



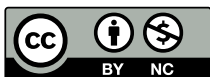
Australian Government
Civil Aviation Safety Authority



Stay OnTrack:

FLYING THE MELBOURNE REGION

Procedures
Ground operations
Hotspots
Radio frequencies
Tracking points



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This guide is an aid for VFR pilots to use when flying into, out of and around the Melbourne region. It is designed to help you in planning and conducting your flight.

The guide was developed with the assistance of operators in the Melbourne region.

For comments and suggestions on improving this guide, contact CASA Safety Promotion at safety.promotion@casa.gov.au

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Disclaimer: This information has been prepared for educational purposes only and was correct at the time of publishing. Always check ERSAs, NOTAMS and weather before you fly.

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Moorabbin (YMMB) procedures overview

Moorabbin is a Class D aerodrome during Air Traffic Control tower hours, catering for high-density general aviation operations. Moorabbin aerodrome hosts emergency services aircraft and air transport operations, plus fixed-wing and rotary wing flying schools. Check the TWR and airspace status with ATC or Moorabbin ATIS. VMC minimums for Class D airfields are:

- » visibility: 5,000 m
- » horizontal distance from cloud: 600 m
- » vertical distance from cloud: 1,000 ft above and 500 ft below.

Moorabbin is located 12 nm south-east of the city of Melbourne. Moorabbin Control Zone (CTR) is from surface (SFC) to 2,500 ft. Following an inbound call to Moorabbin ATC response may simply be your call sign – which indicates you are cleared via your stated intentions – or a more specific instruction (clearance) statement. Pilots unsure of the procedures should advise ATC on first contact using the phrase ‘unfamiliar with Moorabbin’.

Moorabbin has 2 sets of parallel runways and a single crossing runway. By day, simultaneous contra-circuits may be conducted using separate tower frequencies. Operations are managed independently in each circuit, and ATC approval is required to enter the opposite circuit airspace.

Circuit direction is determined by the runway. RWYs 17R/35L and 13R/31L circuits are to the west. RWYs 17L/35R and 13L/31R circuits are to the east. There is also a short cross runway 04/22. Circuit direction will only be issued for a non-standard join. When arriving at Moorabbin, you must provide sufficient notice to ATC if you wish to enter the control zone via other than one of the VFR approach points.

The circuit altitude at Moorabbin aerodrome is 1,000 ft. Unless ATC authorise otherwise, indicated airspeed is not to exceed 200 kts (class D requirements).

Taxi clearance is required prior to entering manoeuvring areas.

These entry points are marked by yellow dashed lines and are known as intermediate holding positions.

Danger area D315 (SFC to 7,500 ft) is known as the Moorabbin training area. Expect high volumes of traffic around this area, not just within the confines of the marked danger area. Be aware that some Moorabbin-based flying schools have training areas outside D315.



Avalon airspace (YMAV) procedures overview

Avalon Airport (YMAV) is a Class D international aerodrome, catering to small and large air transport operations, located approximately 9 nm north-east of Geelong and 30 nm south-west of the Melbourne CBD. Check the TWR and airspace status with ATC or Avalon ATIS. TWR hours may change at short notice. Review ERSA for procedures.

Please note: Different procedures and airspace apply during the Australian International Airshow, which is held every 2 years at Avalon. An AIP SUPP is published for the airshow.



Essendon (YMEN) procedures overview

Essendon Airport is located in the Melbourne Class C control zone (CTR) adjacent to Melbourne Tullamarine International Airport. Because each aerodrome is unique, special procedures have been developed which are listed in ERSA and must be read in conjunction with the AIP.

Essendon Tower is closed at certain times, generally late at night. When this occurs, that part of Melbourne CTR normally allocated to Essendon Tower remains Class C airspace and is controlled by Melbourne Approach and Departures.

Essendon Tower controls the south-eastern quadrant of the Melbourne CTR and the adjacent Class C steps up to, and including, 2,000 ft. Aircraft wishing to operate in this airspace (known as Essendon Tower airspace) must contact Essendon Tower approaching any of the VFR approach points immediately adjacent to the Melbourne CTR, marked on the Melbourne visual terminal chart (VTC).

Accurate compliance with tracking instructions must be adhered to due to the volume of traffic and proximity to Tullamarine.

Circuit altitude for Essendon Airport is 1,300 ft AMSL.





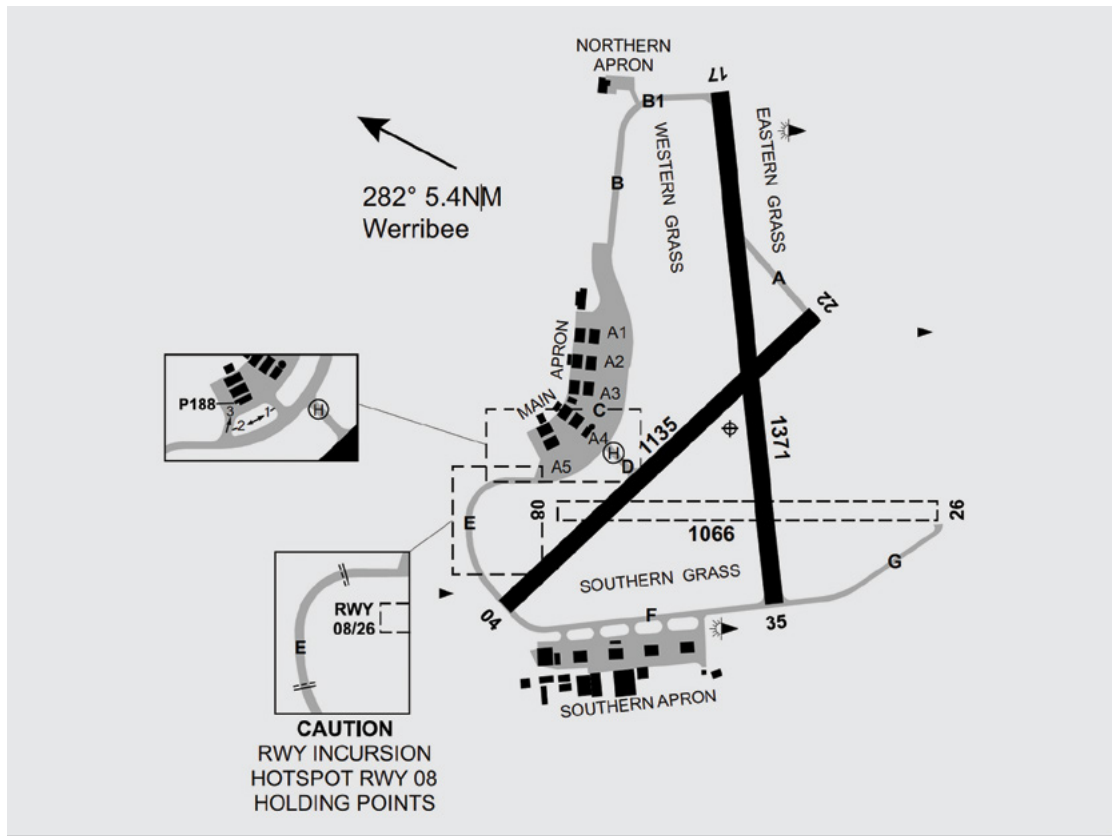
Point Cook (YMPC) procedures overview

Point Cook is on Port Phillip Bay, approximately 17 nm south-west of Tullamarine and 16 nm north-east of Avalon. Point Cook has 3 runways – 2 asphalt and one grass. Additionally, there is a grass operating area to the west of RWY 17/35.

