PRM Operations at Sydney
A Pilot's Guide

PRECISION RUNWAY MONITOR – INDEPENDENT PARALLEL APPROACHES

Effective 27 February 2020

Introduction

Parallel runway operations at Sydney (Kingsford-Smith) Airport (YSSY) comprise a number of parallel operating modes with arrivals and departures using both runways:

- Independent parallel departures
- Simultaneous opposite-direction parallel runway operations
- Dependent parallel approaches
- Independent visual approaches (IVAs)
- Independent parallel approaches (PRM)

This guide provides specific information that can be used to supplement pilot training prior to operating into YSSY during times when PRM operations are in progress.

Learning outcomes

This training will enable pilots to:

- Appreciate the ATC components of PRM operations;
- Recognise when PRM ops are in progress;
- Identify additional approach briefing requirements for PRM ops;
- Understand usage of dual VHF comms and the PRM frequency;
- Explain the break-out procedure and its difference to a go-around.

ATC components of PRM operations

In addition to normal ATC operations, PRM at YSSY uses:

- Wide-area multilateration (WAM), ADS-B and SSR inputs;
- High resolution displays with course deviation alerting capability;
- Two additional radio frequencies (133.95 and 119.45);
- Two additional controllers, each monitoring one runway approach.

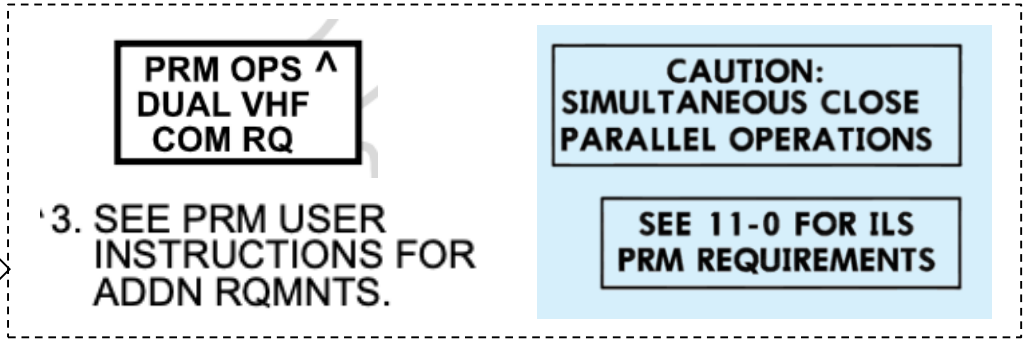
From 27 February 2020, both ILS and GLS approaches can be flown during PRM operations.

Advice of PRM operations

PRM may be used when weather conditions demand, typically during the Mon-Fri morning arrival peak. Normal advice of PRM operations is via ATIS, shortly after the runway nomination. It may also be given directly by ATC. Examples:

- EXPECT PRM OPERATIONS FROM 2100
- PRM OPERATIONS IN PROGRESS

Awareness of your arrival being subject to PRM operations is your cue to brief and prepare appropriately. Approved approach charts include the following unique cues.



If unable to participate in PRM OPS, advise ATC prior to 120 DME 'SY'

Approach brief

To ensure vertical separation with aircraft being vectored to the adjacent approach, pilots assigned 16R or 34R will be given instructions to descend significantly below the glide path before intercepting the approach.

LOW-SIDE APPROACH START ALTITUDES: Expect to reach the procedure initial approach altitude below normal descent profile.

-RWY 16R - expect to reach **3000FT** at least **6NM before URDEN**.
-RWY 34R - expect to reach **2000FT** before **ENDEV**.

PRM USER INSTRUCTIONS
INDEPENDENT PARALLEL APPROACHES

Precision Runway Monitor (PRM) operations are conducted at Sydney to facilitate independent parallel approaches to closely spaced parallel runways. The following instructions apply during independent parallel approaches when pilots are advised by ATIS "PRM OPERATIONS IN PROGRESS".

REQUIREMENTS: Before participating in PRM operations, pilots must have satisfied training requirements as directed by CASA, or be approved for PRM operations by the NATIONAL AVIATION AUTHORITY (NAA) for the state of registration of the ACFT.

If unable to participate in PRM operations, pilots MUST notify ATC prior to 120 DME SY (or if departing from within 120 DME SY on first contact with ATC).

