Australian Government
Australian Transport Safety Bureau

Separation issue involving a Skyfox Aviation CA25N, 24-3265, and a Piper PA-28R, VH-WJO

Roma Airport, Queensland, 03 July 2014

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Addendum

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Separation issue involving a Skyfox Aviation CA25N, 24-3265, and a Piper PA-28R, VH-WJO

What happened

At about noon on 03 July 2014, an instructor and student were conducting training in the circuit at Roma Airport, Queensland, in a Skyfox Aviation CA25N (Gazelle), registered 24-3265.[1] At the same time, a PA-28R, registered VH-WJO (WJO), was inbound to Roma Airport for a landing, on a solo pilot navigation exercise. WJO had overflown Taroom, and was tracking towards Roma from the north-east. Runway 36 was in use at Roma with a light breeze from the north, and the conditions were fine and clear.

When about 15 NM from Roma, the pilot of WJO reported inbound to Roma from the north-west (although the aircraft was actually to the north-east) on the Roma Airport Common Traffic Advisory Frequency (CTAF). With that transmission, the pilot indicated that he planned to overfly the airport at 2,500 ft above mean sea level (AMSL),[2] and join the circuit for runway 36. Based upon the inbound broadcast by the pilot of WJO, the Gazelle instructor anticipated that WJO would overfly the airport from the north-west and join the circuit from the non-active (eastern) side (Figure 1). The Gazelle instructor and student subsequently focussed their lookout accordingly, in an attempt to sight WJO.

About 5 minutes later, as he neared the airport, the pilot of WJO enquired about the Gazelle's current position. The Gazelle instructor responded that the Gazelle was about to turn crosswind. The pilot of WJO responded to the effect that he would follow the Gazelle onto the downwind leg of the circuit.

As the pilot of WJO was about to overfly the airport, he transmitted that he was still unable to sight the Gazelle, again indicating that he was overflying the airport from the north-west (although the inbound track was actually from the north-east). The Gazelle instructor responded with the position of the Gazelle, indicating that the Gazelle was approaching circuit altitude (2,000 ft AMSL), and was about to turn downwind. Soon after, the pilot of WJO reported overflying the airport at 2,700 ft AMSL, adding that he was tracking for a wide left base for runway 36 to accommodate the Gazelle.

About a minute after broadcasting that he was overflying the airport, the pilot of WJO reported that he was at 2,200 ft AMSL, adding that he was turning onto a wide downwind for runway 36. The pilot again requested the position of the Gazelle with this transmission.

At about the same time, as the Gazelle continued downwind, the instructor noticed the shadow of a second aircraft on the ground. He looked ahead and sighted WJO, passing from left to right (heading in approximately a south-westerly direction), about 100 metres ahead and about 200 ft above the Gazelle. He then advised the pilot of WJO that he had WJO sighted, and that the Gazelle was in the 7 o'clock position[3] relative to WJO.

The pilot of WJO was then able to sight the Gazelle over his left shoulder. Both aircraft continued for a full stop landing, the Gazelle landing ahead of WJO which flew a wider circuit.

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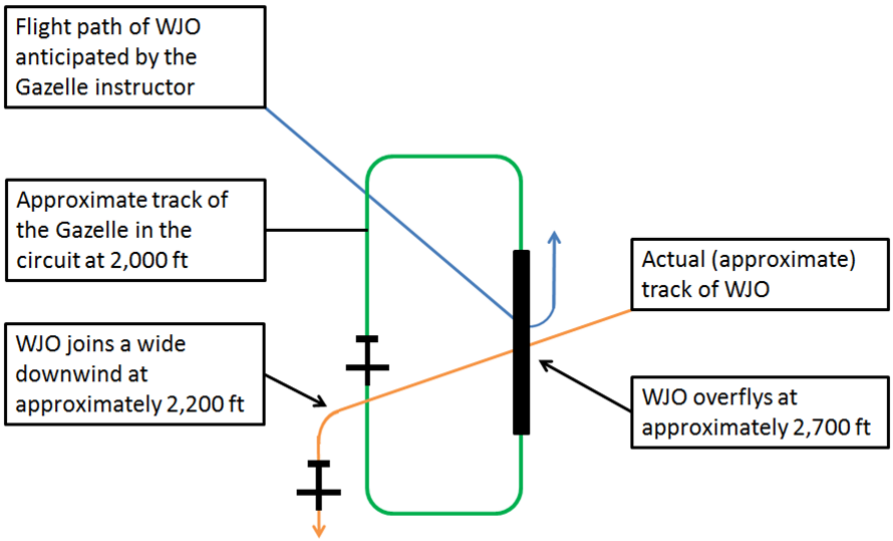
1 The Skyfox Aviation CA25N was registered on the Recreational Aviation Australia aircraft register.

