

SAFETY IN THE CIRCUIT



Photo of Paraparumu aerodrome courtesy of Rhyder Lane.

// Getting local knowledge about the procedures at an uncontrolled aerodrome is key.

The publication of new guidance in the AIP as to who has right of way in the unattended circuit is a good time to highlight general flying safety in this relatively high-risk area.

The AIPNZ has amended its guidance on who has right of way in the circuit. The advice relates to unattended aerodromes hosting a mix of VFR and IFR traffic.

Rule 91.229 *Right-of-way rules* stipulates that circuit traffic has right of way unless an aircraft is in the final stages of an approach to land.

VFR traffic in the circuit, however, should be aware that IFR aircraft conducting an instrument approach may join long final. In that case, circuit traffic still retains right of way, unless weather conditions dictate priority to the IFR aircraft, or if the IFR aircraft is in the final stages of an approach to land (AIP AD 1.5-3 *Circuit Joining Procedures*).

Of course, if a full IFR approach due to weather is needed, it will raise the question as to why there's any active VFR traffic at all in the circuit.

With the growth of performance-based navigation – which will enable more IFR approaches into uncontrolled aerodromes – the likelihood of traffic conflict may increase.

It may also increase with the possibility that air traffic services at some aerodromes may be withdrawn in the future.

Be seen, avoid

CAA Aeronautical Services Senior Technical Specialist John McKinlay says the AIP encourages IFR traffic to make more-than-usual position reports.

“This is to ensure that VFR circuit traffic knows where the IFR aircraft is and can safely sequence with it as it enters the circuit.”

To remind all pilots of their obligations in the circuit, the AIP also says that the principles of ‘see and be seen’ and ‘see and avoid’ apply at all times, and “pilots are ultimately responsible for achieving and maintaining safe separation whilst joining and operating in an unattended aerodrome circuit” (AIP AD 1.5-3, 2.1.3).

While those principles are both valid, pilots should also be mindful of the limitations of each and apply threat and error considerations.

The reminder is important because, as CAA Flight Examiner Katrina Witney says, pilots sometimes overlook the special circumstances encompassing IFR/VFR operations at unattended aerodromes.

“Because there isn't that mix of operations at every unattended airfield, some pilots won't have been exposed to that situation, so they're not situationally aware of who should be giving way to who.”

See

CAA Flight Examiner Marc Brogan observes that pilots flying in and around all aerodromes, but particularly unattended, need to be keenly aware of the way companies and clubs carry out their daily tasks and how those tasks affect other users.

“They also need to consider the itinerants and the broad range of aircraft types those visitors bring into the airfield and circuit,” he says.

John says it's a partnership in the circuit.

“You're looking out for other traffic. You make sure you can be seen, and you're also making appropriate

radio calls so other pilots are aware of you. It's a matter of communication to work out the safest and most expeditious way of joining and operating in the circuit.”

Helicopter consideration

Rule 91.223 notes that if helicopters cannot conform to the circuit, they can avoid it by, for example, making a direct approach, in which case they must give right-of-way to any circuit traffic.

CAA Flight Examiner (Helicopter) Andy McKay says it's also timely to remind helicopter pilots that they need to be aware of where the instrument approach is.

“This is so they can avoid coming face-to-face with someone on the approach as they break visual.”

Causes of heightened risk

John advises aerodrome operators to keep things standard, because when things are non-standard, there's the potential for confusion and greater risk.

“It's really important when safety committees help develop procedures for the AIP, they need to take into account itinerant pilots who might be coming to their aerodrome for the first time. If the procedures are too complex or non-standard, it can create significant problems for those out-of-towners.

“Equally, it's important for the pilots to brief themselves on circuit directions at an unattended airfield and what other operations are there,” says John.

Katrina says that at the other end of the familiarity spectrum, locals' complacency can increase risk.

“Locals think they know the area well and they don't always brief themselves as well as they should.”

John says multiple activities at aerodromes clearly bring about potential heightened risk.

“But if it's managed through a strong safety culture and appropriate standard procedures, it can be done quite safely.”

Plan for successful joining

The key to successfully joining the circuit is situational awareness and that begins with robust pre-departure planning.

One of your fundamental tasks here is to become thoroughly familiar with the aerodrome charts, in *AIP New Zealand*, Vol 4. The AIP is available, free, at aip.net.nz. While you're there, check if you need the aerodrome operator's approval to land. »

» Aircraft joining or vacating the circuit at an uncontrolled or unattended aerodrome must comply with the published circuit directions and procedures in the AIPNZ Volume 4 for that aerodrome. Rule 91.223 *Operating on and in the vicinity of an aerodrome* refers.

These procedures are established to ensure the greatest possible safety for pilots when operating at an uncontrolled or unattended aerodrome. (See “Non-conformance with uncontrolled or unattended aerodrome circuit procedures can be fatal” on aviation.govt.nz > safety > safety messages.)

