



Aircraft Checkout

Piper Dakota N4335M



PA28-236

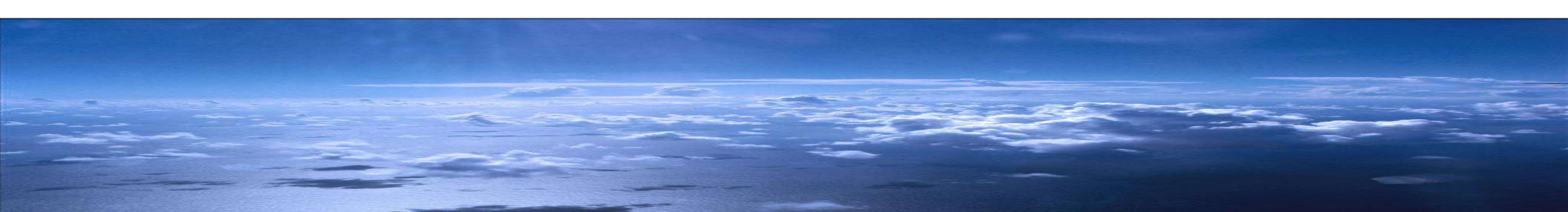


Topics

- PA28-236 Dakota Overview
- Dakota N4335M Special Equipment
 - Including 2022 Avionics Upgrade
- Condor Operating Requirements

For Information Only !

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



**Condor Aero Club
Zelienople, PA
Founded 1957**

PA28-236 Dakota Overview





Condor's PA28 Fleet

- **PA28R-200 (Arrow, Arrow II)**
 - **PA28:** Piper Aircraft, Model 28 (Cherokee)
 - **R:** Retractable Landing Gear
 - **200:** 200 HP Engine, Straight Wing, Shorter Fuselage

- **PA28-181 (Archer)**
 - **PA28:** Piper Aircraft, Model 28 (Cherokee)
 - **181:** 180 HP Engine, Tapered Wing, Stretched Fuselage

- **PA28-236 (Dakota)**
 - **PA28:** Piper Aircraft, Model 28 (Cherokee)
 - **236:** 235 HP Engine, Tapered Wing, Stretched Fuselage
 - PA28-235: 235HP w/Constant Chord Wing
(Straight Wing or "Hershey Bar")*



Dakota Engine & Propeller

■ Engine:

- Lycoming, O-540-J3A5D, (6) Cylinders
- 235 Horsepower
- Max. RPM: 2400
- TBO: 2000 Hours
- Fuel Burn: ~(12) Gallons / Hour at Cruise

■ Propeller:

- Hartzell, Two-Blade, Constant Speed
- 80” Diameter

■ Fuel Capacity:

- Simple Fuel Management: One Tank in Each Wing, Selectable with “Left” or “Right”
 - Topped Off: Total: (77) Gallons, (38.5) Gallons per Side
Usable: (72) Gallons, (36.0) Gallons per Side (432) Lbs.
 - To Tabs: Total: (57) Gallons, (28.5) Gallons per Side
Usable: (52) Gallons, (26.0) Gallons per Side (312) Lbs.

■ Oil Capacity:

- (12) Quarts, (8-9) Quarts Normal
- Add a Quart when Below (8) Quarts on Dipstick



Airframe & Weight

(As of 3/11/2022)

■ Airframe:

- Wingspan: (35) Feet, (6) Inches
- Length: (24) Feet, (9) Inches
- Height: (7) Feet, (5) Inches

■ Weights:

- Max. Ramp Weight: 3011 Lbs.
- Max. Takeoff Weight: 3000 Lbs.
(Allows for Engine Start, Taxi, & Runup Fuel Burn)
- Max. Landing Weight: 3000 Lbs.
- Useful Load (3/11/2022): 1218.38 Lbs.
- Payload w/Full Fuel: 786.38 Lbs.
- Payload w/Fuel to Tabs: 906.38 Lbs.

- Max. Baggage Weight: 200 Lbs.



