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# CGAPH Safety
# ZAON PCAS XRX
# Setup and Cockpit Procedures

March, 2012

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# INTRODUCTION


# Why do we need PCAS?

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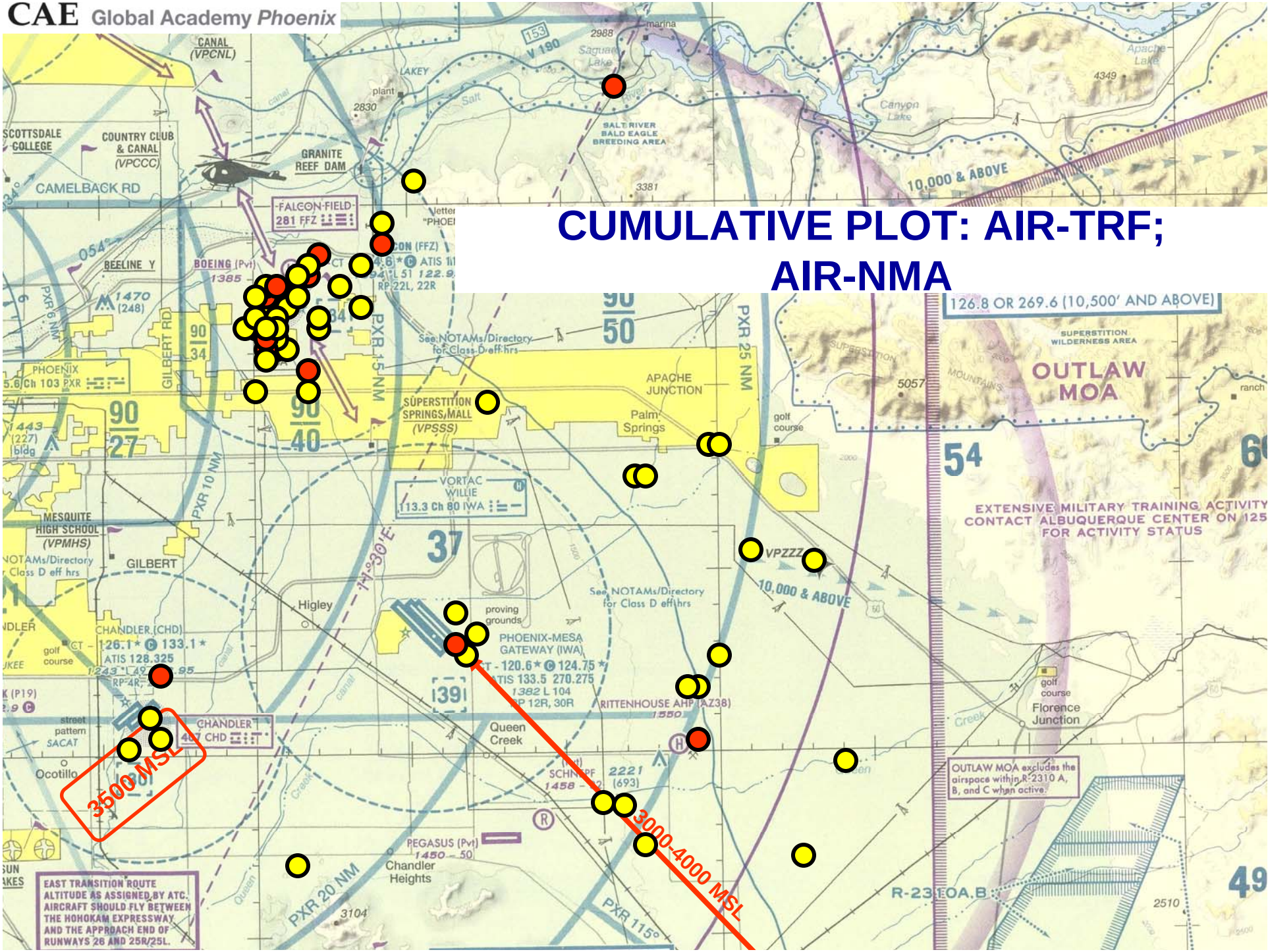
# CUMULATIVE PLOT: AIR-TRF; AIR-NMA



# General Description

- PCAS  is a portable Collision  Avoidance System
- PCAS has the ability listen to  other aircraft transponders.
- PCAS then will provide a visual display of the top three threat aircraft within a specified distance and altitude.

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# Range

- PCAS has a maximum threat detection range of up to 6nm.
- User can select the range in which he/she receives advisories.
- Range can be selected between 6nm, 3nm or 1nm.

# Altitude

- Vertical range can also be pre selected by the user for advisories.

