

NAVAL AIR TRAINING COMMAND

NAS CORPUS CHRISTI, TEXAS

CNATRA P-490 (NEW 07-23)



STUDENT GUIDE



GENESYS AVIONICS TRAINER SELF-STUDY 1

TH-73A

2023



DEPARTMENT OF THE NAVY

CHIEF OF NAVAL AIR TRAINING
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CNATRA P-490
N714
21 Jul 23

CNATRA P-490 (NEW 07-23)

Subj: STUDENT GUIDE FOR GENESYS AVIONICS TRAINER SELF-STUDY 1

1. CNATRA P-490 (New 07-23) PAT, “Student Guide for Avionics Trainer Self-Study 1” is issued for information, standardization of instruction, and guidance to all flight instructors and student military aviators in the Naval Air Training Command.
2. This publication will be used as an explanatory aid to the flight training curriculum. It will be the authority on the execution of all flight procedures and maneuvers herein contained.
3. CNATRA P-490 (New 07-23) PAT is a new publication.
4. Recommendations for changes shall be submitted via the electronic Training Change Request (TCR) form located on the Chief of Naval Air Training (CNATRA) Web site.

A handwritten signature in black ink, appearing to read "T. P. Atherton", is positioned above the typed name.

T. P. ATHERTON
By direction

Releasability and distribution:

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STUDENT GUIDE

FOR

ADVANCED HELICOPTER TRAINING SYSTEM

GENESYS PRIMARY FLIGHT DISPLAY (PFD) &

MULTI FUNCTION DISPLAY (MFD)

AVIONICS TRAINER

SELF-STUDY 1

TH-73A



TERMINAL LEARNING OBJECTIVE

Terminal Learning Objective (TLO):

Upon completion of this self-study, the SNA will be able to set up the Genesys PFD/MFD Display Units with the necessary settings for flight.

HOW TO USE THIS STUDENT GUIDE

1. This self-study student guide provides the steps required to use the Genesys displays for basic flight setup and functionality. You will have the opportunity to use this guide to setup the PFD/MFD displays, radios, and transponder during the Communication/Navigation (COMM/NAV) check of the Systems Checklist.
2. Read and become familiar with the objectives of each chapter before attempting to setup the Genesys PFD/MFD displays, radios, and transponder. The objectives state the purpose of the chapter in terms of **WHAT YOU WILL BE ABLE TO DO** as you complete the chapter.
3. As you read through the steps in each chapter, develop a list of questions about any steps that are unclear to you. This practice will allow you to ask questions at a later time with the instructor in a one-on-one setting.

LIST OF EFFECTIVE PAGES

Dates of issue for original and changed pages are:

Original...0...21 Jul 23 (this will be the date issued)

TOTAL NUMBER OF PAGES IN THIS PUBLICATION IS 72 CONSISTING OF THE FOLLOWING:

PAGE NO.	CHANGE NO.	PAGE NO.	CHANGE NO.
COVER	0		
LETTER	0		
iii – x	0		
1-1 – 1-20	0		
2-1 – 2-6	0		
3-1 – 3-14	0		
4-1 – 4-15	0		
4-16 (blank)	0		
5-1 – 5-4	0		
A-1	0		
A-2 (blank)	0		

INTERIM CHANGE SUMMARY

The following Changes have been previously incorporated in this manual:

CHANGE NUMBER	REMARKS/PURPOSE

The following interim Changes have been incorporated in this Change/Revision:

INTERIM CHANGE NUMBER	REMARKS/PURPOSE	ENTERED BY	DATE

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CHAPTER ONE

PRIMARY FLIGHT DISPLAY AND MULTIFUNCTION DISPLAY OPTIONS

100. INTRODUCTION

This chapter provides the steps required to modify the display options for the Primary Flight Display (PFD) and the Multifunction Display (MFD).

The following procedures are provided:

- Power on PFD/MFD Display Units
- Select PFD Top Display Options
- Select PFD Bottom Display
- Select MFD Top Display
- Select MFD Bottom Display
- Display Radio Altimeter

Cockpit Display Units

There are four Display Units (DU) in the TH-73A cockpit (Figure 1-1); two DUs in front of each pilot:

- DU 1 (pilot) and DU 3 (copilot) automatically act as PFDs.
- DU 2 (pilot) and DU 4 (copilot) automatically act as MFDs.