Dakota vs. Archer "V" Speeds (KIAS)

	<u>Dakota</u>	<u>Archer</u>
■ V_{SO} :	56	49
■ V_{S1} :	65	55
■ V_X :	73	64
■ V_Y :	85	76
■ V_{FE} :	102	102
■ V_A :	124 (@3000 Lbs.)	113 (@ 2550 Lbs.)
■ V_{NO} :	137	125
■ V_{NE} :	173	154
■ Demo. X-Wind:	17	17
■ Best Glide:	85	76



Abbreviated Normal Procedures

■ Before Takeoff (Engine Running):

1. Avionics Master: ON. (Between Main Radio Stacks)
(Emergency Buss is Unfiltered, Located at Bottom/Right of Breakers)
2. Digital Tach: See Attached Excerpt from Pilot's Guide
(Review Tach. Pilot's Guide on Condor Website)
3. Autopilot: Momentarily Press "Test" Button and Release

■ Takeoff (Rotate):

1. Normal (Flaps 0°): 60-65 KIAS
2. Short/Soft Field (Flaps 25°): 50-60 KIAS

Abbreviated Normal Procedures (con't.)

■ Climb:

1. Best Angle: 73 KIAS
2. Best Rate: 85 KIAS
3. Cruise Climb: 100 KIAS

■ Cruise:

1. Fuel Pump Off: At Desired Altitude
2. Normal Max. Power: 75%
3. Reference Power Settings: Pilot's Sun Visor
4. Lean Mixture w/EGT Gauge: 25° - 50° "Rich Side" of Peak EGT
(Consistent with other Condor Aircraft)



■ Descent:

1. Carb. Heat: ON, Check Drop in Manifold Pressure, OFF
2. Throttle: 15" MP *(or as Required for 500-1000 FPM Descent)*
3. Airspeed: 137 KTS
4. Mixture: Rich



Abbreviated Normal Procedures (con't.)

■ Normal Traffic Pattern:

With Each Leg, Perform “**GUMPF**” Check (Gas, Undercarriage, Mixture, Power/Prop, Flaps)

1. Downwind:

<u>G</u> as:	Fuel Pump ON, and on Fullest Tank
<u>U</u> ndercarriage:	Locked Down (“Welded Down” in Dakota)
<u>M</u> ixture:	Full Rich
<u>P</u> ower:	15” Manifold Power
<u>F</u> laps:	10°
Airspeed:	85 KIAS

2. Key Position:

Power:	Reduce to 11” MP for 500 FPM Descent
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3. Base:

<u>F</u> laps:	25°
<u>P</u> rop:	SLOWLY Advance to Full Forward (Do Not Overspeed Prop)
Airspeed:	80 KIAS

(Visually Verify no Straight-In Approaches)

4. Final:

<u>P</u> rop:	Verify Full Forward for Go-Around
<u>F</u> laps:	40°
Airspeed:	75 KIAS

5. Over the Fence:

Airspeed:	70 KIAS
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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

■ Use of Flaps:

- Decreases Obstacle Clearance distance by 200 ft.
- 1800 to 1600 Feet (assumes standard conditions)

■ Carburetor Icing:

- Expect Carb. Icing when Relative Humidity is High, and Temperatures are between 20°F and 70°F
- PA28s Not Known for Carburetor Icing, Use Carb Heat as Directed (POH)

■ Airframe Icing:

- PA28s are NOT approved for **FIKI** Operations (Flight Into Known Icing)



Additional Information

■ Cabin Door:

- Double Latching – DON'T SLAM !!
- Pull Handle Up, Fully Close Door, Latch Bottom Handle, Then Latch Top
- If Door Opens in Flight:
 - ***FLY THE AIRPLANE !***
 - Slow to 87 KIAS
 - Open the Storm Window
 - Secure Door

■ Stratus ADS-B In/Out Transponder:

- Will “Pair” with Phone / Tablet via WiFi
- Enables TIS-B (Traffic, NOTAMs, TFRs, etc.) and FIS-B (Weather) to be Displayed on ForeFlight. (Other Aviation Apps May Work as Well)
- ***NOT TO BE USED FOR TACTICAL WEATHER AVOIDANCE !***

■ Flight Planning:

- Aircraft Type: P28B/S (*P28B = Piper Dakota, /S = Standard Nav. Equipment*)
(*Subject to Change with Avionics Upgrade*)



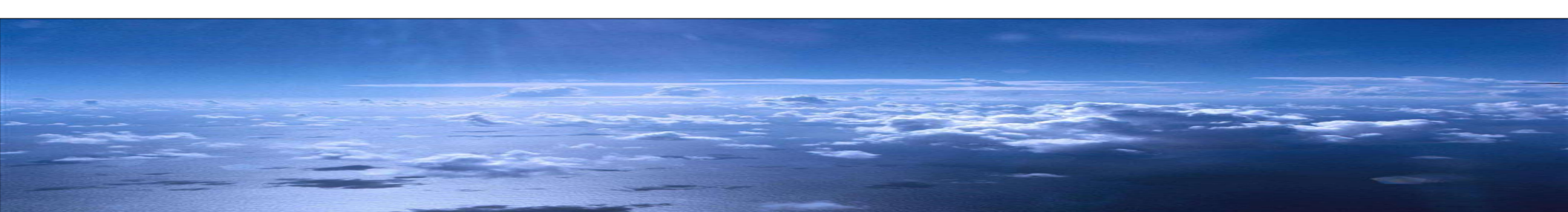
Weight & Balance Example

(As of 3/22/2022)

- Max. Gross/Ramp Weight: 3011 Lbs.
- Max. Takeoff Weight: 3000 Lbs.
- Useful Load: 1218.38 Lbs.
- Payload Full Fuel: 786.38 Lbs.
- Aft C.G Limit: 92 Inches
- Available Baggage: 117.38 Lbs.

(with Full Fuel & (4) "FAA People")

	Weight (Pounds)	(Inches)	Moment (Inch- Pounds)
Basic Empty Weight	1,781.62	84.61	150,742.87
Pilot and Front Passenger:	340.00	80.50	27,370.00
Passengers (Rear Seats):	340.00	118.10	40,154.00
Fuel (72 Gallons Max.):	432.00	95.00	41,040.00
Baggage (200 Lbs. Max.):	117.00	142.80	16,707.60
Ramp Weight (3011 Lbs. Max.):	3,010.62	91.68	276,014.47
Fuel Allowance: (Engine Start, Taxi, Run-Up)	-11.00	95.00	-1,045.00
Takeoff Weight (3000 Lbs. Max.):	2,999.62	91.67	274,969.47



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Dakota N4335M Special Equipment



Garmin GNS 430W

- 10-Watt Comm
- ILS / VOR w/Glideslope, WAAS Nav, and LPV Approaches
(Coupled with G5 Electronic HSI)
- Traffic, Weather, and Terrain displayed on moving map
(Traffic & Wx with GTX 345)



Garmin G5 Electronic PFD

- Uses a solid-state AHRS (Attitude & Heading Reference System) to display:
 - Horizon-based Pitch & Roll indications
 - Vertical Speed
 - Airspeed & Ground Speed
 - True Airspeed (TAS)
 - Track
 - Selected and Actual Altitude (with Visual Alerts)
 - Upon Arriving at Preselected Altitude
 - Altitude Deviation of +/- 200 ft.
 - Outside Air Temperature (OAT)
- (4) Hour Backup Battery



Garmin G5 Electronic HSI

- Displays:
 - Traditional HSI Functionality
 - (2) Bearing Pointers
 - Desired Track (DTK)
 - Heading
 - Distance to Station
 - Ground Speed and Track
 - Wind Speed and Direction
- Enables GPS Steering to Autopilot
- Automatic Failover to Attitude Mode should G5 PFD fail.
- (4) Hour Backup Battery



Additional Garmin G5 Information

- Check out the “Meet the Fleet” page of the Condor website for Garmin Links:

- G5 Electronic Flight Instrument Pilot’s Guide

- [Garmin’s G5 Overview \(YouTube\)](#)

- [Flying Approaches with the G5 / 430W / and King Autopilot](#)

(This video demonstrates loading both VLOC and GPS approaches, including GPS Steering)



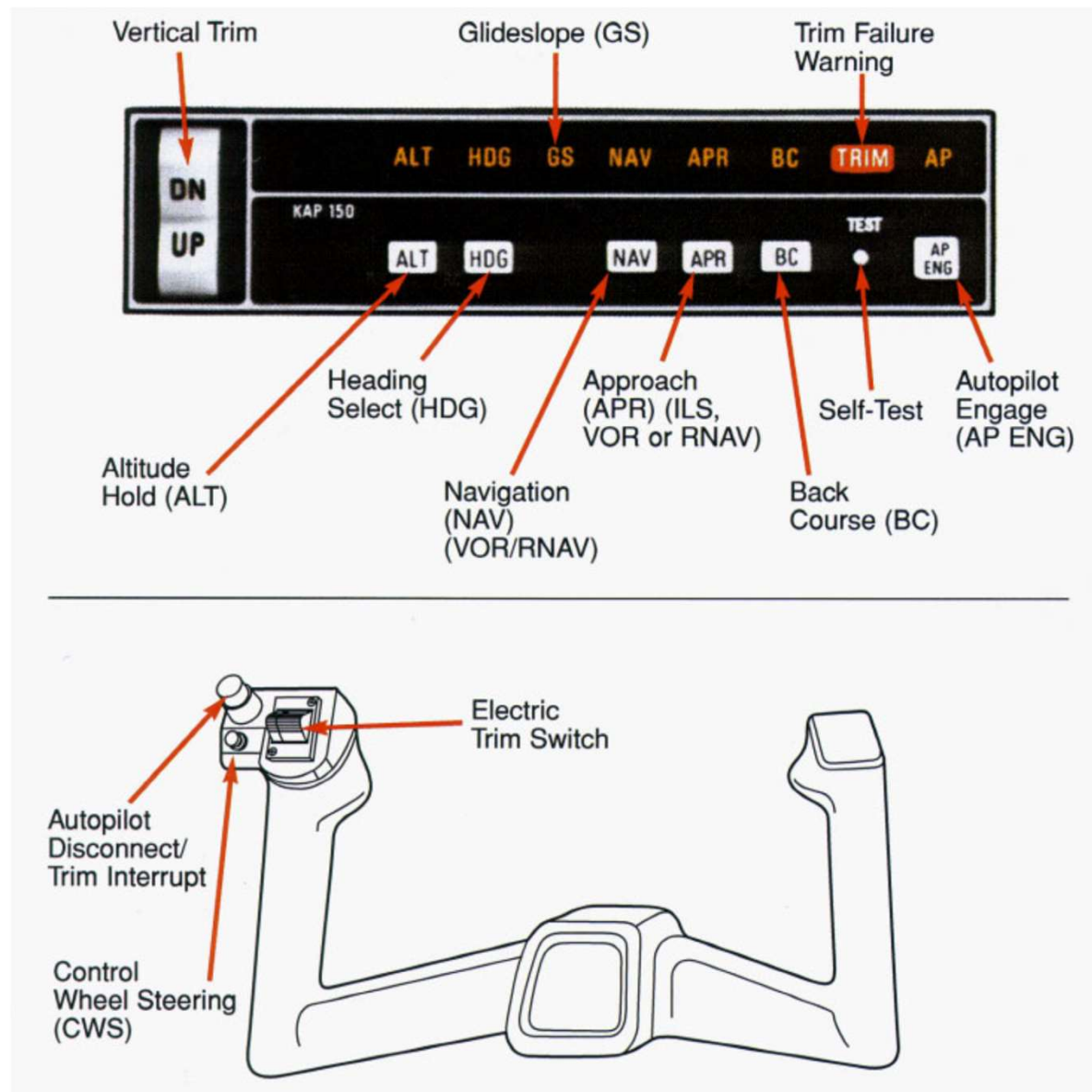


Garmin GMA 350c Audio Panel

- Four-Channel Stereo Audio Panel / Intercom
- 3-D Audio
 - Enables hearing different audio sources from different directions
 - COM1 (ATC) = Left
 - COM2 (ATIS) = Right
- (3) Music Inputs
 - Co-Pilot's Side, Rear Seats
 - On Panel (Music / Phone)
 - Music Inputs can easily be distributed to Pilot, Co-Pilot, and/or Passengers
- Flight Recorder
- Voice Commands



