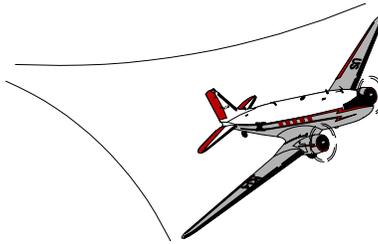


SPECIAL AIRWORTHINESS INFORMATION BULLETIN



U.S. Department
of Transportation
**Federal Aviation
Administration**

AIRCRAFT CERTIFICATION SERVICE
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This is issued for informational purposes only and any recommendation for corrective action is not mandatory.

Introduction:

The purpose of this Special Airworthiness Information Bulletin (SAIB) is to advise owners/operators of The New Piper Aircraft, Inc. (formerly Piper Aircraft Corporation) model PA-28-140 of the need to comply with Service Bulletin (SB) 753, dated December 15, 1982, entitled "Expanded Spin Recovery Procedures" especially if spin maneuvers/training are normally conducted. The information is valuable for anyone who operates a PA-28-140 because of the possibility of an inadvertent spin entry. The SAIB is advisory in nature and not mandated by regulation.

Background:

Issuance of SB 753 was prompted by reports of spin training accidents; recent events have indicated that the procedures presented in the SB are not being followed or are/were not known to the participants in the events.

Spins must be performed correctly or the results can be disastrous. All aspects of the spin maneuver must be understood including: weight and balance, airspeed control, altitude required, spin entry procedures, spin recovery procedures, etc. An unsafe and deadly condition can develop rapidly if all of these aspects are not taken into account. The cause of spin accidents and fatalities can normally be traced to a failure to know and/or review spin characteristics and procedures prior to attempting any spin. Although Accident/Incident Data indicates that most spins are entered inadvertently, a knowledge of the spin characteristics and recovery procedures for a particular airplane model, in this case the PA-28-140, may allow a safe and non-fatal recovery.

Recommendations:

The following information is taken from Piper SB 753 and should be placed in the aircraft records and/or any location where it may be reviewed as needed.

I. Weight and Balance

It is the responsibility of the pilot and aircraft owner to determine that the aircraft remains within the allowable weight versus center of gravity envelope while in flight.

The PA-28-140 is certified for operations in both normal and utility categories. Spins and certain other aerobatic maneuvers are permitted **only** when the aircraft is configured in the utility category which requires that the gross weight and center of gravity not exceed 1,950 pounds and 86.5 inches aft of datum, respectively. Fuel loading is the primary factor controlled by the pilot that affects the weight and center of gravity.

The pilot and copilot seat location of 85.5” as specified in the Airplane Flight Manual (AFM) or Pilots Operating Handbook (POH) as appropriate is the center position of the seat track. This may vary from a full forward position arm of 80.5” to 90.5” at the most rearward position. Each hole from the center position at 85.5” changes the arm of the seat location 1.25”.

The seat position to be used for spins should be determined and the correct arm should be used in calculating the aircraft weight and center of gravity prior to beginning the flight.

To determine the weight and balance limitations refer to the Weight and Balance Section in the appropriate AFM or POH as appropriate.

II. Maneuvers

The PA-28-140 is approved for certain aerobatic maneuvers, provided it is loaded within the approved weight and center of gravity limits (refer to Limitation Section in the appropriate AFM or POH). The approved maneuvers are spins, steep turns, lazy eights, and chandelles.

Intentional spins are prohibited in the normal category airplane.

III. Spins

A. Before spinning

Carrying baggage during the spin is prohibited and the pilot should make sure that all loose items in the cockpit are removed or securely stowed, including the second pilot’s seat belts if the aircraft is flown solo. Seat belts and shoulder harnesses should be fastened securely and seat belts adjusted first, to hold the occupants firmly into the seats, before the shoulder harness is tightened. With the seat belt and shoulder harness tight, check that the position of the pilot and passenger (if occupied) seats allow full rudder travel to be obtained (both left and right) and both full back and full forward control wheel movement. Finally, check that the seats are securely locked in position. The PA-28-140 is approved for intentional spinning only when the flaps are fully retracted. Spins should be started only at altitudes high enough to recover fully by at least 3,000 feet AGL, so as to provide an adequate margin of safety. A one-turn spin, properly executed, will require approximately 1,000 feet to complete; and a six turn spin will require approximately 3,000 feet to complete. The airplane should be trimmed in a power-off glide at approximately 96 MPH/84 Kts. before entering the stall prior to spinning. This trim airspeed assists in achieving a good balance between airspeed and “g” loads in the recovery dive. Spin recovery has been demonstrated up through six turns.

