FIJI AERONAUTICAL INFORMATION CIRCULAR

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AIC 10/98
Effective
31st Dec 98
OPS

AERODROME OPERATIONS

1. SURFACE MOVEMENT CONTROL

1.1 Where a controlled aerodrome has a separate surface movement control, and unless specific procedures are otherwise published in the flight guides, the following procedure must be followed by aircraft wishing to taxi:

1.2 **Departing Aircraft**

1.2.1 Call on the frequency used for control of surface movements, and

- Advise ready to start (IFR only) with requested altitude and alternate;
- Request taxi clearance (report receipt of ATIS if appropriate); and
- Obtain IFR or SVFR clearance; then, unless otherwise instructed, call aerodrome control on the appropriate frequency approaching the holding position for the runway-in-use.

1.3 Arriving Aircraft

- Remain on aerodrome control frequency until clear of the runway-in-use, then, unless otherwise instructed, contact surface movement control on the appropriate frequency for taxi instruction.

2 RUNWAY SELECTION

2.1 Where aerodrome control or AFIS is being provided, the designated runway is that best favouring the wind direction and the take-off length requirements of the majority of the traffic. All RTF equipped aircraft are informed of the runway in use by the ATS unit.

2.2.1 Where AFIS is being provided, when pilots are required, for any operational reason such as runway length, wheel loading, etc., to use a runway other than the designated runway, they must sequence their landing or take-off and are responsible for the avoidance of collision with aircraft which are operating on the runway in use and which therefore have priority.

3 AERODROME CONTROL CLEARANCES

3.1 At controlled aerodromes, the pilot-in-command is required to obtain an aerodrome control clearance prior to:

- Taxiing on to any portion of the aerodrome manoeuvring area, or
- Landing at or taking-off from any runway or heliport at that aerodrome.

3.1.1 Fig. 1 below shows the positions where aircraft at controlled aerodromes normally receive aerodrome control clearances, either by radio or light signals.

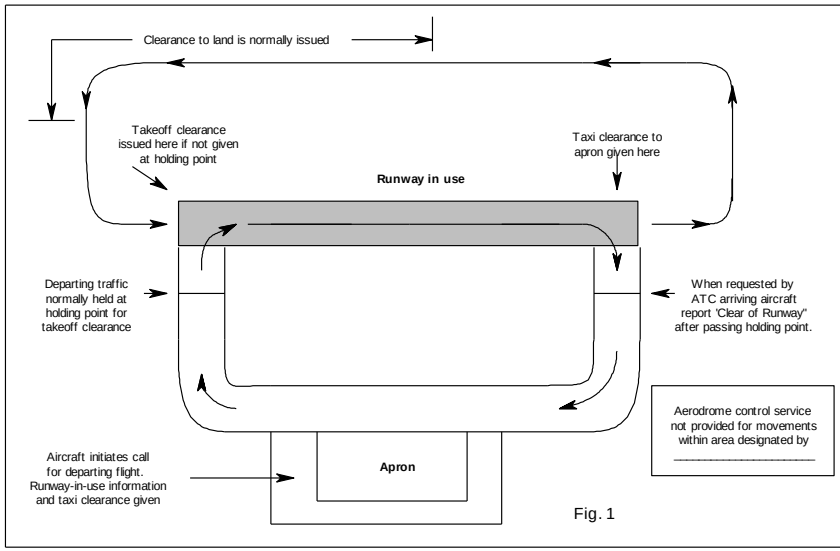


Fig. 1

4 TOUCH-AND-GO LANDING - SINGLE RUNWAY

4.1 By day, where both aircraft have MCTOW of 7000kg or less, aircraft B may cross the runway threshold on a touch-and-go landing provided the departing aircraft A is airborne and the controller can readily determine that the aircraft are not less than 1000m apart; or

4.1.1 By day, where aircraft A has a MCTOW of 7000kg or less and aircraft B a MCTOW of less than 2300kg, aircraft B may cross the runway threshold on a touch-and-go landing provided the departing aircraft A is airborne and the

controller can readily determine that the aircraft are not less than 600m apart. Refer Fig. 2.

