

ENR 1.5 HOLDING, APPROACH AND DEPARTURE PROCEDURES

1. General

1.1. The holding, approach and departure procedures in use through out the Kathmandu FIR (VNSM) are based in accordance with the criteria contained in ICAO Doc 8168- Procedure for Air Navigation Services-Operation (PANS-OPS).

1.2. The holding and approach procedures in use have been based on the values and factors contained in parts III and IV of Vol.I of the PANS-OPS. The holding patterns shall be entered and flown as indicated in VNKT AD 2 – 49.

1.3. An aircraft approaching an aerodrome under IFR for the purpose of making a landing shall conform to the holding and instrument approach procedures for the radio navigation aid employed as prescribed in the appropriate instrument approach charts.

1.4. Pilots will be expected to know the correct holding, approach and departure procedures.

2. Holding Procedures

2.1. An aircraft shall hold in flight as required for the purpose of establishing separation and for absorbing delays caused by traffic peaks or weather. Holding shall be accomplished in accordance with approved procedures. If aircraft are required to hold at a point for which there is no approved procedure, they shall do so in a manner specified by ATC. If a delay of 30 minutes or more is anticipated the pilot-in-command will be notified as early as possible along with the operating agency.

2.2. A request by a pilot-in-command to deviate from an approved holding procedure may be approved, if known conditions permit.

2.3. When an aircraft is holding over an aerodrome which is closed for landing or where weather conditions are less than the prescribed minima; ATC will nominate a schedule of reporting time normally at 15 minutes interval.

2.4. During an instrument approach sequence the aircraft estimated to arrive first over a holding point will be assigned the lowest level available. The succeeding aircraft will be given priority in the order of their estimated time of arrival over such point.

2.5. Holding patterns for all controlled aerodromes are indicated on the applicable approach charts.

2.6. VFR Holding points in Kathmandu are detailed in sub-section VNKT AD 2-51 and VNKT AD 2- 52.

2.7. Initial approach tracks and holding patterns associated with Tribhuvan International Airport is detailed in charts VNKT AD 2 –48/49 prepared for the purpose. Holding patterns for other airfields are indicated on the applicable approach charts.

3. Low Level Holding Areas (Tribhuvan International Airport)

3.1. The holding areas for procedural traffic landing at Tribhuvan International Airport depend on the runway in use at Tribhuvan International Airport and are as follows:

- a) RWY 02/20 --- GURAS holding area – lower / upper limits 11500/13500 ft.
- b) RWY 02/20 --- IGRIS holding area-- lower / upper limits 10500/13500 ft.
- c) RWY 02/20 --- DARKE holding area-- lower / upper limits 10500/13500 ft.

3.2. Details of these holding areas are given in sub-section ENR 3.6. They are also shown in charts VNKT AD 2 – 49.

4. High Level Holding Areas (Tribhuvan International Airport)

4.1. High Level Holding Areas are also established at GURAS and Kathmandu VOR (KTM). The lower/upper limits are FL150/FL190 respectively. Details of these areas are given in sub section ENR 3.6. They are also shown in charts VNKT AD 2 – 49. The GURAS and KTM holding shall not be used simultaneously at same level.

5. Holding Speeds

5.1. The maximum holding speed for all holding areas at Kathmandu is 230 Kts.

5.2. During condition of turbulence, pilots may request clearance to hold at higher speeds for both high and low level holding areas.

6. Standard Instrument Departure (SID) and Standard Instrument Arrival (STAR)

Pilots departing from and landing at Tribhuvan International Airport should refer to the procedures in charts VNKT AD 2-27 to VNKT AD 2-38 and VNKT 2-45 to VNKT AD 2-49.

7. Arriving flights

7.1. IFR flights entering and landing within a terminal control area/ CTR will be cleared to a specified holding point and instructed to contact approach/ aerodrome control at a specified time, level or position. The terms of this clearance shall be adhered to until further instructions received from approach/ aerodrome control. If the clearance limit is reached before further instructions have been received, holding procedure shall be carried out at the level last authorized.

7.2. Entry to the holding patterns and procedures shall be carried out as precisely as possible. Pilots are advised to inform ATC for any deviation.

