Condor Aero Club
Zelienople, PA

# Aircraft Checkout

## Piper Archer N2806M


## PA28-181

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# Topics

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

*For Information Only !*

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

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# Archer Basics

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# 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

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# 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 Vx
  - Raise Flaps
  - Clear Obstable
- 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)

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# 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

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# 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.

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# 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
- Flight Planning
  - Aircraft Type:  P28A/G

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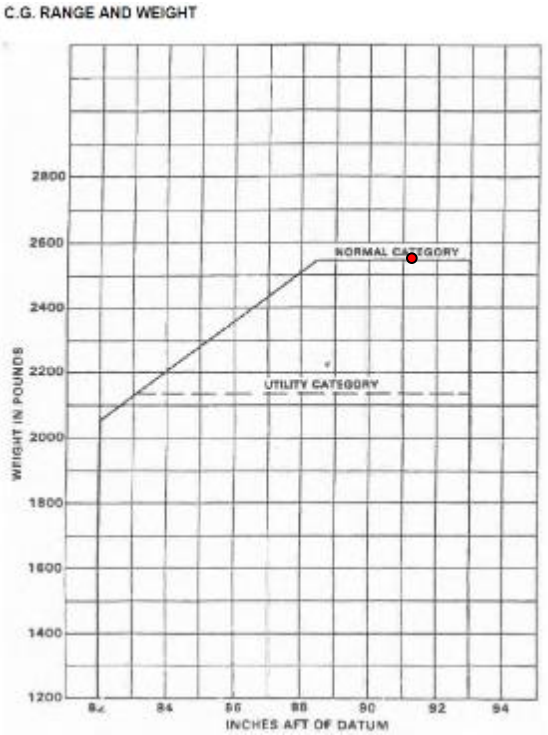
# Weight & Balance

- 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 |
| Totals: | 2555.16 | 91.33 | 233363.71 |

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



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# Archer Safety Information

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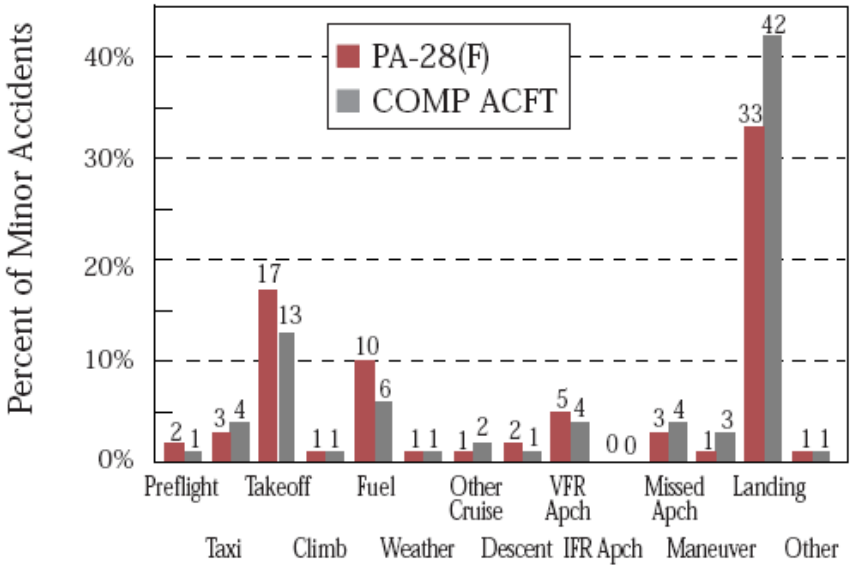
# Archer Safety Information

- 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)

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

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




| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PA-28(F) | 23 | 38 | 232 | 14 | 143 | 18 | 19 | 25 | 65 | 5 | 38 | 20 | 460 | 11 |
| COMP ACFT | 38 | 166 | 495 | 20 | 242 | 34 | 63 | 46 | 165 | 15 | 163 | 100 | 1617 | 22 |

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

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# N2806M Equipment

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# King KCS-55A Horizontal Situation Indicator

- KI-525 Indicator
  - Combines displays of Heading Indicator and VOR/LOC/Glideslope Indicator
  - Compass Card driven from KMT-112 Magnetic Slaving Transmitter located in tail cone
  - Gyro Stabilization driven from remote KG-102A Directional Gyro

- KA-51B Slaving Control & Compensator Unit
  - Slaving Meter indicates difference between displayed heading & magnetic heading
  - Slave/Free Gyro Locking Switch selects gyro mode
  - CCW/CW Adjustment will rotate compass card to eliminate counter-clockwise / clockwise error when in Free Gyro Mode.