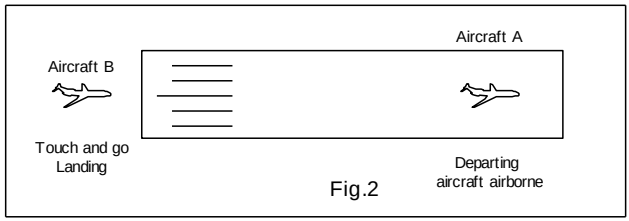


Fig.2

4.1.2 A qualified clearance will be issued whenever the following aircraft B will cross the threshold prior to aircraft A crossing the other end of the runway-in-use.

4.1.3 Allowance will be made for any difference in aircraft performance.

4.2 **Crossing Runways**

4.2.1 An aircraft will not be cleared for take-off until:

- A preceding aircraft taking off on a crossing runway has crossed the intersection; or
- A preceding aircraft landing on a crossing runway has crossed and is clear of the intersection; or
- A preceding aircraft, which has landed on a crossing runway, has stopped short of and is clear of the intersection.

4.2.2 An aircraft will not be permitted to enter a runway and line up when another aircraft on a crossing runway is taking off, or is lined up for take-off, unless specific holding instructions are issued and acknowledged.

4.2.3 A landing aircraft will not be permitted to cross the threshold of a runway until:

- A preceding aircraft taking off on a crossing runway has crossed the intersection, or
- A preceding aircraft landing on a crossing runway has crossed and is cleared of the intersection; or
- A preceding aircraft, which has landed on a crossing runway, has stopped short of and is clear of the intersection.

5 DEPARTURE FROM THE CIRCUIT

5.1 The pilot of a VFR aircraft departing the traffic circuit must make all turns in the direction of the traffic circuit, unless:

- Otherwise authorised by ATC; or
- If at an uncontrolled aerodrome, the pilot is clear of the circuit area or 1500ft above the aerodrome.

6 CIRCUIT HEIGHT

6.1 Unless otherwise specified on the aerodrome chart the circuit height will be 1000ft above the aerodrome elevation.

7 GO AROUND

7.1 If the runway is not available for landing, or to avert an unsafe situation, or to ensure ATC separation, an aircraft will be instructed to or may elect to go around.

7.1.1 Unless instructions are issued by ATC to the contrary, an aircraft on an instrument approach must carry out the missed approach procedure, and an aircraft operating VFR or an IFR aircraft on a visual approach must continue in the circuit.

8 STANDARD OVERHEAD CIRCUIT JOINING PROCEDURE (FIG 3)

8.1 This procedure should be followed at unattended aerodromes (where no air traffic control or flight information service is provided) and at other aerodromes when a pilot is unfamiliar with the aerodrome or is uncertain of circuit traffic. The standard overhead joining procedure detailed below will ensure compliance with Air Navigation Regulations 1981, Regulation 97(1).

- If RTF equipped advise traffic of joining intentions.

  - Approach the aerodrome by descending or climbing to not less than 1500ft above aerodrome elevation. If a circuit height other than 1000ft is specified on the aerodrome chart, join at not less than 5000ft above circuit height, or use specified joining altitude.

  - Pass overhead the aerodrome in order to observe wind, circuit traffic and any ground signals displayed. If these cannot be fully ascertained continue to circuit the aerodrome at 1500ft.
  - Make all subsequent turns in the direction of the traffic circuit.
  - Once the conditions above are ascertained, cross to the non-traffic side, and descend to circuit height.

- Turn ninety degrees cross wind and pass sufficiently close to the upwind end of the runway to ensure that aircraft taking off can pass safely underneath.
- Turn to join the downwind leg of the traffic circuit at a point that ensures adequate spacing with any aircraft in the circuit ahead or behind.

