NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

AI-4
Log 1008

ISSUED: February 5, 1979

Forwarded to:

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

SAFETY RECOMMENDATION(S)

A-79-3

On August 19, 1978, a Beechcraft Model 35, N668D, crashed during the initial climb following takeoff from Redmond, Washington. The engine reportedly lost power, and the aircraft stalled and crashed on airport property. Preliminary investigation revealed that the engine-driven fuel pump, Thompson Products, Inc., Model TF-1900, had failed.

When the pump was disassembled, investigators found that the drive pin had been sheared as a result of excessive wear. Although the engine had been changed 46 hours before the crash, the fuel pump had accumulated 1,501.12 hours since its last overhaul. The fuel pump, originally a Model TF-1100-2, is identified as a Model TF-1900 because the pump rotor, drive pin, and driver had been replaced in accordance with the manufacturer's Service Bulletin 182A, dated May 26, 1955. A second Bulletin, 182B, was issued on October 18, 1955, and stated that it was "imperative to modify" these pumps. Yet a third Bulletin, 182C, was issued on July 18, 1956, to "emphasize the importance of periodic overhaul" and recommended a complete overhaul at 800 hours of service. Airworthiness Directive 55-26-02 was issued to inspect the TF-1100-2 pump every 100 hours until modified to the TF-1900-2. After modification, no further inspection was required nor did the AD apply to the TF-1900 Model. Page 8-41 of the Beechcraft Pilot's Operating Handbook, an approved FAA Flight Manual issued January 1977, states that the recommended overhaul or replacement interval for the TF-1900-2 engine driven fuel pump is 800 hours.

The fuel pump involved in the accident had accrued its time on two different engines. The first engine was operated 1,455.1 hours before overhaul. The fuel pump was then installed on the newly overhauled engine without any tests or overhaul.

A review of Maintenance Difficulty reports of the FAA over the past five years disclosed that eight TF-1900 fuel pumps have failed. Page 99 of the 1975 edition of the General Aviation Inspection Aids Summary documents two fuel pump drive pin failures which have caused power losses.

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

> Issue an Airworthiness Directive to (1) require that a one-time inspection of all Thompson Model 1900 fuel pumps be accomplished to determine the condition of the driver and drive pins (PN TF-1991) and (2) establish an overhaul interval of 800 operating hours on the pump. (Class I--Urgent Action) (A-79-3)

KING, Chairman, DRIVER, Vice Chairman, McADAMS and HOGUE, Members, concurred in the above recommendation.

By: James B. King
Chairman