7.3. Pilots making instrument approaches at VNKT aerodrome shall refer to the procedures in the instrument approach charts. (Reference VNKT AD 2-36 to VNKT AD 2-38)

7.4. In TIA, arriving VFR aircraft shall be required either to enter and remain within TMA at appropriate level till control zone boundary for further descent below 7500' AMSL or to fly well clear of TMA and enter control zone at a level below 7500' AMSL. Aircraft making VOR/DME Approach must include level while reporting position (Radial/DME). In case the

aircraft reports incorrectly against the prescribed procedure, the controller shall alert the aircraft accordingly.

7.5. IFR Flights Entering Control Zones.

- 7.5.1. a) Aircraft shall establish communication with the aerodrome control tower before entering the control zone and report position, level and flight conditions at the first contact.
- b) In case of Tribhuvan International Airport, aircraft shall establish communication with Kathmandu Approach Control before entering control area or control zone.

7.5.2. A clearance up to the aerodrome or to an appropriate holding point shall be issued along with the following instructions by the control tower/ Kathmandu approach,

- a) The type of instrument approach to be expected;
- b) Expected Approach Time (EAT), if delay exceeds 5 minutes
- c) Expected time for onward clearance, if instructions are issued to hold for an indefinite period at a holding point from which instrument approach is not intended,

7.5.3. Control TWR/Approach control will also specify the following information:

- a) runway to be used
- b) landing information

7.6. VFR Flight Entering Control Zone

- 7.6.1. a) Aircraft shall establish communication with the aerodrome control tower before entering the control zone and report position, level and flight conditions at the first contact.
- b) In case of Tribhuvan International Airport aircraft shall establish communication with approach control unit before entering control area or control zone.

7.6.2. Approach control /Aerodrome control will provide instructions for progressive descents, changes in route, clearance limits and holding instruction. It will also advise and update necessary details of the runway to be used and other landing information;

7.7. Visual Approach

7.7.1. 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 condition are such that with reasonable assurance a visual approach and landing can be completed.
- c) The visibility at the aerodrome is 5 km or more.

7.7.2. Notwithstanding Para 7.7.1(b) and (c), if the pilot reports that he has the aerodrome in sight and conduct his approach with visual reference to terrain, the flight may be

cleared for a visual approach/ circle to land. Separation shall be provided between an aircraft cleared to execute a visual approach and other arriving and departing aircraft.

7.8. *Provision of information for Landing*

7.8.1. ATC shall supply the following information for landing operation;

- a) Runway in use
- b) Wind direction and speed, QNH and temperature
- c) Significant weather information, including low cloud and visibility
- d) Cross-wind component, if this equals or exceeds 8 knots for single-engine aircraft or 12 knots for multi-engine aircraft.
- e) Down wind component, if pilot chooses to operate in downwind
- f) Aerodrome surface conditions
- g) Presence of birds on or in the vicinity of the runway.

7.8.2. ATC, whenever practicable, advise the aircraft about the wake turbulence and its hazards.

7.9. *Selection of Runway-in-Use for landing*

7.9.1. The term 'runway-in-use' shall be used to indicate the runway that, at a particular time, is considered by the aerodrome control tower to be the most suitable to be used by the types of aircraft expected to land at the aerodrome.

7.9.2. Normally, an aircraft will land into the wind unless safety, the runway configuration, meteorological conditions and available instrument approach procedure or air traffic conditions determine that a different direction is preferable. In selecting the runway in use, however, the unit providing aerodrome control service shall take into consideration, besides, surface wind speed and direction, other relevant factors such as the aerodrome traffic circuit, the length of runway, and the approach and landing aids available.

Note.— The decision to land on a wet runway or when the presence of birds has been advised, rests solely with the pilot-in-command

7.10. *Selection of Circuit Direction*

7.10.1. Circuit directions and turns shall be specified by aerodrome controller, taking into consideration of the traffic and separation requirements.

Note.— If a particular runway circuit turn is essential for the safe operation of the aircraft, the pilot in command shall make a request to ATC, which may be granted if conditions permit.

7.11. *Landing*

7.11.1. Irrespective of the clearance received, a pilot-in-command shall not land unless he has received a specific clearance to do so in the terms "CLEAR TO LAND".

7.11.2. Unless specifically permitted, aircraft shall not hold on the runway.

7.12. ***Separation Requirement for Landing:***

7.12.1. An aircraft shall not be issued landing clearance until:

- a) A preceding departing aircraft using the same runway is airborne, and has crossed up wind end or commenced a turn;
- b) A preceding landing aircraft using the same runway has vacated it.