Point Cook is a non-controlled aerodrome in Class G airspace with a dedicated CTAF. Point Cook is surrounded by Danger area D383, which extends from SFC to base of Control Area (CTA) and is active during hours of daylight or as amended by NOTAM.

The airspace around Point Cook is complex due to the proximity of major airfields such as Tullamarine, Avalon, Essendon and Moorabbin. Additionally, Restricted areas R330A and B can be activated by NOTAM for military flying operations and have the dimensions of a 3 nm radius of Point Cook aerodrome reference point (ARP), SFC to base of CTA. Pilots should check NOTAMs for activation periods.

Special circuits and operational procedures apply due to intensive flying training and dissimilar aircraft types. Review ERSAs for procedures.





Mangalore, Tyabb, Lilydale, Bacchus Marsh procedures overview

Close to 30 non-controlled aerodromes exist within 45 nm of Melbourne. It is the pilot-in-command's responsibility to check current charts, powerlines/windfarms, airfield conditions, permissions, procedures, ERSA and NOTAMs for flights to these locations.



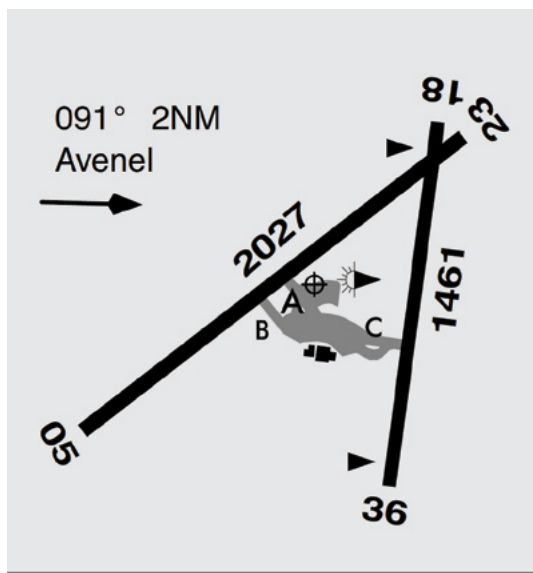
Mangalore procedures overview

Mangalore is a certified aerodrome located approximately 48 nm north of Melbourne and requires VHF radio carriage and use when operating in the vicinity. Mangalore aerodrome is predominantly used for flight training and recreational flying. Instrument flight training is also conducted. Extensive fixed-wing flight training is conducted at the aerodrome and in an area bound by Seymour, Nagambie, Stanhope and Euroa townships, from SFC to 8,500 ft. When operating in the vicinity, it is recommended landing lights, anti-collision strobes and navigation lights be used. Occasional helicopter operations will also be encountered. It is the pilot-in-command's responsibility to check current charts, ERSA and NOTAMs for flights in this area.

The Kilmore Gap is a busy VFR thoroughfare between Melbourne and Mangalore. The gap can only be navigated in VMC. If there is a moist airflow from the south, it is possible for low cloud to form on the southern approaches. This may restrict VFR operations through the gap. When entering the VFR inland route from the north, it is important to identify the key navigational feature of Mt Piper, immediately west of the township of Broadford and to the north-east of Kilmore township. If this landmark is not visible due to mist or cloud, consider alternates or returning to Mangalore until weather improves.

Bureau of meteorology provides a weather camera service at Kilmore Gap to provide pilots with better situational awareness.

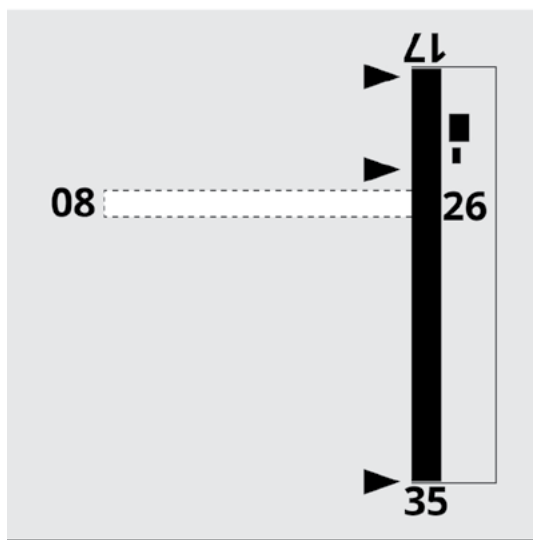
<https://weathercams.airservicesaustralia.com>





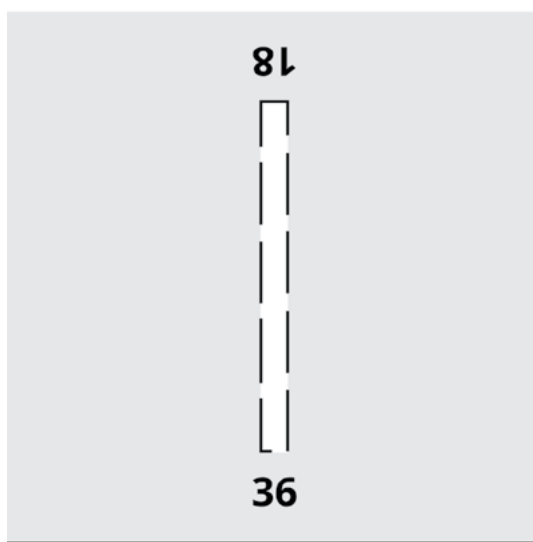
Tyabb procedures overview

Tyabb is an uncertified aerodrome approximately 40 nm south-east of Tullamarine, on the Mornington Peninsula. Prior permission is required to use this aerodrome. CTAF 128.0 MHz applies. It is the pilot-in-command's responsibility to check current charts, ERSAs and NOTAMs for flights in this area. Note: Tyabb is in close proximity to R332 at Hanns Inlet: RA3 SFC to 2,000 ft military non-flying, activated DLY 2100-1300 or by NOTAM.



