



# Aircraft Checkout

## Piper Archer N2806M



PA28-181



# Topics

- Archer Basics
- Archer Safety Information
- N2806M Equipment
- Condor Operating Requirements

*For Information Only !*

*Please consult the Pilot's Operating Handbook for complete information.*



## Archer Basics





# Engine & Propeller

- Engine
  - Lycoming O-360-A4A
  - 180 Horsepower
  - TBO: 2000 Hours
  - Fuel Burn: ~10 gallons / hour at cruise
  
- Propeller
  - Sensenich Fixed Pitch
  - 76" Diameter
  
- Fuel Capacity
  - 50 Gallons, 48 Usable
  - (2) Wing Tanks, 25 Gallons each, 24 Usable
  - Fuel Selector: "Left" or "Right" (no "Both position")
  
- Oil Capacity
  - 8 Quarts
  - Add a quart when below 6 quarts on dipstick



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# Archer “V Speeds”

- $V_{SO}$ : 49 KIAS
- $V_{S1}$ : 55 KIAS
- $V_X$ : 64 KIAS
- $V_Y$ : 76 KIAS
- $V_{FE}$ : 102 KIAS (@2550 Lbs)
- $V_A$ : 113 KIAS (@2550 Lbs) (89 KIAS @ 1634 Lbs)
- $V_{NO}$ : 125 KIAS
- $V_{NE}$ : 154 KIAS
- Best Glide: 76 KIAS
- Max. Demonstrated Crosswind: 17 KIAS



# Abbreviated Normal Operations

- Normal Takeoff:
  - Fuel Selector: Fullest Tank
  - Flaps: Set
  - Trim: Takeoff
  - “BLT” Check
    - Boost Pump “ON”
    - Lights/Strobes “ON”
    - Transponder “ALT”
  - Accelerate to: 52-65 KIAS, Rotate
  - Accelerate to  $V_Y$ : 76 KIAS
  - Fuel Pump: “OFF” > 400 AGL
  - Cruise Climb: 87 KIAS
- Short/Soft Field Takeoff:
  - Control Wheel aft for Soft Field
  - Flaps: 25° (2 Notches)
  - Accelerate to 41-49 KIAS, Rotate
  - Accelerate in Ground Effect to  $V_x$
  - Raise Flaps
  - Clear Obstacle
- Normal Approach & Landing:
  - Fuel Selector: Fullest Tank
  - Fuel Pump: ON
  - Mixture: SET
  - Flaps: SET ( $V_{FE} = 102$  KIAS)
  - Downwind Leg:
    - Trim for 75 KIAS
    - Carb Heat: ON then OFF
  - Key Position:
    - 1700 RPM
    - 75 KIAS / 500 fpm descent
    - Flaps: 10° (1 Notch)
  - Base Leg:
    - 1700 RPM
    - 70 KIAS
    - Flaps: 25° (2 Notches)
  - Final Leg:
    - 1700 RPM
    - 66 KIAS
    - Flaps: 40° (3 Notches)



## Additional Information

- **Operating at Gross Weight**
  - Longer takeoff runs, shallower climbs
  - Longer landing rollouts
  
- **Density Altitude: 90°F, 1000 MSL Airport**
  - 50% Increase in Takeoff Distance
  - 30% Decrease in Climb Performance



# Additional Information

- Use of Flaps
  - Decreases Obstacle Clearance distance by 200 ft.
  - 1800 to 1600 Feet (assumes standard conditions)
  
- PA28s are NOT approved for Flight into Known Icing Conditions
  
- Carburetor Icing
  - Occurs when humidity is high and temperature is between 14° and 77°F.
  - PA28s are not known for excessive carburetor icing, but use carb heat as directed by POH.