PRM operations assume all participating aircraft conduct a GLS or ILS approach to their respective RWY. Aircarft will be vectored to final at the IAF. Circling approaches are not available during PRM operations.

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DUAL VHF REQUIREMENTS: Each approach has both a TWR and a PRM frequency. The TWR and PRM controllers transmit simultaneously on both frequencies. Pilots must only transmit on the TWR frequency, and LISTEN TO BOTH. Set the PRM frequency volume prior to transfer to TWR at the same level to ensure ATC instructions can be heard on both frequencies in case of a blocked transmission.

DEVIATIONS: When an aircraft deviates from the final approach course towards the No Transgression Zone (NTZ), ATC will issue the following instructions:

"(callsign) YOU ARE DEVIATING LEFT (or RIGHT) OF THE FINAL APPROACH COURSE. TURN (LEFT or RIGHT) IMMEDIATELY AND RETURN TO YOUR CLEARED APPROACH."

Acknowledge deviation advice as soon as practicable. Compare tracking indications and use the indicator most consistent with ATC advice. Immediately adjust tracking to regain the final approach course.

BREAK-OUT: If ATC determines that an aircraft has or will penetrate the NTZ and avoiding action is required, the non-deviating aircraft on the adjacent approach will be issued BREAK-OUT instructions using the following phraseology:

"BREAK-OUT ALERT, (callsign) TURN LEFT (or RIGHT) IMMEDIATELY HEADING (three digits), CLIMB (or DESCEND) TO (altitude)"

HAND FLY A BREAK-OUT: When issued with BREAK-OUT instruction, time is critical. Break-out procedures MUST BE HAND FLOWN. In exceptional circumstances a descending BREAK-OUT may be given but the assigned altitude will not be below the applicable (MVA).

Approach brief

Hand fly a break-out immediately.

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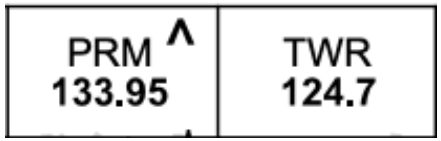
Approach brief

Dual VHF is required to ensure ATC is heard during blocked transmissions.

Director transfers aircraft to TWR befor the initial approach fix.

Set COM2 to the PRM frequency and monitor that frequency during the approach while also selecting the TWR frequency on COM1. Transmit only on COM1/TWR.



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APPROACHES WITH AUTOPILOT ENGAGAED: It is recommended that approaches are flown with the aircraft autopilot engaged.

TCAS SELECTION: Pilots should maintain TCAS in the RA mode.

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Break-out procedure

To avoid another deviating aircraft in unsafe proximity, ATC may issue avoiding action in the form of a "BREAK-OUT ALERT".

Hand-fly the break-out manoeuvre immediately.

A break-out is a different procedure entirely to a missed approach procedure. Pilots issued with "break-out" instructions are in a situation of minimal lateral separation with another aircraft with little or no advance warning of impending break-out. Time is critical. To obtain the quickest response, all "break-out" procedures must be hand flown. Pilots will be given instructions to break-out that will not conform to the published go around. Pilots will be instructed to turn immediately, climb or descend to headings and altitudes that maintain traffic separation and terrain clearance. In unusual circumstances, descending break-out instructions may be given but this clearance will not be to an altitude below the minimum vectoring altitude (MVA).

Deviation alerts & TCAS

PRM may provide advice of deviations off centreline towards the other approach and an instruction to return to the cleared approach. This must be acknowledged as soon as practicable.

TCAS should be maintained in RA mode. In the case of a simultaneous break-out and RA, and the ATC climb/descend instruction differs from the RA, pilots must follow the RA while continuing to follow the controller's immediate heading instruction. Report this deviation to ATC as soon as practical.

Review questions

- How are pilots made aware of PRM operations?
- What instrument approach chart cues indicate the approach is approved for PRM operations?
- What is COM2 used for during PRM operations and when?
- What document contains additional approach briefing information for PRM?
- Can TOGA be used in response to a break-out instruction?
- Can a break-out be given to an aircraft that is not deviating from final?
- Which runways at YSSY are "low-side" and what does that mean when planning descent?
- What TCAS mode should be used when cleared for the approach?
- When should pilots unable to participate in PRM operations advise ATC?