Lilydale procedures overview

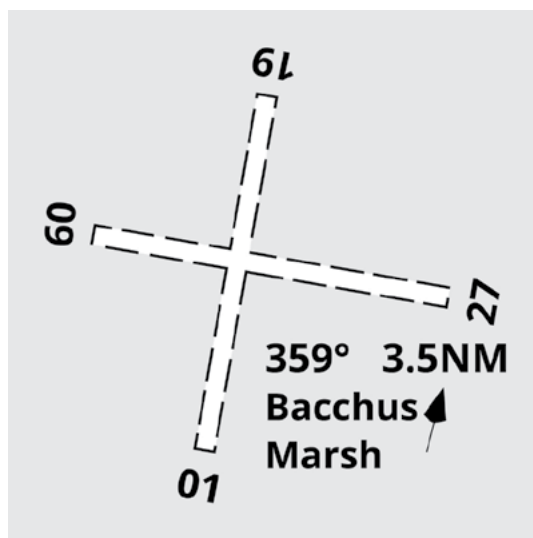
Lilydale is an uncertified aerodrome approximately 23 nm east of Tullamarine. CTAF 119.1 MHz applies. Flight training, ballooning and parachute operations take place at the aerodrome. Pilots should be aware of rising terrain to the west of the aerodrome. Note: Coldstream aerodrome is close to Lilydale, just 3 nm to the south-east, on the same CTAF. It is the pilot-in-command's responsibility to check current charts, ERSAs and NOTAMs for flights in this area.





Bacchus Marsh procedures overview

Bacchus Marsh is an uncertified aerodrome approximately 20 nm west of Tullamarine. CTAF 118.8 MHz applies. Flight training, helicopter and gliding (including tug and winch) operations take place at the aerodrome. Pilots should be aware of rising terrain to the west of the aerodrome. Note: Rowsley, Brooks Landing aerodrome and Rowsley HLS are located approximately 5 nm to the north-west and operate on the same CTAF. It is the pilot-in-command's responsibility to check current charts, ERSAs and NOTAMs for flights in this area.



Other operations



Torquay procedures overview

Torquay is a small uncertified aerodrome approximately 18 nm south of Avalon Airport. CTAF 119.0 MHz applies. Recreational flying, joy flights and parachute operations take place at the aerodrome. Tandem skydive operations occur most days up to FL150 with an associated drop zone within a 3 nm radius from the airport. Aerobatic joy flights also occur within the vicinity of the airport up to 4,500 ft.



Barwon Heads procedures overview

Barwon Heads aerodrome is approximately 5 nm to the north-east of Torquay, on the same CTAF, with flying training and extensive parachuting operations. It is the pilot-in-command's responsibility to check current charts, ERSAs and NOTAMs for flights in this area.



General military information

Conditional RA (Restricted Area) status

The status of restricted areas (RAs) appears in the Designated Airspace Handbook (DAH) and ERSA and is presented in a table on the VTC/VNC. This status indicates which types of restricted airspace it is possible to get a clearance through. NOTAMS are issued to list activation times and levels for military restricted airspace and **MUST ALWAYS** be consulted before flights through these areas, to avoid airspace infringements.

RA conditional status legend

RA1: Pilots may flight plan through the RA and, under normal circumstances, expect a clearance from ATC.

RA2: Pilots must not flight plan through the RA unless on a route specified in ERSA GEN FPR or by agreement with the Department of Defence. However, a clearance from ATC is not assured. Other tracking may be offered through the RA on a tactical basis.

RA3: Pilots must not flight plan through the RA and clearances will not be available.

Some military airspace around Melbourne is active H24, while other airspace is activated by NOTAM and may become active at short notice. Check the status prior to going flying by checking PRD in ERSA, DAH and NOTAMS. If in doubt while airborne, check with ATC on the frequency you are on.

Multiple military restricted and danger areas exist in the vicinity of Melbourne. Pilots should check charts, NOTAMS and relevant documentation for activations.

Puckapunyal

Puckapunyal military training area is located about 40 nm north of Melbourne. The airspace is used for both firing and military flying activities. Puckapunyal is a military uncertified airport, not available for public use, that lies on the external edge of the restricted airspace. R350A (H24), R351A/B and R352 (activated daily as per ERSA and DAH) are RA3. R350B and R351B are RA2 and activated by NOTAM. Pilots need to plan carefully and be always aware of their location.

Point Cook

Point Cook R330A/B is centred on Point Cook aerodrome, is RA3 for military flying operations and is activated by NOTAM, SFC to 2,500 ft and SFC to 4,500 ft.

Western Point

Western Port R323A/B is centred on West Head at the bottom of Mornington Peninsula and is RA2. It is predominantly used on weekdays for firing and military flying activities but can be activated anytime by NOTAM. The airspace extends from the SFC to differing levels as advised by NOTAM.

Cape Schanck

Cape Schanck R339 extends south-west from Western Port/R323 and is RA2. The airspace extends from the SFC to differing levels as advised by NOTAM and can be activated anytime by NOTAM.

Hanns Inlet

Hanns Inlet R332 is in the vicinity of Crib Point, approximately 5 nm south of Tyabb aerodrome and is RA3. The airspace extends from the SFC to 2,000 ft and is active daily between 2100–1300Z (1HR earlier HDS) or as amended by NOTAM.

Swan Island

Swan Island R374 is in the vicinity of Queenscliff, at the southern end of Port Phillip Bay and is RA3. The airspace extends from the SFC to 1,500 ft and is active 24 hours a day.

East Sale

East Sale airbase is located approximately 110 nm south-east of Melbourne. When active, the CTR extends from SFC to 3,000 ft. The adjoining restricted areas R359 and R391 (NAIPS codes YMES and ESX) are RA2 for military flying. Clearance is not required for transit through R359A via the D353 VFR transit lane. Pilots need to plan carefully and always be aware of their location. Refer to ERSA for tracking, broadcast requirements and procedures.

It is the pilot's responsibility to check and monitor the status of the restricted areas and CTRs.



Airspace infringement: Hotspots Melbourne basin – north

1. Airspace infringement hotspot inbound at the 30 nm DME step

At 30 DME, the steps change from 8,500 ft/7,500 ft to 4,500 ft. Use good visual references to allow a healthy buffer for a planned descent to remain OCTA. If requesting a clearance, allow plenty of time before the step and always have an alternative plan, including a suitable decision point.

