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

OFFICE OF
THE CHAIRMAN

April 10, 1970

A70-17

Honorable John H. Shaffer
Administrator
Federal Aviation Administration
Department of Transportation
Washington, D. C. 20590

Dear Mr. Shaffer:

The pilot of a Piper PA-28R (Arrow), N3959T, in scheduled Air Taxi operation, experienced an engine failure over Mentone, Texas, and decided to land the aircraft with gear up on the apparently smooth snow-covered desert. To land gear-up in this aircraft, the automatic landing gear extension system must be bypassed by holding the spring-loaded bypass lever in the up position. The pilot instructed the passenger in the right seat to hold the lever in the up position while the pilot concentrated on landing the aircraft. He executed a satisfactory touchdown but encountered a small snow-covered sand dune which caused the aircraft to become airborne again. The passenger released the bypass lever when the aircraft became airborne and the landing gear automatically extended. Subsequent ground contact in this configuration resulted in substantial damage to the aircraft and serious injury to the passenger.

The pilot of another Piper PA-28R, N4649J, was involved in an accident while executing a maximum gross weight takeoff from the Grand Canyon, Arizona, Airport (6,611 feet m.s.l.) on July 5, 1969. Pilots in two accompanying aircraft, in communication with the pilot of N4649J, reported that N4649J advised them he was having difficulty in climbing and subsequently advised that he could not retract the landing gear and was going to crash. The pilot and passenger incurred fatal injuries when the aircraft was unable to negotiate the rising terrain in the direction of flight. The pilot had limited high altitude flight operation experience and limited experience in the Piper PA-28R.

The Piper PA-28R landing gear will automatically extend, regardless of the landing gear selector position, at 105 m.p.h. with power off, at 85 m.p.h. with full power, and at various power and airspeed combinations between 85 and 105 m.p.h., unless the spring-loaded bypass lever is physically held in the up position. A pilot desiring a landing-gear-up configuration in this flight regime is required to manipulate both the control yoke and the power lever with his left hand while holding the spring-loaded bypass lever up with his right hand.

Automatic landing gear operation is undesirable in situations such as: (1) high gross weight versus obstacle clearance takeoffs; (2) high altitude takeoffs; (3) emergency intentional wheels-up landings; (4) when encountering turbulence at low airspeed; (5) low airspeed instrument flight conditions; and (6) when practicing power on/off stalls in a clean configuration. It is extremely hazardous for a pilot in critical situations, such as an emergency wheels-up landing or a high gross weight takeoff, to be required to utilize one hand to prevent the landing gear from extending.

The Board believes that the incorporation of an automatic landing gear extension system on any aircraft should be required to include a provision for the system to be positively bypassed at the option of the pilot. The Board considers the lack of such a provision to constitute a hazard to flight safety and recommends that an Airworthiness Directive be issued to require deactivation of the automatic landing gear extension system on the Piper PA-28R until the system is modified to incorporate a positive method of providing the pilot optional control of the system. It is further recommended that the modification include a warning light to indicate when the automatic landing gear extension system is in the deactivated mode.

Our technical staff will be available and pleased to provide any further assistance in this matter.

Sincerely yours,

John H. Reed

John H. Reed
Chairman