- The vertical range selections available are +/- 2500 ft  +/- 1500 ft  and +/- 500 ft

# FLEET EQUIPMENT

•PA-28's have Power Receptacles and removable installation of Zaon XRX PCAS

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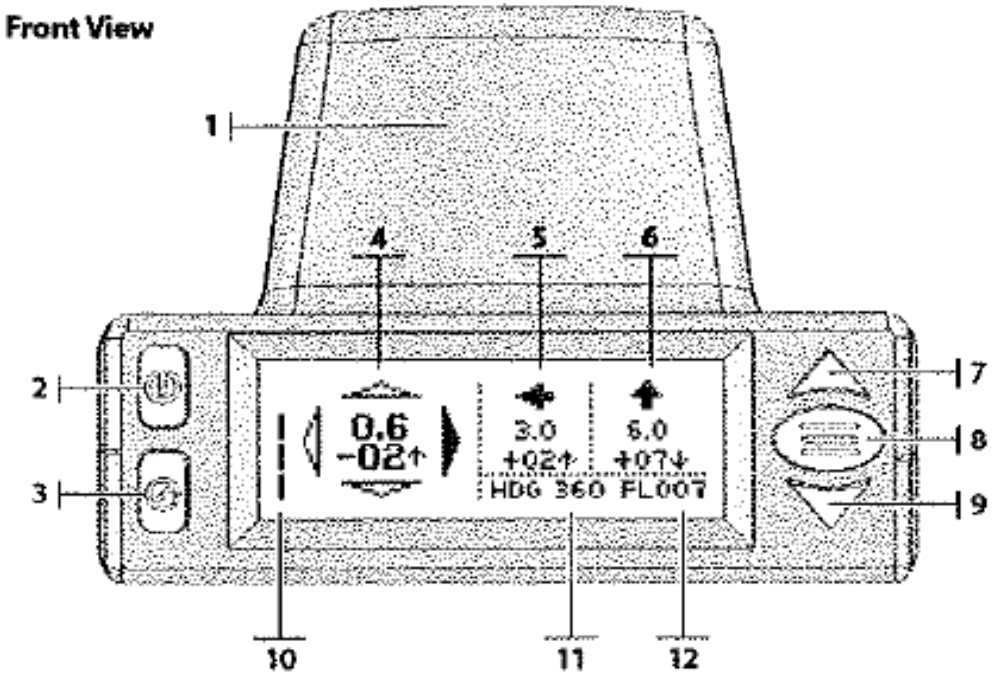
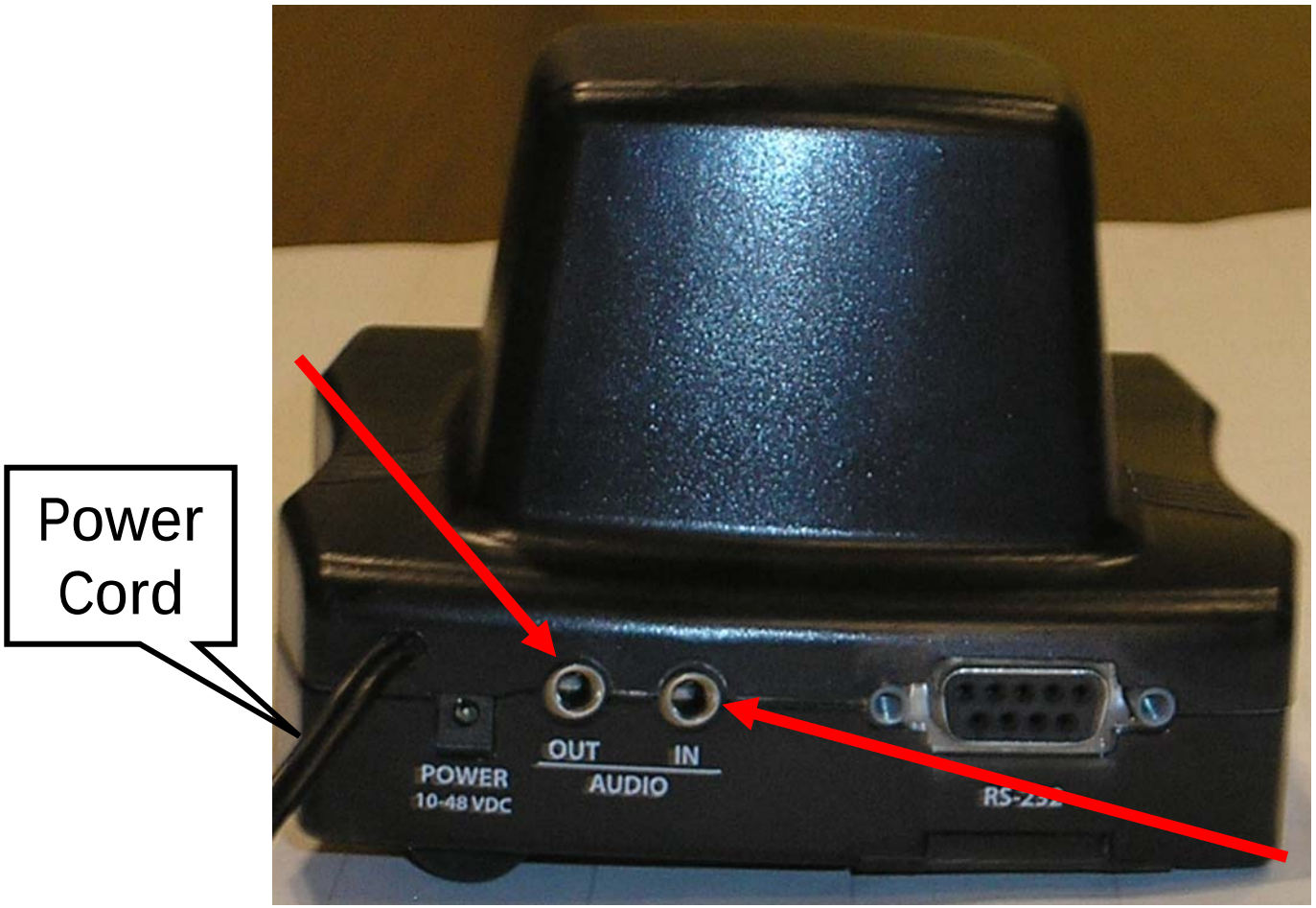
# ILLUSTRATION- UNIT CONTROLS AND DISPLAY




