



U.S. Department
of Transportation
Federal Aviation
Administration

Advisory Circular

Subject: Maintenance and Handling of
Air-Driven Gyroscopic Instruments

Date: 6/23/26

AC No: 91-26A

Initiated by: AFS-300

Change:

- PURPOSE OF THIS ADVISORY CIRCULAR (AC).** This AC is issued to advise operators of General Aviation (GA) aircraft of the need for proper maintenance of air-driven gyroscopic instruments and associated air filters. This AC contains guidance that is pertinent to Title 14 of the Code of Federal Regulations (14 CFR) §§ [43.13](#) and [91.205\(d\)](#).

Note: This is a guidance document. Its content is not legally binding in its own right and will not be relied upon by the Department as a separate basis for affirmative enforcement action or other administrative penalty. Conformity with the guidance document is voluntary only. Nonconformity will not affect rights and obligations under existing statutes and regulations.

- AUDIENCE.** The audience for this AC is maintenance personnel/facilities performing maintenance on air-driven gyroscopic and GA operators.
- WHERE YOU CAN FIND THIS AC.** You can find this AC on the Federal Aviation Administration's (FAA) website at https://www.faa.gov/regulations_policies/advisory_circulars and the Dynamic Regulatory System (DRS) at <https://drs.faa.gov>.
- WHAT THIS AC CANCELS.** AC 91-26, Maintenance and Handling of Air-Driven Gyroscopic Instruments, dated October 29, 1969, is canceled.
- BACKGROUND.** The FAA conducted an investigation of air-driven gyroscopic instrument malfunctions. The investigation was directed primarily to directional and attitude instruments. The major reasons for removal of gyro horizons were failure to erect and tumbling due to improper gyro speed; in directional gyros the reason was precession. Generally, dirty air filters were found to be the causes of malfunctions.
- GENERAL.** A large number of GA operators are not aware of the importance of proper instrument maintenance. There are a number of simple operational checks that can be easily and quickly performed at any time and will give an indication of instrument malfunction and impending failure. Some of these checks are:
 - During preflight, inspect instruments for poor condition, mounting, marking, broken or loose knobs, bent or missing pointers, and (where applicable) improper operation.
 - Check power-off indications of instrument pointers, tape scales, and warning flags for proper indications.

3. Apply power during engine runup and check for excessive mechanical noise, erratic or intermittent operation, failure to indicate, sluggishness, or indication of excessive friction.
 4. Check that erection or warm-up time is not excessive, caging functions are normal, and warning flags, indicating lights, and test circuits are operable.
 5. Check pneumatic tubing for leaks, corrosion, erosion, cracks, bends and pinching, and evidence of chafing.
 6. Check for evidence of overheating. Dust, dirt, and lint contribute to the overheating of equipment and malfunctioning. If contamination is present or suspected, check the air filter and clean or replace as necessary.
- 7 **DISCUSSION.** The FAA investigation determined that contaminated bearings are the major cause of air-driven gyro instrument malfunctions.
- 7.1 **Contamination.** Contamination is caused by foreign material induced into the instrument by the vacuum/pressure air system. Since the air that drives the gyro rotor passes through the rotor bearings, any dirt, tars, moisture, etc. passed by the filter will collect on the bearings. Contamination can result during operation due to the normal amount of contaminants in the air. Dirty bearings will cause reduced rotor speeds resulting in various types of malfunctions and can cause bearing failure.
- 7.2 **Maintenance.** Regular checks and maintenance should be performed in order for gyroscopic instruments to perform satisfactorily. Recommendations of instrument and aircraft manufacturers should be followed to ensure that maximum performance, accuracy, and reliability are obtained from the instrument. Cleaning or replacement of air filters is important to maintaining reliable instrument operation and should be accomplished at the intervals recommended by the manufacturer.
- 7.3 **Air Supply Filters.** A number of filters for the air supply to gyroscopic instruments are available. If the instruments do not have an air filter system, the installation of one should be seriously considered. The aircraft owner should specify that it be installed in an accessible location so that it can be removed easily for checking or replacement. Some central air filters are panel-mounted for ease of maintenance.
- 7.4 **Handling and Packaging.** Improper handling and packaging of gyroscopic instruments also contributes to malfunctions. Careless handling and packaging by uninformed personnel during removal, installation, and transporting can turn a minor repair into a major one.
- 7.5 **Check Instruments.** Instruments should be checked for proper operation after installation and periodically thereafter. The suggested inspections and checks contained in paragraph 6 of this AC, if performed regularly in addition to those required by the CFR, will help to detect early signs of instrument malfunctioning. Operations with malfunctioning instruments are hazards to flight.

- 8 AC FEEDBACK FORM.** For your convenience, the AC Feedback Form is the last page of this AC. Note any deficiencies found, clarifications needed, or suggested improvements regarding the contents of this AC on the Feedback Form.

A handwritten signature in blue ink, appearing to read 'R. Reckert', with a stylized flourish extending to the right.

Robert Reckert for
Hugh Thomas
Executive Director, Flight Standards Service

Advisory Circular Feedback Form

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Subject: AC 91-26A, Maintenance and Handling of Air-Driven Gyroscopic Instruments

Date: _____

Please mark all appropriate line items:

- ☐ An error (procedural or typographical) has been noted in paragraph _____ on page _____.
- ☐ Recommend paragraph _____ on page _____ be changed as follows:
- ☐ In a future change to this AC, please cover the following subject:
(Briefly describe what you want added.)
- ☐ Other comments:
- ☐ I would like to discuss the above. Please contact me using the information below.

Submitted by: _____

Date: _____