2. Airspace infringement hotspot Sunbury-Romsey Area

The IFR arrival into Melbourne comes close to the CTA base in this area. Leave yourself a buffer underneath the step. Most of the area under the C LL 1,500 ft step north of Melbourne is not practically navigable OCTA – stay well away. Remain north and west of the high ground near the Sunbury water tanks and clear of the Penfield and Riddell aerodromes.

3. Airspace infringement hotspot Melbourne CTR – Tullamarine and Essendon

Familiarise yourself with airspace around where you are flying. Confirm where you will need a clearance. Request your clearance well before reaching the CTA step. Ensure current published aeronautical charts are used and monitor the correct frequency.

4. Airspace infringement hotspot – step boundaries near Yan Yean

With 3 different CTA lower levels in close proximity, use Yan Yean Reservoir as a landmark to determine which quadrant you are in.





Airspace infringement: Hotspots Melbourne basin – south

1. Airspace infringement hotspot inbound at the 30 nm DME step

At 30 DME, the steps change from 8,500 ft/7,500 ft to 4,500 ft. Use good visual references to allow a healthy buffer for a planned descent to remain OCTA. If requesting a clearance, allow plenty of time before the step and always have an alternative plan, including a suitable decision point.

2. South Melbourne – C LL 2,000 and 2,500 steps

Leave a buffer between you and the CTA base and ensure accurate height holding when flying underneath these steps. Ensure you have reached the airspace boundary before climbing.

Remain well south of the quarry on the south-western boundary of the CTR. Westbound establish yourself well west of Rockbank before turning north. The BOM tower near Altona baseball stadium is a good landmark in the centre of the 'lane' between D383 and the C LL 1,500 ft step. Mount Cottrell is not a good landmark from a distance.

3. Moorabbin CTR

Familiarise yourself with airspace around where you are flying and call inbound at approximately 6 nm. Request your clearance well before reaching the CTR.

The VFR lane on the south-western side of Moorabbin departs from the coastline to avoid the Moorabbin control zone. Maintain a listening watch on Moorabbin (MB) TWR 123.0 transiting in the VFR lane. There are multiple inbound and outbound tracks to the west of the MB control zone particularly for IFR. If you would like to track along the coastline past Moorabbin airport, contact ATC for clearance on 123.0 and you may be assigned a level.

When departing Moorabbin CTR, be aware the lower limit of the surrounding Class C airspace.

4. Avalon CTR

Familiarise yourself with airspace around where you are flying and confirm where you will need a clearance.





Moorabbin ground operations



Moorabbin has a complex runway and taxiway system.

Wingspan limitations apply to the aerodrome. Areas of the main apron and northern apron are marked advising where aircraft with wingspans 11.5 m or greater and 18 m or greater are not permitted. Pilots must exercise caution due to reduced wingtip clearances.

Circuits on RWY 35R/17L and 31R/13L are to the east on frequency 118.1. Circuits on RWY 35L/17R and 31L/13R are to the west on frequency 123.0.

Typically, one runway will be used for circuits while the other (parallel) runway will be primarily used for arrivals and departures. However, this is by no means always the case. Always follow ATC instructions and, if you are unsure of procedures, ask for help.

Key areas when planning to navigate around an aerodrome are:

- » study the layout, paying particular attention to complex intersections and runway incursion hotspots in ERSA
- » anticipate and plan your taxi route to and from the runway in use based on information from the ATIS, NOTAMs, ERSA, recent experience and the aerodrome chart
- » have the aerodrome chart or diagram readily available to use during the planning phase and while taxiing
- » check the route on which you are taxiing against the chart or ERSA and again, pay special attention to complex intersections
- » continually scan for conflicting traffic and holding point markings
- » confirm your assigned route if you are in doubt about the taxi instructions received from a controller.

A specific clearance is required to enter, backtrack, line-up on, cross, take-off from and land on a runway. When taxiing, ensure you have received a specific clearance to cross any runway on your taxi route. Whilst taxiing, do not turn your radio down to brief or chat, you may miss some key ATC instructions.

The clearance will include your callsign and the words 'CROSS RWY XX'. An ATC clearance to line-up does not authorise the pilot to backtrack on the runway.

While taxiing, the use of standard operating procedures and your radio will increase the safety of operations. This includes following instructions from ATC, confirming your understanding of ATC instructions by ensuring correct readbacks, maintaining situational awareness, using all resources available and ensuring effective pilot/controller communication practices. At the holding point, ensure your 'ready' call is on the correct frequency.

Using non-standard radio calls or readbacks affects the ability of ATC to understand your intentions and confirm that you have understood your clearance.

The principle of good communication is to effectively articulate:

- » who you are
- » where you are
- » what you want.

When landing, runway confusion can be avoided by:

- » paying careful attention to runways in clearances
- » always reading back an assigned runway in full
- » taking sufficient time during the approach briefing to determine how positive runway identification will be achieved, particularly if using a non-precision, circling or visual approach
- » visually identifying the correct runway before entering or landing on it, depending on weather conditions
- » distinguishing between runway lighting and taxiway lighting, which are coloured differently.

Start approval is required for:

- » circuit operations
- » aircraft departing for aerial work in the Melbourne TMA (terminal area)
- » aircraft landing at Melbourne Airport.
- » aircraft departing above 2,000 ft for landing at Essendon.



Moorabbin helicopter operations

Helicopter arrivals and departures use the southern or northern aiming point or prior-approved HLS. Helicopters must nominate aiming point or HLS on first contact with tower. Departures and arrivals must be parallel to the duty runway and comply with circuit direction. All arrivals, departures and circuits must be at 700 ft AMSL unless notified otherwise. Do not fly over any airport buildings or public viewing areas at less than 500 ft.

When operating in Class G airspace outside of the Moorabbin control zone, ATC may not be aware of all traffic or may be busy managing traffic in Class D airspace. A high level of situational awareness is important. Helicopters typically maintain 700 ft in this area.

There is a no-go area to the west of the tower which is a public viewing area. Therefore, outbound helicopter traffic usually departs the southern pad to the east of the tower and proceeds overhead the taxiway before departing the zone.

There are 2 helicopter landing sites (HLS) at Moorabbin – uncontrolled taxiway G1 for the north and the grass area abeam the helicopter hangars for the south. The northern HLS is quite close to the approach threshold for runways 17L and 17R. Therefore, approaches to the northern HLS, when runways 17 are in operation, require a unique set of instructions from ATC (most likely a close, right-hand circuit) to avoid conflict with the fixed-wing traffic. When runway 31L/13R in use, helicopters will be sequenced into taxiway G1.

Departures

Moorabbin has no specific outbound tracks for helicopters. If city-bound, expect an on-track departure or via a leg of the circuit. Note: this may mean two-way traffic for helicopters, at the same level.