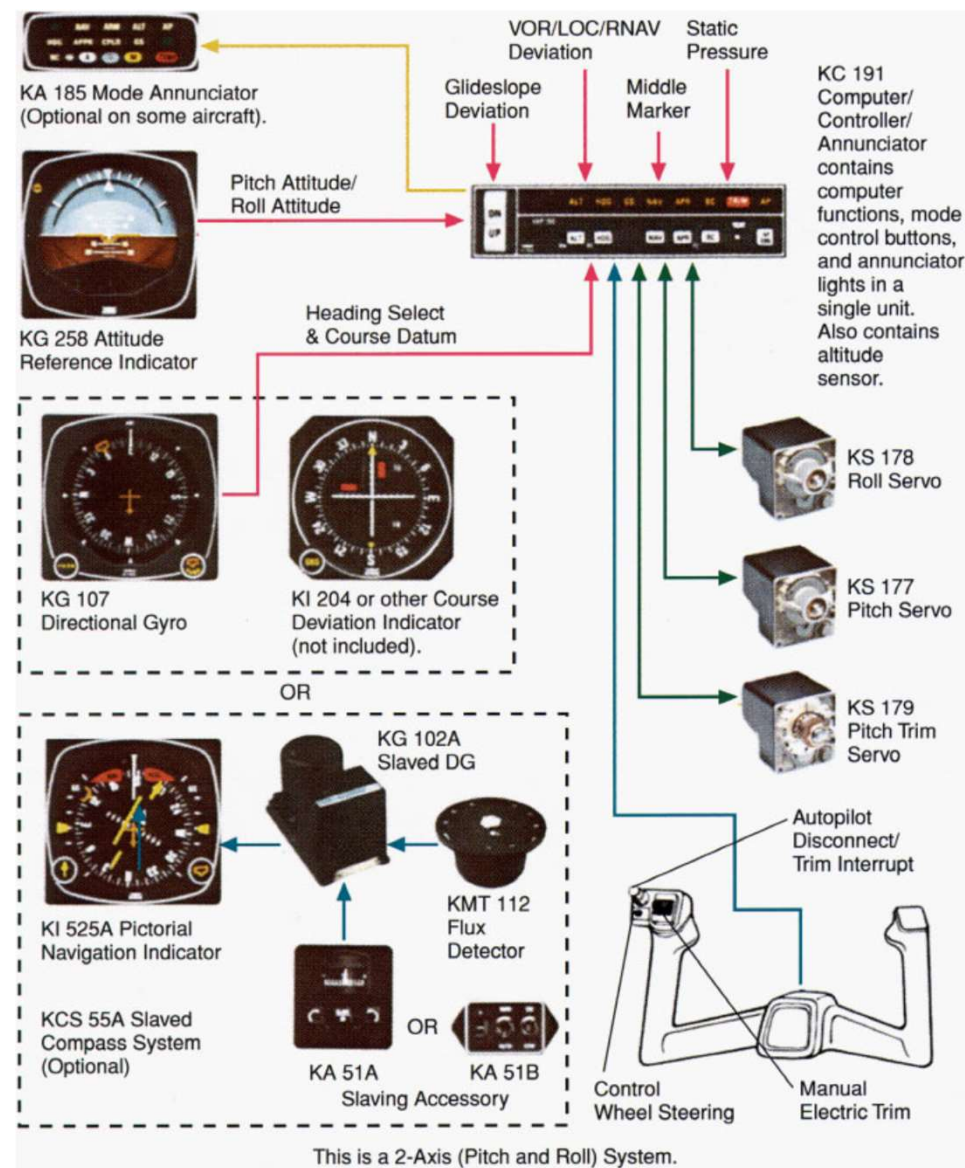
Bendix/King KAP-150 Autopilot





Bendix/King KAP-150 Autopilot System

- **Press “AP ENG” to Engage**
- **Heading can be Driven From:**
 - Heading Bug on HSI (HDG Mode)
 - Heading Bug commands standard-rate turn
 - VOR-1 or VOR-2 (NAV Mode)
 - ILS / Localizer (APR Mode)
 - Localizer Back Course (BC Mode)
- **Altitude Hold:**
 - Autopilot will Hold Aircraft Altitude when the ALT Button is Pressed
 - Aircraft Should be in Level Flight and Trimmed when ALT Mode is Engaged.
 - No Glideslope Coupling
- **Control Wheel Steering (CWS):**
 - Allows Pilot to Maneuver Aircraft in Pitch and Roll Without Disengaging Autopilot
 - When CWS Switch is Released, Autopilot Resumed Control of the Aircraft
- **Yoke-Mounted Disconnect Switch:**
 - Autopilot Disconnect and Altitude Disconnect



3M WX-10A Stormscope

- **Power / Mode Switch:**
 - Select “ON” to Operate Stormscope
 - Select “FWD” to Concentrate Unit’s Memory on the Forward 180°
- **Test Button:**
 - Press “TST” to Verify Operation of Unit
 - Either During Pre-Flight, or In-Flight
- **Clear Button:**
 - Press “CLR” to Manually Clear Lightning Strikes from the Display
- **Range Selection Switch:**
 - Turn Switch to Select Desired Range (25nm, 50nm, 100nm, or 200nm)
 - Selected Range Corresponds to Outer Circle on the Display (Inner Circle: One-Half of Selected Range)
- **Brightness Control:**
 - Turn to Select Desired Brightness of Lightning Strikes on the Display



Horizon P-1000 Digital Tachometer

■ Left Button:

- Example: Engine Hours = 1500.83
