

# Piper PA-28 Archer Model Guide

The Piper PA-28 Archer is a four-seat, single-engine piston airplane, listed as in production from 1973. The detailed figures below come from the 1998 Archer III (PA-28-181): a 180-hp Lycoming O-360-A4M with a fixed-pitch propeller. Earlier Cherokee Archer (PA-28-180) airplanes have different paperwork, so check which variant you are buying.

## KEY TAKEAWAYS

- The 1998 Archer III has a 180-hp Lycoming O-360-A4M, 4 seats, 2,550 lb max takeoff weight and 875 lb useful load.
- It cruises at 128 KTAS at 75% power and 8,000 ft. Std fuel is 50 gal (48 usable), giving 3.8 hr with a 45-min reserve.
- You cannot fill the seats, the tanks and the baggage area all at once. Do a weight and balance calculation every flight.
- Ask for records of AD 2013-02-13, the recurring stabilator control cable inspection.

## WHAT IT CARRIES AND HOW IT PERFORMS

The Piper PA-28 Archer III lists 875 lb useful load, 587 lb payload with full fuel and 200 lb baggage capacity. Takeoff ground roll is 1,135 ft and 1,610 ft over a 50-ft obstacle. Sea level climb is 667 fpm and service ceiling is 13,236 ft. Landing over 50 ft needs 1,400 ft. Demonstrated crosswind is 17 kt.

## LOADING AND WEIGHT AND BALANCE

Piper's weight and balance report warns that an aft CG can cause premature rotation, pitch-up in climb and reduced stability. A forward CG can make rotation difficult. After any equipment change or modification, the mechanic must work out a new basic weight and CG and record it in the log book. Confirm the current figures are in the airplane's records.

## WHAT TO CHECK WHEN BUYING

Review AD 2013-02-13 compliance for the stabilator control system (cables, turnbuckles, corrosion or cracking). A training checklist for the PA-28-181 notes that IFR flight needs all nine static wicks present. It also says the main gear strut should show about 4.5 in, and a puddle under the gear may mean a hydraulic fluid leak.

## SPECIFICATIONS

|                        |      |
|------------------------|------|
| Engine Power Hp        | 180  |
| Max Takeoff Weight Lbs | 2550 |
| Empty Weight Lbs       | 1683 |
| Useful Load Lbs        | 875  |
| Fuel Capacity Gal      | 50   |
| Usable Fuel Gal        | 48   |
| Baggage Capacity Lbs   | 200  |
| Length Ft              | 24   |

## PERFORMANCE

|                               |       |
|-------------------------------|-------|
| Takeoff Ground Roll Ft        | 1135  |
| Takeoff Distance Over 50ft Ft | 1610  |
| Rate Of Climb Fpm             | 667   |
| Max Level Speed Kt            | 129   |
| Cruise Speed 75pct 8000ft Kt  | 128   |
| Service Ceiling Ft            | 13236 |
| Landing Distance Over 50ft Ft | 1400  |
| Landing Ground Roll Ft        | 920   |

## V-SPEEDS

|                          |     |
|--------------------------|-----|
| Vx Best Angle Climb Kt   | 64  |
| Vy Best Rate Climb Kt    | 76  |
| Va Maneuvering Kt        | 103 |
| Vfe Flaps Extended Kt    | 102 |
| Vno Structural Cruise Kt | 125 |
| Vne Never Exceed Kt      | 154 |
| Vs1 Stall Clean Kt       | 51  |
| Vso Stall Landing Kt     | 46  |

## WEIGHT & BALANCE

|                        |      |
|------------------------|------|
| Max Takeoff Weight Lbs | 2550 |
| Max Landing Weight Lbs | 2550 |
| Max Ramp Weight Lbs    | 2558 |
| Empty Weight Lbs       | 1683 |
| Useful Load Lbs        | 875  |
| Payload Full Fuel Lbs  | 587  |
| Baggage Capacity Lbs   | 200  |

## SAFETY NOTES

- AD 2013-02-13 (effective 03/11/2013, recurring) covers PA-28-180 and PA-28-181 models. Cable failure could cause loss of pitch control, so inspect the stabilator system.
- The AD inspection was estimated at 5 work-hours (\$425). Replacing a full set of stabilator control cables was estimated at \$1,458.
- Overloading or an out-of-limit CG reduces takeoff, climb and cruise performance and can lead to inadvertent stalls and spins.