Departing to the southern training area is usually outbound via a leg of the circuit. Exit the zone at 700 ft then track to the sewage treatment works.

If outbound to the north or east, depart via the appropriate leg of the circuit (often a crosswind leg). A helicopter is very rarely given the instruction to depart on the upwind leg. From here, a typical clearance is via Sandown and then out of Class D airspace to the north or east, as required. If outbound to the south, departure will usually be via the coast.

- » taxi for the either the southern aiming point and hold short of TWY A or the northern aiming point and hold short of TWY G
- » for departures to the east, call TWR on 118.1 when ready
- » for departures to the west, call TWR on 123.0 when ready, and either pass east of the TWR and track north until past the TWR or track south until past airport buildings.

Arrivals:

- » from the east, must call TWR on 118.1 and fly a close base leg to pass over the duty threshold not below 500 ft AMSL
- » from the west, must remain clear of duty runways
- » from the south, track east of the TWR, then descend to the southern HLS
- » from the north, track east of the TWR and descend to the northern or main aprons.

Circuits:

- » are conducted from either the eastern grass (duty RWY 17/35) or the western triangle (duty RWY 13/31)
- » are flown parallel to the duty RWY, inside the fixed-wing circuit and in compliance with the fixed-wing circuit direction
- » once established, the only radio call is 'airborne' before each circuit. ATC will not positively control take-off and landing for helicopter circuit ops or provide sequencing.

Key

Run-up bay

Intermediate holding position

Runway holding position

Runway incursion hotspot

Taxiway to 04

Taxiway to 13

Taxiway to 17

Taxiway to 31

Taxiway to 35

Operations on the aerodrome

Apron area – no taxi clearance required. Monitor Ground on 134.25 MHz.

Taxiway – taxi clearance from Ground required before entering this area.

Runway – specific clearance required from ATC before entering this area.

Definitions

Apron area	A defined area intended to accommodate aircraft for purposes of loading or unloading passengers, mail, cargo, fueling, parking or maintenance.
Taxiway	A defined path established for the taxiing of aircraft and intended to provide a link between one part of the aerodrome and another.
Runway	A defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft.

Stay OnTrack: Flying the Melbourne Region

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Radio use – Requesting taxi clearance Moorabbin

ATIS VHF frequency 120.9 or NDB 398 (TWR hrs only), AWIS frequency 120.9 (outside TWR hours only), AWIS telephone 03 8470 3216

Moorabbin Terminal Information _____ Runway _____ Wind _____

X-Wind _____ Visibility _____ Cloud _____ Temperature _____

QNH _____

Moorabbin Ground Freq 134.25

Moorabbin Ground,

(Aircraft type & callsign), _____

_____ P.O.B.

(_____ (Dual / Solo if applicable))

Received _____ (ATIS),

_____ (Location on airfield eg,
Northern Apron), Request taxi.

Clear to taxi, holding point _____

runway _____

(runway number left or right)

_____ (Callsign).

read back

Cleared to taxi, runway

_____ via Taxiway

_____ (Taxi route

Details), Cross / Hold at

_____ (Holding point

instructions), _____ (Callsign).



Moorabbin Tower



Radio use – Holding points and take-off clearance

Ground FREQ 134.25

Moorabbin Ground, _____

(Aircraft callsign), _____

at _____ (location on airfield)

Request cross holding point

_____ (Holding
point identifier)

read back

Cross /Hold holding point

_____ (Holding point
identifier). _____ (Callsign).

Tower FREQ 118.1/123.0

Moorabbin Tower, _____

(Aircraft callsign), _____ Ready

Runway _____ (runway

number) for departure _____

(circuits/training area/first tracking
point - leg of circuit for departure).

(north, east, south, west)

read back

Cleared for take-off runway

_____ (runway
identifier), _____ (left/right turn,
maintain runway heading - unless
implied due runway configuration,
see ERSA) _____ (Callsign).

The following components of an ATC transmission require accurate readback:

1. an ATC route clearance in its entirety, and any amendments
2. en route holding instructions
3. any route and holding point specified in a taxi clearance
4. any clearances, conditional clearances or instructions to hold short of, enter, land on, line-up on, wait, take-off from, cross, taxi or backtrack on any runway
5. any approach clearance
6. assigned runway, altimeter settings directed to specific aircraft, radio and radio navigation aid frequency instructions
7. SSR codes, data link logon codes
8. level instructions, direction of turn, heading and speed instructions.



Moorabbin departure and tracking

VFR aircraft must advise departure tracking intentions to the tower with their 'ready' call on the appropriate tower frequency 118.1 (east) or 123.0 (west). An airways clearance for VFR aircraft to operate in the Moorabbin CTR and for VFR aircraft departing directly into Class G airspace will be issued by Moorabbin Tower. A take-off clearance constitutes a clearance to operate within the CTR or depart the zone in accordance with the intentions notified with the 'ready' call. VFR aircraft departing directly into Class G airspace must depart the zone on an extended leg of the circuit.

All aircraft departing directly into and remaining within Class G airspace should change to Melbourne Centre frequency 135.7 (callsign 'Melbourne Centre') 3 nm from Moorabbin during tower operating hours, as specific transfer instructions from Moorabbin Tower will not be issued to VFR aircraft.

Departure altitude is 2,000 ft on QNH, or higher if cloud permits. Advise tower if unable to comply. Caution - There maybe aircraft inbound to Moorabbin on circuit frequencies 118.1 (east) or 123.0 (west). Maintaining a good lookout is essential.