- **1 DIRECTIONAL ANTENNA**
- **2 POWER BUTTON**
- **3 MUTE CONTROL**
- **4 PRIMARY TARGET DISPLAY**
- **5 SECONDARY TARGET DISPLAY**
- **6 TERTIARY TARGET DISPLAY**
- **7 UP BUTTON**
- **8 MENU BUTTON**
- **9 DOWN BUTTON**
- **10 VOLUME INDICATOR**
- **11 AIRCRAFT HEADING**
- **12 AIRCRAFT ALTITUDE**

# PHOTO- AFT POWER AND AUDIO PLUG-INS



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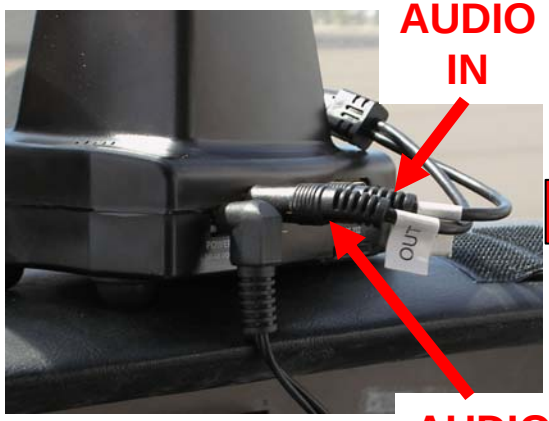
# PCAS INSTALLATION- BEFORE START




ARCHER: 30-45 DEG
ARROW: FACE AFT

**CAUTION- INSERT POWER PLUG WITH BATT SW <u>OFF!</u>**

**ENSURE PLUG IS FULLY INSERTED!**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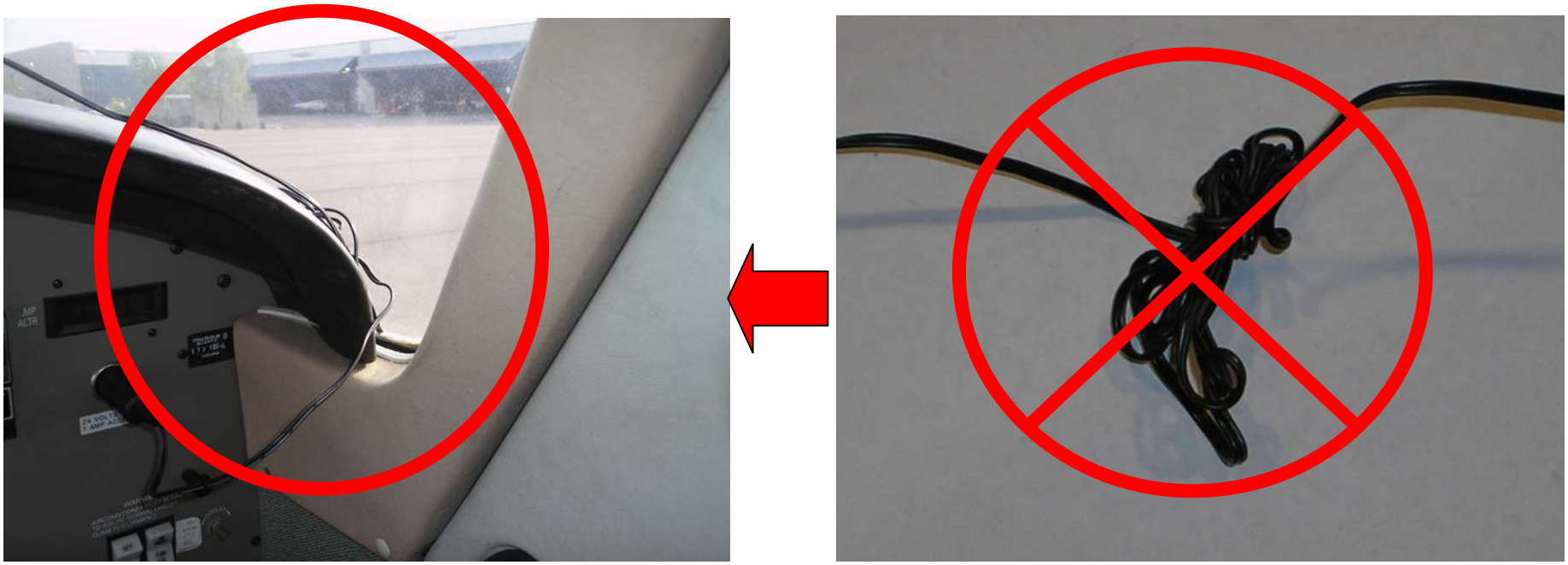
# PCAS INSTALLATION- BEFORE START

