

Chapter 1
General

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Introduction

This manual is designed as a training tool for operation of the PA-28R-200 Arrow training aircraft. However, it is not intended as a substitute for adequate and competent flight instruction, pilot knowledge of current airworthiness directives, applicable Federal Air Regulations (FARs) or Advisory Circulars (ACs). The manual is a procedural manual for operation of the PA-28R-200 Arrow when conducting flight training within the Bridgewater State College flight training program, and as such must be kept in current status.

This chapter includes depictions of the aircraft and its basic dimensions. These depictions are printed here by permission of Piper Aircraft, Inc., and may not be reprinted or copied without written permission from Bridgewater State College Aviation Operations and Piper Aircraft, Inc.

Aircraft Dimensions

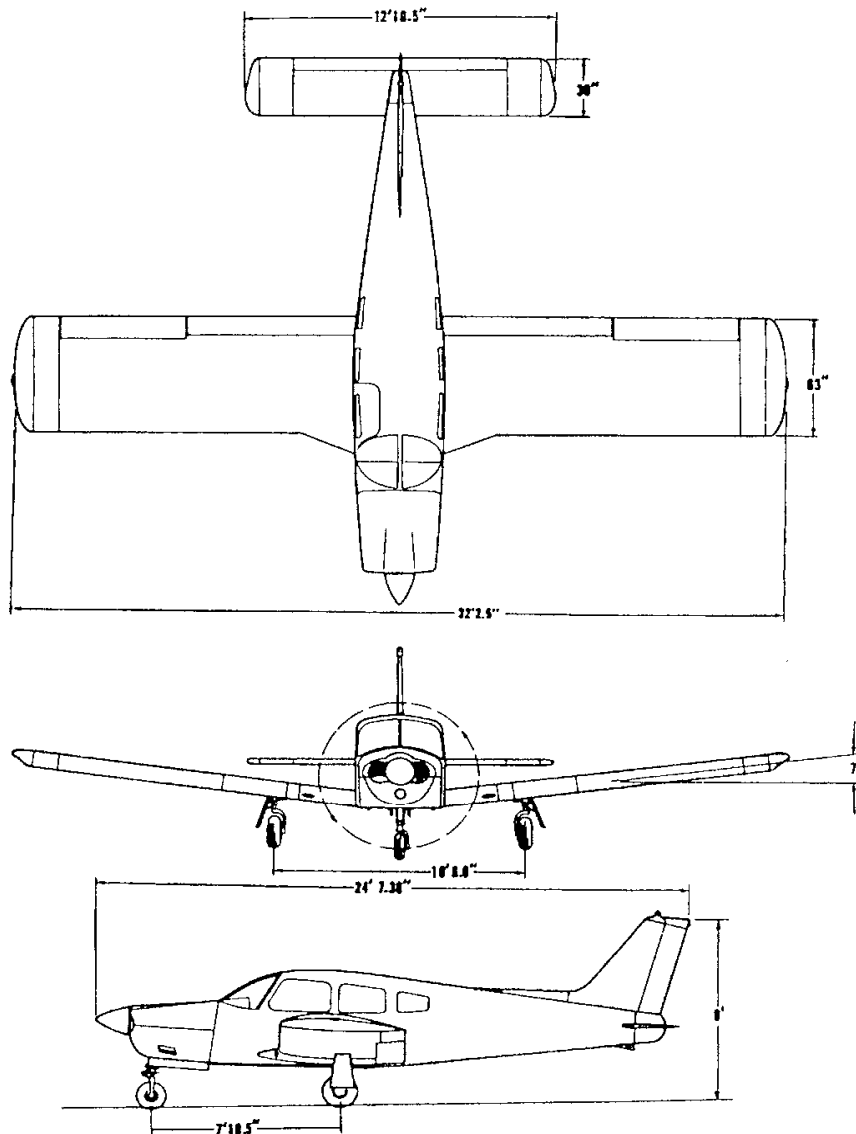


Figure 1-1
THREE VIEW DRAWING
(Not to scale)

Airworthiness Directives

The following section lists the current Airworthiness Directives and Service Bulletins for the Piper PA-28R-200 Arrow. Flight crews are responsible for reviewing the maintenance summary sheet to ensure that the aircraft is in compliance with the following ADs and SBs:

AD 97-01-01 R1

Main Gear Side-brace Stud

This amendment revises (AD) 97-01-01, which currently requires repetitively inspecting the main gear side-brace studs for cracks on (Piper) Models PA-28R series airplanes, and replacing any main gear side-brace stud found cracked. The FAA has approved certain alternative methods of compliance (AMOC) for AD 97-01-01. This AD retains all the actions of AD 97-01-01, and will incorporate certain AMOC's as a way of accomplishing the actions specified in AD 97-01-01. The actions specified by this AD are intended to prevent a main landing gear collapse caused by main gear side-brace stud cracks, which could result in loss of control of the airplane during landing operations. Effective 12/8/98.

AD 96-10-03

Flap Handle Attachment Bolt

The FAA issued this AD to require inspection and modification of the flap lever assembly. Reports of worn flap handle attach bolts and elongated holes in the flap lever to cable mounting attach point prompted issuance of the AD. The AD requirements are intended to prevent failure of the flap handle attach bolt and sudden retraction of the flaps, which, if not detected and corrected, could result in loss of control of the airplane. Compliance time was established as follows: with a 2,000 hour TIS threshold or within the next 100 hours TIS for those airplanes with greater than 2,000 hours TIS. Effective 6/14/96.

AD 95-26-13

Oil Cooler Hose Inspection

Numerous incidents/accidents caused by oil cooler hose rupture or failure on the affected airplanes prompted this action. This amendment superseded (AD) 76-25-06, which required replacing oil cooler hoses on Piper Model PA28-140 airplanes, and inspecting for a minimum clearance between the oil cooler hose assemblies and the front exhaust stacks and adjusting if proper clearance was not obtained. This AD maintains the clearance inspection and oil cooler hose replacements, requires this inspection and these replacements to be repetitive, and extends the applicability to include other PA28 series airplanes. It also provides the option of installing approved TSO-C53a, Type D oil cooler hose assemblies as terminating action for the repetitive inspection requirement. The actions specified by this AD are intended to prevent these oil cooler hoses from failing or rupturing, which could result in engine stoppage and subsequent loss of control of the airplane. This AD requires a repetitive 100-hour time-in-service (TIS) inspection and 8-year (or 1,000 hours TIS) repetitive oil cooler hose assembly replacement. Effective 2/05/96.

AD 94-14-14***Nose Landing Gear Modification***

This AD requires installing a certain nose landing gear modification kit (Piper part number (P/N) 764-377). Several service difficulty reports of collapsed nose gear on the affected airplanes prompted the AD. The reports revealed failure of the bolt (AN4-20) connecting the lower nose gear drag link to the upper drag link. The actions specified by this AD are intended to prevent nose gear collapse because of AN4-20 bolt failure, which could lead to airplane damage. Effective 8/19/94.

AD 86-17-01***Ammeter Replacement***

This AD was issued to prevent smoke in the cockpit and possibly complete electrical failure resulting from shorting of ammeter terminal posts, and required the following: Within 50 hours time-in-service (TIS) after the effective date of the AD, replacement of the ammeter(s) with Ammeter Replacement Kit(s), Piper Part No. 765-186, on the above listed airplanes in accordance with the instructions contained in Piper Service Bulletin No. 811A, dated May 12, 1986. Effective 8/21/86.

AD 82-06-11***Nose Landing Gear, Inspect, Rig, Modify***

This AD was issued to require modification of the nose landing gear that would prevent the inadvertent retraction of the nose landing gear. Within the next 100 hours time-in-service after the effective date of the AD, owners/operators are required to inspect, rig and modify the nose landing gear in accordance with Piper Service Bulletin No. 724A, dated April 20, 1982, Parts I and II as applicable, except dye penetrant must be used for detection of cracks. A record of compliance with this AD is required via an appropriate entry in the airplane maintenance records. Effective 6/16/82.

