

Douglas C47 Dakota 4, G-AMPZ

AAIB Bulletin No:	3/2000	Ref:	EW/G99/12/09	Category:	1.1
Aircraft Type and Registration:	Douglas C47 Dakota 4, G-AMPZ				
No & Type of Engines:	2 Pratt & Whitney R1830-92 piston engines				
Year of Manufacture:	1944				
Date & Time (UTC):	17 December 1999 at 0104 hrs				
Location:	7 nm south-east of Ringa				
Type of Flight:	Public Transport (Cargo)				
Persons on Board:	Crew - 3 - Passengers - None				
Injuries:	Crew - None - Passengers - N/A				
Nature of Damage:	Spark plug missing from one cylinder				
Commander's Licence:	N/K				
Commander's Age:	N/K				
Commander's Flying Experience:	N/K				
Information Source:	MOR submitted by the Operator				

History of the flight

The aircraft had departed from Belfast Aldergrove Airport on an IFR night cargo flight to Coventry. Approximately eight minutes after reaching its cruising flight level (FL 060) the left engine lost power some 7 nm south-east of RINGA reporting point which is about 27 nm north-west of the Isle of Man. The power loss was accompanied by vibration and a noise consistent with the loss of combustion in one cylinder. The pilot selected the fuel mixture lever to 'AUTO-RICH' in an attempt to achieve smoother running and throttled back to reduce the stresses on the engine, whilst maintaining some power. This action was partially successful and a request was then transmitted for an immediate return to Aldergrove. ATC acknowledged the request and gave the aircraft a left turn onto a heading of 310 degrees, requesting the nature of the problem. The pilot replied that he had an engine cylinder problem and ATC then advised Aldergrove Radar of the emergency return of the aircraft, before passing position and distance information to the aircraft with the latest weather at Aldergrove. The Airport Fire Service was placed on Local Standby.

During the return flight the No 1 engine appeared to lose further power and a decision was made to shut it down. The Aldergrove Approach Radar controller was advised of the engine shutdown at 0125 hrs and a Full Emergency was then declared. The subsequent approach and landing on Runway 25 at 0138 hrs were uneventful, although in the prevailing strong wind of 270 degrees/50

kt ground manoeuvring with the wind from the left caused some difficulty, with power only available from the right engine.

Engineering examination of the left engine

Subsequent inspection of the left engine by the operator's engineering staff found that a spark plug had unscrewed from the No 6 cylinder. The cylinder was examined and found to be undamaged. The spark plug hole helicoil thread insert had been correctly installed and was undamaged. The spark plug was also undamaged and was therefore reinstalled. All of the other spark plugs were torque checked and found to be satisfactory. Ground runs were then carried out successfully and the aircraft was released back to service.

Approximately 3 flying hours prior to the incident the aircraft had been released to service following a maintenance check during which all of the spark plugs had been replaced. The operator's engineering staff concluded that the spark plug may not have been torque tightened following fitment and action was therefore taken to prevent a repetition of this lapse.