Moorabbin outbound to the south
Woodlands golf course – upwind RWY 17R



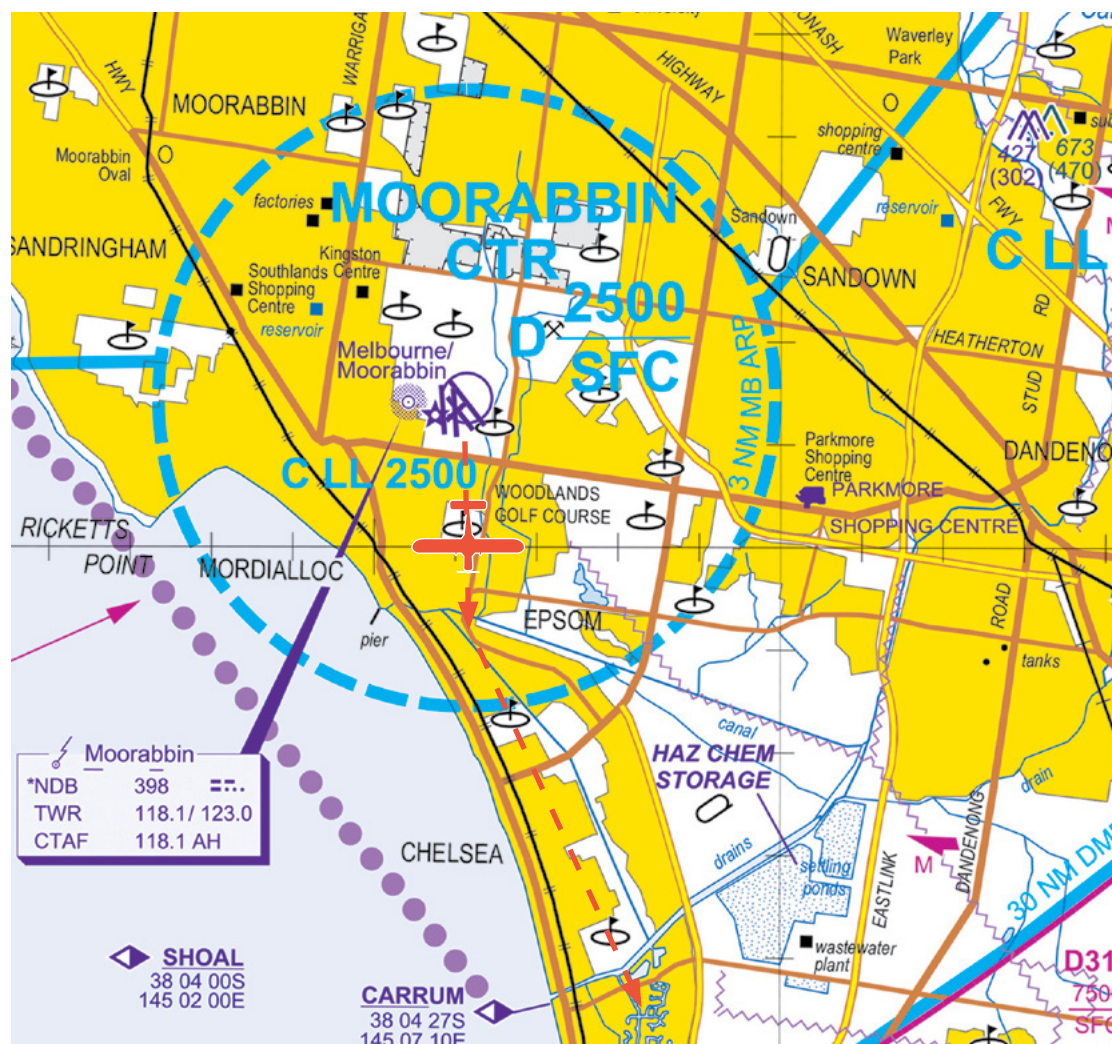
Departure and tracking – south

VFR aircraft departing directly into Class G airspace must depart the zone on an extended leg of the circuit.

Departures from RWY 17 – on upwind leg, remain over land until abeam Carrum to avoid inbound traffic.

Departures from RWY 17R to the south – turn left to follow the coast when south of Woodlands golf course.

Departing aircraft climb to 2,000 ft or higher cloud permitting and, if remaining in Class G airspace, change to Melbourne Centre frequency 135.7, 3 nm from MB. Review ERSA for any additional noise abatement and VFR requirements.





Moorabbin arrival and tracking

Enter the Moorabbin CTR at 1,000 ft. Arriving VFR aircraft should track via and report at one of the following VFR approach points: Carrum (CARR), Brighton (BTO), Academy (ACE), SHOAL or General Motors Holden (GMH). However, Carrum, Brighton, Academy and GMH are the most common VFR approach points used.

Note: when runway 13R or 17R is in use, pilots in the western circuit should be aware that these 2 runways can be confused, resulting in the final approach leg being flown to the incorrect runway. Pilots should check the magnetic direction of the aircraft when established on the final approach leg to ensure it is consistent with the direction of the runway in use.



Arrival and tracking – from the south via Carrum

Report inbound at Carrum. Depending on the runway in use, expect ATC to instruct you to join the circuit on final for a RWY 35 or a RWY 31 approach, or join on a right downwind for RWY 13 or RWY 17. For a 17R arrival, remain over water until established downwind.

Note: Moorabbin uses 2 frequencies – east and west of the runways. Carrum is always on the western frequency 123.0.





Arrival and tracking – from the north and west via Brighton

At Brighton, contact Moorabbin Tower on 123.0, the western frequency. Descend to enter the MB CTR at 1,000 ft unless instructed otherwise. ATC may track you via Moorabbin Oval. Exercise caution with opposite direction traffic departing Moorabbin, tracking north to Albert Park Lake or Brighton on climb to 2,000 ft.

Normal procedure for helicopters is to track inbound coastal via Cerberus. Helicopters can approach direct, without going coastal, but this requires caution as it could potentially put you at the same level as inbound fixed-wing traffic arriving via Brighton, on descent from 1,500 ft to 1,000 ft in this area.



Brighton inbound from the north



Moorabbin Oval inbound from the north-west



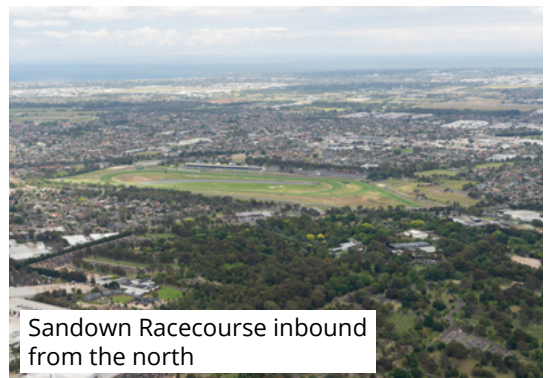
Arrival and tracking – from the north via Academy

At Academy, call ATC on 118.1, the eastern frequency. From here, you may be instructed to join final or oblique base for RWY 17L or 13L or via Sandown to join the circuit for a right downwind join for RWY 35R, or a base for RWY 31R. ATC may also instruct you to maintain 1,500 ft for an upwind join.

With a RWY 17 approach, helicopters may often be asked to report at a position 3 nm north of the runways, where they may be asked to change to the western frequency 123.0 and proceed directly to the HLS, thus keeping away from the circuit area of fixed-wing traffic. This is a preferred procedure by the tower.