**WARNING- DO NOT "KNOT UP" THE POWER CORD. THIS CAN CAUSE AN ELECTRICAL SHORT AND POSSIBLE ELECTRICAL FIRE! COIL THE POWER CORD AND STOW IT BEHIND THE GLARE SHIELD.**



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# HEADSET AUDIO CONNECTION


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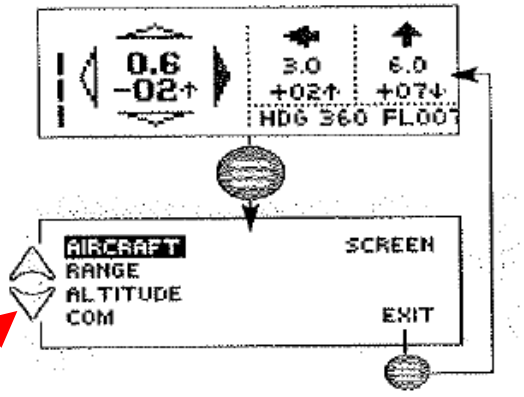
# PCAS INITIALIZATION- AFTER ENGINE START & RADIO MASTER **ON**


**PWR BUTTON**



**MENU BUTTON**


**UP & DOWN BUTTON**

**MENU BUTTON**

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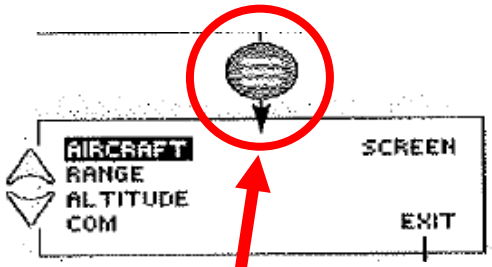
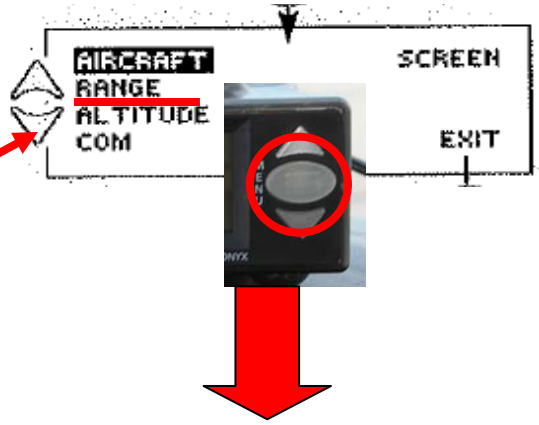
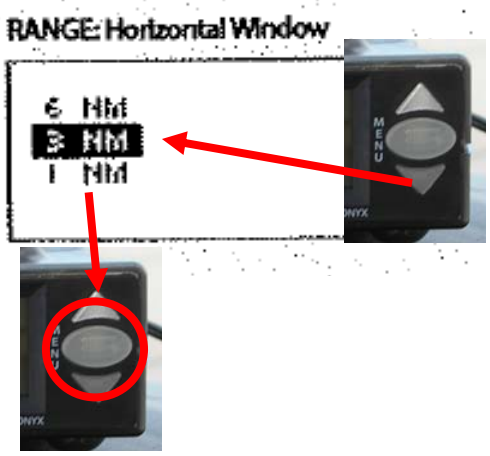
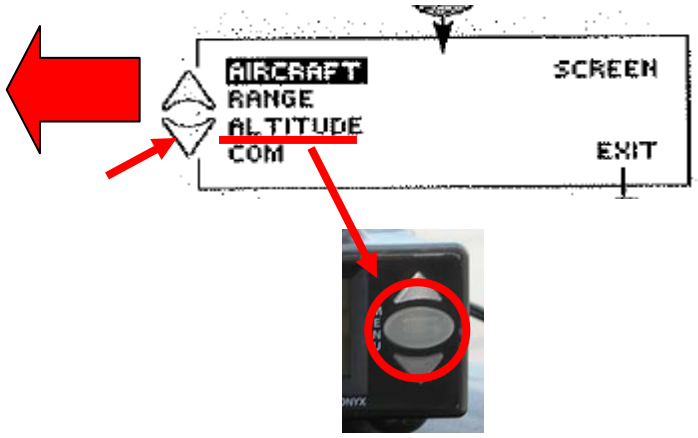
# PCAS INITIALIZATION-COMPANY SETTINGS