- Press and Hold for (1) Second to Display Integer Portion of Engine Hours, (1500)
- Release to Display Fractional Portion of Engine Hours for (5) Seconds, (.83)
- After (5) Seconds, the Display Reverts back to RPM

■ RPM Arc Indicators:

- (3) LED Indicators at Top Right of Tach.
- GREEN = Normal Operating Range
- YELLOW = Caution Range
- RED = Red Line

■ Magneto Drop Display Mode:

- Loss of Either Mag. Causes Corresponding “Status” LED Indicator to Turn RED.
- RPM Drop is Displayed as a Negative Number
- A Positive Number Indicates an Increase in RPM





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Zelienople, PA

Upgraded N4335M Panel

(March, 2022)





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Condor Aero Club, Inc. Dakota Member Operating Requirements





Dakota N4335M

Member Operating Requirements

- Private Pilot or Better with (100) Hours as PIC
- Previous Condor Checkout in Piper Archer, or Equivalent
- Condor Club-Approved CFI Checkout Appropriate to Flight Conditions Desired (VFR/IFR):
 - If \geq (10) Hours in High-Performance and/or Complex Aircraft:
 - ✓ (1) Hour Ground Review of Aircraft and Systems
 - ✓ (2) Hours Dual Flight Instruction
 - ✓ (3) Takeoffs & Landings
 - If $<$ 10 Hours in High-Performance and/or Complex Aircraft:
 - ✓ (1) Hour Ground Review of Aircraft and Systems
 - ✓ (3) Hours Dual Flight Instruction
 - ✓ (10) Takeoffs & Landings
- High-Performance Endorsement will be Added to Logbook
- NOTES:
 - These are CLUB MINIMUMS, and Additional Instruction May be Required.



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Questions ?

