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Australian Transport Safety Bureau

Near collision involving Piper PA-28, VH-MJT, and Airbus Helicopters EC 130, VH-ZVO

Bankstown Airport, New South Wales, 20 May 2016

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Addendum

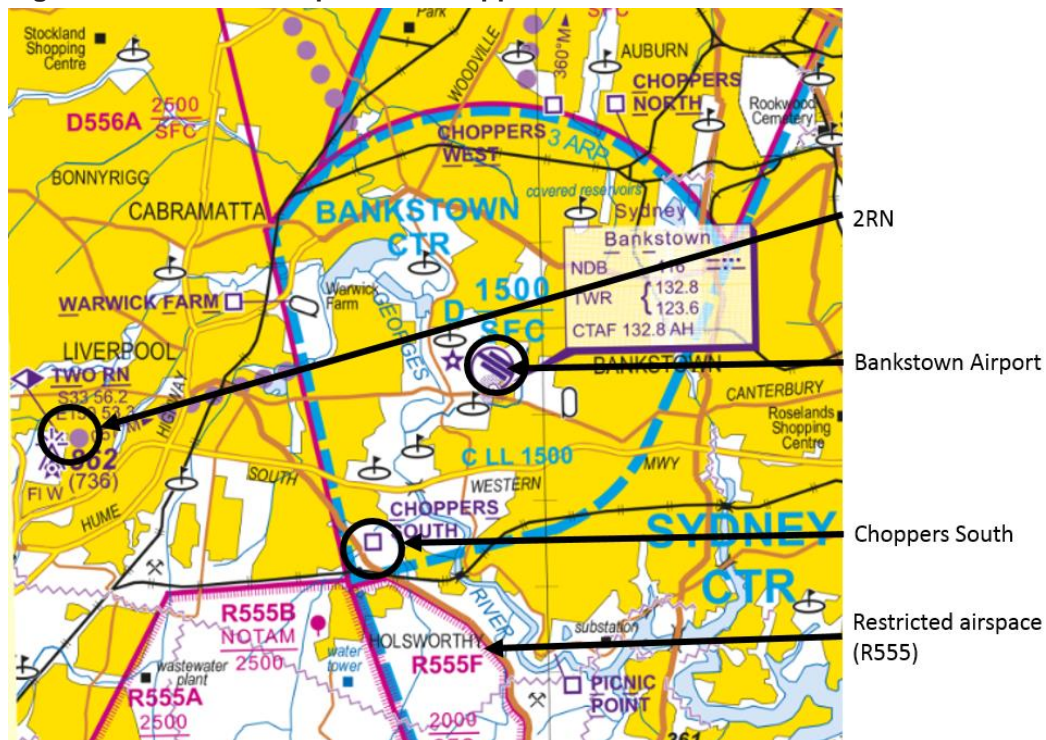
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Near collision involving Piper PA-28, VH-MJT, and Airbus Helicopters EC 130, VH-ZVO

What happened

On 20 May 2016, the pilot of an Airbus Helicopters EC 130 T2 helicopter, registered VH-ZVO (ZVO), was conducting a ferry flight from Port Kembla to Bankstown Airport, New South Wales, with an engineer, who was also a crewmember, on board. At about 1437 Eastern Standard Time (EST), the pilot of ZVO contacted Bankstown Tower air traffic control (ATC), advising they were at 2RN approach point at 1,000 ft and inbound to Bankstown (Figure 1). The aerodrome controller (ADC) cleared ZVO to track to Bankstown via the Choppers South approach point at 500 ft.

Figure 1: Bankstown Airport and Choppers South



Source: Aircservices Australia, annotated by the ATSB

At the same time, an instructor and student of a Piper PA-28-181 aeroplane, registered VH-MJT (MJT), were conducting circuit training on runway 29 left (29 L) at Bankstown Airport. At about 1438, the instructor advised the ADC that they were on the downwind circuit leg for a glide approach,¹ and a touch-and-go landing. The ADC cleared MJT for the touch-and-go landing in response. Soon after, the instructor set the throttle to idle to simulate an engine failure, and the student commenced a glide approach.

At about 1439, the pilot of ZVO called at Choppers South at 500 ft and the ADC cleared ZVO to overfly the runways midfield (which included crossing all three runways – 29 left, centre and right), at 500 ft and then to join the circuit on the downwind leg for a landing at taxiway N1 (Figure 2). The ADC also advised the pilot of ZVO of traffic, which was another helicopter then overhead the

¹ Throttle set to idle to simulate an unpowered approach.

runways and outbound via Choppers South. The pilot of ZVO saw, and reported sighting, that helicopter.