Academy inbound from the north



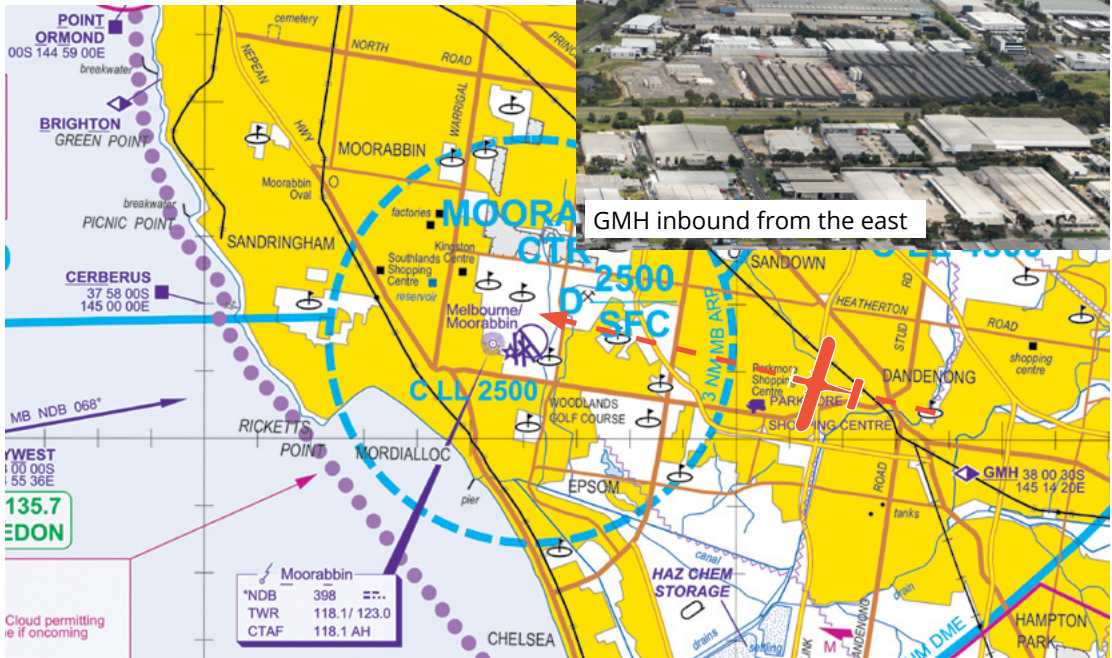
Sandown Racecourse inbound from the north



Arrival and tracking – from the east via GMH (General Motors Holden)

At GMH, call ATC on 118.1, the eastern frequency. GMH can be difficult to identify. It is an old industrial complex with a dark, sawtooth roof, approx. 7 nm east of Moorabbin and just south of the junction of the Monash and South Gippsland freeways.

For approaches to RWY 31R, 35R or a downwind join to RWY 13L, you will often be requested to report at Parkmore Shopping Centre and/or crossing Springvale Road (a major north-south road), which is just inside the 3 nm CTR boundary. Approaches to RWY 17L will often track via Sandown Racecourse to join a left base.





Keep to the right of the lane to avoid oncoming traffic. Pilots should have landing lights, anti-collision strobes and navigation lights on to assist sighting and avoiding other traffic. Maintain a vigilant lookout and an effective scan.



Pilots should be aware of the Melbourne airspace control area step north of the VFR coastal route with a lower limit of 1,500 ft. Tracking too far north will infringe this step. Pilots should also be aware of the PTOM parachuting danger area (D342) SFC to 2,500 ft. Pilots should maintain an active listening watch on CTAF 132.1 while tracking via the coastal route. If the aircraft has 2 radios, pilots should also monitor Melbourne Centre on 135.7.

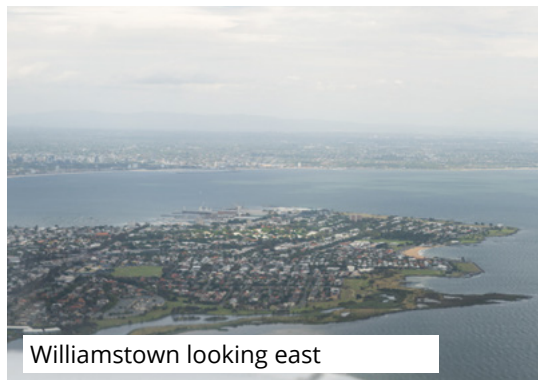
Note: use caution at Laverton BOM tower when climbing or descending to avoid controlled airspace. The tower is inside the 2,000 ft step – climbing prematurely or descending late at the tower will infringe the step. If runway 34 at Melbourne is in use, any breach of the step will cause conflict with arriving jet aircraft.



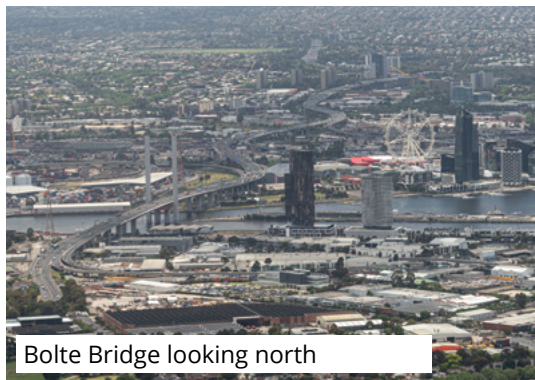
Laverton BOM tower looking east



Point Ormond



Williamstown looking east



Bolte Bridge looking north



Station Pier looking south-east



Cerberus looking south



Inland VFR route

The inland route runs between Sugarloaf Reservoir and Kilmore and is one of the main VFR routes connecting the Melbourne Basin with northern Victoria used by northbound and southbound VFR traffic.

Maintain a good lookout for other aircraft, particularly when climbing and descending. Listen out on Melbourne Centre frequency 135.7 and broadcast your position and intentions when entering the inland route. Make sure you keep to the right (oncoming traffic should be on your left) and strobes, landing and taxi lights should be on.

