



EASA Safety Information Notice

No.: 2007- 38 Revision 1
Issued: 15 October 2007

Subject: Inspections of elevator control cables on De Havilland Canada DHC-6 series Twin Otter airplanes

Ref. Publication: Bureau d'Enquêtes et d'Analyses (BEA) Safety recommendation letter No.001972/BEA/D

Introduction: On August 2007, a DHC-6 registered in France, crashed into the sea after take-off from the island of Moorea in French Polynesia. This public transport accident caused twenty fatal injuries. In accordance with the ICAO annex 13 and the Directive 94/56/CE of the European Union Council, the BEA is conducting the investigation regarding this accident, with the participation of the Transportation Safety Board of Canada, the State of Manufacture of the airplane. During the laboratory examinations that were performed in the course of the investigation, it was found that the two elevator control cables, made of stainless steel, showed areas that were heavily worn by chafing when passing through the cable guides located aft of station 426. This wear, which was accompanied by broken wires, had reduced the loaded section of the cable by more than 50% in some parts. It was also found that these worn areas were difficult to identify without an in-depth examination. They were thus not noticed during the initial visual examination. The aircraft's maintenance records showed the cables had been inspected, at least on two occasions since 17 November 2006, during programmed maintenance checks.

At this time, it has not been confirmed that the elevator cables were the cause of the accident. The airworthiness concern is therefore still under investigation and EASA reserves the right to release an Airworthiness Directive to address this subject.

Transport Canada Civil Aviation (TCCA) issued:

- in 2000, the Airworthiness Directive CF-2000-14, that references Components Service Life Limits in PSM 1-6-11, rev 5 dated 11 January 2000. Although the AD does not specifically refer to component lives for control cables, document PSM 1-6-11 does; the replacement time is one year for landplanes in a salty environment and all floatplanes.
- on 12 October 2007, the Service Difficulty Alert No. AL-2007-03, DHC-6 – (Twin Otter) control cable inspection (hereto attached), that covers the same topic and emphasizes the Instructions for Continued Airworthiness (ICA) for the Twin Otter.

SIN 2007-38 has been revised to make reference to the TCCA document, as TCCA is the recognised 'State of Design' authority for the affected type design.

Applicability: All Viking Air Ltd (formerly Bombardier Inc. and De Havilland Canada) DHC-6 series Twin Otter airplanes.

Recommendations: Although the accident investigation is not terminated yet, EASA supports recommendations made by the BEA which request operators to:

- Inspect, thoroughly, as soon as possible, all stainless steel elevator control cables installed on DHC-6 Twin Otter airplanes, with particular attention being paid to all possible chafing areas where cables pass through the cable guides or can come into contact with aircraft structure;
- Extend the inspection to carbon-steel cables which may also be installed on the elevator control system of the DHC-6 Twin Otter airplane.
- Report findings of the inspections to their National Aviation Authority and to the Type Certificate Holder i.e Viking Air Limited, 9574 Hampden Road, Sidney, British Columbia, Canada.

Contact: For further information contact the Airworthiness Directives, Safety and Research Section, Certification Directorate, EASA.
E-mail: ADs@easa.europa.eu.



No. N°	AL-2007-03	1/2
Date	2007-10-12	

SERVICE DIFFICULTY ALERT

This Service Difficulty Alert brings to your attention a potential hazard identified by the Service Difficulty Reporting Program. It is a non-mandatory notification and does not preclude issuance of an airworthiness directive.

DHC 6 – (TWIN OTTER)

CONTROL CABLE INSPECTION

Transport Canada Civil Aviation (TCCA) has been notified of a recent Twin Otter accident in the French Polynesia. While the accident remains under investigation, preliminary examination revealed that two stainless steel elevator control cables were found worn beyond acceptable limits, however **they did not fail**. The defect occurred in the vicinity of station 426. The cables had been recently inspected.

Transport Canada is issuing this Service Difficulty Alert to ensure that operators and maintainers are aware of, and are following the Instructions for Continued Airworthiness (ICA) for the Twin Otter, which includes Inspection Requirements Manual PSM 1-6-7 and Service Bulletin 6/523 - Special Inspection of Control Cables for Wear and Corrosion. Additionally PSM 1-6-2 and 1-63-2 contain cable inspection criteria.

In addition to cable inspection requirements, periodic replacements of cables are required according to TCCA Airworthiness Directive (AD) CF- 2000-14 which mandates the DHC-6 Structural Components Service Life Limits Manual PSM 1-6-11.

Any further defects or occurrences should be reported to Transport Canada, Continuing Airworthiness, Ottawa, via the Service Difficulty Reporting (SDR) program.

ALERTE AUX DIFFICULTÉS EN SERVICE

Cette alerte aux difficultés en service a pour but d'attirer votre attention sur une condition possiblement hasardeuse qui a été révélée par le Programme de rapports de difficultés en service. Elle est une notification facultative et n'exclut pas nécessairement la publication d'une consigne de navigabilité.

DHC 6 – (TWIN OTTER)

INSPECTION DES CÂBLES DE COMMANDE

Transports Canada, Aviation civile (TCAC) a récemment pris connaissance d'un accident de Twin Otter survenu en Polynésie française. Bien que l'enquête entourant cet accident ne soit pas encore terminée, un examen préliminaire a révélé que deux câbles de commande de la profondeur en acier inoxydable étaient dans un état d'usure dépassant les limites acceptables, ces câbles ne s'étant toutefois **pas rompus**. Le problème est survenu aux abords de la référence 426. Les câbles avaient été inspectés récemment.

Transports Canada publie la présente Alerte aux difficultés en service afin de veiller à ce que les personnes qui exploitent et entretiennent ces avions connaissent et suivent les Instructions pour le maintien de la navigabilité (IMN) du Twin Otter, ce qui comprend le manuel des exigences en matière d'inspection PSM 1-6-7 et le bulletin de service 6/523 portant sur une inspection spéciale des câbles de commande à la recherche d'usure et de corrosion. De plus, les PSM 1-6-2 et 1-63-2 précisent les critères d'inspection des câbles.

En plus des exigences en matière d'inspection des câbles, ceux-ci doivent être remplacés de façon périodique en vertu de la Consigne de navigabilité (CN) CF-2000-14 de TCAC qui rend obligatoire l'application du manuel des limites de durée de vie en service des composants structuraux du DHC-6 PSM 1-6-11.

Toute autre défectuosité ou tout autre événement de la sorte devraient être signalés au Maintien de la navigabilité aérienne de Transports Canada, à Ottawa, au moyen du programme de Rapports de difficultés en service (RDS).

For further information, contact a Transport Canada Centre, or Mr. Jean Grenier, Continuing Airworthiness, Ottawa, telephone 613 952-4343, facsimile 613 996-9178 or e-mail grenije@tc.gc.ca.

For Director, Aircraft Certification

Pour de plus amples renseignements, communiquer avec un centre de Transports Canada ou avec M. Jean Grenier, Maintien de la navigabilité aérienne, à Ottawa, téléphone 613-952-4343, télécopieur 613-996-9178 ou courrier électronique grenije@tc.gc.ca.

Pour le Directeur, Certification des aéronefs

B. Goyaniuk
Chief, Continuing Airworthiness
Chef, Maintien de la navigabilité aérienne

Note: For the electronic version of this document, please consult the following Web address:

Nota : La version électronique de ce document se trouve à l'adresse Web suivante :

www.tc.gc.ca/CivilAviation/certification/menu.htm