NOTE: An ATC clearance will be required prior to carrying out this procedure at controlled aerodromes.

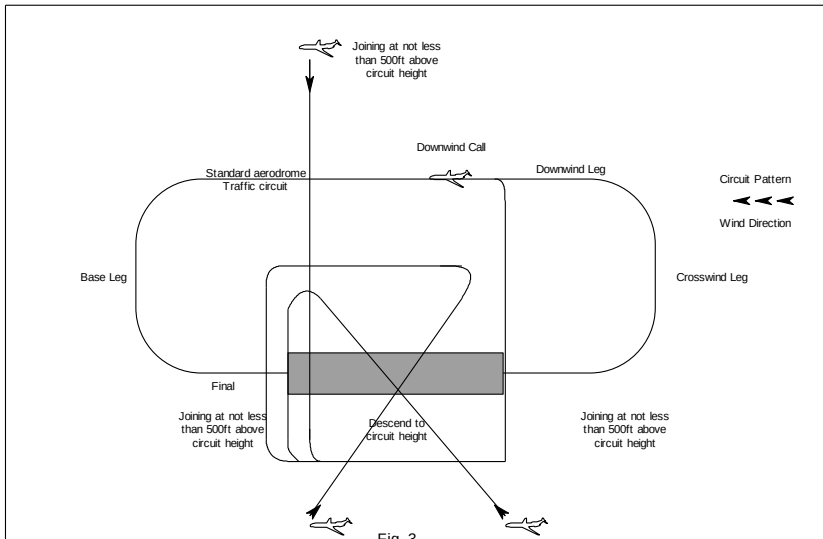


Fig. 3

9 CIRCUIT JOINING PROCEDURES: CONTROLLED AERODROMES (FIG 4)

9.1 Aircraft intending to land at a controlled aerodrome (where air traffic control is being provided) must join the circuit in accordance with ATC instructions:

- By descending to circuit height prior to joining and making either a straight-in approach to the runway in use, or by joining on downwind or base leg.
- As outlined in the standard overhead circuit joining procedures in Para 8.
- As outlined in the buzz and break procedure following.

10 CIRCUIT JOINING PROCEDURES: UNCONTROLLED AERODROMES

10.1 The pilot of an aircraft intending to land at an unattended aerodrome, or one where aerodrome flight information service is being provided, may join the circuit via standard overhead circuit joining procedure or in the way outlined in the Circuit Joining Procedure: Controlled Aerodromes (see above) provided that:

- If RTF equipped joining intentions are advised to traffic or FIS; and
- The runway in use and aerodrome traffic are properly ascertained; and
- When making a straight-in approach, or joining a downwind or base leg, the aircraft is sequenced in such a way as to give priority to aircraft already established in the circuit or established in the standard overhead circuit joining pattern (detailed above); and
- When entering or flying within the circuit, all turns are made in the direction appropriate to the runway in use.

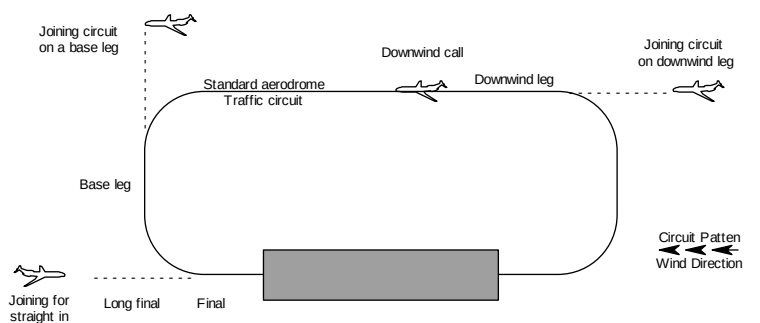


Fig. 4

11 BUZZ AND BREAK PROCEDURES (FIG 5)

11.1 At controlled aerodromes, pilots who have received training in the manoeuvre, may on request be cleared to join the traffic circuit via an initial point for buzz and break:

