



**Australian Government**

**Australian Transport Safety Bureau**

# Separation issue involving Bombardier DHC-8, VH-QOV, and Eurocopter MBB-BK 117, VH-EHQ

Bundaberg Airport, Queensland, 26 November 2016

**ATSB Transport Safety Report**  
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**Addendum**

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# Separation issue involving Bombardier DHC-8, VH-QOV, and Eurocopter MBB-BK 117, VH-EHQ

## What happened

On 26 November 2016, at about 0908 Eastern Standard Time (EST), a Bombardier DHC-8-402 aircraft, registered VH-QOV (QOV), operating scheduled passenger flight QF2320 from Brisbane, commenced descent to Bundaberg Airport, Queensland (Qld). At about the same time, a Eurocopter MBB-BK 117 helicopter, registered VH-EHQ (EHQ) was being prepared to depart Bundaberg. The crew of EHQ had been tasked to conduct a visual flight rules (VFR) flight to search for potential wreckage from a trawler missing off the Qld coast.

Bundaberg is a non-controlled airport with a common traffic advisory frequency (CTAF). A CTAF is a designated frequency on which pilots make positional broadcasts when operating in the vicinity of a non-controlled aerodrome. Bundaberg is also equipped with an aerodrome frequency response unit (AFRU) with a pilot activated light (PAL) option. When a pilot transmits on the correct frequency, the AFRU will provide an automatic response, either 'Bundaberg CTAF' (if the frequency has not been used in the previous five minutes) or a beep-back. At night, or at other times of low natural light levels, transmitting three one second pulses, one second apart, on the frequency will activate the runway lighting and the transmission will change to the aerodrome name and CTAF with either 'runway lights on' or 'no runway lights'. At other times, this action will activate the precision approach path indicator (PAPI).

At 0912, three one second pulses were broadcast on the Bundaberg CTAF. This resulted in the AFRU correctly responding automatically, 'Bundaberg Aerodrome no runway lighting'. Two seconds later a single one second pulse was also broadcast on the CTAF. The next recorded CTAF broadcasts were those made by the flight crew of QOV while on approach to Bundaberg. Broadcasts were made at 27 NM, 10 NM and 5 NM and on each occasion the flight crew received the AFRU beep-back. No responses from other aircraft were heard.

While QOV was on final approach to Bundaberg, EHQ taxied for departure from a position to the east of runway 32. The helicopter taxied a short distance, took off and once airborne commenced a left turn tracking initially towards Hervey Bay.

During EHQ's departure, the flight crew of QOV received a traffic advisory (TA)<sup>1</sup> from their aircraft's traffic alert and collision avoidance system (TCAS).<sup>2</sup> On receipt of the TA, the flight crew of QOV attempted to sight the traffic causing the alert. After a few seconds, they identified a helicopter, later determined to be EHQ, in their 2 o'clock<sup>3</sup> position around 1.5 NM, and around 1,000 ft below their aircraft. The helicopter was clear of their projected flight path and accordingly the flight crew continued the approach, landing without further incident.

After landing, the flight crew of QOV made two broadcasts on the CTAF to identify the helicopter. These were unsuccessful and they requested, on area frequency, if air traffic control knew the identity of the helicopter. The pilot of EHQ heard this exchange and subsequently identified

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<sup>1</sup> When a TA is issued, pilots are instructed to initiate a visual search for the traffic causing the TA.

<sup>2</sup> TCAS is an aircraft collision avoidance system. It monitors the airspace around an aircraft for other aircraft equipped with a corresponding active transponder and gives warning of possible collision risks.

<sup>3</sup> O'clock: 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.

themselves also advising they had not heard the earlier broadcasts made by the flight crew of QOV.