7.13. ***Taxing after Landing***

7.13.1. Unless otherwise authorized by ATC, an aircraft shall promptly vacate the runway and proceed to the normal parking area via the shortest available taxiway. However, an aircraft shall not backtrack on the runway without obtaining a clearance.

7.13.2. A pilot-in-command unfamiliar with the aerodrome shall request for guidance to the terminal. The controller will then issue necessary instructions.

8. **Departing Flights**

8.1. IFR flights departing from controlled aerodromes will receive initial ATC clearance. The clearance limit will normally be the aerodrome of destination. IFR flights departing from un-controlled aerodromes must make prior arrangements.

8.2. The instrument departure procedures are only applicable for aircraft with all engines operating.

8.3. Pilots departing from controlled aerodromes, where standard instrument departure procedures have been published, shall comply accordingly.

8.4. Minimum climb gradient specified in the charts take in to account necessary obstacle clearance requirements.

8.5. VFR flights departing from TIA shall be required either to leave Control Zone at a level below 7500' AMSL and fly well clear of TMA before climbing to en route level or reach at or above 7500' by Control Zone boundary in order to remain within controlled airspace.

9. **Engine Starting Procedure**

9.1. When operating at controlled aerodromes, the pilot-in-command of an aircraft shall request clearance to start engines. Clearance to start engines will be given by using the phrase "START-UP APPROVED"

Note1.— Once the start-up clearance is issued, it is expected that the pilot-in-command shall start engines within 5 minutes

Note2.— 2 At TIA, surface movement control is provided on 121.9 MHZ to control all ground movement of aircraft other than the movement on the runway

10. **Procedures for push back and engine start up at TIA**

10.1. Aircraft departing from TIA shall get permission for push back.

10.2. To avoid confusion, pilots shall use the correct phraseology as detailed in Para 10.2.1, when ready for push back.

10.2.1. The pilot shall notify ATC when the aircraft is ready to push back within 5 min using the following phraseology:

- callsign;
- destination;
- proposed flight level and alternate level, if any;
- parking position;- and
- ready to push back in 5 minutes.

10.2.2. On receipt of the "ready to push back" call, ATC will advise the pilot push back clearance and an ATC clearance may be issued accordingly. If pre-departure coordination with an adjacent centre is required, the pilot will be instructed to standby.

10.2.3. By the completion of push back, the departing aircraft must have all engines running and shall be ready for taxi, unless otherwise instructed by ATC.

11. **Information provided prior to Take-off.**

11.1. ***Prior to departure the aircraft shall be provided with the following information:***

- a) Runway-in-use;
- b) Wind direction and speed, QNH and temperature;
- c) A time check to the nearest half minute;
- d) The crosswind component on the runway-in-use (if it equals or exceeds 8 knots for single engine or 12 knots for multi-engine aircraft);
- e) Significant aerodrome surface conditions;
- f) Presence of birds or animals on the runway (likely to be hazardous); and
- g) Significant weather observation made by control tower or met personnel.

Note.— The decision to take-off on a wet runway or when the presence of birds has been advised, rests solely with the pilot-in-command

12. **Selection of Runway-in-Use for take off**

12.1. The term 'runway-in-use' shall be used to indicate the runway that, at a particular time, is considered by the aerodrome control tower to be the most suitable to be used by the types of aircraft expected to take off at the aerodrome.

12.2. Normally, an aircraft will take off into the wind unless safety, the runway configuration, meteorological conditions or air traffic conditions determine that a different direction is preferable. In selecting the runway in use, however, the unit providing aerodrome control service shall take into consideration, besides, surface wind speed and direction, other relevant factors such as the aerodrome traffic circuit, the length of runway.

12.3. If the nominated runway or direction is not suitable for some reason the pilot-in-command shall request for alternative runway or direction prior to taxi.

12.4. A pilot-in-command shall not hold on the runway in use unless permitted to do so.

Note.— The decision to take off on a wet runway or when the presence of birds has been advised, rests solely with the pilot-in-command

13. Selection of Turn

13.1. Taking into consideration of traffic separation requirements turns shall be specified by control tower

13.2. Direction of turn shall not be specified in the take off clearance, where a standard instrument departure(SID) has been authorised.