**MENU BUTTON**


SEE NEXT SLIDE

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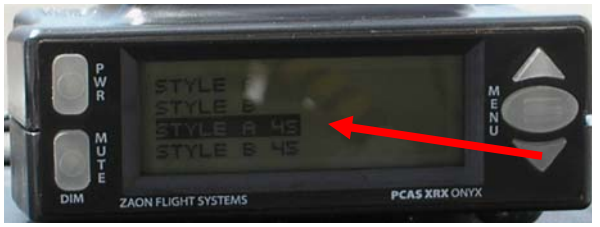
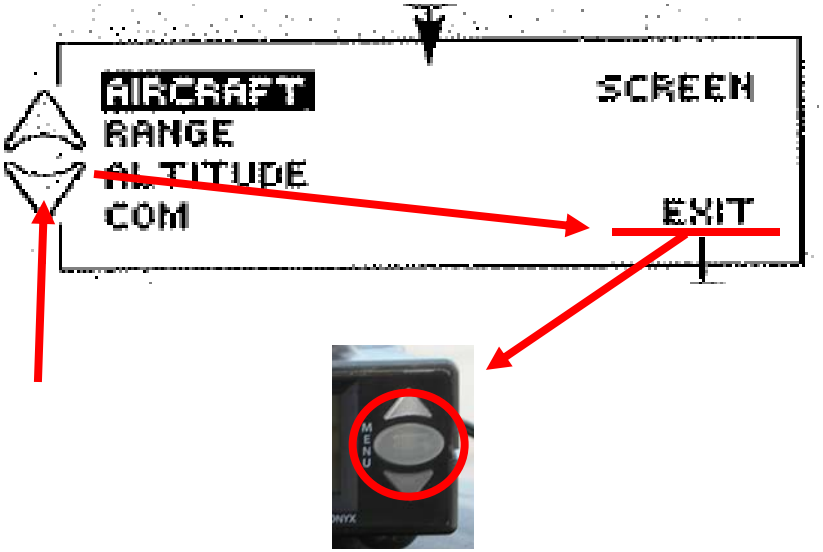
# PCAS INITIALIZATION-COMPANY SETTINGS



DO NOT SELECT
COM MODE!




**ARROW: STYLE A (DEFAULT)**
**ARCHER: STYLE A 45**



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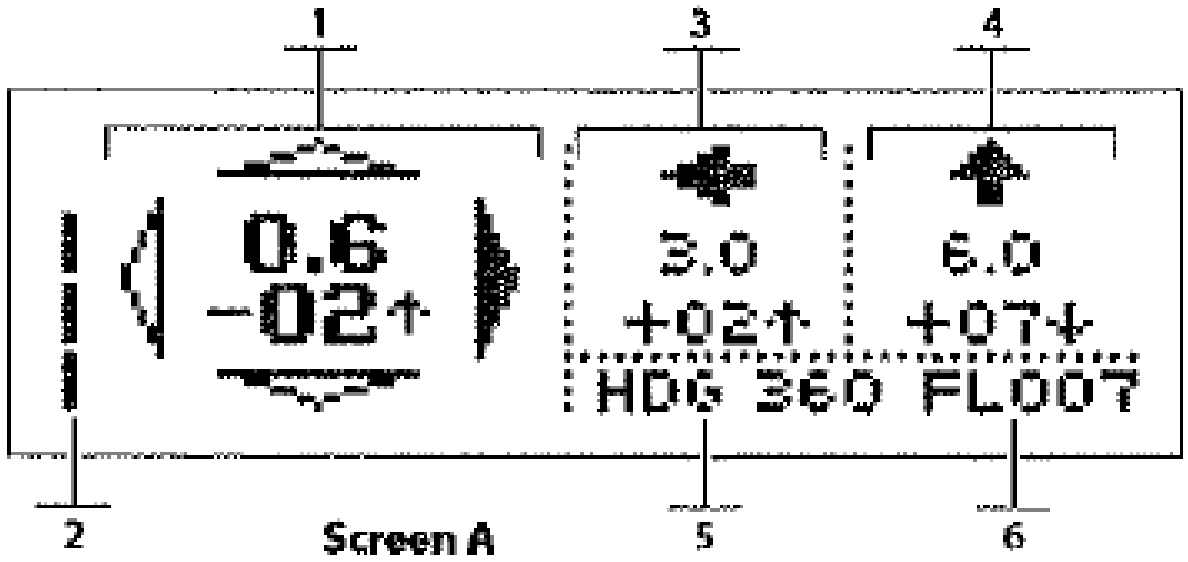
# SCREEN A TRAFFIC DISPLAY




- **1 PRIMARY TARGET DISPLAY**
- **2 VOLUME INDICATOR**
- **3 SECONDARY TARGET DISPLAY**
- **4 TERTIARY TARGET DISPLAY**
- **5 AIRCRAFT (UNIT) HEADING**
- **6 AIRCRAFT (UNIT) PRESS ALT**

