



Australian Government

Australian Transport Safety Bureau

ATSB TRANSPORT SAFETY INVESTIGATION REPORT

Aviation Occurrence Report – 200604209

Final

**Engine in-flight shutdown
Canberra Airport
de Havilland Canada Dash 8, VH-TQR
22 July 2006**



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Abstract

On 22 July 2006, at 1615 Eastern Standard Time, a de Havilland Canada Dash 8 aircraft, registered VH-TQR, departed Canberra Airport. Late in the take-off roll, the left ENGINE MANUAL caution light illuminated and the takeoff was continued. At approximately 2,500 feet above mean sea level, the crew noticed that the left engine torque gauge indicated 108 % torque and, soon after, the left engine propeller feathered. The departure was continued and the flight crew carried out the required check list items, shut-down the left engine and returned the aircraft to Canberra.

The operator's engineering personnel replaced the left engine hydromechanical fuel control unit, electronic control unit and propeller assembly and the aircraft returned to service.

THE AUSTRALIAN TRANSPORT SAFETY BUREAU

The Australian Transport Safety Bureau (ATSB) is an operationally independent multi-modal Bureau within the Australian Government Department of Transport and Regional Services. ATSB investigations are independent of regulatory, operator or other external bodies.

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. Accordingly, the ATSB also conducts investigations and studies of the transport system to identify underlying factors and trends that have the potential to adversely affect safety.

The ATSB performs its functions in accordance with the provisions of the *Transport Safety Investigation Act 2003* and, where applicable, relevant international agreements. The object of a safety investigation is to determine the circumstances in order to prevent other similar events. The results of these determinations form the basis for safety action, including recommendations where necessary. As with equivalent overseas organisations, the ATSB has no power to implement its recommendations.

It is not the object of an investigation to determine blame or liability. However, it should be recognised that an investigation report must include factual material of sufficient weight to support the analysis and findings. That material will at times contain information reflecting on the performance of individuals and organisations, and how their actions may have contributed to the outcomes of the matter under investigation. 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.

Central to the ATSB's investigation of transport safety matters is the early identification of safety issues in the transport environment. While the Bureau issues recommendations to regulatory authorities, industry, or other agencies in order to address safety issues, its preference is for organisations to make safety enhancements during the course of an investigation. The Bureau prefers to report positive safety action in its final reports rather than making formal recommendations. Recommendations may be issued in conjunction with ATSB reports or independently. A safety issue may lead to a number of similar recommendations, each issued to a different agency.

The ATSB does not have the resources to carry out a full cost-benefit analysis of each safety recommendation. The cost of a recommendation must be balanced against its benefits to safety, and transport safety involves the whole community. Such analysis is a matter for the body to which the recommendation is addressed (for example, the relevant regulatory authority in aviation, marine or rail in consultation with the industry).

FACTUAL INFORMATION

The report presented below was prepared principally from information supplied to the Bureau.

Reported information

On 22 July 2006, at 1615 Eastern Standard Time¹, a de Havilland Canada Dash 8 aircraft, registered VH-TQR, departed Canberra, ACT, on a scheduled passenger flight to Melbourne, Vic. Late in the take-off roll, the left ENGINE MANUAL caution light illuminated and the takeoff was continued. At approximately 2,500 feet above mean sea level, the crew noticed that the left engine torque gauge indicated 108 % torque and, soon after, the left engine propeller feathered. The departure was continued and the flight crew declared a PAN². At a plateau height³ of 3,000 feet, the crew carried out the 'Plateau Height' check list, then the 'Propeller Unscheduled Feather' check list. The crew shut-down the left engine and returned the aircraft to Canberra.

The operator's engineering personnel replaced the left engine hydromechanical fuel control unit, electronic control unit and propeller assembly and the aircraft returned to service.

1 The 24-hour clock is used in this report to describe the local time of day Eastern Standard Time (EST), as particular events occurred. Eastern Standard Time was Coordinated Universal Time (UTC) + 10 hours.

2 Radio code indicating uncertainty or alert, generally broadcast to widest area but not yet at level of Mayday.

3 The plateau height is the minimum height that the flaps are retracted.