The ADC reported that they then observed MJT on final approach, about 100 m short of the runway threshold, and assessed that they were on a normal approach path. The ADC also observed ZVO pass the outbound helicopter and then, concerned about the outbound helicopter's proximity to restricted airspace (R555), had a brief look at the tower situational awareness display (TSAD) to check their track.

The instructor of MJT reported that as the aeroplane approached the runway threshold on final approach, it was still at about 400–500 ft above the runway, which they assessed as too high to safely complete the landing. The student therefore commenced a go-around² procedure, applied full power, and moved to the left of the runway centreline. The radar data showed MJT descended to about 300 ft during final, and an off-duty controller who observed the incident, estimated MJT then continued to descend to between 100 and 200 ft on short final before conducting a go-around.

The controller looked up from the TSAD and sighted MJT in the go-around. The controller estimated that MJT was at about 250–350 ft above the runway and about 250–300 m beyond the runway threshold.

As ZVO crossed the airport boundary, the engineer sighted the aeroplane (MJT) and alerted the pilot. The pilot then saw MJT in the go-around, at the same height as ZVO, and immediately conducted a left turn to increase separation between the helicopter and the aeroplane. MJT was about midfield (half way along the runway) when the instructor sighted the helicopter (ZVO) taking avoiding action.

At about 1441, the controller advised the pilot of ZVO of MJT as relevant traffic, and watched as the helicopter turned through 360° and passed MJT.

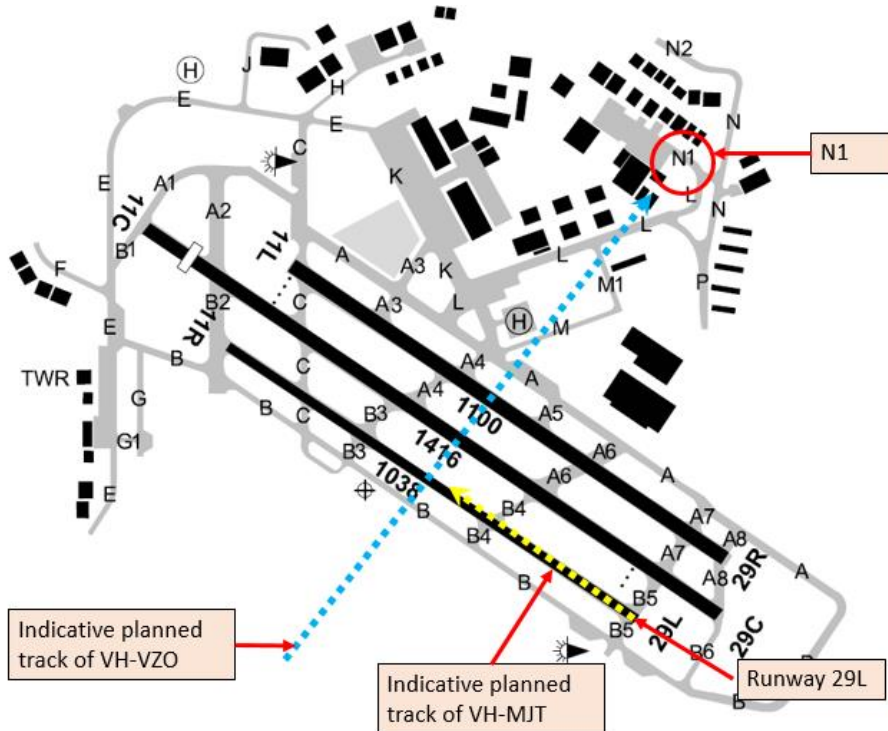
At that time, the instructor of MJT reported that they broadcast, stating that they were going around. On the recorded audio from the ADC frequency, about 8 seconds after the ADC advised ZVO of MJT, the instructor of MJT can be heard to start to broadcast, but was then over-transmitted by another radio broadcast.

The instructor of MJT estimated that the helicopter was within about 30–50 m horizontally and at the same height as MJT. The pilot of ZVO estimated the aeroplane was about 200 m away, and the ADC estimated the proximity to be about 120 m.

ZVO then continued to land at N1 as cleared. MJT continued to conduct circuits.

² A flight path taken by an aircraft after an aborted approach to landing.

