



**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

Airworthiness Directive

82-16-05 R1 PIPER AIRCRAFT CORPORATION: Amendment 39-4459 as amended by Amendment 39-5278. Applies to Models PA-31 and PA-31-325 (Serial Numbers 31-2 through 31-8312019), PA-31-350 (Serial Numbers 31-5001 through 31-8452021), and PA-31-350-T1020 (Serial Numbers 31-8253001 through 31-8553002) equipped with Piper Part Numbers 455-301, 555-376, 555-511, or 555-366 turbocharger exhaust pipe couplings, certificated in any category.

Compliance: Required as indicated, unless already accomplished.

To prevent the possibility of an inflight powerplant fire due to a turbocharger exhaust pipe coupling failure, accomplish the following:

(a) Within the next 100 hours time-in-service after the effective date of this AD or 100 hours time-in-service since the last inspection per this AD prior to its revision, whichever is first, and thereafter at intervals not exceeding 100 hours time-in-service, inspect the multi-segment Piper P/N 455-301, 555-376, 555-511, 555-366 turbocharger exhaust pipe couplings by accomplishing the following:

- (1) Gain access to the turbocharger exhaust systems.
- (2) Remove the turbocharger exhaust couplings and tailpipe.

NOTE: Exercise caution to prevent spreading or forcing the coupling beyond its normal open position when removing or installing the coupling,

(3) Using either a dye penetrant inspection method or a light and a 10-power magnifying glass, accomplish the following:

(i) Inspect coupling for cracks, spreading of "V" band segments, failed spot welds, and indication of exhaust flanges bottoming in couplings.

(ii) Inspect the condition of the coupling clamp for bending, overstress, thread damage, cracks or other obvious damage.

(iii) Inspect turbocharger to turbocharger exhaust tailpipe connection area for proper mating of surfaces.

(iv) Inspect tailpipe and turbocharger flanges for cracks and distortion. Remove carbon deposits from mating flanges before reassembly.

(v) Reinstall serviceable couplings using the applicable torque and procedures described in paragraph (b).

NOTE: Initial and repetitive inspection are not required for coupling Part Numbers 557-584 and 557-369.

(b) Prior to further flight, replace any cracked or otherwise damaged couplings found during any inspection required by paragraph (a) of this AD with applicable couplings specified below:

MODEL	PIPER COUPLING P/N (AEROQUIP P/N)	TORQUE
PA-31	455-301 (4404-376M)	40-50 in.-lbs.
	555-376 (MVT68049-375H)	40-50 in.-lbs.
	(MVT68049-375D)	
	555-511 (MVT69861-377M)	40-50 in.-lbs.
	557-584 (NH1005834-10)	30-35 in.-lbs.
PA-31-325	555-511 (MVT69861-377M)	40-50 in.-lbs.
	557-584 (NH1005834-10)	30-35 in.-lbs.
PA-31-350	555-366 (MVT68049-450M)	45-55 in.-lbs.
	557-369 (NH1005798-10)	30-35 in.-lbs.

Install couplings in accordance with the instructions contained in Piper Service Bulletin No. 644C, dated December 3, 1985, ensuring that the tailpipe and turbocharger flanges are properly aligned and that the wrench socket is properly aligned to prevent bolt sideload.

(c) Piper Aircraft Corporation Service Bulletin No. 644C dated December 3, 1985, pertains to the subject matter of this AD.

(d) The time-in-service between the repetitive inspections required herein may be adjusted up to plus 25 percent of any specified inspection interval required by this AD to facilitate accomplishing these inspections concurrent with other scheduled maintenance on the airplane.

(e) Airplanes may be flown in accordance with FAR 21.197 to a location where this AD may be accomplished.

(f) An equivalent method of compliance with this AD if used must be approved by the Manager, Atlanta Aircraft Certification Office, FAA, 1075 Inner Loop Road, College Park, Georgia 30337.

All persons affected by this directive may obtain copies of the documents referred to herein upon request to Piper Aircraft Corporation, 2926 Piper Drive, Vero Beach, Florida 32960 or the FAA, Rules Docket, Office of the Regional Counsel, Room 1558, 601 East 12th Street, Kansas City, Missouri 64106.

Amendment 39-4459 became effective September 15, 1982.

This amendment, 39-5278, becomes effective April 11, 1986.

SUPERSEDED