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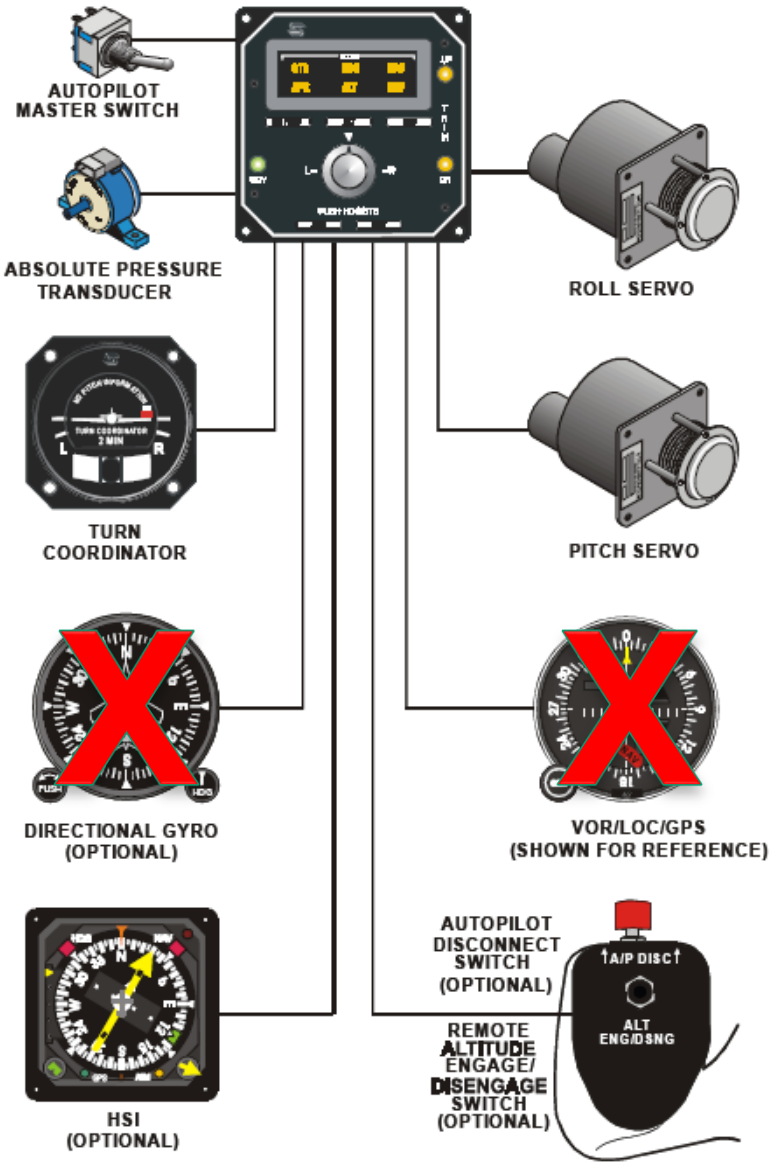
# S-TEC Model 50 2-Axis Autopilot

