



Australian Government

Australian Transport Safety Bureau

Ground fire involving a Robinson R44

188 km north-north-east of Alice Springs, Northern Territory, on 22 June 2022

ATSB Transport Safety Report

Aviation Occurrence Brief

AB-2022-004

FINAL – 15 December 2022

AB-2022-004

Occurrence Briefs are concise reports that detail the facts surrounding a transport safety occurrence, as received in the initial notification and any follow-up enquiries. They provide an opportunity to share safety messages in the absence of an investigation.

What happened

On 22 June 2022, the pilot of a Robinson R44 helicopter was conducting gravity survey work¹ north of Alice Springs, Northern Territory. On board were the pilot and a geophysical field technician. The survey consisted of landing at 1 km intervals to collect data. At about 1000 local time, the pilot landed in an area of spinifex grass and the field technician disembarked the helicopter to carry out their survey tasks. The technician reported that, after setting up the equipment, they looked up and noticed flames under the helicopter.

It was reported that the helicopter’s engine bay was positioned close to an area of dry spinifex and the heat from the engine’s exhaust ignited the grass. The ensuing fire spread very quickly, engulfing the helicopter. The pilot vacated the aircraft and sustained minor burns to their leg while attempting to retrieve a satellite phone on board. The helicopter was destroyed in the fire (Figure 1).

Figure 1: Fire damage to the helicopter and surrounding bushland



Source: NT Police

¹ Gravity surveying measures small differences in gravity due to the variation in density of rocks across the earth’s surface. The data is used for many purposes including minerals exploration, mapping and to underpin the Global Positioning System

Grass fire risk

The ATSB has been notified of 5 occurrences since 2012 where a Robinson helicopter has been destroyed by grass fire, with many reports highlighting the speed with which the grass ignited and the fire spread beyond control.

The Pilot's Operating Handbook for both the Robinson R22 and R44 helicopter types has a note in Section 10, Safety Tips stating:

Do not land in tall dry grass. The exhaust is low to the ground and very hot; a grass fire may be ignited.

The ground to muffler height on a new R44 is about 49 cm.

Safety action

The operator undertook a review of their operating procedures following this event.

Safety message

Long dry grass is a known hazard when landing at an off-airport helicopter landing site. The design of the Robinson R22 and R44 helicopters increases the risk of a grass fire given the proximity of the exhaust pipe to the ground. Despite the operator having procedures in place and the manufacturer providing warnings in the Pilot's Operating Handbook, the nature of survey work may require a pilot to land in an area where the risk of grass fire is present. Pre-flight briefings highlighting the dangers of landing on grass, especially in areas of high temperatures and low humidity, can reinforce the importance of carefully choosing a landing site.

Previous exemptions under [AD/GENERAL/65 Amdt 5](#) are now incorporated in CASR Part 133 and the associated [Part 133 MOS](#). This requires portable fire extinguishers of an approved type to be carried in the cabin of an R44. While this may not have been capable of extinguishing a rapidly spreading grass fire, it may be sufficient to extinguish small spot fires before they spread.

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, no investigation has been conducted and the ATSB did not verify the accuracy of the information. A brief description has been written using information supplied in the notification and any follow-up information in order to produce a short summary report, and allow for greater industry awareness of potential safety issues and possible safety actions.

General details

Occurrence details

Date and time:	22 June 2022 – 1000 CST	
Occurrence class:	Accident	
Occurrence categories:	Fire	
Location:	188 km north-north-east of Alice Springs, Northern Territory	
	Latitude: 22° 9.26' S	Longitude: 134° 19.86' E

Aircraft details

Manufacturer and model:	Robinson Helicopter Company R44 II
Type of operation:	Part 138 Aerial work operations-Task specialist
Activity:	General aviation / Recreational-Aerial work-Other surveying

Sector:	Helicopter, Piston	
Departure:	Ti Tree, Northern Territory	
Destination:	Private property, NT	
Persons on board:	Crew – 1	Passengers – 1
Injuries:	Crew – 1 minor	Passengers – 0
Aircraft damage:	Destroyed	