# Additional Information

- **Cabin Door**
  - Double Latching – DON'T SLAM !!
  - Pull closed, latch bottom then top.
  - If door opens in flight:
    - Slow to 87 KIAS
    - Open the storm window
    - Secure door
  
- **KLN-94 GPS**
  - VFR Installation Only
  - Not Coupled to HSI and/or Autopilot
  
- **Flight Planning**
  - Aircraft Type: P28A/A



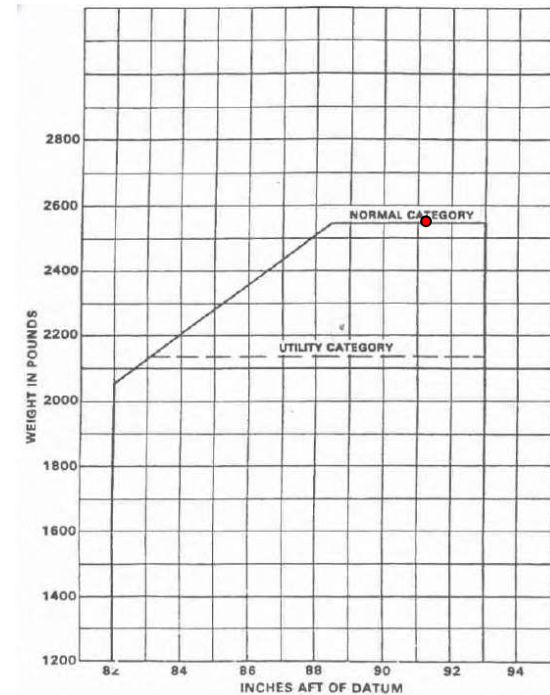
# Weight & Balance

- Max. Gross Wt. = 2550 lbs
- Aircraft Empty Wt. = 1587.16 lbs
- Useful Load = 962.84 lbs

	Weight	Arm	Moment
Aircraft Empty Weight:	1587.16	87.25	138479.7
Pilot & Front Seat Passenger:	340.00	80.50	27370.0
Rear Seat Passengers:	340.00	118.10	40154.0
Usable Fuel (48 gals. Max.):	288.00	95.00	27360.0
Baggage (200 lbs. max.):	0.00	142.80	0.0
<b>Totals:</b>	<b>2555.16</b>	<b>91.33</b>	<b>233363.71</b>

- Payload w/full fuel = 674.84 lbs
- Max fuel w/4 people = 47 gals.
  - Full fuel = 5.16 lbs over gross