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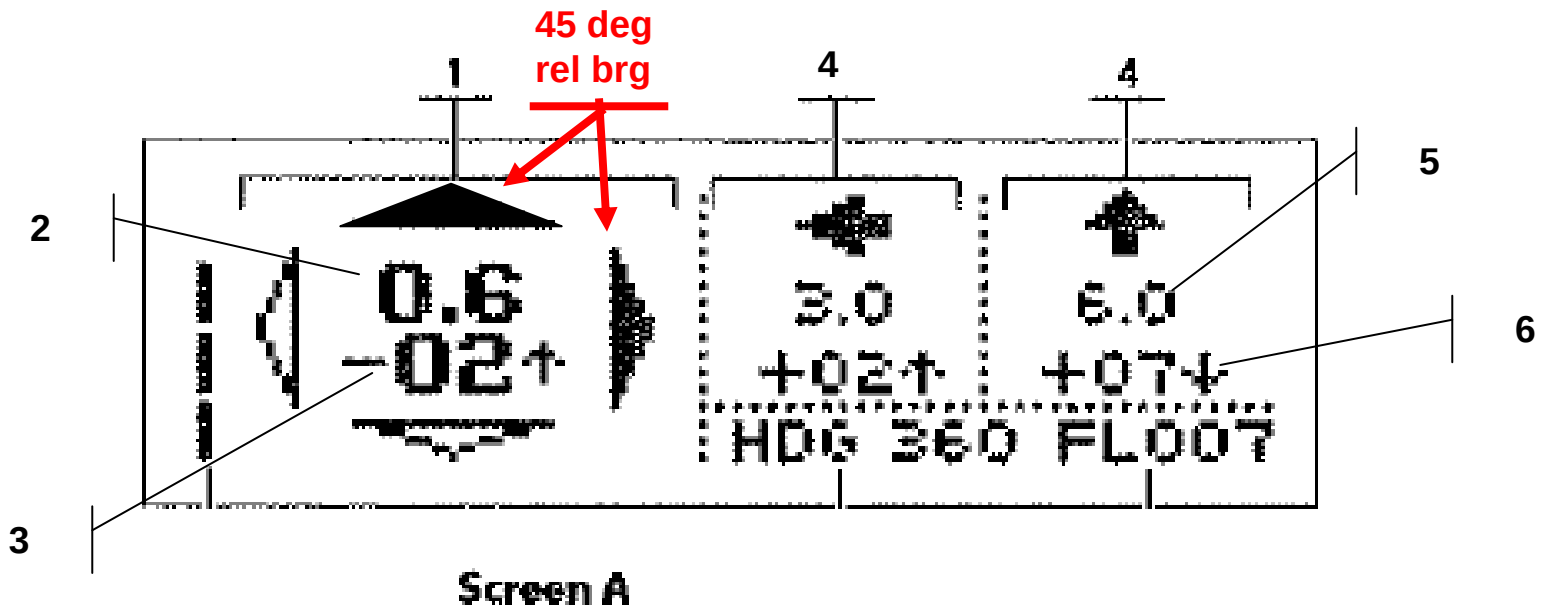
# SCREEN A SYMBOLOGY




Screen A

- 1 PRIMARY TARGET RELATIVE BRG
- 2 PRIMARY TARGET DISTANCE (NM)
- 3 PRIMARY TARGET REL ALTITUDE & VERTICAL TREND
- 4 SECONDARY/TERTIARY TARGET REL BRG
- 5 SECONDARY/TERTIARY TARGET DISTANCE (NM)
- 6 SECONDARY/TERTIARY TARGET REL ALT & VERTICAL TREND

# THREAT PRIORITIZATION

The greatest threat is determined by looking at aircraft within the detection window settings and comparing primarily the vertical separation (+/- relative altitude), and secondarily the range to the aircraft currently being displayed

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# Audio Alerts

| Level | Audio Alert | Range Setting | Threat Distance | Altitude |
|---|---|---|---|---|
| Advisory | "Traffic advisory. Monitor closure rate. " (Unit beeps twice) | | | |
| | | 6 nm | 2 nm | +/- 1000 ft |
| | | 3 nm | 1.0 nm | +/- 1000 ft |
| | | 1 nm | .6 nm | +/- 500 ft |
| Alert | "Traffic alert. Obtain visual contact." ( Unit beeps three times ) | | | |
| | | 6 nm | .7 nm | +/- 700 ft |
| | | 3 nm | .6 nm | +/- 600 ft |
| | | 1 nm | .3nm | +/- 500 ft |

- **110 KTS GS: @ 1 NM - CLOSURE RATE= 367 FPS; TIME TO ACQUIRE = 16 SEC**
- **110 KTS GS: @ .6 NM – CLOSURE RATE= 367 FPS; TIME TO ACQUIRE = 9.8 SEC**