Note.—If a particular turn is considered to be essential for the safe operation of aircraft, the pilot-in-command shall request for the same including the word 'REQUEST.....'

14. Departure Instruction

14.1. Departure instruction are issued to a departing aircraft in order to apply or achieve separation, make optimum use of airspace, and as necessary for weather and noise avoidance procedures, which consist of;

- a) altitude restrictions (if required)
- b) direction of turn (if required)
- c) any other instruction as and when necessary

14.2. Departure instruction are issued in the form of SID, where such procedures are designed and this must be complied by the pilot-in-command until established on a cleared out bound route.

15. Take-Off

15.1. Irrespective of other clearances, a pilot-in-command shall not take-off unless he has received a specific clearance in the terms "CLEARED FOR TAKE OFF"

Note.— Whenever practicable, aircraft shall be advised of the expected occurrence of hazards caused by wake turbulence.

15.2. Unless otherwise instructed by ATC, a pilot-in-command shall establish flight on the departure track as soon as practicable after take-off at a distance not more than 5 miles from the aerodrome.

16. Separation Minima for Take-Off

16.1. An aircraft will not be permitted to commence take-off until

- a) a preceding departing aircraft using the same runway has crossed the upwind end of the runway or commenced a turn.

- b) a preceding landing aircraft using the same runway has vacated it.

17. Communication Failure Procedure

17.1. *Communication failure.*

If a communication failure precludes compliance with 17.1.1, the aircraft shall comply with the communication failure procedures of Annex 10, Volume II, and with such of the following procedures as are appropriate. The aircraft shall attempt to establish communications with the appropriate air traffic control unit using all other available means. In addition, the aircraft, when forming part of the aerodrome traffic at a controlled aerodrome, shall keep a watch for such instructions as may be issued by visual signals,

17.1.1. *If in visual meteorological conditions, the aircraft shall:*

- a) continue to fly in visual meteorological conditions; land at the nearest suitable aerodrome; and report its arrival by the most expeditious means to the appropriate air traffic control unit ;
- b) if considered advisable, complete an IFR flight in accordance with 17.1.2.

17.1.2. *If in instrument meteorological conditions or when the pilot of an IFR flight considers it inadvisable to complete the flight in accordance with 17.1.1 a), the aircraft shall:*

- a) in airspace where radar is not used in the provision of air traffic control, maintain the last assigned speed and level, or minimum flight altitude if higher, for a period of 20 minutes following the aircraft's failure to report its position over a compulsory reporting point and thereafter adjust level and speed in accordance with the filed flight plan;
- b) in airspace where radar is used in the provision of air traffic control, maintain the last assigned speed and level, or minimum flight altitude if higher, for a period of 7 minutes following:
 - 1. the time the last assigned level or minimum flight altitude is reached; or
 - 2. the time the transponder is set to Code 7600; or
 - 3. the aircraft's failure to report its position over a compulsory reporting point; whichever is later, and thereafter adjust level and speed in accordance with the filed flight plan.
- c) when being radar vectored or having been directed by ATC to proceed offset using RNAV without a specified limit, rejoin the current flight plan route no later than the next significant point, taking into consideration the applicable minimum flight altitude;
- d) proceed according to the current flight plan route to the appropriate designated navigation aid or fix serving the destination aerodrome and, when required to ensure compliance with e) below, hold over this aid or fix until commencement of descent;
- e) commence descent from the navigation aid or fix specified in d) at, or as close as possible to, the expected approach time last received and acknowledged; or, if no expected approach time has been received and acknowledged, at, or as close as possible to, the estimated time of arrival resulting from the current flight plan;

- f) complete a normal instrument approach procedure as specified for the designated navigation aid or fix; and
- g) land, if possible, within thirty minutes after the estimated time of arrival specified in e) or the last acknowledged expected approach time, whichever is later.

17.2. *Receiver or Transmitter Failure Only*

Aircraft which experience failure of transmitting or receiving facility only, shall proceed in accordance with paragraph 17.1 above, but shall also:

- a) In the event of receiver failure, transmit intentions and subsequently transmit position reports etc. on the appropriate frequency; and
- b) In the event of transmitter failure, continue to maintain watch on the appropriate ground/air frequency.