- The initials point is four miles from the runway threshold, 200m on the non-traffic side of the runway extended centreline.
- An “initials” call must be made when approaching this point and specifying joining from left or right of the centreline.
- From initials, the aircraft must be flown parallel to the extended centreline, 200m on the non-traffic side, to a point where a safe and expeditious turn into the normal traffic circuit can be made. The pilot is responsible for sequencing into the traffic pattern as instructed by ATC.
- The break must not be made until all relevant traffic has been sighted by the pilot.
- The turn onto the downwind position may be either level at circuit altitude, or climbing up to circuit altitude.

- The break must be commenced not below 500ft AGL and not above 360kt IAS. The aircraft will be at normal circuit speed downwind. Formations of aircraft may join simultaneously via this method. The formation leader is responsible for sequencing the formation into the circuit traffic pattern as instructed by ATC.

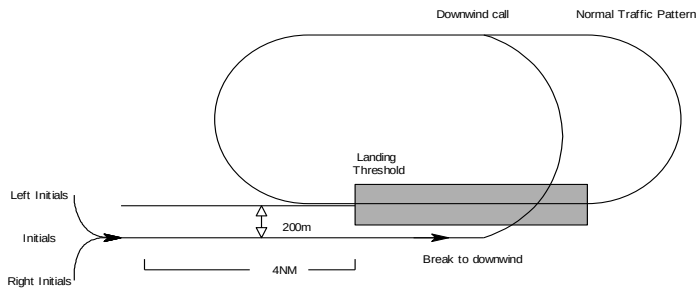
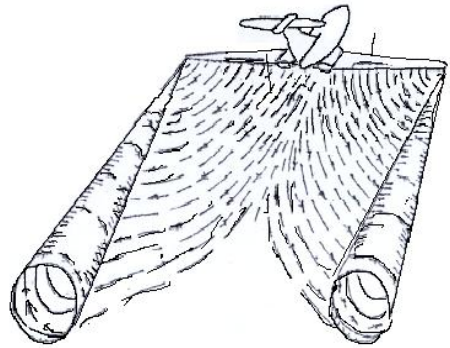


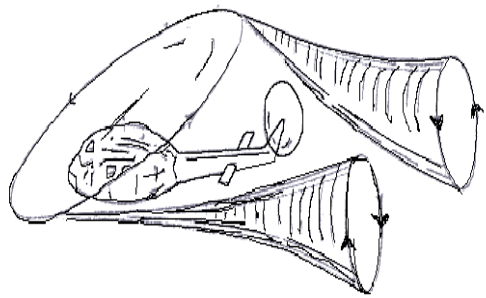
Fig. 5

12 WAKE TURBULENCE AND JET BLAST

12.1 Wake turbulence is the term used to describe the effect of the rotating air masses (wake vortices) generated behind the wing tips of aircraft in flight. These vortices are two counter-rotating cylindrical air masses trailing aft from the aircraft and are particularly severe when generated by large and wide-bodied aircraft (See Fig 6). The vortices are most dangerous to following aircraft during the take-off, initial climb, final approach and landing phases of flight. They tend to drift down, and when close to the ground move sideways from the track of the generating aircraft. Wind, wind shear, turbulence, ground and atmospheric stability affect the motion and decay of a vortex system. Vortex wake generation begins on rotation and ends when the nose wheel touches down on landing. Its strength increases proportionally to weight, and is greatest when the generating aircraft is heavy, slow and in a clean configuration.

12.2 Helicopters produce vortices when in flight and there is evidence that, per kilogram of gross mass, their vortices are more intense than those of fixed-wing aircraft. Helicopters should be kept well clear of light aircraft when hovering or while air taxiing (See Fig 7).