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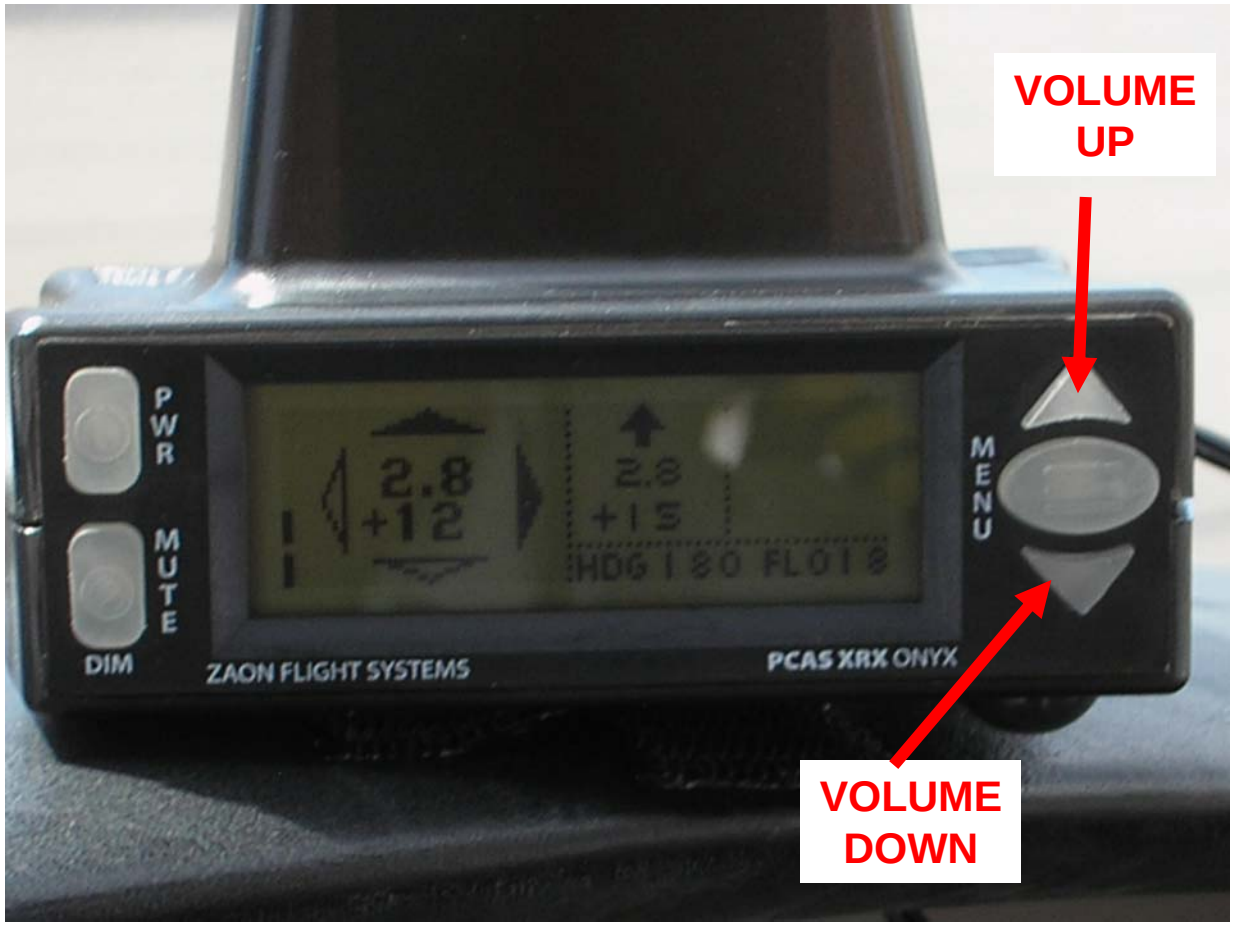
# Audio Alerts



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# Back Light Adjustment

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# LIMITATIONS

- **PCAS DOES NOT REPLACE SEE AND AVOID!**

- PCAS has the ability listen to other aircraft transponders- it does not interrogate.

- Aircraft not equiped with transponders will not be “seen” by PCAS.

- TURN ON UNIT ONLY AFTER STARTING ENGINE!

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# LIMITATIONS

- PCAS should indicate unit heading within +/- 10 degrees of aircraft heading- check Screen Mode.

- If PCAS indicates > +/- 10 degrees from A/C heading or >+/- 300 feet from A/C altitude- either re-calibrate unit or notify CGAPH Safety or Dispatch. DO NOT SQUAWK AIRCRAFT!

- PCAS IS NOT A “NO-GO” ITEM! However Annex 5 of the CGA Operations Manuals requires all PA28 aircraft to have PCAS if a unit is available.

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# DISPATCH PROCEDURE FOR PA-28's

- At Ops Check-in: request keys and PCAS unit: CAE ID badge will be deposited with Dispatch

- Carry PCAS in case to and from aircraft. Unit must be returned in case to Ops for Return Check in. DO NOT LEAVE PCAS IN AIRCRAFT!

- When PCAS is returned to Ops, CAE ID badge will be returned to crew member.

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# SATC Safety
# ZAON PCAS XRX
# Cockpit Calibration
# Procedures

January, 2011

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# INTRODUCTION


# Calibration Procedures for PCAS

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# Description

- Solo students must have received instruction in calibration procedures from an authorized instructor.
- Can be accomplished during runup.
- Will help avoid future PCAS "squawks".

