Australian Government
Australian Transport Safety Bureau

Near collision involving an unmanned aerial vehicle and a Bell 412, VH-WSR

near Newcastle Westpac Base (HLS), New South Wales, 22 March 2014

ATSB Transport Safety Report
Aviation Occurrence Investigation
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Addendum

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Near collision involving an unmanned aerial vehicle and a Bell 412, VH-WSR

What happened

On 22 March 2014, at about 2200 Eastern Daylight-savings Time (EDT), a Bell 412 helicopter, registered VH-WSR (WSR), lifted off from John Hunter Hospital in Newcastle for a flight of about 2 NM to the Newcastle Westpac helipad, New South Wales, with five crew members on board (Figure 1).

The pilot broadcast his intentions on the common traffic advisory frequency (CTAF) and did not receive a response. Heading to the north-east and on climb to 1,200 ft above ground level (AGL), the pilot observed a steady white light that initially appeared to be an aircraft in the vicinity of Williamtown Airport, about 10 NM away. After reaching 1,200 ft AGL, the pilot commenced a descent towards the helipad.

The light appeared to cross very quickly from the pilot's left to right and the helicopter crew realised that it was actually about overhead the Hunter Stadium in Newcastle. It then made an abrupt turn to the left of about 30-40 degrees and commenced tracking to the south-east and away from the helicopter. As he had thought the light was on an aircraft, the pilot again broadcast on the CTAF and again received no response.

The pilot continued to monitor the light during the descent and about 10 to 15 seconds later, he observed the light make an abrupt right turn and track towards the helicopter. The rate and radius of the turn indicated to the pilot that it was not an aircraft and was more likely to be a small unmanned aerial vehicle (UAV).

As the helicopter descended through about 1,000 ft AGL and banked to the left, the pilot observed the UAV about 100 m away and at about the same level as the helicopter. The pilot then commenced a turn to the right and observed the UAV hovering in position just above the helicopter. The pilot continued the turn through 360 degrees and landed at the helipad. The pilot did not receive any alerts on the traffic collision avoidance system (TCAS).

Figure 1: Westpac Rescue Helicopter

Source: Operator

A football match had been played at the Hunter Stadium that evening however no official aerial photography was conducted. The venue operators did not have any knowledge of a UAV operating in the vicinity. The official broadcaster of the event did not take any aerial footage and did not have a UAV approved to operate within the stadium at that time. A Notice to Airmen (NOTAM) would have to be issued for approved operations of a UAV at 1,000 ft AGL and there were no relevant NOTAMs current for the area at the time of the incident.

CASA comment

The following information was provided to the ATSB by CASA.

It appears the Unmanned Aerial Vehicle (UAV) in this incident was a First Person View (FPV) UAV. Over 90% of complaints received about UAV's relate to such FPV UAV's, which have a video fixed either inside or outside the UAV which enables the operator to fly it remotely whilst looking through either a pair of goggles or at a screen. The picture transmitted back in real time gives the impression to the operator that they are actually sitting inside and looking out of it. Use of these goggles does not provide line of sight vision of the UAV.

All UAV's are restricted to operations below 400 ft AGL unless the operator has been granted explicit approval, as per Civil Aviation Safety Regulation 1998 (CASR) 101.085. Any unmanned vehicle, whether a UAV or model aircraft, is subject to the general requirements of CASR Subpart 101.C.

General details

Occurrence details

Date and time:	22 March 2014 – 2208 EDT	
Occurrence category:	Serious incident	
Primary occurrence type:	Interference from ground	
Location:	near Newcastle Westpac Base (HLS), New South Wales	
	Latitude: 32° 55.20' S	Longitude: 151° 43.80' E

Aircraft details

Manufacturer and model:	Bell Helicopter Textron Canada 412EP	
Registration:	VH-WSR	
Serial number:	36233	
Type of operation:	Aerial work – emergency medical services	
Persons on board:	Crew – 5	Passengers – Nil
Injuries:	Crew – Nil	Passengers – Nil
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 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.