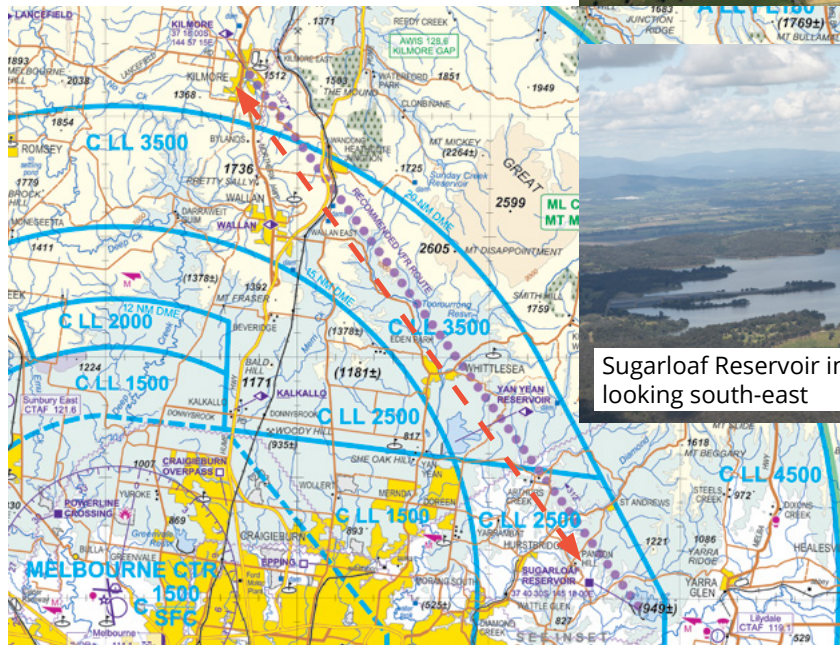
Exercise caution in the vicinity of high terrain to the immediate north of the route with associated mechanical turbulence in strong northerly or easterly winds. When terrain, weather and CTA steps permit, fly at VFR cruising altitudes. Accurate height holding is essential along this route as the lower levels of controlled airspace vary from 2,500 ft to 4,500 ft, with 4 different CTA steps converging in the vicinity of Yan Yean Reservoir. Use the Melbourne VTC to identify airspace steps.



Kilmore inbound looking south-east



Yan Yean Reservoir inbound looking west



Sugarloaf Reservoir inbound looking south-east



Weather



The variable weather in Melbourne means aviation hazards are ever-present.

Fog/low cloud: Fog is a significant hazard for Melbourne and can affect many aerodromes around the Melbourne Basin (Melbourne, Essendon, Moorabbin, Avalon and Point Cook) at the same time. Fog and low cloud events are often associated with a phenomenon known as the Melbourne (Spillane) Eddy. In this situation,

moist south-westerly winds develop and move low cloud over the Melbourne Basin.

Radiation fog is not common around Melbourne, but is in the Yarra Valley. Low cloud is also often associated with a southerly air flow. Moisture from Port Phillip Bay can produce low cloud and possible drizzle, for hours over the basin. In moist flows, sea fog and low cloud can also affect the basin via the bay.

Thunderstorms: Thunderstorms can occur in the Melbourne Basin at any time of the year. The main thunderstorm activity is during spring and summer, with these storms more likely to bring large hail and damaging winds. The triggers include frontal systems, troughs and sea breeze convergence.

Thunderstorms can be tracked when they form on the ranges to the north and are then steered by a north to north-westerly flow over the Melbourne area. Large thunderstorm bands can occur with fronts and can move quickly through Melbourne. In these airstreams, and for the Melbourne Basin, it is best to monitor thunderstorms near Ballarat, as the storm cells typically track from this direction. Meanwhile, when thunderstorms develop on a sea breeze convergence line, they can have weak steering and hence be slow moving and last for several hours.

Showers: In a southerly flow, Melbourne is exposed to showers, with reduced visibility and sometimes long periods of low cloud. Moorabbin is most affected by showers when the air stream is from the south-west. The Melbourne area is normally protected from precipitation from the north due to a rain shadow from the ranges. However, occasionally bands of showers can move over the area from the north.

Winds: The strongest winds are typically prefrontal northerly winds. These winds can strengthen due to funnelling through Kilmore Gap to the north of Melbourne. Consequently, Melbourne Airport can experience stronger winds than Essendon, despite the proximity of the aerodromes.

An afternoon southerly sea breeze occurs mainly in spring and summer and can affect all aerodromes, resulting in runway changes. Moorabbin and Avalon can often experience an early afternoon bay breeze followed by a stronger late afternoon southerly sea breeze.

Turbulence: The west-to-east orientation of the Great Dividing Range means northerly winds will produce the most turbulent flows in the basin. Severe turbulence can result ahead of strong cold fronts. Windshear can also occur when strong northerly winds aloft do not completely mix to the surface. This results in a strong change in wind speed with height, which can make take-off and landing difficult.



Radio use at CTAFs (when YMMB, YMAV and YMEN Towers are closed)

Calls recommended ALL the time

Situation	Example broadcast
1. Before take-off or during taxi	Mangalore traffic, C172, ZTQ taxiing runway 36 for Moorabbin, Mangalore.
2. Inbound at least 10 nm from the aerodrome or further for high performance aircraft or busy aerodromes	Tyabb traffic, C172, ZTQ one zero miles west inbound 2,000, estimating circuit at two five, Tyabb.
3. Overflying or in the vicinity of an aerodrome outside tower hours, but not landing, or further for high performance aircraft	Bacchus Marsh traffic, C172, ZTQ one zero miles southwest, 2,000, overflying, estimating overhead two five, Bacchus Marsh.

Calls when there is OTHER TRAFFIC

Situation	Example broadcast
4. Entering a runway	Tyabb traffic, C172, ZTQ lining up 17, Tyabb.
5. Joining the circuit	Tyabb traffic, C172, ZTQ joining midfield crosswind, runway 17, Tyabb.
6. Making a straight in approach, not less than 3 nm from the touch-down threshold*	Mangalore traffic C172, ZTQ joining 3 nm final, straight-in approach runway 18, Mangalore.
7. Joining on base leg	Lilydale traffic, C172, ZTQ joining base, runway 36, Lilydale.
8. During an instrument approach, either when established at the final approach fix, or when commencing the missed approach	Mangalore traffic, C172, ZTQ conducting missed approach, runway 18, tracking to the south, climbing 3,900, Mangalore.
9. Once clear of the runway(s)	Tyabb traffic, C172, ZTQ runway 35 vacated, Tyabb.

*Pilots should be aware that a GNSS indication of 3 nm from an aerodrome may not be 3 nm to the runway threshold.

Note: If you hear a CTAF call, respond with your location and intentions. Don't assume you are the only aircraft in the vicinity.

Frequencies	
Moorabbin ground	134.25
Moorabbin tower	118.1 or 123.0
Moorabbin ATIS	120.9 NDB 398
Melbourne Centre	135.7
Melbourne approach	132.0
Melbourne departures	118.9 (Routes 264 radial through N to 092 radial) 129.4 (Routes 263 radial S to 093 radial)
Essendon ATIS	119.8
Essendon ground	121.9
Essendon tower	125.1
Point Cook CTAF	126.2
Avalon tower	120.1
Avalon approach	133.55
Avalon ATIS	118.2 or 116.1 (VOR)
Avalon CTAF	120.1

Contact phone numbers	
ATIS	03 8470 3216
CENSAR	1800 814 931
Moorabbin AWIS Kilmore Gap AWIS	03 8470 3216
Kilmore Gap AWIS	03 8470 3216 03 8470 3210 or Freq 128.6

Notes

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