two aircraft are approaching head-on or approximately so and there is danger of collision, each shall alter its heading to the right.

5.15.9 Converging

5.15.9.1 When two aircraft are converging at approximately the same level, the aircraft that has the other on its right shall give way, except as follows:

a) power-driven heavier-than-air aircraft shall give way to airships, gliders and balloons;
b) airships shall give way to gliders and balloons;
c) gliders shall give way to balloons;
d) power-driven aircraft shall give way to aircraft which seen to towing other aircraft or object.

5.15.10 Overtaking

5.15.10.1 An overtaking aircraft is an aircraft that approaches another from the rear on a line forming an angle of less than 70 degrees with the plane of symmetry of the latter, i.e. is in such a position with reference to the other aircraft that at night it should be unable to see either of the aircraft's left (port) or right (starboard) navigation lights. An aircraft that is being overtaken has the right-of-way and the overtaking aircraft, whether climbing, descending or in horizontal flight, shall keep out of the way of the other aircraft by altering its heading to the right, and no subsequent change in the relative positions of the two aircraft shall absolve the overtaking aircraft from this obligation until it is entirely past and clear.

5.16 Special VFR Flight

5.16.1 A Special VFR flight provides flexibility, during Instrument Meteorological Conditions or between the hours of sunset and sunrise in a control zone, to a pilot who is unable to comply with Instrument Flight Rules.

5.16.2 Special VFR flights may be authorised to enter a control zone for the purpose of landing or take-off and depart directly from a control zone.

5.16.3 Special VFR flights may be authorised only when the ground visibility is not less than 1500 metres.

5.16.4 Special VFR flights must not be allowed to hinder or interfere with IFR flights and must therefore be regarded as a concession which will be granted when traffic conditions permit. IFR flights take precedence over Special VFR flights.

5.16.5 A Special VFR clearance may be issued only when specifically requested by a pilot.

5.16.6 Authorization for Special VFR flights will depend upon traffic conditions, the extent of the proposed flight and whether or not air/ground communications can be maintained.

5.16.7 Special VFR flights will not normally be given a specific level to fly; they will be merely instructed to remain clear of cloud and in sight of the surface. However, if it is necessary to maintain vertical separation from other aircraft above, the Special VFR aircraft may be required to remain below a specified level.

5.16.8 Standard separation shall be provided:

a) Between IFR flight and Special VFR flights.
b) Between flights operating on Special VFR clearance.

5.16.9 The pilot-in-command of a Special VFR flight shall:

a) submit a Flight Plan or a flight notification.
b) comply with ATC instructions.
c) be responsible for ensuring that he flies within the limitation of his licence.
d) be responsible for ensuring that he is able to remain clear of cloud, in sight of the surface and keep clear of obstacles.
e) be responsible for maintaining the minimum safe altitude/low flying restrictions as prescribed in Rule 5 of the Eleventh schedule of the Civil Aviation Regulation 1996.

5.16.10 Aircraft flying under Special VFR authorisation are subject to the general flight rules. Compliance with these rules is the responsibility of the pilot.

6. LIGHT AIRCRAFT OPERATIONS

6.1 General

6.1.1 Light aircraft operations will normally be conducted under VFR. Request for operations under IFR may be approved if the aircraft is suitably equipped and the pilot appropriately rated.

6.1.2 Flight notification shall be given by telephone or by filing a Flight Plan prior to departure. Flight notification by means of RTF should be avoided.

6.1.3 For circuits and landings or local flights in the vicinity of an aerodrome of not more than one hour's duration. The following information should be given:

a) Aircraft identification and type ;
b) Flight rules;
c) Name of pilot ;
d) Number of persons on board ;
e) ETD ;
f) Flight duration ;
g) Total endurance ;
h) Area of flight.

6.1.4 For flights other than those classified in para 6.1.3, a flight plan shall be filed.

6.1.5 Light aircraft engaged in training or proceeding outside a CTR shall maintain two-way RTF communication.

6.1.6 Non-radio equipped aircraft may operate at an airfield at the discretion of ATC when traffic conditions permit. The light signals specified in Appendix 'A' shall be strictly adhered to.

6.1.7 Light aircraft intending to operate on airways shall, in addition to radio communication apparatus, be equipped with navaid equipment appropriate for the route.

6.1.8 Non-radio equipped aircraft will be controlled by the prescribed light signal from the Tower and, in-flight, shall acknowledge by rocking the wings.

6.1.9 Light aircraft operating in Malaysia shall be capable of maintaining VHF communication with respective ATS Units and the Aerodrome Control Unit of the destination airfield. Application for exemption from this requirement may be made to respective ACCs.

6.2 Local Flying Restriction

6.2.1 For local flying restriction refer to AD 2 section of the AIP.

7. POSITION REPORTS

7.1 In so far as range permits, the pilot-in-command shall report position to the responsible ATC unit on the appropriate VHF RTF frequency. When outside VHF R/T range, the pilot-in-command shall report position on HF RTF.

7.2 The pilot-in-command shall report position as soon as possible after the aircraft has passed each designated reporting point or 'on request' reporting point (when so required by ATC).

7.3 Where no designated or 'on request' position report is required, the pilot-in-command shall report position hourly in latitude and longitude and shall report 'Operations Normal' every 30 minutes in between.