13 WAKE CATEGORIES

13.1 For the purpose of assessing wake turbulence separation, aircraft are divided into the following weight categories:

- Heavy (H)
  All aircraft types of 136,000kg maximum weight or more (includes A330, A340, C5, C141, C17, B777, B767, B74A/B/S, DC8, MD11, DC10).

- Medium (M)
  Aircraft types of less than 136,000kg maximum weight but more than 7000kg maximum weight (includes B757, B73A/B/C, B727, A320, F27, A748, BA46, C130, P3, DC3, SF34, SW3).

  Note: B757 aircraft will be assessed as HEAVY (H) aircraft for the purpose of assessing wake turbulence for the following aircraft.

- Light (L)
  Aircraft types of 7000kg maximum weight or less (includes C402, C421, BN2A, NOMA, PA31, E110, SW3).

The weight turbulence category for each aircraft type is listed in ICAO DOC 8643 (Aircraft Type Designators).

14 ATC – WAKE TURBULENCE MINIMA

14.1 Application

14.1.1 Where IFR separation minima is greater than for wake turbulence, ATC will apply the IFR minima.

14.1.2 Wake turbulence minima may be applied for any situation not covered by specific minima whenever ATC believes a potential wake turbulence hazard exists.

14.1.3 Where practicable, ATC will advise aircraft of the expected occurrence of hazards caused by turbulent wake by issuing a caution to the pilot using the following RTF phraseology.

"Caution – wake turbulence"

14.1.4 However, it should be noted that the occurrence of wake turbulent hazards cannot be accurately predicated and ATC cannot assume responsibility for issuing advice of such hazards at all times.

15 DEPARTING AIRCRAFT (IFR/VFR)

15.1 Departures are regulated so that the following separation exists when the second aircraft is airborne (Fig 8a and Fig 8b).

(i) A following LIGHT or MEDIUM aircraft making a full length take-off from:

- The same runway; or
- Crossing runways, if projected paths will cross whilst in flight;

will not be cleared for take-full until 2 minutes after a HEAVY aircraft is airborne.

(ii) A following LIGHT or MEDIUM aircraft departing from an intersection or inset position from:

- The same runway; or
- Crossing runways, if projected paths will cross whilst in flight;

will not be cleared for take-off until 3 minutes after a HEAVY aircraft is airborne.

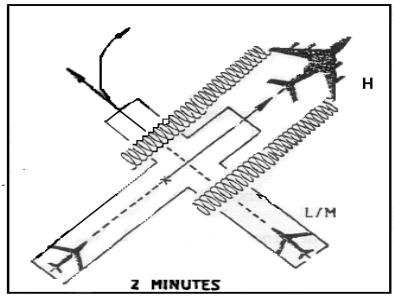


Fig. 8a

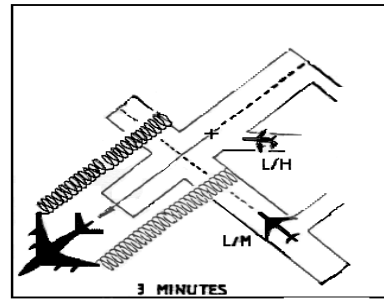


Fig. 8b

16 ARRIVING AIRCRAFT

16.1 Instrument Flight Rules (IFR)

16.1.1 Between IFR aircraft on final approach to the same runway or to different runways if the flight paths will cross.

- 3 minutes when a LIGHT aircraft follows or crosses behind a HEAVY or MEDIUM aircraft.
- 2 minutes when a MEDIUM aircraft follows or crosses behind a HEAVY aircraft. (See FIG.9).

