A06 1119

# NATIONAL TRANSPORTATION SAFETY BOARD
## WASHINGTON, D.C.

ISSUED: November 28, 1979

Forwarded to:

Honorable Langhorne M. Bond
Administrator
Federal Aviation Administration
Washington, D.C. 20591

SAFETY RECOMMENDATION(S)

A-79-91

On September 30, 1979, a West Coast Air Service, Ltd., DeHavilland DHC-6-200 Twin Otter, Canadian Registry C-FWAF, crashed on final approach to Porpoise Bay, British Columbia, Canada. This accident is being investigated by the Aviation Safety Bureau of Transport Canada. A National Transportation Safety Board representative observed the investigation at the invitation of the Aviation Safety Bureau.

During the investigation, the reversing interconnect linkage from the right propeller was found to be disengaged between the propeller reversing push/pull control wire rope terminal (P&WC P/N 3010175)[1/] and the clevis (P&WC P/N 3012419) interconnect linkage of the right engine. In addition, the reversing interconnect linkage rod and clevis on the aircraft's left engine propeller were found to be attached to the push/pull control wire rope terminal by only one and one-half threads. The engine manufacturer's maximum limit is three threads visible outside the lock nut securing the control rod.

This type of propeller reversing interconnect linkage is installed in some models of the Pratt & Whitney Aircraft of Canada Ltd., PT6-6A,-6B,-6C/20 and -20 series turboprop engines, which are used primarily in a number of models of DeHavilland and Beech aircraft.

Failure mode analyses by the aircraft manufacturers have shown that if this linkage should fail or become disengaged, under some flight conditions, the propeller can go into reverse pitch. A relatively low airspeed, typical of approach airspeeds, and a mechanical failure or a nullification by the pilot of the beta backup systems will cause the propeller to reverse pitch. Since this sequence would result in a potentially hazardous situation to the aircraft and its occupants, the Safety Board believes that corrective action is required.

1/ Pratt & Whitney Aircraft of Canada, Ltd., Illustrated Parts Catalog Part Number.

Therefore, the Safety Board recommends that the Federal Aviation Administration:

> Issue an Airworthiness Directive to require a special inspection of the propeller reversing interconnect linkage of all aircraft equipped with Pratt & Whitney Aircraft of Canada Ltd., PT6-6A, 6B, -6C/20 and -20 series turboprop to assure that these installations conform to the aircraft manufacturer's propeller reversing linkage rigging specifications. (Class I, Urgent Action) (A-79-91.)

KING, Chairman, DRIVER, Vice Chairman, McADAMS, GOLDMAN, and BURSLEY, Members, concurred in these recommendations.

By: James B. King
Chairman