AD 81-11-02***Oil Drain Valves***

This AD requires compliance within the next 50 hours time in service (TIS) or at the next oil change, whichever comes first, after the effective date of the AD (unless it has already accomplished). The AD was issued to prevent possible loss of oil due to installation of an incorrect engine oil quick drain valve. The AD requires installation of two warning placards, one on each side, on the lower engine mount beneath the intake and exhaust tubes. For those airplanes equipped with an engine oil quick drain valve, the following actions are required: Inspection of the oil quick drain valve and installation and correct safety wiring of Piper Part No. 492-172V. If an incorrect valve is installed, replace with Piper PN 492-172V, and safety wire. Effective 10/2/81.

AD 80-19-01***Carbon Monoxide in Cabin***

This AD was issued to prevent possible leakage of carbon monoxide into the cabin. Compliance is required within the next 50 hours time in service (TIS) after the effective date of the AD unless already accomplished, and includes the following actions: Removal of upper and lower engine cowling, removal and discard of clips on muffler shroud end plates, inspection for movement between the muffler shroud end plates and the muffler pipes. Piper Service Bulletin No. 691, dated August 6, 1980, pertains to this subject. Effective 9/12/80.

AD 77-23-03***Control Rod Ends***

This AD applied to PA-28R-200 serial numbers 28R-35001 through 28R-7635512, and was issued to prevent power loss due to thermal contraction binding on a control rod end. Inspection of the rod bearing ends for the throttle, mixture, and propeller controls was required to be performed within 25 hours after issuance of the AD. If the rod bearing ends did not pass inspection, replacement with a serviceable part was required. Effective 11/14/77.

AD 77-01-01***Fuel Quantity Indicators***

This AD applied to PA-28R-200 serial numbers 28R-7235001 through 7635459, and was intended to prevent fuel exhaustion resulting erroneous readings on the fuel gauges. The AD required the installation of a placard reading "WARNING FUEL GAUGES MAY INDICATE AS MUCH AS 2 1/2 GALLONS WHEN TANKS ARE EMPTY" within 10 hours TIS after issuance of the AD, and an inspection of the gauges for proper operation within the next 200 hours TIS or 12 calendar months, whichever came first. Effective 1/7/77.

AD 76-15-08***Nose Gear Trunnion***

This AD applied to PA-28R-200 serial numbers 28R-7635001 to 28R-7635432 inclusive, and all PA-28R-200 airplanes that had the Nose Gear Trunnion Assembly (Piper part number 67054-00V) replaced with one supplied by the manufacturer between 8/1/75 and 8/1/76. The AD required a visual inspection of the nose gear trunnion to detect any obvious cracks on the trunnion ear that attaches to the nose landing gear arm spring. The AD allowed the inspection to be conducted by the pilot or by other persons authorized to perform preventive maintenance under FAR 43. Effective 8/6/1976.

AD 75-25-02***Rear Seat Leg Inspection***

This AD was issued to prevent the seats from coming loose during an accident, and required an inspection within the next 100 hours time in service or at the next annual inspection, whichever came first. The inspection required inspection of the rear legs on the quick-disconnect seats in accordance with Piper Service Letter No. 763, and adjustment or replacement of any component that did not pass inspection. Effective November 21, 1975.

AD 75-08-03***Fuel Drain Valves***

This AD was issued to detect and correct an unsecured fuel drain valves installed at the gascolator. Compliance was required prior to next flight (or 50 hours time in service after the effective date of the AD) unless already accomplished, and was to be accomplished by a pilot check of the fuel gascolator drain valve, (Piper Part No. 492-022) to determine if it is tight in the fitting by attempting to turn the valve counter-clockwise by hand. Effective April 4, 1975.

AD 74-09-04***Rear Seatbelt Installation***

This AD was issued to require the installation of improved rear seat belt by relocating the rear seat safety belt outboard attachments in accordance with Piper Service Bulletin Number 393. Effective 4/24/74.

Service Bulletin No. 866A***Backup Landing Gear Extender Removal***

The Piper PA-28R Back Up Gear Extender System was designed as a safety device to help prevent both inadvertent landing with the gear retracted and premature retraction of the gear during takeoff. When correctly operated and maintained, the system automatically extends the landing gear when the airspeed falls below a certain value, and also prevents the landing gear from being retracted before a specified airspeed. Allegedly, properly functioning systems were contributing factors in certain aircraft accidents, propagated by other emergencies. Piper issued Service Bulletin No. 866A, requiring the removal of the BGE system to eliminate the possibility of accidents occurring due to the system.