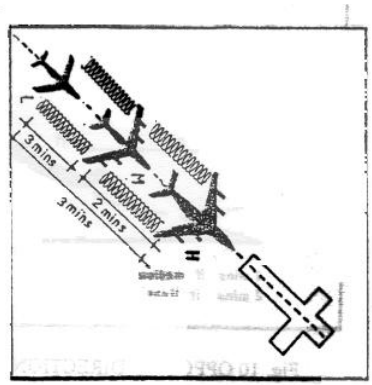


Fig. 9 ARRIVING AIRCRAFT

16.2 Visual Flight Rules (VFR) or Visual Approach

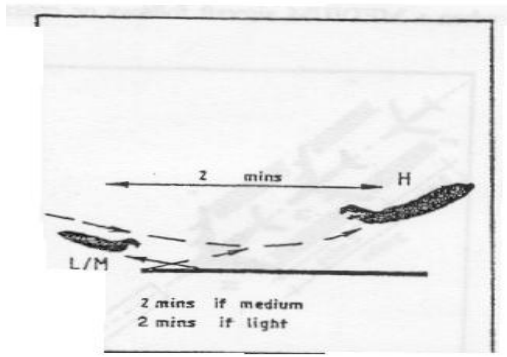
16.2.1 When flights are operating visually in the vicinity of an airport (aircraft on Visual approach under VFR or a mixture of the two), sufficient information will be provided to enable pilots of successive aircraft to position themselves at the following distances:

- 10 NM when a LIGHT aircraft follows or crosses behind a HEAVY aircraft.
- 6 NM when a MEDIUM aircraft follows or crosses behind a HEAVY aircraft.
- 4 NM when a LIGHT aircraft follows or crosses behind a MEDIUM aircraft.

17 OPPOSITE DIRECTION

17.1 Between a HEAVY aircraft departing, making a low or missed approach and a MEDIUM or LIGHT aircraft utilising an opposite direction runway for take-off.

- 2 minutes if a LIGHT aircraft.
- 2 minutes if a MEDIUM aircraft.

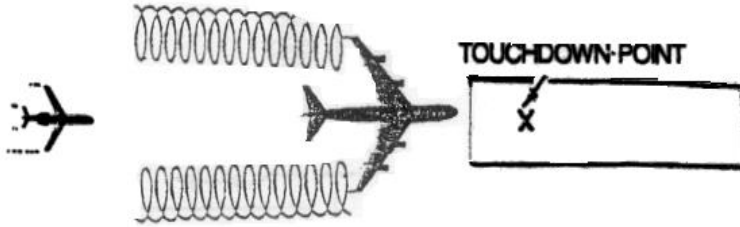


18 FLIGHT PROCEDURES – WAKE TURBULENCE

18.1 Pilots should be alert to the possibility of wake turbulence from any preceding aircraft, and when following a larger aircraft, employ where necessary one of the following flight procedures to minimise their effect:

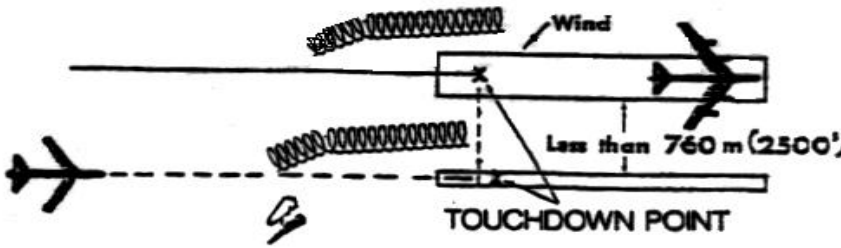
18.1.1 **Landing behind a larger aircraft – same runway**

- Stay <u>above</u> the larger aircraft's final approach flight path – note its touchdown point and land beyond it.



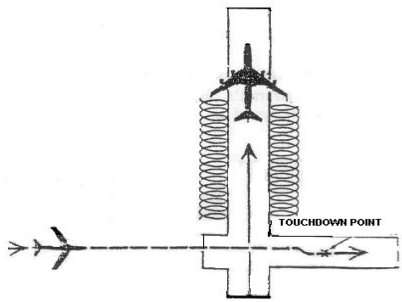
18.1.2 **Landing behind a larger aircraft – parallel runway or vector**

- Note wind for possible vortex drift to the landing vector if practicable. Stay <u>above</u> the larger aircraft's final approach flight path – note its touchdown point and land beyond and abeam it.