Figure 1-1 Cockpit DUs

PFD

The PFD provides the pilot and copilot flight instruments in a centralized location. The screen is divided into an upper screen area and a lower screen area, which can be changed to display different data (Figure 1-2).

1. The upper part of the PFD is called the Primary Flight Information (PFI) area.
2. The lower part is called the bottom area (BTM) of the PFD.



Figure 1-2 PFI and BTM Areas on the PFD

MFD

The MFD screen can be divided into an upper screen area (TOP) and a lower screen area (BTM), which can be modified to display different data (Figure 1-3).

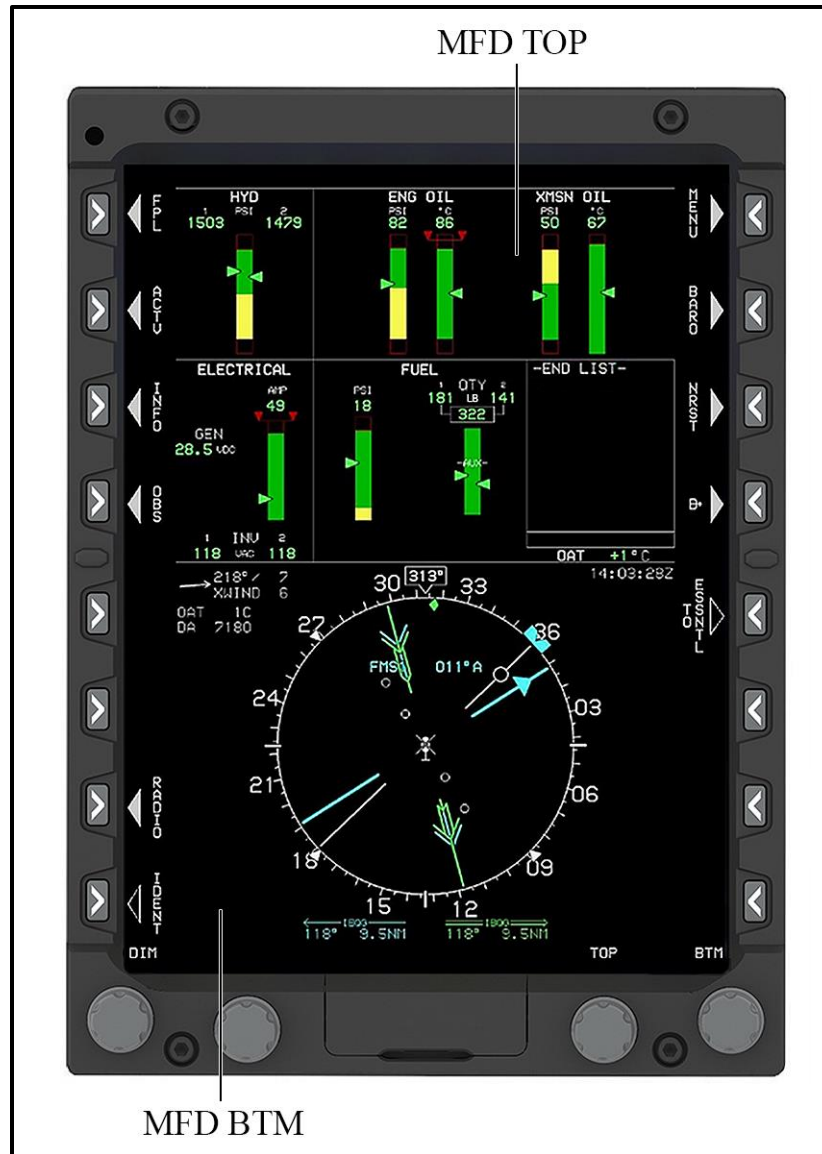


Figure 1-3 TOP and BTM Areas on the MFD

Display Buttons and Encoder Knobs

Each DU can be operated by the use of four encoder knobs (E1–E4) and 16 left and right display buttons (L1–L8 and R1–R8) indicated in Figure 1-4.

1. The left and right display buttons are designated by the letters “L” and “R,” respectively, and are numbered in sequence from top to bottom.

2. The lower encoder knobs are designated by the letter “E” and numbered in sequence from right to left.
3. **KNOB 4 (E4)** is only used for adjusting the screen and button brightness. It is always labeled **DIM**.