Pilots should weigh the risk involved in different approaches to the circuit.

For instance, while the standard overhead join provides more time to assess the circuit, see other aircraft and work out wind conditions, some aerodromes have parachute operations and specifically dissuade pilots from joining overhead.

Getting local knowledge is key.

“It’s also important to slow down and allow yourself the time to identify the threats on the day, before proceeding into the overhead or circuit area,” says Katrina.

Situational awareness

It’s already been noted how pivotal to situational awareness and circuit safety, are the principles of ‘see and be seen’ and ‘see and avoid’.

Every ab initio pilot knows those involve constant lookout and regular radio calls.

“Be clear, confident and accurate with your position reports,” says Katrina. “Keep them short and standard, listen and build up a mental picture of what is evolving around you and how that will affect you.

“Help other pilots by providing your aircraft type if you’re at an unfamiliar airfield or in high-traffic areas.

“Also make sure to identify and confirm the correct runway and circuit direction.”

Once in the circuit, continue to communicate – for instance, if you’re changing runways. Be clear about your intentions and get agreement from everyone else. Consider using ‘plain English’ to avoid confusion.

Katrina says IFR aircraft need to incorporate geographical position calls in amongst their standard IFR calls, so VFR aircraft understand where they are.

“For example, an IFR aircraft might call ‘Kerikeri traffic, Alpha Bravo Charlie, final approach fix RNAV runway 33’.

“That means little to a VFR pilot. At an uncontrolled aerodrome the IFR aircraft should call ‘Kerikeri traffic, Alpha Bravo Charlie, Cessna 172, final approach fix, five miles south of the aerodrome, descending through 2000 feet, long final runway 33’.”

One of the most important radio calls is about how you intend to sequence.

Experienced microlight pilot and retired air traffic controller Bill Penman told *Vector* in 2016 that heightened risk accompanies aircraft on mid-base leg about to turn on to final.

“You have to ensure you’re sequenced correctly, and what’s more, that you communicate that sequencing.

“Have a really good look between the threshold, and three or four miles on final, to make sure you’re not cutting someone else off. If you’re unsure of the traffic sequence, speak up.”

That especially applies, of course, if there are IFR aircraft in the final stages of approach.

The radio should be used judiciously, however.

While radio calls are fundamental to circuit safety, there’s always a danger that pilots rely on them almost solely for their situational awareness.

But radio position calls can be inaccurate, there can be NORDO aircraft in the circuit, or there are irrelevant exchanges, and position calls hard to fathom through that chatter.

So, looking out can never be dismissed, although it, too, comes with conditions.

In the 2016 *Vector* article “Joining Uncontrolled”, Wanaka Helicopters CFI Simon Spencer-Bower warned of blind spots in a pilot’s vision.


“Pilots should understand where their blind spots make them vulnerable. A fixed-wing pilot can’t see down below the nose, and although a helicopter pilot has good visibility out front, they can’t see behind.”

“Keep it compact”

Rodger Ward, another experienced microlight pilot and air traffic controller, also told *Vector* that a standard circuit makes it easier for everyone.

“You don’t need to be doing a massive two NM-wide downwind ending up on a five-mile final. Keep it compact.

“Slow the aircraft down. Just because your aircraft can do 140 knots doesn’t mean you have to do it in the circuit. That makes the circuit a lot safer,” he said.



// Pilots flying in and around all aerodromes, but particularly unattended, need to be keenly aware of the way companies and clubs carry out their daily tasks and how those tasks affect other users. //

Photo courtesy of Timaru District Council.

Finally, if your listening and looking fails and you lose situational awareness, remove yourself from the circuit and give yourself time to rebuild the picture.


If conditions change

Rodger Ward also told *Vector* that when the wind changes, pilots need to step up and take ownership of the situation.

“During the middle of winter, and at Rangiora in particular, you might start off with a 5 kt westerly because of katabatic drainage down the valley, and then as the

day goes on, the wind slowly changes and it turns into an easterly. People just continue to use the original vector.

“After a period of time, someone really needs to step up and say, ‘hey guys, we’ve got a tailwind at the moment’. And that’s probably the most dangerous time, when all these aeroplanes have to reposition for the other runway. It can get quite messy.

“In my view the best move is to get away from the circuit and rejoin for the other runway, rather than doing orbits and 180s downwind. It’s easier to spend another 10 minutes, go away and come back.” 

Reported collisions and close calls at unattended aerodromes January 2015 – October 2020

Type	2015	2016	2017	2018	2019	2020	Total
Air proximity	34	31	39	31	27	13	175
Collision					1		1
Near collision	4	7	15	16	19	10	71
Total	38	38	54	47	47	23	247