

NATIONAL TRANSPORTATION SAFETY BOARD
 WASHINGTON, D.C.

ISSUED: June 14, 1979

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

SAFETY RECOMMENDATION(S)

A-79-48 through -51

The National Transportation Safety Board's investigation of an accident involving an Antilles Airboats Grumman G-21 at sea near St. Croix, U.S. Virgin Islands, has revealed a need for the reevaluation of the propeller unfeathering system installed on the G-21 airplanes which have Hartzell propellers installed in accordance with Supplemental Type Certificate SA1-52.

The airplane was being flown by a company pilot on a test flight with FAA flight test personnel on board. The flight test was at the request of the FAA Southern Region to determine single-engine performance of the G-21. When unfeathering the left propeller after completion of single-engine work, the right propeller suddenly feathered. Neither engine could be restarted and a landing was made in the open sea. The aircraft later sank due to the sea state; however, all occupants were uninjured and successfully rescued.

The unfeathering system associated with the propeller installation consists of an oil crossfeed line, connected between the output pressure ports of the two propeller governors, with an on-off valve called an "emergency unfeather valve" located in the cockpit. When using this system to assist in unfeathering a propeller, the propeller control lever for the feathered propeller must be placed in the full forward, high rpm position to assure that oil from the operating engine is directed to the propeller and not bypassed into the sump of the inoperative engine. If the oil is bypassed, pressure is lost in the operating propeller and it will automatically feather. Our investigation determined that the pilot had positioned the propeller lever out of the feather range but not fully forward as required. It is possible to unfeather the propeller without using the unfeathering system by placing the propeller lever just out of the feather range and cranking the engine with the starter. However, there are ambiguous and conflicting descriptions of the unfeathering procedures in different sections of the airplane operating manual used by this operator. From the description in one section it could be inferred that the lever should be positioned in the low rpm position when using the unfeathering system. In another section the proper procedure and lever position are specified.

In January 1979 the Great Lakes Region issued an Airworthiness Directive requiring a placard adjacent to the emergency unfeather valve which specifies the proper lever position. We are also aware that the Western and Great Lakes Regions have considered a reevaluation of this system and a reassessment of the requirement for it with the Hartzell installation.

Because a number of Grumman G-21 airplanes with the Hartzell installation are used by Part 135 operators, the Safety Board believes more positive steps are necessary to assure that use of the governor crossfeed unfeathering system does not cause loss of both engines. Therefore, the Safety Board recommends that the Federal Aviation Administration:

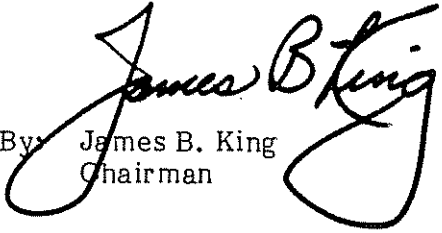
Expedite the evaluation of the propeller feathering system on G-21 aircraft with STC SA1-52 incorporated to determine if an unfeather assist system is required with the Hartzell installation. (Class II, Priority Action) (A-79-48)

If the evaluation shows that such a system is required, issue an Airworthiness Directive to modify or replace the present system in order to eliminate the possibility of inadvertent loss of both engines when unfeathering a propeller. (Class II, Priority Action) (A-79-49)

Review the operating manuals and procedure checklists of all Grumman G-21 operators to assure that the correct procedures for unfeathering are provided and the proper position of the propeller lever is emphasized. (Class II, Priority Action) (A-79-50)

Require that all operators of Grumman G-21 airplanes equipped with this unfeathering system emphasize in their training program the correct procedures for propeller unfeathering. (Class II, Priority Action) (A-79-51)

KING, Chairman, DRIVER, Vice Chairman, and McADAMS, Member, concurred in these recommendations. GOLDMAN, Member, did not participate.

By: 
James B. King
Chairman