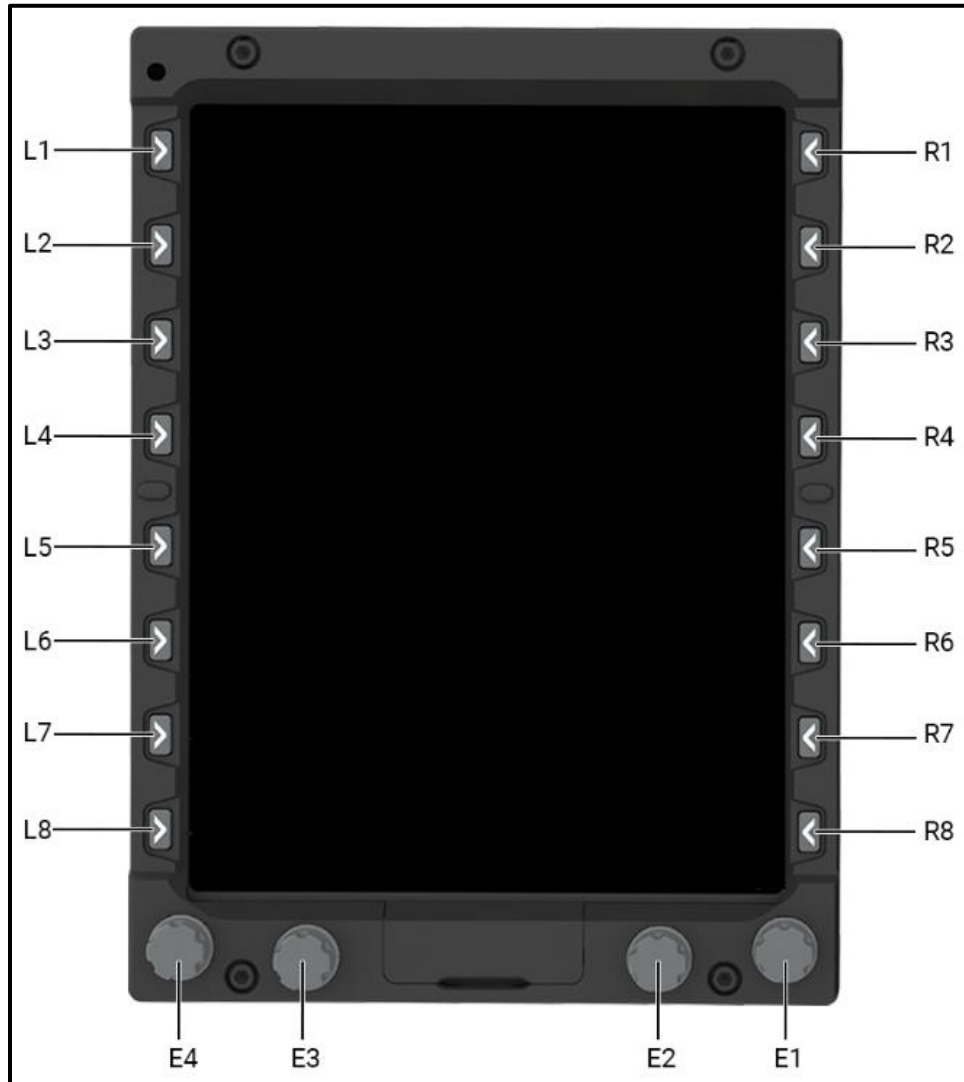


Figure 1-4 Display Buttons and Encoder Knobs

Display Button Menus

The menu system and buttons are labeled with titles. The titles of each button display in the bezel margins next to the button, along with a triangle menu icon (Figure 1-5). The titles change depending on the display options on each DU.

1. A filled triangle indicates further menu levels are available.
2. A hollow triangle icon indicates no further menu levels are available, and pressing the button is the final action.



Figure 1-5 Display Button Menu Levels

101. POWER ON PFD/MFD DISPLAY UNITS

Perform this procedure to activate the PFD and the MFD DUs.

To power on the PFD/MFD DUs complete the following steps:

1. Move the circuit breakers and overhead switches to the IN and OFF position.
2. Move the **BAT** (Battery) switch to the ON position.
3. Move the **BUS** switch to the ON position.
 - a. **INITIALIZING** displays.
 - b. **PRESS ANY BUTTON TO CONTINUE** displays (Figure 1-6).



Figure 1-6 Genesys Launch Screen

4. Verify the displays complete the initial self-test without fault, and they display the Status Page.

1-6 PRIMARY FLIGHT DISPLAY AND MULTIFUNCTION DISPLAY OPTIONS

Press any button on the bezel around the DUs to activate the flight DUs.

