



Australian Government

Australian Transport Safety Bureau

Near collision involving Cessna 404, VH-VEC and Piper PA-28, VH-UNW

near Mangalore Aerodrome, Victoria, 10 January 2014.

ATSB Transport Safety Report

Aviation Short Investigation

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Addendum

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Near collision involving Cessna 404, VH-VEC and Piper PA-28, VH-UNW

What happened

On 10 January, 2014 the pilot of a Cessna 404 aircraft registered VH-VEC (Figure 1), (VEC) planned to conduct a number of aerial survey flights throughout Victoria. On the evening of 9 January, the pilot received a copy of the survey tasks for the following day from his company. These tasks included a relatively short survey flight of about thirty minutes in the Mangalore Aerodrome area. The pilot received specific latitude and longitude coordinates, and a defined radius of 10 NM for the flight.

As all the flights were to be conducted under instrument flight rules (IFR), the pilot liaised closely with ATC, to arrange the most appropriate start and finish time for those tasks scheduled to operate in Melbourne controlled airspace. As VEC was fitted with specialised camera equipment, the pilot also discussed the suitable timing of each task with the camera operator. Survey flights involving camera work are reliant of factors such as the angle of the sun, cloud shadow, visibility and turbulence. The Mangalore flight was planned at 2,000 ft above mean sea level (AMSL). As the elevation of Mangalore Aerodrome is 467 ft AMSL the aircraft would be flying about 1,500 ft above ground level. On this day, it was decided to conduct the shorter Mangalore survey first, and the aircraft departed Essendon for Mangalore with the pilot and camera operator on board.

Approaching Mangalore, the pilot commenced a listening watch on the common traffic aerodrome frequency (CTAF). Just prior to 10 NM from Mangalore Airport, he broadcast the aircraft's position and intentions. There was no reply.

He commenced the survey work which was centralised north-east of the aerodrome. This placed VEC slightly east of the runway 36 extended centreline, (Figure 3). The survey runs were predominantly north south with an east west run and procedure turns over the airport to calibrate the camera.

Figure 1: VH-VEC (in foreground)



Source: Steven Viegel

Figure 2: A PA28 aircraft (Piper Warrior)



Source: Daniel Tanner

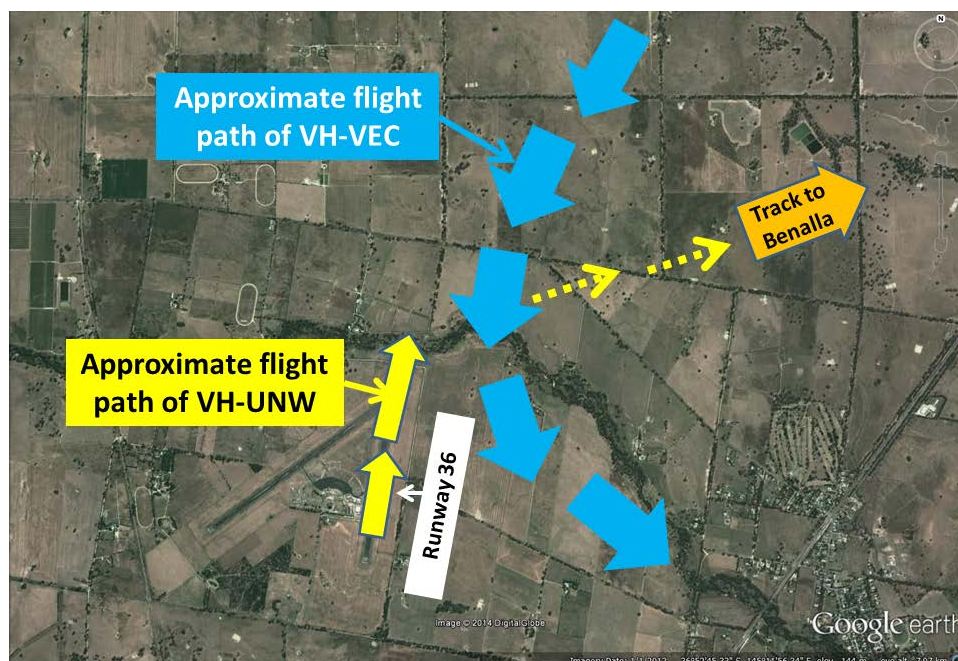
Shortly after commencing the runs, the pilot of VEC heard broadcasts on the CTAF from several aircraft taxiing for a runway 36 departure. A group of students from the Mangalore based flying school were conducting navigation exercises that day.

Table 1: Aircraft airborne during VH-VEC survey

Aircraft	Aircraft Type	Exercise	First sector
VH-IPO	PA28	PPL ¹ Solo navigation	Mangalore-Shepparton, Victoria
VH-UNW	PA28	PPL Solo navigation	Mangalore-Benalla, Victoria
VH-VLG	PA28R	CPL ² Dual navigation	Mangalore – Albury, New South Wales

The first of the flying school aircraft to depart was a PA28 aircraft, (Figure 2), registered VH-IPO (IPO). The pilot of VEC and the pilot of IPO had a brief exchange on the radio. The pilot of VEC then advised his aircraft's position, level and intentions which put him 8 NM north at 2,000 ft, turning back toward the field. He did not receive a reply to this transmission.

