

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

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(202) 426-8787

ISSUED: January 27, 1977

Forwarded to:

Honorable John L. McLucas
Administrator
Federal Aviation Administration
Washington, D. C. 20591

SAFETY RECOMMENDATION(S)

A-77-1 and 2

On July 13, 1976, a Grumman American Model AA-1B airplane crashed at New Cumberland, West Virginia, during an emergency landing which followed a complete loss of engine power. The engine failed as a result of fuel starvation even though the fuel selector was positioned to a tank which contained approximately 3 gallons of fuel (about 1/4 full). Since this amount of fuel substantially exceeds the 1 gallon of unusable fuel per tank designated in certification criteria applicable to this airplane, the design-related, operational planning aspects of this accident warrant review and appropriate corrective action by the Federal Aviation Administration.

The pilot was executing a go-around at the Herron Airport at New Cumberland when the airplane crashed. Just after the turn onto the downwind leg for the second landing attempt, turbulence was encountered; investigators believe that the turbulence caused the fuel tank outlet line to be unported. The engine failed shortly thereafter. An emergency landing was executed in a field about 1 mile southeast of the airport. The airplane was damaged substantially and the pilot was injured.

The owners' manual for this airplane provides fuel system and cruise performance range and endurance data based on 11 gallons of usable fuel from each of the two wing tanks. Since the fuel quantity which can be safely consumed from either tank in this airplane may be significantly affected by turbulence or unusual attitudes, flight planning based on 11 gallons of usable fuel per tank could be hazardous.

In view of the above, the National Transportation Safety Board recommends that the Federal Aviation Administration:

A-77-1 and 2

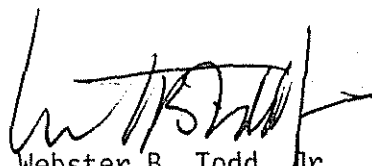
Honorable John L. McLucas

- 2 -

Conduct tests of the fuel system installed in the Grumman American AA-1B airplane to ascertain the amount of usable fuel under the most adverse fuel feed conditions, including the effects of turbulence. If these flight tests so dictate, require a fuel system design change in all newly manufactured Grumman American AA-1B airplanes to assure 11 gallons of usable fuel per tank under all operational conditions, or establish a new usable fuel supply based on the above tests. (Class II--Priority Followup.) (A-77-1)

Issue an Airworthiness Directive pertaining to all Grumman American AA-1B and similar models, which do not incorporate this design change or its equivalent, requiring that subsequent flight operations be in conformance with the newly established usable fuel supply. (Class II--Priority Followup.) (A-77-2)

TODD, Chairman, BAILEY, Vice Chairman, McADAMS, HOGUE, and HALEY, Members, concurred in the above recommendations.


By: Webster B. Todd, Jr.
Chairman

THESE RECOMMENDATIONS WILL BE RELEASED TO THE PUBLIC ON THE ISSUE DATE SHOWN ABOVE. NO PUBLIC DISSEMINATION OF THE CONTENTS OF THIS DOCUMENT SHOULD BE MADE PRIOR TO THAT DATE.