B. Spin Entry

The spin should be entered from a power-off glide by reducing speed at about 1kt/sec. until the airplane stalls. Apply full aft control wheel and full rudder in the desired direction. This control configuration with the throttle closed should be held throughout the spin. The ailerons must remain neutral throughout the spin and recovery, since aileron application may alter the spin characteristics to the degree that the spin is broken prematurely or that recovery is delayed.

C. Spin Recovery

1. Apply and maintain full rudder opposite the direction of rotation.
2. As the rudder hits the stop, rapidly move the control wheel full forward and be ready to relax the forward pressure when the spin rotation has stopped.
3. As rotation stops, neutralize the rudder and smoothly recover from the dive.

Normal recoveries may take up to 1.5 turns when proper technique is used; improper technique can increase the turns to recover and the resulting altitude loss.

IV. Further Advice on Spinning

A. Spin Entry

Application of full aft control wheel and full rudder before the airplane stalls is not recommended as it results in large changes in pitch attitude during entry and the first turn of the spin.

B. Spin Recovery

The recommended procedure has been designed to minimize turns and altitude loss during recovery.

In all spin recoveries the control column should be moved full forward briskly. This is vitally important because the steep spin attitude may inhibit pilots from moving the control forward positively.

The immediate effect of applying normal recovery controls may be an appreciable steepening of the nose down attitude and an increase in rate of spin rotation. It is essential to maintain full anti-spin rudder and to continue to hold the control wheel full forward until the spin stops. The airplane will recover from any point in a spin in not more than one and one half additional turns after application of controls as recommended.

C. Mishandled Recovery

Improper application or a delay in application of recovery controls can increase the number of turns to recover and the resulting altitude loss.

Delay in moving the control wheel forward may result in the aircraft suddenly entering a very fast, steep spin mode which could disorient a pilot. Recovery will be achieved by briskly moving the control wheel fully forward and holding it there while maintaining full recovery rudder.

In certain cases the steep, fast rotation has developed into a spiral dive in which the rapid rotation continues, but indicated airspeed increases rapidly. It is important to recognize this condition. The aircraft is no longer auto-rotating in a spin and the pilot must be ready to neutralize the rudder so as to ensure that airspeed does not exceed 129 MPH/112 Kts. (V_a) with full rudder applied.

D. Recovery to Level Flight

In most cases spin recovery will occur as the control wheel reaches the fully forward position. The aircraft pitches nose down quickly when the elevator takes effect and, depending on the control wheel position, it may be necessary to move the wheel partially back almost immediately to avoid an unnecessarily steep nose down attitude, possible negative “g” forces and excessive loss of altitude.

Because the aircraft recovers from a spin in a steep nose down attitude, speed builds up quickly in the recovery. The rudder should be neutralized as soon as the spin stops. Delay in neutralizing the rudder may result in yaw and “fish-tailing”. If the rudder is not neutralized it would be possible to exceed the maximum maneuver speed (V_a) of 129 MPH/112 Kts. with the surface fully deflected.

E. Engine

Normally the engine will continue to run during a spin, sometimes very slowly. If the engine stops, take normal spin recovery action, during which the propeller will probably windmill and restart the engine. If it does not, set-up a glide at 83 MPH/72 Kts. and restart using the starter motor.

A copy of SB 753 may be obtained from: The New Piper Aircraft, Inc.
Attn: Customer Service
2926 Piper Drive
Vero Beach, FL 32960

There is a placard (S/Ns 28-7725001 through 28-7725290 already have this placard installed) associated with this SB which may be purchased for \$4.29. The placard reminds the pilot to review the material in SB 753 prior to conducting spin maneuvers.

For Further Information Contact

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