NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

FOR RELEASE: 6:30 A.M., E.D.S.T., AUGUST 12, 1975

ISSUED: August 12, 1975

Forwarded to:

Honorable James E. Dow
Acting Administrator
Federal Aviation Administration
Washington, D. C. 20591

SAFETY RECOMMENDATION(S)

A-75-64

On June 16, 1974, at Muscoy, California, four persons were killed when the twin-engine airplane in which they were flying crashed and burned after entering a spin at low altitude. The landing gear and flaps were down at the time of impact, and the left propeller was feathered. The flight was being conducted for the benefit of prospective buyers of the airplane, and the pilot was apparently demonstrating its single-engine handling characteristics when the accident occurred. As a result of its investigation, the National Transportation Safety Board determined that the pilot had disregarded good operating practices during the demonstration and also had failed to maintain adequate flying speed.

This and numerous other spin accidents in twin-engine airplanes caused by attempting flight at less than the single-engine stalling or engine-out minimum control speed emphasize the need for increased pilot awareness of single-engine operating limitations and the consequent loss of control which almost always results when such limitations are exceeded.

Approximately seventy-five spin accidents involving general aviation twin-engine airplanes have occurred from 1968 through 1974. The flight purpose associated with about 1/3 of these accidents was instructional, and it is likely that most of such occurrences were related to practice and demonstration of one or more single-engine emergency procedures. Another 1/3 of these spin accidents were preceded by an actual engine failure or malfunction caused by miscellaneous acts and conditions including fuel starvation, fuel exhaustion, and material failure. Most of the remaining 1/3 of the accidents occurred under operational circumstances unrelated to use of asymmetric power.

The flight test for a multiengine class rating may require that the applicant demonstrate any or all of the engine's inoperative, engine-out, or engine failure emergency procedures. During the course of preparing for the test, both student and instructor pilot should be extremely aware of the single-engine performance capabilities of their particular airplane and any limitations imposed by equipment or environment. More importantly, they must also be aware of the potentially irreversible situation which can result from a loss of control when flight below the single-engine stalling or engine-out minimum control speed is attempted. At those relatively low altitudes normally associated with the practice of engine-out emergency procedures, loss of control is almost always fatal and recovery even at higher altitudes may not be possible, particularly when a flat spin develops.

The Safety Board believes that information relating to engine-out emergency procedures, including appropriate operational guidelines, should be disseminated to pilots. This should also include a discussion of the effects of certain related factors, such as density altitude and airplane configuration, and a summary of the significant flight characteristics and hazards which result when current high-performance, multiengine airplanes are flown at or below their single-engine stalling or engine-out minimum control speeds.

In summary, the Safety Board wants to assure that pilots are provided current, pertinent operational information and are informed of the potentially catastrophic situations which may develop, including the flat spin, if a loss of control is allowed to occur.

This information would benefit not only student and instructor pilots in simulated emergency procedures pertinent to the multiengine class rating, but would also improve the likelihood of a pilot's dealing successfully with actual engine-out emergencies. Our evaluation of those spin accidents which were precipitated by an actual engine failure or malfunction, for example, disclosed that most occurred during the critical takeoff or landing phases of flight and involved experienced pilots with considerable total flight time. It would appear, therefore, that a review, even by experienced pilots, of operational considerations regarding engine-out emergencies might be of considerable assistance.

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

> Issue an Advisory Circular dealing solely with simulated and actual engine-out emergencies in typical high performance, multiengine general aviation airplanes. (Class II)

This Circular, aside from providing general operational guidelines and technical information, should supplement present FAA Advisory Circular 61-67, "Hazards Associated With Spins in Airplanes Prohibited From Intentional Spinning," by placing special emphasis on the potentially catastrophic and often irreversible situations which may develop, e.g., the flat spin, if a loss of control is allowed to occur. This information should be mailed directly to all pilots holding multiengine class ratings, distributed to fixed base operators and flight schools, and disseminated among the various flight instructor clinics and safety seminars held throughout the year. In addition, FAA's Accident Prevention Staff should, where feasible, discuss operational details with recipients to assure that the objectives of the Circular are thoroughly understood.

REED, Chairman, McADAMS, THAYER, BURGESS, and HALEY, Members, concurred in the above recommendation.

By: John H. Reed
for Chairman

THIS RECOMMENDATION 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.

Safety Recommendation Reiteration List

SR Number	Reiteration Number	Report Number	Report Date	Accident Description	Accident City	Accident State	Accident Date
A-75-064	1	N/A	5/7/1981	From the Safety Recommendation Transmittal Letter issuing A-81-049 through -053, which discusses that the Beech Baron/Travel Air series of airplanes have demonstrated a propensity for entering flat spins under conditions of high asymmetric power and low speed. Between March 1978 and March 1980, there were eight fatal accidents of this type.	N/A	N/A	N/A