17.3. *Action taken by ATC*

17.3.1. When unable to maintain two-way communication with an aircraft which has been given ATC clearance to enter a control zone or control area, or when ATC is unable to establish communication with an aircraft in accordance with standard procedures, two-way communication failure will be assumed. ATC will act in the following manner unless it is known that the aircraft is not adhering to the flight plan received:

- a) Maintain separation between aircraft on the assumption that aircraft experiencing radio failure will adopt the procedures in paragraph 17.1 above;
- b) Transmit on the appropriate air/ground channels the altitude, route and EAT, or ETA, to which it is assumed the aircraft is adhering, and the weather conditions at the destination aerodrome and suitable alternates (When this information is already being transmitted on the appropriate channels either by routine broadcast, or in messages to other aircraft, a special transmission will be made only at the discretion of ATC). If practicable, the weather conditions in the area, or areas, suitable for a descent through cloud will also be transmitted;
- c) Endeavour by means of any available ground radar to check whether the aircraft is receiving, and able to comply with instructions from ATC, and subsequently, to give all possible guidance to the aircraft;
- d) Inform the operator concerned, or his designated representative; and
- e) Inform ATC at the alternate aerodrome, or the appropriate ATC unit of the circumstances; if (by agreement with the operator or his designated representative) instructions to divert are transmitted to the aircraft, transmit the latest weather report and any current unserviceability report of approach aids at the alternate, and request the appropriate ATC unit to attempt to establish communication with the aircraft.

17.3.2. Before presuming that the aircraft has proceeded to another area or aerodrome, ATC will allow:

- a) A period of 30 minutes after the last acknowledged EAT;
- b) If no EAT has been acknowledged, a period of 30 minutes after the last acknowledged ETA; or

- c) If no ETA has been acknowledged, a period of 30 minutes after the ETA computed from the last acknowledged position report and the flight plan times for subsequent sectors of the flight.

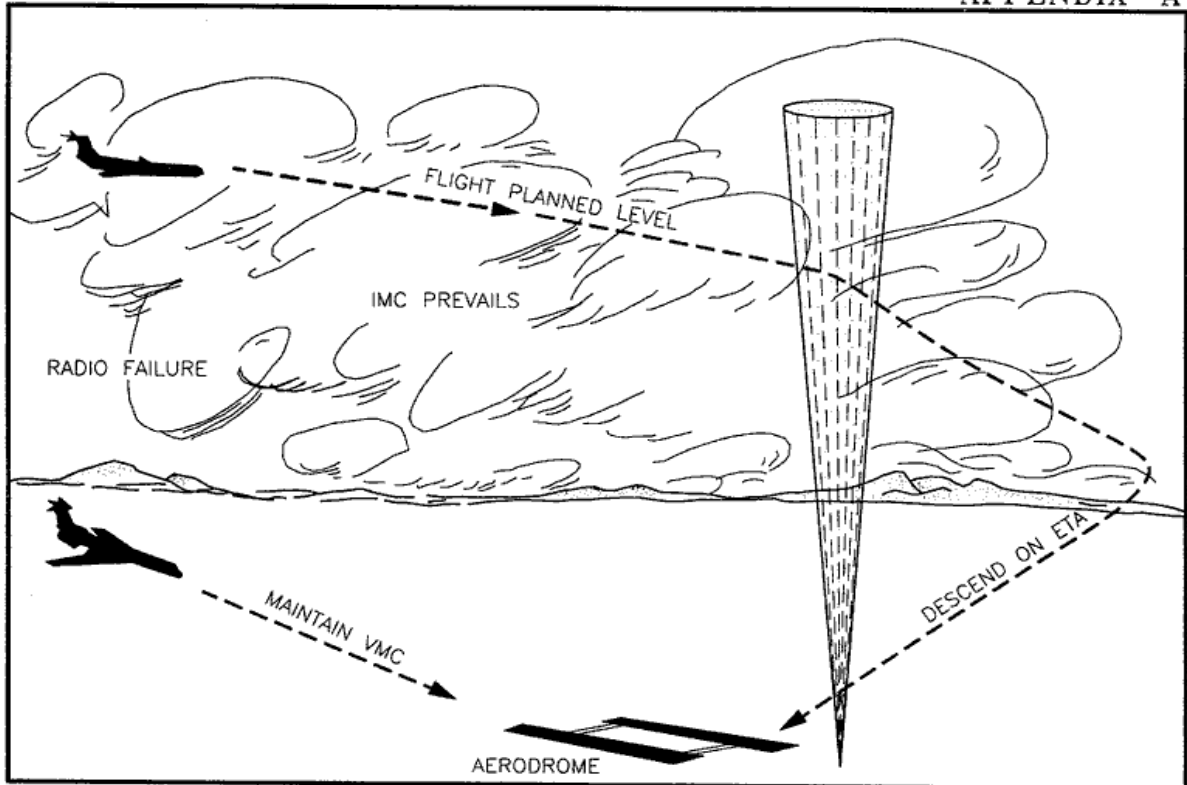
17.3.3. If the aircraft has not reported or landed by the end of the appropriate period, alerting action will be initiated and pertinent information concerning the aircraft will be given to the operating agencies and/or the pilots of any other aircraft concerned and normal operations resumed if they so desire, It is the responsibility of the operating agencies and/ or the pilots of aircraft to determine whether they will resume normal operations or take other action.