The second aircraft to depart was VH-UNW (UNW). As UNW was taxiing, the solo student pilot heard an 'ALL TRAFFIC' broadcast from VEC placing the aircraft 10 NM to the north-east at 2,000 ft AMSL and returning to the field. From the broadcast, the student pilot misunderstood the intentions of VEC, thinking he was inbound to land at Mangalore. He thus did not expect any conflict between the two aircraft. Also, as the broadcast had been to all aircraft, and not specifically UNW, he did not respond.

Figure 3: Approximate flight path of VH-VEC and VH-UNW

Source: Google earth

As UNW commenced the take-off, the student made an advisory broadcast that his aircraft was rolling on runway 36. He then, as per his training, focussed on flying the aircraft during the take-off and initial climb phases until the aircraft reached about 1,200 ft AMSL, where he lowered the aircraft's nose to check the airspace for any traffic

As he lowered the nose, he saw VEC to the right, heading south-westerly, at about 200 ft above and about 100 m laterally. He thought that VEC was descending slightly, but still thinking the aircraft was intending to land he did not foresee any conflict. The pilot of VEC called UNW with an updated position and intentions call, but did not receive a reply.

¹ PPL – Private Pilot Licence

² CPL – Commercial Pilot Licence

The student maintained level flight in UNW, and turned about 50-60 degrees to the right to intercept the track to Benalla. Shortly after, VEC passed over UNW, conducting a climbing turn to the right. There was a short exchange on the radio, then the student continued with his flight to Benalla, and VEC returned to re-fly that particular run.

The third aircraft to depart was VH-VLG (VLG). Shortly after giving a broadcast to advise VLG was rolling on runway 36, the instructor and student received a call from the pilot in VEC. However, as they were in the take-off and initial climb phase, they delayed the response until VLG passed through 1,000 ft AMSL. The instructor on board VLG advised VEC that VLG would maintain 1,500 ft AMSL until VEC was clear. They sighted VEC pass and when the aircraft was clear of any conflict, they continued with the climb and set course for Albury.

Comments – Operator of VH-VEC

The operator believed the PIC of VEC made every effort to continually communicate the aircraft's position and intention throughout the entire operation in the CTAF. The pilot was concerned at the lack of response from the pilots in the flying school aircraft.

Comments – Chief Pilot / Chief Flying Instructor Mangalore based flying school

The Chief Pilot/Chief Flying Instructor advised that the school encourages their instructors and students to aviate, navigate and then communicate. They particularly encourage this through the take-off and initial climb phase to 500 ft AGL. This is to keep the pilots focussed on the aircraft during this time of higher workload.

He also advised that although the ERSA entry for Mangalore has several compliance notes under the Local Traffic Regulations section, it does not include a requirement for prior permission to be obtained. He reported that the majority of operators using Mangalore are aware of the magnitude of ab initio training conducted by the flying school and make prior contact for any non-standard operation.

He suggested that a Fly Neighbourly policy as listed for high density traffic areas in the General – Special Procedures section of the ERSA would be an excellent safety addition for operations in the Mangalore area. High density training areas such as Moorabbin, Victoria have a dedicated section to assist with separation of the high volume of aircraft.

At the time of publication, the CP reported the flying school is continuing to pursue the Fly Neighbourly and related airspace issues through the RAPAC³ forum.

Extract from the En Route Supplement Australia (ERSA)

Note 6: Local Traffic Regulations:

The minimum radio broadcasts are taxiing, entering, departing: Inbound, Joining, Base and Final with position, altitude and intentions.

NOTE: Pilots must respond to radio requests from other traffic for their intentions, position or altitude.

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 Regional Airspace and Procedures Advisory Committee

Operator – VH-VEC

After discussions with the Chief Pilot/ CFI of the Mangalore based Flying School, the operator advised, they will make prior contact with the flying school for any future operations in the Mangalore area.

- The company have issued a notice to their operational staff detailing the above safety action.

Safety message

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



The ATSB has issued a publication called *A pilot's guide to staying safe in the vicinity of non-towered aerodromes*, which outlines many of the common problems that occur at non-controlled aerodromes, and offers useful strategies to keep yourself and other pilots safe. The report found that insufficient communication between pilots and breakdowns in situational awareness were the most common contributors to safety incidents in the vicinity of non-controlled aerodromes.

Also important is to understand the issues associated with unalerted see-and-avoid as detailed in the ATSB's research report *Limitations of the See-and-Avoid Principles*. Communication on the CTAF is more likely to be successful, as knowing where to look, greatly increases the chances of sighting traffic. The report can be found at: www.atsb.gov.au/publications/2009/see-and-avoid.aspx.

General details

Occurrence details

Date and time:	10 January, 2014 – 0940 EDT	
Occurrence category:	Serious incident	
Primary occurrence type:	Near collision	
Location:	Near Mangalore Aerodrome	
	Latitude: 36° 53.30' S	Longitude: 145° 11.05' E

Aircraft details VH-VEC

Manufacturer and model:	Cessna Aircraft Company 404 (Titan)	
Registration:	VH-VEC	
Serial number:	4040217	
Type of operation:	Aerial survey	
Persons on board:	Crew – 1	Passengers – 1
Injuries:	Crew – Nil	Passengers – Nil
Damage:	None	

Aircraft details VH-UNW

Manufacturer and model:	Piper Aircraft Corporation PA28 (Warrior)	
Registration:	VH-UNW	
Serial number:	28-7716225	
Type of operation:	Flying training - solo	
Persons on board:	Crew – 1	Passengers – Nil
Injuries:	Crew – Nil	Passengers – N/A
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.