

Log 1602

NATIONAL TRANSPORTATION SAFETY BOARD WASHINGTON, D.C.

ISSUED: August 15, 1984

Forwarded to:

Honorable Donald D. Engen
Administrator
Federal Aviation Administration
Washington, D.C. 20591

SAFETY RECOMMENDATION(S)

A-84-86

On December 30, 1982, the landing gear on a Beechcraft Model 58 airplane collapsed on the landing roll out at Charleston, South Carolina. Although no one was injured, the airplane was heavily damaged. The pilot indicated that both alternator warning lights illuminated while the airplane was in instrument meteorological conditions and rain about 40 miles from the airport. While maneuvering for landing, he attempted to lower the landing gear, at which time all electrical power was lost. He, therefore, lowered the landing gear manually. After landing, however, all three landing gears collapsed because the manual gear extension procedure had not been performed properly.

Three days later, the airplane was inspected by a Federal Aviation Administration (FAA) inspector. He stated that he could find no evidence of a malfunction of the airplane's electrical system. The alternators were removed and tested at a repair facility, and both operated satisfactorily.

Further research disclosed other unexplained cases of dual alternator failures in other model airplanes; the failures apparently were limited to twin-engine airplanes equipped with Prestolite 100-ampere alternators. Cessna Aircraft Company issued Customer Information Letters in January 1980 and 1982 stating that under certain unusual atmospheric flight conditions, moisture will freeze in Prestolite 100-ampere alternator brush holders and cause an interruption of electrical power generation by the alternators. The letters recommended either repositioning the brushholders or installing a water deflector kit.

Since complete electrical power failure during flight in instrument meteorological conditions presents a hazard to safe flight, and since these alternators are used on various makes and model twin engine airplanes, including airplanes used in commuter and air taxi operations, the Safety Board recommends that the Federal Aviation Administration:

Identify the makes and models of twin-engine airplanes equipped with Prestolite 100-ampere alternators and evaluate them for susceptibility of the alternators to ice formation in the brushholders that can cause interruption of electrical power generation, and take the action necessary to correct any deficiencies that cause such ice formation. (Class II, Priority Action) (A-84-86)

BURNETT, Chairman, GOLDMAN, Vice Chairman, BURSLEY and GROSE, Members, concurred in this recommendation.

By:  for
Jim Burnett
Chairman