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# PREP FOR CALIBRATION

- After PCAS has been turned on and traffic display page selected-

  > in runup area, align aircraft with Magnetic North (360 deg)

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# ACCESS ADMIN MODE

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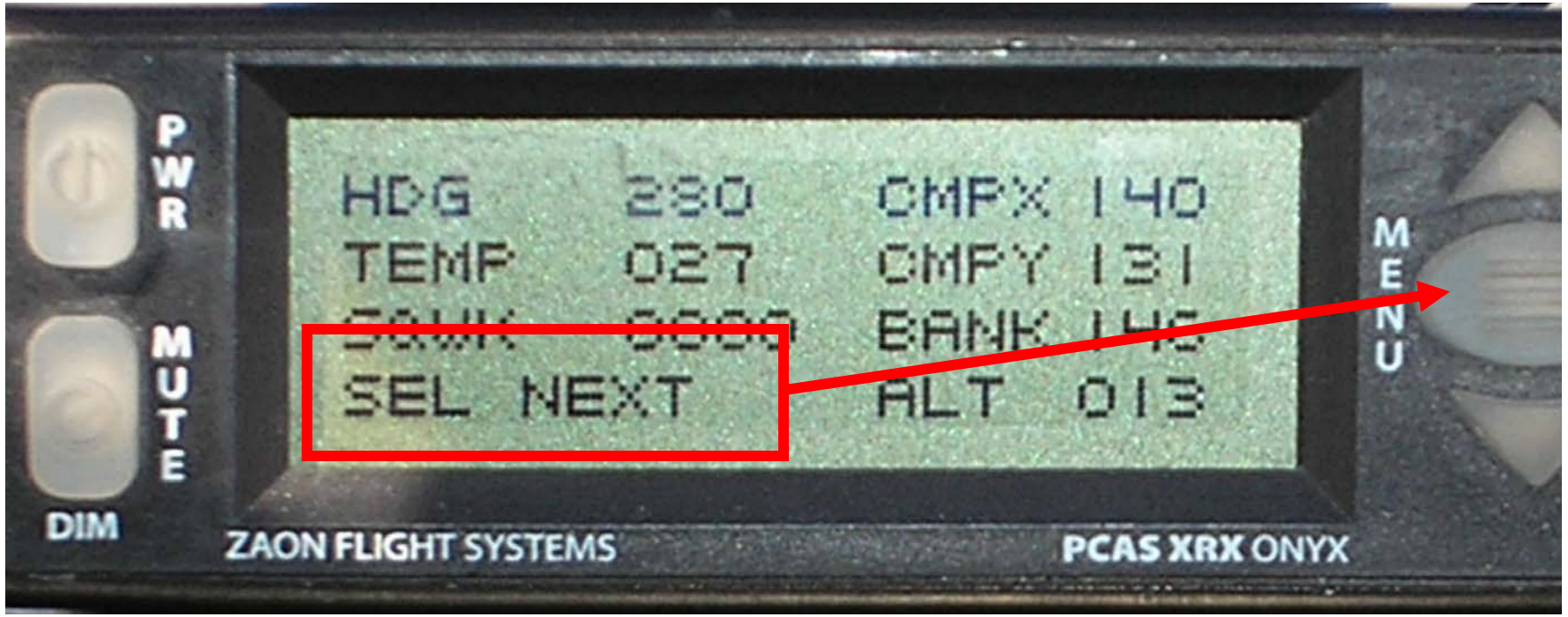
# Heading Calibration

**1. PRESS TO ALIGN**


**2. WAIT FOR HEADING TO CALIBRATE-**
**- UNIT WILL AUTOMATICALLY**
**ADVANCE TO NEXT PAGE**

# Advance to ALT Page



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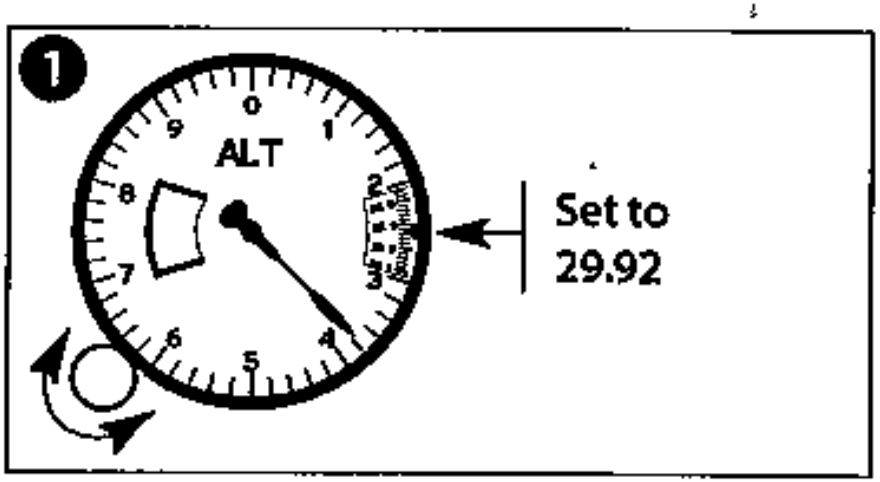
# ALT Calibration




**PCAS USES PRESSURE ALTITUDE ONLY-**

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# ALT Calibration


**USE UP OR DOWN BUTTONS TO SET CURRENT P.A. (WITHIN 100 FT RESOLUTION) THEN PRESS MENU BUTTON**

**AT PROMPT INDICATED, SELECT MENU AND PCAS WILL SAVE CALIBRATION SETTINGS AND RETURN TO "A" TRAFFIC DISPLAY**