17.3.4. The Period referred to in 17.3.2 above will be reduced when:

- a) Through the use of electronic or other aids, ATC can determine the position of the aircraft experiencing the failure, and can determine that action contrary to that prescribed above can be taken without impairing safety ; or
- b) It becomes known that the aircraft has landed.

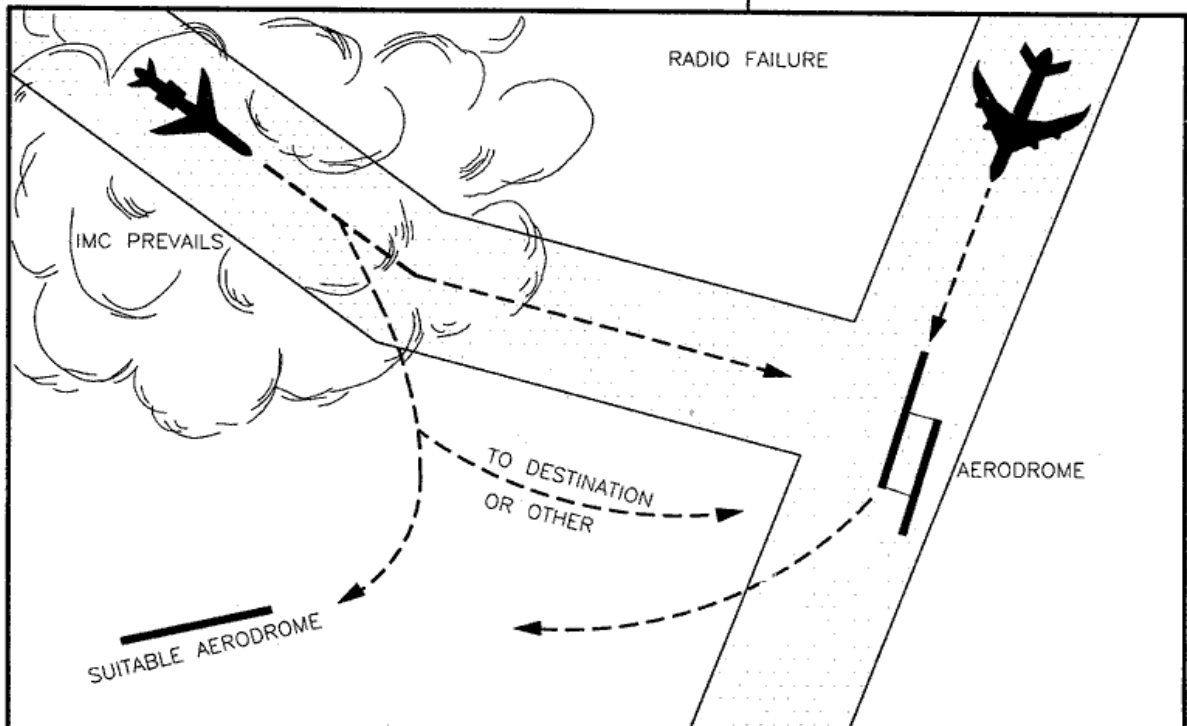
PILOT PROCEDURE FOR RADIO FAILURE

APPENDIX 'A'