***Pilot comment VH-EHQ***

The pilot of EHQ provided the following comments:

- The flight was routine, preparations for the flight were not rushed with normal pre-departure checks conducted. They recalled completing normal communication checks including ensuring all frequencies were set correctly and at appropriate volumes. They also recalled hearing an aircraft broadcast on the air traffic control area frequency, and a response from the AFRU when the PAPI was activated. They did not hear any other broadcasts made by the flight crew of QOV.
- Normally, when departing from a location similar to the one they did on the day of the incident, the pilot advised they would make a taxi call and a call departing on the CTAF. They recalled making these calls but could not recall if an AFRU response was received.
- During the left turn after departure, the crew of EHQ sighted QOV on final approach, clear of their projected flight path.
- After departure, they heard the flight crew of QOV on area frequency attempting to determine the identity of the helicopter. They identified themselves and subsequently checked their communications set up, with nothing abnormal found.

***Captain’s comment VH-QOV***

The Captain of QOV provided the following comments:

- They had made all of the necessary CTAF broadcasts, receiving the AFRU response, and did not receive any broadcasts made by EHQ.
- They were surprised upon receipt of the TA, but had quickly visually identified the traffic and confirmed it was not on a conflicting flight path.

**Safety Analysis**

The ATSB reviewed all available recordings from air traffic control and the Bundaberg CTAF. All broadcasts made by the flight crew of QOV and the AFRU responses were recorded. There were no identifiable recordings of broadcasts made by the pilot of EHQ. The ATSB was not able to determine why the broadcasts reportedly made by the pilot of EHQ were not transmitted on the CTAF or why the crew were not able to hear the broadcasts made by the flight crew of QOV. It is probable that the pilot did not correctly configure and operate the helicopter’s communications system.

**Findings**

These findings should not be read as apportioning blame or liability to any particular organisation or individual.

- It is probable the pilot of EHQ did not correctly configure and operate the helicopter’s communications system for CTAF operations while departing Bundaberg airport and they did not detect the error.

## Safety action

As a result of this occurrence, the pilot of EHQ has advised they now transmit on the CTAF and activate the lighting to confirm they have the correct radio frequency and volumes selected.

## 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 such concern is [Safety around non-controlled aerodromes](#), which highlights that it is difficult for pilots to detect another aircraft through visual observation alone. The ATSB has identified that insufficient communication between pilots operating in the same area is the most common cause of safety incidents near non-controlled aerodromes.

This incident highlights the fundamental importance of effective communication, particularly during operations at a non-controlled aerodrome. The Civil Aviation Safety Authority (CASA) has produced several publications and resources that provide important safety advice related to operations in the vicinity of non-controlled aerodromes. Relevant guidance and explanatory material provided by CASA includes the following:

- [CASA Civil Aviation Advisory Publication \(CAAP\) CAAP 166-1\(3\) Operations in the vicinity of non-controlled aerodromes](#)
- [CAAP 166-2\(1\) Pilots' responsibility for collision avoidance in the vicinity of non-controlled aerodromes using 'see-and-avoid'](#)
- [Operations at non-controlled aerodromes booklet](#).

## General details

### Occurrence details

Date and time:	26 November 2016 – 0922 EST	
Occurrence category:	Incident	
Primary occurrence type:	Airspace - Aircraft separation - Issues	
Location:	Bundaberg Aerodrome	
	Latitude: 24° 54.23' S	Longitude: 152° 19.12' E

### Aircraft details – VH-QOV

Manufacturer and model:	Bombardier Incorporated DHC-8-402	
Registration:	VH-QOV	
Operator:	SUNSTATE AIRLINES (QLD) PTY. LIMITED operating as QantasLink	
Serial number:	4277	
Type of operation:	Air Transport High Capacity	
Persons on board:	Crew – 4	Passengers – 38
Injuries:	Crew – 0	Passengers – 0
Aircraft damage:	Nil	

## Aircraft details – VH-EHQ

Manufacturer and model:	Eurocopter MBB-BK 117 C-1	
Registration:	VH-EHQ	
Serial number:	7502	
Type of operation:	Aerial Work	
Persons on board:	Crew – 3	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.