Note. *Operating companies may request approval to make fixed rather than hourly reports.*

7.4 A position report shall comprise Section I or Section I and III, or the AIREP form of report:

a) Section I (Position Report)

i) Aircraft identification
ii) Name of reporting point or position
iii) Time at reporting point or position

iv) Flight level or altitude
v) Next position and time over
vi) Ensuing significant point

b) Section ll (Operational Information)

i) Estimated time of arrival
ii) Endurance

c) Section lll (Meteorological Information)

i) Air temperature
ii) Mean Wind or spot wind and position thereof or equivalent tail wind
iii) Turbulence
iv) Aircraft icing
v) Supplementary information

7.5 Section ll - Operational Information of an AIREP is not required for turbine powered aircraft operations.

7.6 Designated and on request reporting points for the various established routes are listed in ENR 3. Position reports which require Section lll (Meteorological Information) are detailed in GEN 3.5.

8. HOLDING

8.1 An aircraft required to hold en-route or over the destination holding point shall do so in accordance with the holding pattern specified for the radio aid in ENR 3.6.

8.2 Where no specified holding pattern is established and en-route holding is required by ATC, the pilot-in- command shall hold in accordance with the standard holding pattern as follows:

a) Follow the specified track inbound to the holding point;
b) On passing the holding point, make a 180° rate one turn to the right;
c) Maintain a parallel track outbound from the holding point for 1 minute if at FL 140 or below and 1 1/2 minute if above FL 140.
d) Make a 180° rate one turn to the right; and
e) Follow the specified track inbound.

Note.

1. *Notwithstanding para 8.2 above, ATC may instruct an aircraft to execute a left hand turn and specify the direction in which the aircraft is to be held in relation to the reporting or holding point en-route.*
2. *The pilot-in-command should adjust his holding pattern within the limits of the established holding area in order to leave the holding point as far as possible at the exact time specified.*

9. FLIGHT IN CONTROLLED AIRSPACES

9.1 Within Class A, B and C airspace, ATC separate IFR flights:

a) Vertically : by assigning them different levels or altitudes;
b) Longitudinal: by instructing two aircraft to maintain a minimum time interval or distance between them; and
c) Laterally : by providing different flight paths.

9.2 Standard Separation in accordance with PANS-RAC DOC 4444 - RAC/501/13 shall be provided to all flights operating in controlled airspace, except when:

a) Aircraft are cleared to operate VMC below FL 150 en-route, holding, climbing or descending during the hours of daylight;

b) Positive identification by radar of an aircraft's position is available to the appropriate ATC Unit;

c) Within all TMA/CTR and Airways, reports received from opposite direction aircraft indicate they have definitely passed each other.

d) Within the Kuala Lumpur TMA/CTR, Johor TMA/ CTR and Airways for same direction, arriving, departing and en-route traffic, a succeeding aircraft can continuously keep a preceding aircraft in sight from the time they are 1000 ft vertically apart until level change is completed and vertical separation restored and

e) In the vicinity of an aerodrome:

i) two or more aircraft are continuously visible to an aerodrome controller who can take positive action to ensure separation; or

ii) all aircraft are continuously visible to one another and pilots indicate that they can maintain their own separation.

9.3 When operating in VMC, on an IFR flight plan, the pilot-in-command shall keep a lookout for other aircraft to avoid collision hazard.

9.4 All aircraft operating under IFR or VFR on airways shall be equipped with appropriate two-way radio communications, suitable instrument and radio navigation apparatus appropriate to the route to be flown and the pilot shall hold an instrument rating.

10. TRANSFER OF COMMUNICATIONS

10.1 The transfer of Air/Ground communications contact to an adjoining Area Control Centre in adjacent FIRs is normally made at the agreed transfer point or at the common FIR boundary.

11. ALERTING SERVICE

11.1 Alerting service is available for all notified aircraft movements in the Kuala Lumpur and Kota Kinabalu FIRs.

11.2 The pilot-in-command of an aircraft landing at an unattended landing ground shall notify arrival to ATC by the most expeditious means available.

12. ROUTING REQUIREMENTS

12.1 All aircraft entering / transiting the Kuala Lumpur and Kota Kinabalu FIRs shall route via published ATS Routes.

APPENDIX 'A'

LIGHT SIGNALS

LIGHT (Direct towards aircraft concerned)	**AIRCRAFT IN FLIGHT**	**AIRCRAFT ON THE GROUND**
Steady Green	CLEARED TO LAND	CLEARED FOR TAKE-OFF
Steady Red	GIVE WAY TO OTHER AIRCRAFT AND CONTINUE CIRCLING	STOP
Series of Green Flashes	RETURN FOR LANDING*	CLEARED TO TAXI
Series of Red Flashes	AERODROME UNSAFE, DO NOT LAND	TAXI CLEAR OF LANDING AREA IN USE
Series of White Flashes	LAND AT THIS AERODROME AND PROCEED TO APRON*	RETURN TO THE STARTING POINT ON THE AERODROME
Red Pyrotechnic Light	NOTWITHSTANDING ANY PREVIOUS INSTRUCTIONS, DO NOT LAND FOR TIME BEING	-

*** Authorisation to land will be thereafter given as a Steady Green Light**