- 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 required trim changes

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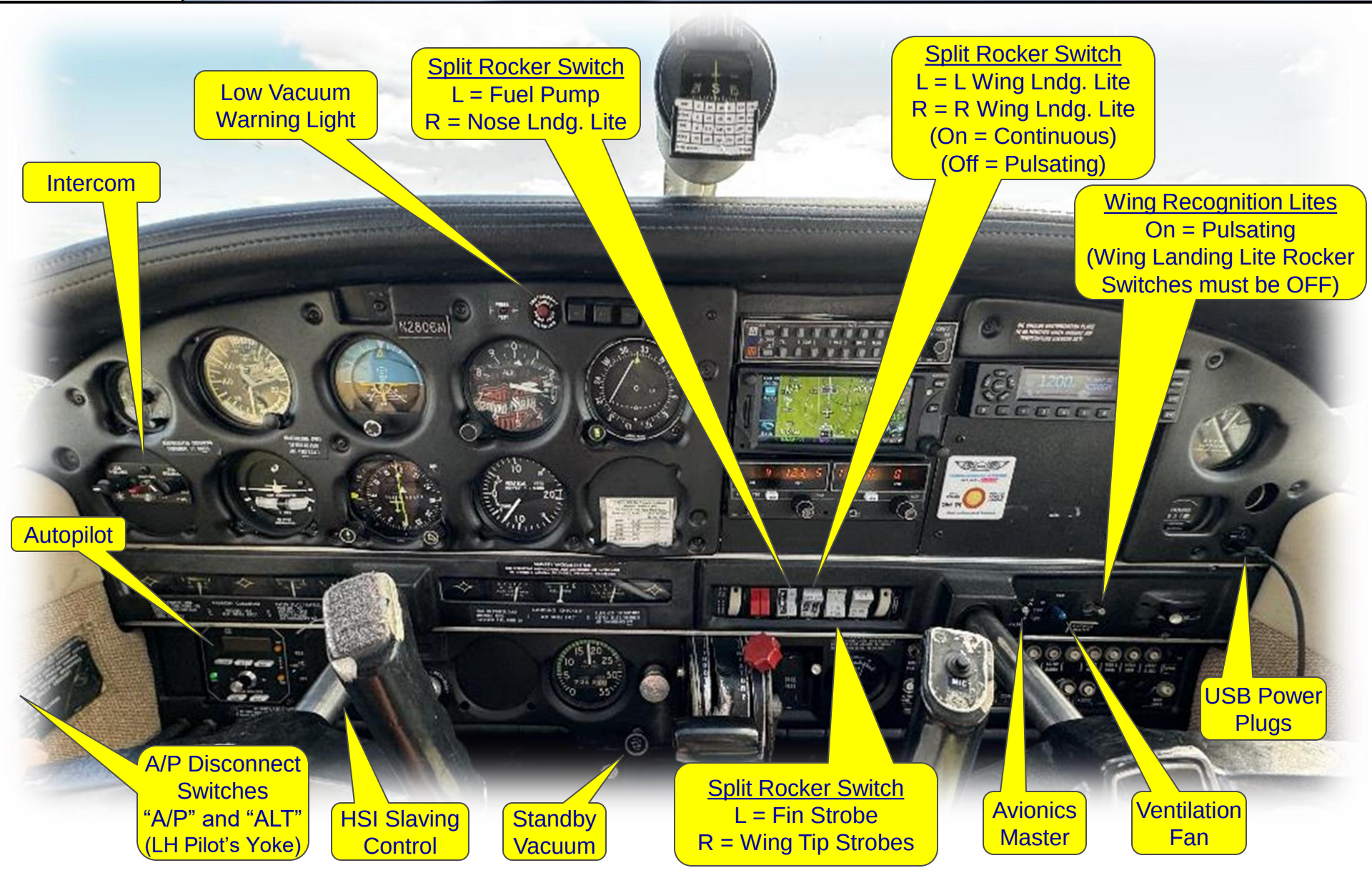
# N2806M Panel Overview



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# Condor Operating Requirements

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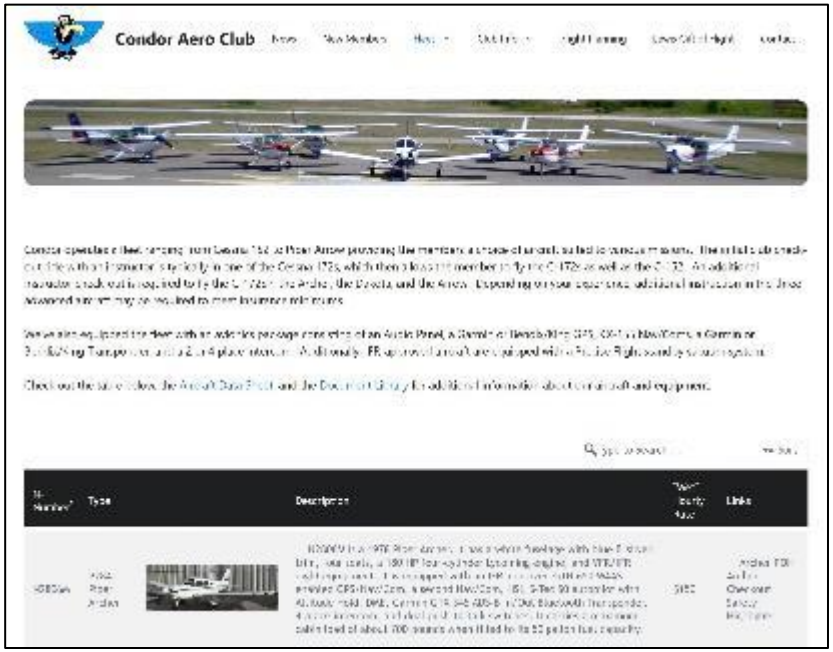
# N2806M Operating Requirements

- 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
  - Click "Fleet → Fleet Overview"
  - Check out links to the right



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# Questions ?