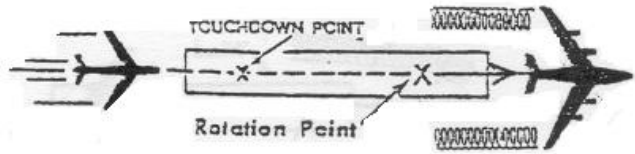
18.1.3 **Landing behind a larger aircraft – crossing runway**

- Cross <u>above</u> the larger aircraft's flight path.



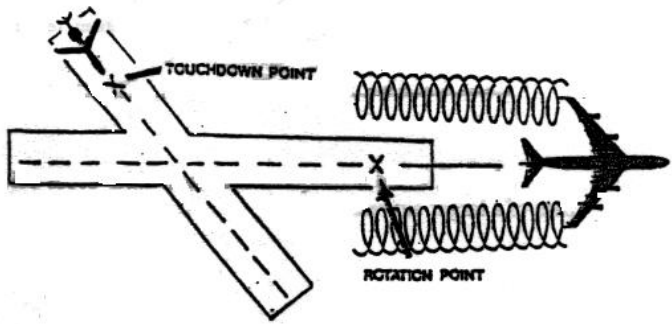
18.1.4 **Landing behind a departing larger aircraft – same runway**

- Note larger aircraft's rotation point and land will prior to it.

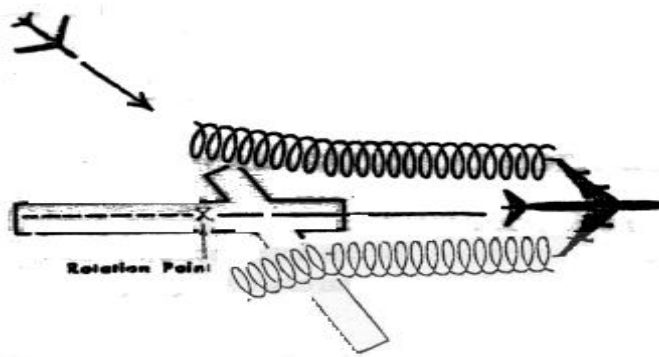


18.1.5 **Landing behind a departing larger aircraft – crossing runway**

- Note larger aircraft's rotation point. If point is past the intersection, continue the approach and land prior to the intersection.

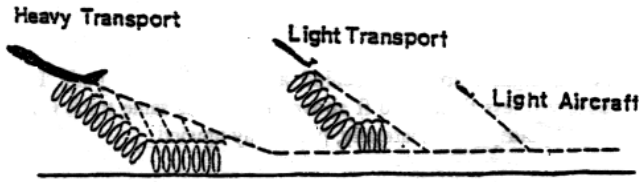


- If the larger aircraft rotates prior to the intersection, avoid flight below it's flight path. Abandon the approach unless a landing is assured well before reaching the intersection.