C.G. RANGE AND WEIGHT





## Archer Safety Information

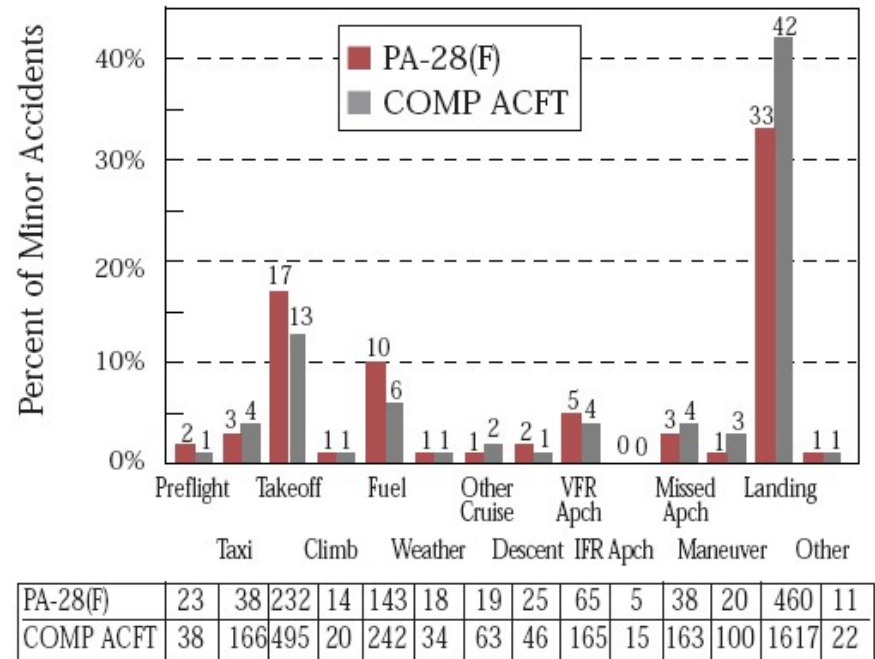




# Archer Safety Information

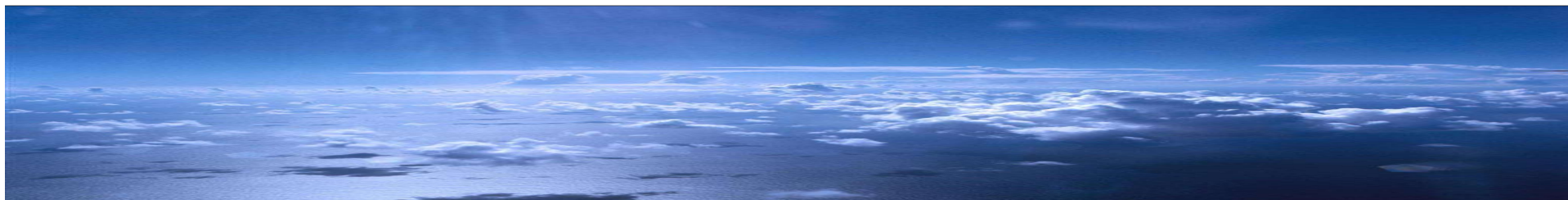
- Landings Represent highest % of PA-28 accidents:
  - Landing Long is most common fixed-gear landing problem
    - “Warrior Wing” tends to float
    - Especially for those used to the Arrow’s “Hershey Bar” wing
    - You should be down in the first third of the runway.
  - Airspeed Control
    - 75 Kts on Downwind (10° Flaps)
    - 70 Kts on Downwind (25° Flaps)
    - 66 Kts on Downwind (40° Flaps)

**Figure 5. Pilot Related Causes  
Minor Accidents PA-28(F)**



*Remember: A good landing starts with a stabilized approach !!*

*Source: AOPA Air Safety Foundation study of accidents from 1982-1999*



## N2806M Equipment







# S-TEC Model 50 2-Axis Autopilot

## ■ Heading Can be Driven From:

- Roll Knob on A/P (STB Mode)
  - Basic Wing Leveler
  - Knob commands a standard-rate turn
- Heading Bug on HSI (HDG Mode)
  - Heading Bug commands standard-rate turn
- VOR-1 or VOR-2 (NAV Mode)
- Localizer (APR Mode)
- Localizer Back Course (REV Mode)

*Note: The KLN-94 GPS is NOT coupled to A/P.*

## ■ Altitude Hold:

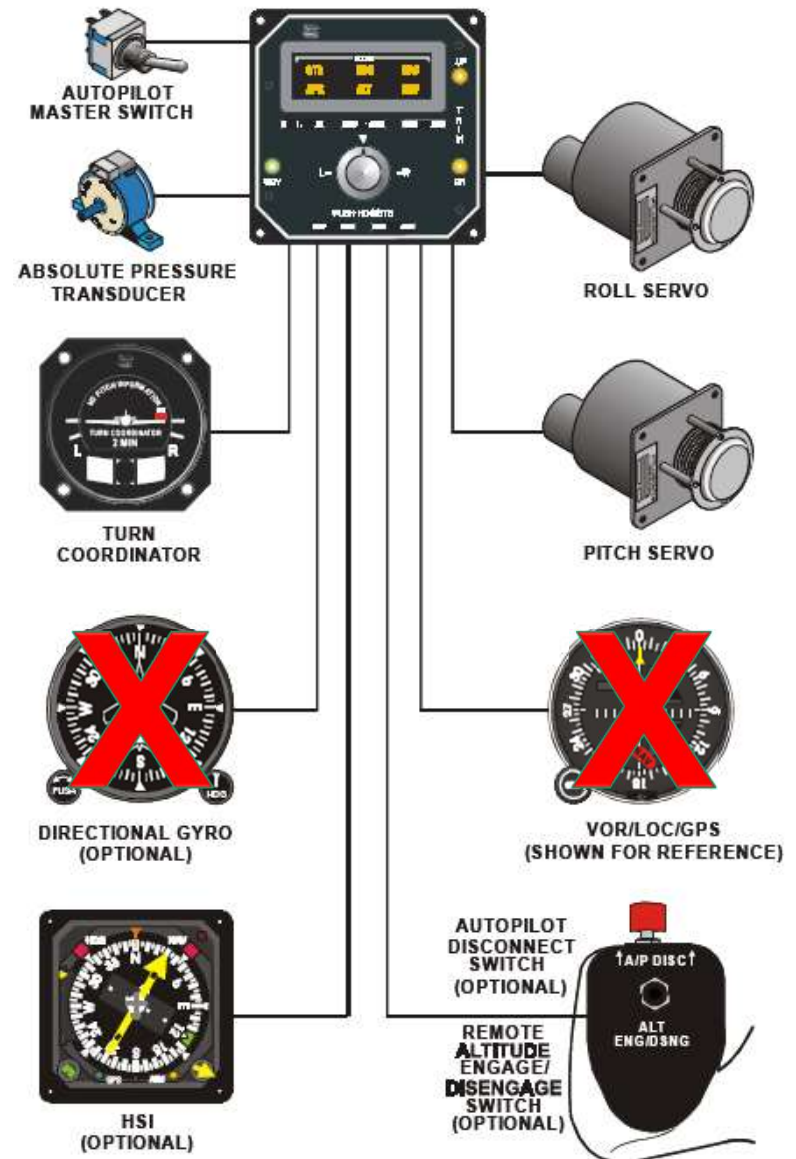
- Autopilot will hold aircraft altitude when the ALT button is pressed
- Aircraft should be in level flight when ALT mode is engaged.
- No Glideslope coupling

## ■ Yoke-mounted Disconnect Switches

- Autopilot Disconnect and Altitude Disconnect

## ■ Autopilot is “Rate Based”

- Roll/Bank is tied to Turn Coordinator, not AI
- Not subject to a Vacuum System / AI Failure





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# S-TEC 50 Autopilot (con't.)

## Abbreviated Operations (Consult POH)

1. A/P Master Switch to “TEST”
  - After ~30 Seconds RDY Light ON
2. A/P Master Switch to “ON”
3. Press “ON/OFF” Switch
  - A/P now in Wing Leveler (STB) Mode
  - Roll Knob commands standard-rate turn
4. Press Roll Knob
  - A/P now in HDG Mode
  - Driven from Heading Bug on HSI
  - Used to Intercept Airway/Course/Approach
5. When CDI Centers
  - Rotate Heading Bug to On Course Heading
  - Aircraft will turn in HDG Mode to Heading
6. When Established on Course
  - Press “NAV”
  - A/P will now track HSI CDI.
7. When at Enroute Altitude
  - Trim for level flight
  - Press “ALT”
  - Trim LEDs will illuminate for trim changes

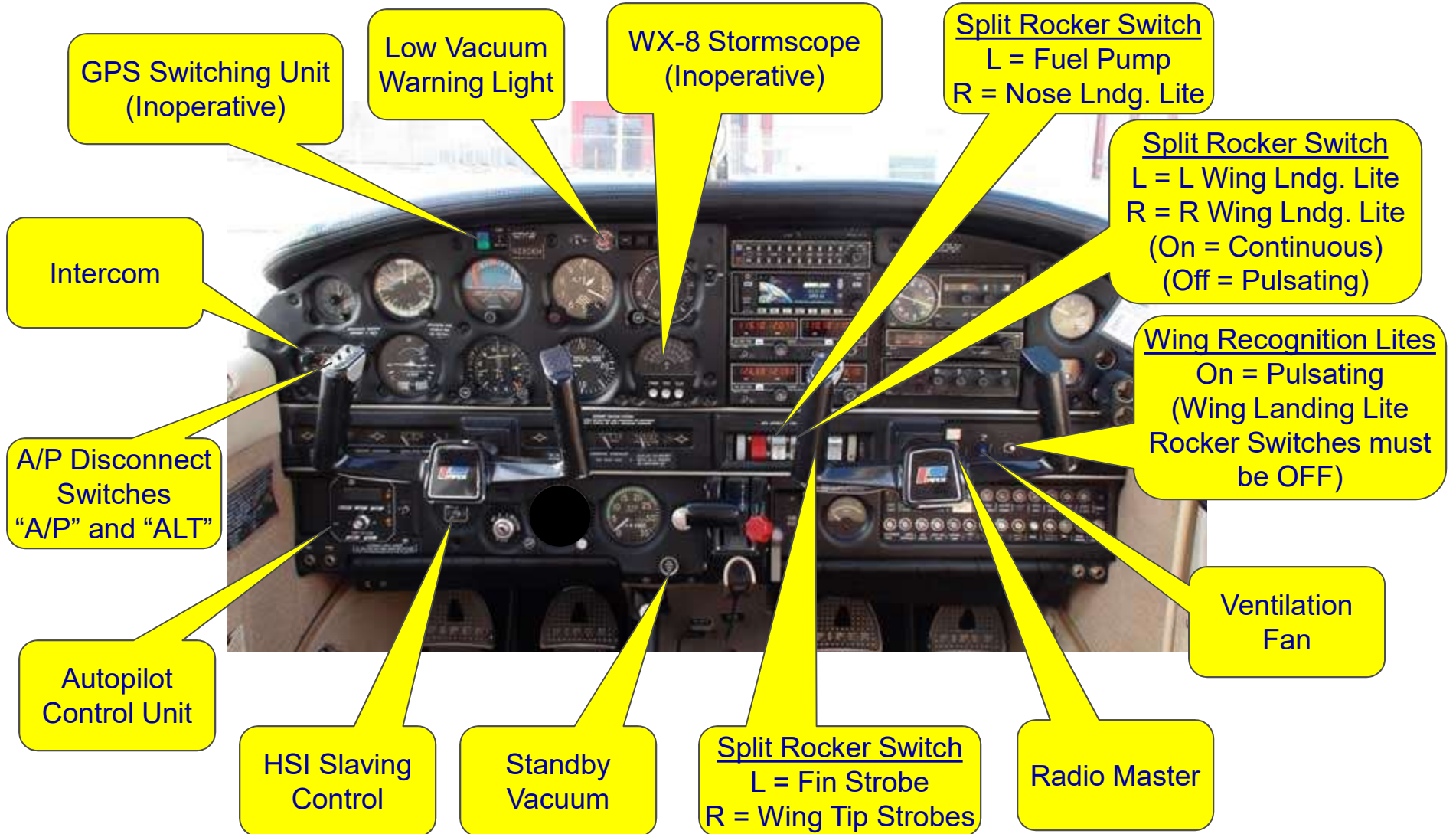


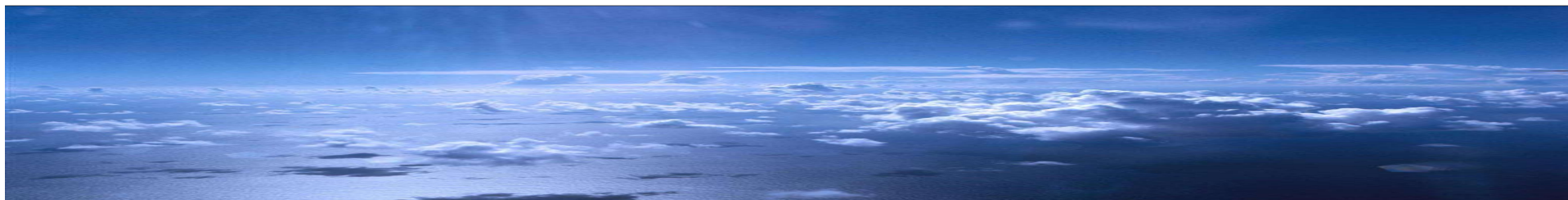




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# N2806M Panel Overview





## Condor Operating Requirements





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# N2806M Operating Requirements

- Club Members in Good Standing
- Private Pilots or Better (No Student Pilot Flight Training)
- Instructor Checkout
  - Depth of Training based on each member's Pilot Experience
    - Experience with PA-28s
    - Experience with HSI, Autopilot, etc.
    - Etc.

- For Additional Information:

- [www.condoraero.com](http://www.condoraero.com)
- Click "Meet the Fleet"
- Check out links to the right

Condor Aero Club, Inc.  
Zelienople Airport (KPJC)  
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Condor operates a fleet ranging from Cessna 152 to Piper Arrow providing the members a choice of aircraft suited to various missions. The initial club check-out ride with an instructor is typically in one of the Cessna 172s, which then allows the member to fly both C-172s as well as the C-152. An additional instructor check-out is required to fly the C-172SP, C-172XP, and the Arrow. Depending on your experience, additional instruction in the three advanced aircraft may be required to meet insurance minimums.

We've also equipped the fleet with a standard Bendix/King avionics package consisting of a KMA-24 Audio Panel, a KLN-94 (color) or KLN-99B GPS, a pair of KX-155 Nav/Coms, a KT-76A Mode C Transponder, and a 2 or 4 place intercom. Additionally, IFR-approved aircraft are equipped with a Precise Flight standby vacuum system.

Check out the links below and to the right for additional information about our aircraft & equipment.

Condor Rental Rates (As of March 1 <sup>st</sup> , 2010)		
Type	Tail #	Rate
C-152	N6521H	\$62
C-152	N89549	\$64
C-172	N06573	\$83
C-172	N62104	\$83
C-172S	N684SP	\$89
PA-28	N2806M	\$89
C-172XP	N11413V	\$96
PA-28R	N11963T	\$99


**Aircraft Docs**

- Condor Aircraft Data Sheet
- KMA-28 Brochure
- KLN-94 Brochure
- KLN-94 Pilot's Guide (7.9Mb)
- King Silver Crown Plus Pilot's Guide

**Piper Archer Docs**


- PA28-181 POH
- Archer N2806M Checkout
- AOPA Archer Safety Highlights
- King KCS-55A HSI
- S-Tec 50 Autopilot

**N684SP - Cessna 172 SP**



N684SP is a 1998 172S. It has a white fuselage with red trim, four seats, a 180 HP four-cylinder Lycoming fuel-injected engine, and VFR/IFR night equipment. It is equipped with a KMA-28 Stereo Audio Panel with intercom, an IFR approved KLN-94 color GPS, dual Nav/Coms, single-axis KAP-140 autopilot with nav coupling, and dual push-to-talk switches. It carries a maximum cabin load of about 500 pounds when filled to its 53 gallon fuel capacity.

**N2806M - Piper Archer**



N2806M is a 1978 Piper Archer. It has a white fuselage with blue & silver trim, four seats, a 180 HP four-cylinder Lycoming engine, and VFR/IFR night equipment. It is equipped with a VFR (soon to be IFR I) approved KLN-94 color GPS, dual Nav/Coms, HSI, S-Tec



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# Questions ?