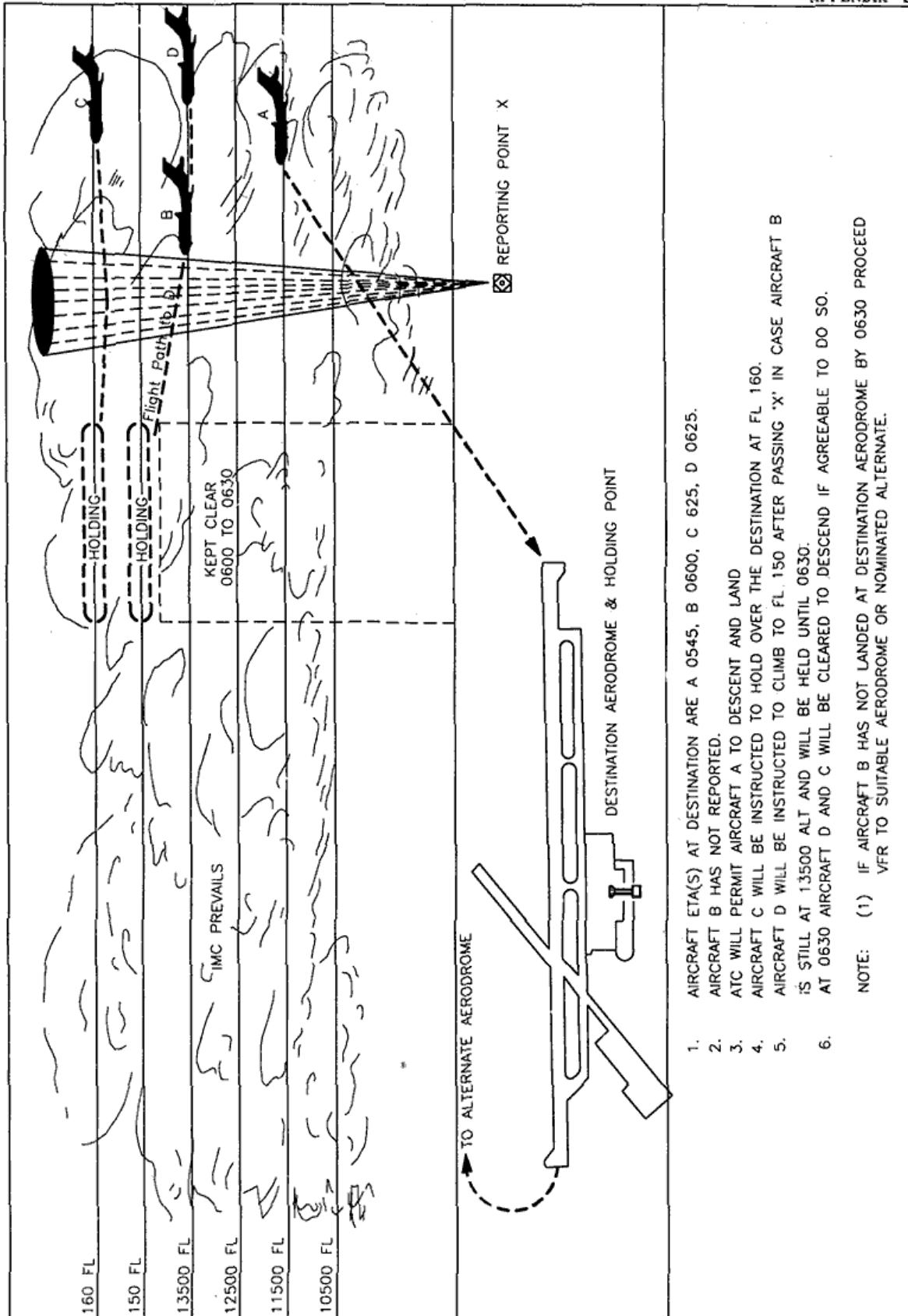
IF IFR, DIVERT OFF AIRWAYS, ESTABLISH VMC AND LAND AT SUITABLE AERODROME OR, PROCEED IN STRICT ACCORDANCE WITH LAST CLEARANCE OR FLIGHT PLAN TO DESTINATION.

IF VFR, MAINTAIN VMC TO DESTINATION OR OTHER SUITABLE AERODROME.



ATC PROCEDURE FOR RADIO FAILURE

APPENDIX 'B'



Appendix B Remove: