UNITED STATES OF AMERICA

NATIONAL TRANSPORTATION SAFETY BOARD

WASHINGTON, D.C.

ISSUED: August 18, 1971

Adopted by the NATIONAL TRANSPORTATION SAFETY BOARD
at its office in Washington, D. C.
on the 29th day of July 1971

FORWARDED TO:
Honorable John H. Shaffer
Administrator
Federal Aviation Administration
Washington, D. C. 20590

SAFETY RECOMMENDATION A-71-38

The subject of Piper Aircraft Corporation Service Letter No. 558 dated July 1, 1970, is an air flow modification kit for the PA-30 Twin Comanche affecting aircraft serial Nos. 30-1 to 30-2000, inclusive. This kit together with its installation, provided free of charge to the customer, is designed to improve operational characteristics during slow speed maneuvers by effecting significant changes in the aircraft's stall and lateral-directional qualities. The modification does not apply to certain of the aforementioned aircraft, namely the approximately 60 already modified to incorporate the counterrotating powerplant conversion kit (reference Piper Service Letter No. 552, dated May 1, 1970), those where the exterior has been modified in the field, and those equipped with deicer boots. In the latter two instances, according to the Service Letter, factory approval data is required for installing the air flow kit.

Piper informed the National Transportation Safety Board on May 25, 1971, that 1,303 of the air flow kits had been sent to Piper distributors but, as of that date, only 843 were known to have been installed. Thus, it appears that between 45 percent and 68 percent of the affected PA-30 fleet has been modified in accordance with one or the other of the above-referenced service letters. Since the cost of the counterrotating powerplant conversion kits approximate several thousands of dollars, it is understandable that these have been incorporated in rather limited numbers. Installation of the gratis air flow kit, however, is warranted in all affected PA-30 aircraft.

Incorporation of either the air flow or counterrotating powerplant conversion kit will significantly improve the slow speed, lateral-directional characteristics, and we are greatly encouraged at the prospect

of such improvements, particularly as they may relate to stall/spins. Our concern in connection with spin accidents involving the PA-30 was originally expressed in a Safety Board recommendation to FAA dated July 27, 1967. As a result, the then Acting Administrator, Mr. D. D. Thomas, initiated a number of measures, including coordination with both the manufacturer and NASA, in an attempt to ascertain this aircraft's handling qualities. Other related action taken by FAA included the issuance of an Alert Bulletin to all of its operations inspectors and Advisory Circular No. 61-40, both dealing with the performance of stalls on pilot flight tests. The Alert Bulletin and the Advisory Circular are applicable to the PA-30, as well as to other small high-performance airplanes.

From 1964 through 1970, there have been at least 40 stall/spin/spiral/mush-type accidents involving the PA-30 (1970 statistical tabulation incomplete) resulting in a total of 73 fatalities and 11 serious injuries. The potential of these modification kits in respect to preventing these types of accidents appears rather substantial. It is therefore recommended, because of the long-term safety advantages afforded PA-30 operators by such a modification and the relative ease of incorporating it, that:

> FAA issue an airworthiness directive to require that all affected PA-30 aircraft above, not equipped with counterrotating propellers, be modified with the air flow kit in accordance with Piper Service Letter No. 558.

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.

Laurel, McAdams, and Thayer, Members, concurred in the above recommendation. Reed, Chairman, and Burgess, Member, were absent, not voting.

Oscar M. Laurel

By: Oscar M. Laurel
Acting Chairman