Figure 2: Bankstown Airport showing indicative tracks



Source: Airservices Australia, annotated by the ATSB

Aerodrome control and radio frequencies

There were two tower frequencies and ADC positions at Bankstown, with ADC1 having responsibility for arrivals and departures on runways 29 right/11 left and 29/11 centre; ADC2 was responsible for the training circuit with runway 29 left/11 right. However, these were combined when the traffic volume allowed. When not combined, the two aerodrome controllers were required to coordinate with each other if helicopters were operating inbound or outbound via Choppers South and therefore crossing the circuit traffic midfield over the runways.

The two Tower frequencies at Bankstown were combined at the time of the incident, and one controller occupied the ADC position. When combined, pilots of aircraft operating on either the circuit Tower frequency or the other Tower frequency would have been able to hear transmissions on the other frequency. Although the pilots of ZVO and MJT had different radio frequencies selected, they were combined such that the transmissions on both frequencies could be heard on either.

Pilot comments

Instructor of VH-MJT

The instructor of MJT commented that they were not aware of ZVO before sighting it after the pilot of ZVO had taken avoiding action and the ADC had issued the traffic alert. Despite having heard a couple of radio calls regarding helicopters, they were not aware of ZVO tracking via Choppers South or that they would be crossing the runways at 500 ft.

There was a tailwind component, which may have contributed to the aircraft being high on final. The automatic terminal information service (ATIS) current at the time indicated an occasional downwind of 4 kt. The ATIS was changed about 10 minutes after the incident, and the runway direction changed to 11, with the wind reported to be from 150° at 8 kt.

The instructor stated that if an approach is unstable,³ conducting a go-around is standard procedure. The instructor also stated that it would be valuable for aircraft in the circuit to be advised by ATC if a helicopter is approaching from Choppers South and crossing midfield at 500 ft. Additionally, advising the helicopter pilot when there is an aircraft on final would be valuable information.

After the incident, the instructor spoke to the Tower controller by telephone, and reported that they were advised that to avoid a similar situation, pilots should broadcast that they are going around before commencing the go-around. The instructor commented that a pilot's priority is to aviate first and control the aircraft, then to communicate later.

The instructor also commented that at a non-towered aerodrome, there would not be an aircraft passing across the midfield at 500 ft (without a broadcast). The procedure could be addressed such that either the helicopters do not pass directly through the circuit, or the aircraft on final approach and the helicopter pilot are both given traffic information regarding each other.

Pilot of VH-VZO

The pilot of VZO provided the following comments:

- They did not hear any call from the pilot of the aeroplane, nor was there any call from Tower that the aeroplane was conducting a go-around.
- Even if a pilot broadcasts conducting a go-around, sometimes the aircraft can be hard to see on finals. They did not see the aeroplane at first, but their passenger saw it going around. They do not expect to see another aircraft at the same height when crossing the runways at 500 ft.
- They were not aware of the other aircraft at all before they saw it – they had not heard a call and were not aware of any aircraft in the training circuit. They did not know to look there for other aircraft traffic.

Controller comments

The aerodrome controller reported that they were monitoring an outbound helicopter on the TSAD when MJT commenced the go-around. As soon as they sighted the potential conflict, VZO had commenced a left turn and the ADC gave MJT as traffic to VZO.

An off-duty controller, who was in the ATC tower at the time of the incident, commented that in Class D airspace, pilots have responsibility to see and avoid VFR aircraft and ATC has a responsibility to provide relevant traffic information to assist them to do that. In normal circumstances, an aircraft in the circuit and a helicopter tracking across the runway at 500 ft would not need to know where each other was as they are 'segregated'. Additionally, providing traffic information that was not useful, may lead pilots to switch off to essential information. However, in the go-around procedure, they were relevant traffic and the controller would pass the traffic. Usually their response would be to pass traffic to the helicopter first as they were generally in a stage of flight with a lower workload and are more manoeuvrable than fixed wing aircraft.

En Route Supplement Australia

The ERSA entry for Bankstown included the following under the heading Class D:

'CAUTION: HELICOPTERS OVERFLY RUNWAYS MIDFIELD AT 500FT.'

Safety action

Whether or not the ATSB identifies safety issues in the course of an investigation, relevant organisations may proactively initiate safety action in order to reduce their safety risk. The ATSB has been advised of the following proactive safety action in response to this occurrence.

