Australian Government
Australian Transport Safety Bureau

Aircraft proximity event involving two Robinson R22s, VH-HQJ and VH-IAY, and an unknown aircraft

near Broome, Western Australia, 16 September 2014

ATSB Transport Safety Report
Aviation Occurrence Investigation
AO-2014-152
Final – 26 February 2015

Released in accordance with section 25 of the *Transport Safety Investigation Act 2003*

Publishing information

Published by: Australian Transport Safety Bureau
Postal address: PO Box 967, Civic Square ACT 2608
Office: 62 Northbourne Avenue Canberra, Australian Capital Territory 2601
Telephone: 1800 020 616, from overseas +61 2 6257 4150 (24 hours)
Accident and incident notification: 1800 011 034 (24 hours)
Facsimile: 02 6247 3117, from overseas +61 2 6247 3117
Email: atsbinfo@atsb.gov.au
Internet: www.atsb.gov.au

Addendum

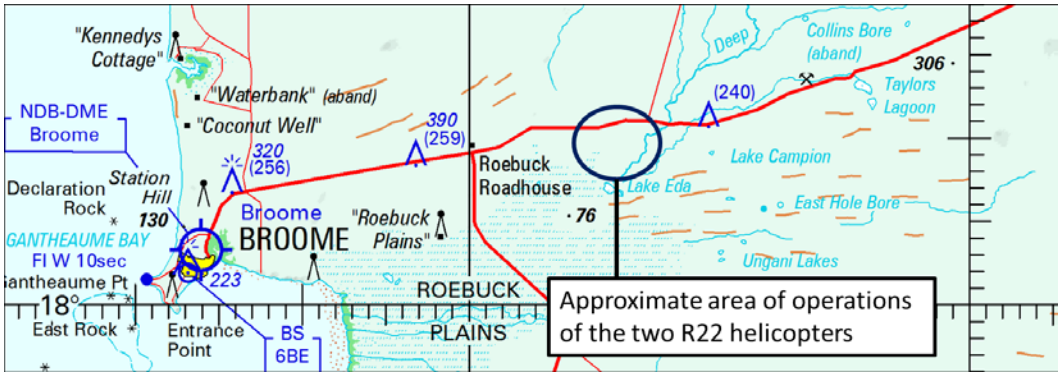
Page	Change	Date

Aircraft proximity event between two Robinson R22s, VH-HQJ and VH-IAY, and an unknown aircraft

What happened

On 16 September 2014, two Robinson R22 helicopters, registered VH-HQJ and VH-IAY, were conducting aerial mustering operations about 26 NM east-north-east of Broome, Western Australia (Figure 1). The two R22 pilots were working together, and had planned mutual separation using relevant ground features in the area of operations. The two R22 pilots were also in radio contact on a company radio, and monitoring the multicom frequency 126.7 MHz.[1] There was lifting fog in the area at the time, with some clear patches emerging. The fog in a westerly direction towards Broome was relatively thick, but it appeared to be clearing further east.

Figure 1: Approximate area of operations of the two R22 helicopters



Source: Airservices Australia – information added by the ATSB

At about 0745 Western Standard Time, the pilot of one of the R22s observed a light aircraft in close proximity, and advised the pilot of the other R22 that was operating some distance away. That pilot immediately looked in the direction that he thought the light aircraft may have appeared, and observed a single-engine light aircraft travelling at low level in an easterly direction. He witnessed the aircraft bank sharply towards the north, perhaps in response to having sighted the other R22 which was operating almost directly beneath the flight path of the light aircraft. Following what appeared to be an evasive manoeuvre, the light aircraft resumed its easterly track, still at low level.

The R22 pilot that observed the manoeuvring of the light aircraft estimated its altitude to be about 200 ft above ground level (AGL). He estimated that the other R22 (close to the flight path of the light aircraft) was operating at about 100 ft AGL. He tried a number of times to contact the pilot of the light aircraft on the multicom frequency, but without response. The frequency in use by the pilot of the light aircraft is unknown, but they may have been monitoring the Area VHF.[2] The light

[1] The multicom frequency (126.7 MHz) is used for broadcasts when an aircraft is operating to or from, or in the vicinity of, a non-controlled aerodrome depicted on an aeronautical chart that does not have a discrete Common Traffic Advisory Frequency (CTAF) assigned.

[2] Aeronautical Information Publication (AIP) Australia (Operations in Class G Airspace – Climb and Cruise Procedures) states that pilots of radio-equipped VFR aircraft must listen out on the appropriate VHF frequency. Apart from operations in the vicinity of aerodromes depicted on aeronautical charts, Area VHF is the appropriate frequency. AIP Australia also includes provision for some aircraft (such as those engaged in agricultural operations) operating below 5,000 ft in Class G airspace, to maintain a listening watch on other than the Area VHF.

aircraft continued out of sight towards the east, and the two R22s resumed their aerial mustering operation.

ATSB comment

Without a report from the pilot of the light aircraft, the full circumstances surrounding the incident are unclear. Nonetheless, this incident demonstrates the importance of an effective lookout. An ATSB research report titled *Limitations of the See-and-Avoid Principle* discusses the numerous factors that influence the effectiveness of a pilot's lookout, including pilot workload, limitations of the human visual system, field of view considerations, target characteristics and psychological factors. A copy of the report is available on the ATSB website at www.atsb.gov.au/publications/1991/limit_see_avoid.aspx.

Although this incident did not occur in the immediate vicinity of a non-controlled aerodrome, the CASA booklet titled *Operations at non-controlled aerodromes* has some relevance. The limitations of the see and avoid principle, and the importance of effective communication are discussed in the booklet. The publication also provides an overview of 'radio rules' with respect to frequency management at non-controlled aerodromes (including reference to the use of the multicom frequency and the area frequency). The booklet is available on the CASA website at www.casa.gov.au/wcmswr/_assets/main/pilots/download/nca_booklet.pdf.

AIP Australia also provides important information regarding frequency management during operations in Class G airspace. A copy of AIP Australia is available on the Airservices Australia website at www.airservicesaustralia.com/publications/aeronautical-information-package-aip/.

Safety message

This incident highlights the importance of an effective lookout, even at low level when other aircraft may be unexpected. Pilots engaged in aerial mustering operations are usually focussed on the task at hand – monitoring the movement of livestock, the proximity of the aircraft to terrain and obstacles, and aircraft performance. These task demands reduce the capacity of a mustering pilot to maintain an effective lookout for unexpected aircraft. Accordingly, other pilots are encouraged to avoid operating at low level in areas where other aircraft may be engaged in aerial mustering or similar operations.

General details

Occurrence details

Date and time:	16 September 2014 – 0745 WST	
Occurrence category:	Serious incident	
Primary occurrence type:	Aircraft proximity event	
Location:	48 km east-north-east of Broome, Western Australia	
	Latitude: 17° 50.0' S	Longitude: 122° 40.0' E

Aircraft details

Manufacturer and model:	Robinson R22	
Registration:	VH-IAY	
Serial number:	4642	
Type of operation:	Aerial work	
Persons on board:	Crew – 1	Passengers – Nil
Injuries:	Crew – Nil	Passengers – Nil
Damage:	None	

Aircraft details

Manufacturer and model:	Robinson R22	
Registration:	VH-HQJ	
Serial number:	1958	
Type of operation:	Aerial work	
Persons on board:	Crew – 1	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.