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DEPARTMENT OF TRANSPORTATION
NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C. 20591

October 19, 1967

IN REPLY OC-1-AB-96
REFER TO:

Honorable William F. McKee
Administrator
Federal Aviation Administration
Department of Transportation
Washington, D. C. 20590

Dear General McKee:

The investigation of a fatal accident involving a Grumman Gulfstream, G-159, N861H, near Le Center, Minnesota, on July 11, 1967, disclosed that the flight reported a fire in the left engine after requesting a steer to the nearest airport. Shortly thereafter the crew indicated it was being forced to crash land. The investigation further disclosed that a fire developed in the right engine, and that a right wing fuel tank explosion occurred before impact.

Investigation of the powerplants revealed that both propellers were feathered at impact and that both engines experienced extreme turbine over-temperaturing, but revealed no malfunction or failure that would have caused the turbine burnout condition.

The flight safety switch, located in the cockpit, was found in the "Emergency" position. This switch is provided for use in case of a propeller system malfunction, serving as a safeguard against propeller overspeed at the higher flight speeds, and will keep both propellers above the 34.5-degree pitch lock setting by shutting off electrical power to the automatic pitch lock removal system. When airspeed is reduced below cruise, these pitch locks must then be manually removed by placing the high pressure fuel cock lever in the "Cruise Lock Out" position. Otherwise, the turbines are susceptible to destructive over-heat because of the propeller "hang-up" on the cruise pitch stops.

Examination of the relays in the automatic cruise pitch lock removal system revealed eroded "X" relay and fatigued "Z" relay contact elements indicating the likelihood that erratic relay operation had impelled the crew to activate the "Emergency" switch.

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The necessity for manual removal of the cruise pitch stops occurs so rarely that it can easily be overlooked under the duress and distractions of flight emergency conditions. A cockpit reminder therefore appears to be the most effective means of insuring flight safety after the "Emergency" switch is activated.

Consequently, it is recommended that consideration be given to the installation of a red warning light with adjoining placard in Grumman Gulfstream aircraft. The placard would warn that, with the flight safety switch in the "Emergency" position, the cruise pitch locks must be manually removed when airspeed is reduced below cruise. It is considered desirable that the light activate to a flashing state when the switch is placed in "Emergency", and deactivate when action is taken to manually withdraw the locks.

Representatives of our Engineering Division have discussed this proposal with several members of your Engineering and Manufacturing Division. If any further information is desired on this matter, we shall be pleased to respond.

Sincerely yours,

Joseph J. O'Connell, Jr.
Chairman