³ An unstabilised approach is an approach during which an aircraft does not maintain at least one of the following variables stable: speed, descent rate, vertical/lateral flight path and in landing configuration, or receive a landing clearance by a certain altitude.

Airservices Australia

As a result of Airservices internal investigation into the occurrence, a Standardisation Directive (SD) has been developed for publication on 28 June 2016. The SD aims to educate controllers on the key lessons learned from the occurrence.

Specifically the SD Clarifies that

- an aircraft cleared to land is also cleared to conduct a go-around
- helicopter tracking which crosses an operational runway as described in ERSA must not be relied on to assure segregation of overflying helicopter traffic from the possible go-around or missed approach of aircraft using the runway
- where the possible go-around or missed approach path of a landing aircraft is in potential conflict with a helicopter overflying, controllers are required to provide traffic to both aircraft in anticipation of the possible go-around or missed approach rather than in response to the go-around or missed approach.

Operator of VH-MJT

As a result of this occurrence, the operator of MJT has advised the ATSB that they are taking the following safety actions:

Induction training amendment

Company induction training will be expanded to cover more details with regards to helicopter activities at each base.

Safety message

The possibility that an aircraft will go around from an approach should always be considered by ATC and pilots, with respect to the separation of air traffic.

The adage 'aviate-navigate-communicate' remains a fundamentally effective prioritisation guide for pilots. Nonetheless, under some circumstances, it may be prudent to broadcast intentions early, particularly when those intentions vary from an expected or anticipated course of action. This may be particularly important where the potential for a conflict with other traffic is elevated, such as in an area of high traffic density. Timely broadcasts provide greater opportunity for other pilots to focus their lookout, and for ATC to react to the changing circumstances.

The Civil Aviation Safety Authority booklet, [Class D airspace](#), advises pilots that when operating in Class D airspace, they must sight and maintain separation from other aircraft. Pilots and ATC have a dual responsibility to maintain situational awareness of other traffic.

General details

Occurrence details

Date and time:	20 May 2016 – 1441 EST	
Occurrence category:	Serious incident	
Primary occurrence type:	Near collision	
Location:	Bankstown Airport, New South Wales	
	Latitude: 33° 55.47' S	Longitude: 150° 59.30' E

Aeroplane details

Manufacturer and model:	Piper Aircraft Corporation PA-28	
Registration:	VH-MJT	
Serial number:	28-7790256	
Type of operation:	Flying training – dual	
Persons on board:	Crew – 2	Passengers – 0
Injuries:	Crew – 0	Passengers – 0
Aircraft damage:	Nil	

Helicopter details

Manufacturer and model:	Airbus Helicopters EC 130	
Registration:	VH-ZVO	
Serial number:	8186	
Type of operation:	Business – Test & Ferry	
Persons on board:	Crew – 2	Passengers – 0
Injuries:	Crew – 0	Passengers – 0
Aircraft damage:	Nil	

About the ATSB

The Australian Transport Safety Bureau (ATSB) is an independent Commonwealth Government statutory agency. The ATSB is governed by a Commission and is entirely separate from transport regulators, policy makers and service providers. The ATSB's function is to improve safety and public confidence in the aviation, marine and rail modes of transport through excellence in: independent investigation of transport accidents and other safety occurrences; safety data recording, analysis and research; and fostering safety awareness, knowledge and action.

The ATSB is responsible for investigating accidents and other transport safety matters involving civil aviation, marine and rail operations in Australia that fall within Commonwealth jurisdiction, as well as participating in overseas investigations involving Australian registered aircraft and ships. A primary concern is the safety of commercial transport, with particular regard to operations involving the travelling public.

The ATSB performs its functions in accordance with the provisions of the *Transport Safety Investigation Act 2003* and Regulations and, where applicable, relevant international agreements.

The object of a safety investigation is to identify and reduce safety-related risk. ATSB investigations determine and communicate the safety factors related to the transport safety matter being investigated.

It is not a function of the ATSB to apportion blame or determine liability. At the same time, an investigation report must include factual material of sufficient weight to support the analysis and findings. At all times the ATSB endeavours to balance the use of material that could imply adverse

comment with the need to properly explain what happened, and why, in a fair and unbiased manner.

About this report

Decisions regarding whether to conduct an investigation, and the scope of an investigation, are based on many factors, including the level of safety benefit likely to be obtained from an investigation. For this occurrence, a limited-scope, fact-gathering investigation was conducted in order to produce a short summary report, and allow for greater industry awareness of potential safety issues and possible safety actions.