2 The elevation of Roma Airport is 1,032 ft. 2,500 ft AMSL is therefore equivalent to about 1,500 ft above ground level.

3 The clock code is used to denote the direction of an aircraft or surface feature relative to the current heading of the observer's aircraft, expressed in terms of position on an analogue clock face. Twelve o'clock is ahead while an aircraft observed abeam to the left would be said to be at 9 o'clock.

Figure 1: Simplified representation of the incident



Source: ATSB

ATSB comment

Although both pilots were communicating on the CTAF and attempting to establish visual contact, separation seems to have been compromised on this occasion for a number of reasons, related primarily to the effectiveness of the communication and the limitations of each pilot's lookout.

The pilot of WJO inadvertently indicated that he was joining the circuit from the north-west, while the inbound track was actually from the north-east. Although the Gazelle instructor had been unable to sight WJO, he was satisfied that WJO was well behind him as he proceeded downwind. The perception of the Gazelle instructor was based upon CTAF communications from the pilot of WJO referring to the inbound track (from the north-west) and the intent to overfly the airport, and indications that WJO would follow the Gazelle onto downwind. The Gazelle instructor was surprised when he sighted WJO ahead and above.

Based upon his interpretation of the CTAF communications, the pilot of WJO believed that he would be clear of the Gazelle as he joined the circuit. He planned to fly a wide circuit to allow the Gazelle to continue inside his planned track, without interruption. No CTAF communications alerted the pilot of WJO to the fact that the Gazelle crew had not sighted his aircraft as he joined the circuit. The pilot of WJO later indicated that he would have discontinued his arrival and manoeuvred on the non-active side of the circuit if he believed that there was a problem with separation.

Aside from the communication issues discussed above, the ability of each pilot to sight the other aircraft was probably compromised to some degree by a number of factors, including the nature of construction of each aircraft and the geometry of occurrence. The PA-28 was above the Gazelle - the Gazelle has a high wing, while the PA-28 has a low wing, so the ability of each pilot to sight the other aircraft may have been compromised to some extent by wing structures. The pilot of WJO also commented that his ability to sight the Gazelle may have been affected by sun glare, particularly as he leaned forward (into the direct sunlight) to broaden his view of the circuit area. An ATSB research report titled *Limitations of the See-and-Avoid Principle* discusses a wide range of factors that may limit the effectiveness of a pilot's lookout. A copy of the research report is available on the ATSB website at www.atsb.gov.au/publications/2009/see-and-avoid.aspx.

Safety message

This incident highlights the important role of an effective lookout, complemented by accurate and timely communication. An ATSB booklet titled *A pilot's guide to staying safe in the vicinity of non-towered aerodromes* aims to provide pilots with an appreciation of the types of safety events that are associated with operations at non-controlled aerodromes, and provide education to assist pilots in being prepared for the related risks. The booklet includes some discussion regarding the importance of radio-alerted 'see-and-avoid' and an effective lookout. The booklet summary includes the following paragraph:

> Most of the occurrences involved conflicts between aircraft, or between aircraft and ground vehicles. A large number of these involved separation issues, ineffective communication between pilots operating in close proximity, the incorrect assessment of other aircraft's positions and intentions, relying on the radio as a substitute for an effective visual lookout, or a failure to follow published procedures.

A copy of the booklet is available on the ATSB website at www.atsb.gov.au/publications/2008/avoidable-1-ar-2008-044(1).aspx.

A range of information is also available on the CASA website regarding operations at non-controlled aerodromes (www.casa.gov.au/nca). The website includes a link to a booklet titled *Operations at non-controlled aerodromes* which discusses the limitations of the 'see-and-avoid' principle, provides a number of examples where communications were ineffective, and discusses circuit procedures and radio rules.

The ATSB SafetyWatch program highlights broad safety concerns that emerge from investigation findings and from the occurrence data reported to the ATSB by industry. One of the safety concerns is safety around non-controlled aerodromes: www.atsb.gov.au/safetywatch/safety-around-aeros.aspx.

General details

Occurrence details

Date and time:	03 July 2014 – 1153 EST	
Occurrence category:	Incident	
Primary occurrence type:	Aircraft separation issue	
Location:	Roma Airport	
	Latitude: 26° 32.70' S	Longitude: 148° 46.48' E

Aircraft details – PA-28R

Manufacturer and model:	Piper Aircraft Corp PA-28R-200	
Registration:	VH-WJO	
Serial number:	28R-7635441	
Type of operation:	Flying training	
Persons on board:	Crew – 1	Passengers – Nil
Injuries:	Crew – Nil	Passengers – Nil
Damage:	None	

Aircraft details – CA25N

Manufacturer and model:	Skyfox Aviation Ltd	
Registration:	24-3265	
Serial number:	Ca25n086	
Type of operation:	Flying Training	
Persons on board:	Crew – 2	Passengers – Nil
Injuries:	Crew – Nil	Passengers – Nil
Damage:	None	

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 fare-paying passenger operations.

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.