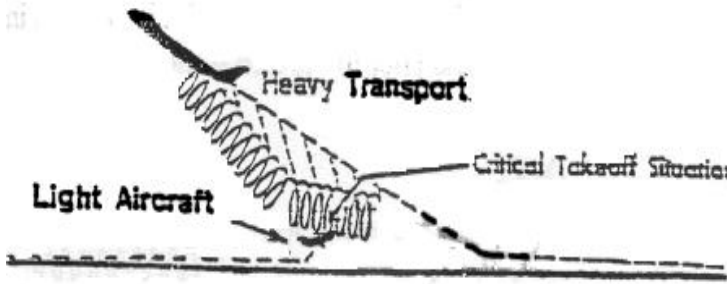


19. DEPARTING BEHIND A LARGER AIRCRAFT

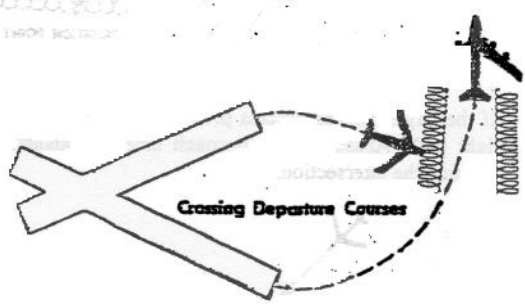
19.1 Start take-off from a point where your aircraft can be safety rotated prior to the rotation point of the preceding larger aircraft and establish a climb above it's flight path until such time as a turn can safely be made clear of it's wake. If this is not possible, delay your take off.



- Be alert for any take-off situation that could lead to a vortex encounter.

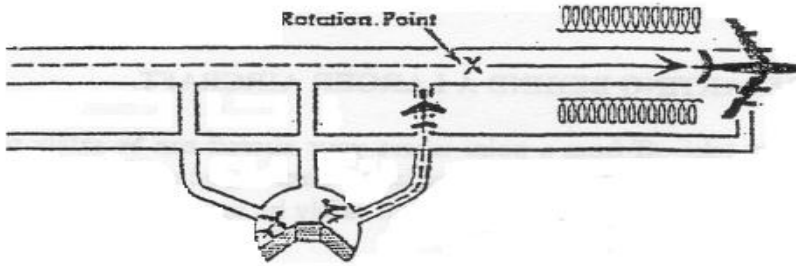


- After take-off, avoid subsequent headings that cross below and behind the path of a larger aircraft.



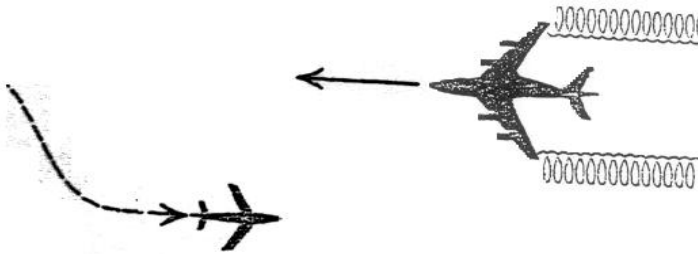
20 INTERSECTION TAKE-OFF – SAME RUNWAY

20.1 Be alert to adjacent larger aircraft operations, particularly upwind of your runway. If clearance is received for an intersection take-off, avoid subsequent headings that cross below the larger aircraft's flight path.



21. En-route

21.1 Avoid flight below and behind a larger aircraft's path. If a larger aircraft is observed less than 1000ft above you on the same track (or opposite direction), adjust your position laterally, preferably upwind.



22 WAKE TURBULENCE SEPARATION – GENERAL

22.1 If a pilot considers the wake turbulence separation standards inadequate, an increased separation **may be requested** by specifying the spacing required.

If a controller considers the wake turbulence separation provided is inadequate or that it need be applied for any situation not covered by a

specific minimum the pilot will be advised and an appropriate separation applied.

Notwithstanding the above wake turbulence separation standards, if pilots indicate that the effect can be nullified by ensuring that flight profiles do not cross they may **request and be granted exemption from these separations.** ATC will advise the category or type of the other where that aircraft is a HEAVY (H) weight category or is a B757 aircraft.

e.g. *"XYZ MAINTAIN OWN WAKE TURBULENCE SEPARATION B767 LANDING RUNWAY 02……"*

23 JET BLAST AND PROPELLER SLIPSTREAM

23.1 Pilots are cautioned of the hazards caused by jet blast and propeller slipstream to taxiing aircraft, to aircraft taking off or landing, and to vehicles and personnel operating on the aerodrome.

23.2 Jet blast and propeller slipstream can produce localized wind velocities of sufficient strength to cause damage to other aircraft, vehicles and personnel.