102. SELECT PFD TOP DISPLAY OPTIONS

The PFI area on the top half of the PFD can be customized to display different information. Perform this procedure to customize the data displayed in the top area of the PFD.

To select the display options in the PFI area of the PFD, complete the following steps:

1. On the PFD, press the **MENU (R1)** button (Figure 1-7) to display additional menu levels.



Figure 1-7 MENU Button

2. Press the **DCLTR (R4)** (Declutter) button within 10 seconds (Figure 1-8) to enter the HSI (Horizontal Situation Indicator) DCLTR menu.

- A menu displays in the bottom right corner of the PFD with data options.



Figure 1-8 DCLTR Button

3. Rotate **KNOB 1 (E1)** to cycle through the options (Figure 1-9).



Figure 1-9 PFI Declutter Options Menu

4. Press **KNOB 1 (E1)** to select an option. Multiple options can be selected.
- a. A check mark displays to confirm each selection and the data displays in the PFI area.
 - b. The following display options are available:
 - i. **ANLG AGL:** Displays the Radio Altimeter (RADALT) on the lower right of the PFI with a green circular tape and digital readout in the center. The green tape disappears above 1,000 feet AGL.
 - ii. **BANK SCL:** Displays the bank angle scale and sky/roll pointer on the top half of the screen. If the BANK SCL is deselected, the bank angle scale and roll pointer will only display when the magnitude of the bank angle exceeds 2.8 degrees (it is dampened based on magnitude and time to prevent nuisance displays).

- iii. **BASIC:** Displays a traditional attitude display with airspeed, altitude, and heading scales on the top half of the screen.
- iv. **MINI MAP:** Displays a mini map with a VOR pointer, Flight Management System (FMS) active leg, and own ship symbol in the center of the display on the lower right of the PFI.
- v. **MINI TRFC:** Provides a mini traffic display on the lower right of the PFI.
- vi. **SKYWAY:** Displays the Skyway information and associated flight cues (active navigation route and manual Omnibearing Selector [OBS] course in 3D with a series of skyway boxes which overlay the flight plan route on the top half of the screen). It provides cues at the appropriate altitude as well as lateral and vertical guidance.
- vii. **SVS TAWS:** Displays Synthetic Vision System (SVS) colors of olive, brown, amber, and red for terrain and areas causing Forward Looking Terrain Awareness (FLTA) alerts on the top half of the screen. Deep blue for areas of water has precedence over other colors. Display shades of olive at or below 100-foot aircraft altitude, shades of brown above 100 feet, and Terrain Awareness and Warning System (TAWS) coloring of FLTA alert or warning cells.
- viii. **SVS BASIC:** Displays basic terrain and obstruction colors on the top half of the screen. For example, it provides shades of brown for non-water terrain. Deep blue for areas of water has precedence over other colors.
- ix. **TRAFFIC:** Displays traffic data on the top half of the screen.
- x. **TURN IND:** Displays a worm in the direction of turn with full-scale deflection indicating a standard rate turn and half-standard rate indicated at the mid-scale mark on the top half of the screen.
- xi. **FD1:** The Flight Director (FD) will display the single cue (magenta wedge-shaped) valid steering commands on the attitude indicator on the top half of the screen.
- xii. **FD2:** The FD will display the magenta horizontal and vertical steering commands on the attitude indicator on the top half of the screen.
- xiii. **METERS:** Displays the Barometric Altimeter (BARALT) information in meters on the top half of the screen.

- Press the **EXIT (R1)** button (Figure 1-10) to close the menu.



Figure 1-10 EXIT Button

103. SELECT PFD BOTTOM DISPLAY

Perform this procedure to change the display in the bottom area of the PFD.

To select the display for the bottom area of the PFD, complete the following steps:

1. On the PFD, press **KNOB 1 (E1)**.
 - A menu displays in the bottom right corner of the PFD with four display options (Figure 1-11). The current display is highlighted on the menu.



Figure 1-11 PFD Bottom Display Options Menu

2. Rotate **KNOB 1 (E1)** to cycle through the display options (Figure 1-12).
 - a. **MAP** – Displays a moving map on the bottom area of the PFD
 - b. **HSI** – Displays a Horizontal Situation Indicator on the bottom area of the PFD
 - c. **TRAFFIC** – Displays a traffic page on the bottom area of the PFD
 - d. **HOVER** – Displays a hover page on the bottom area of the PFD



Figure 1-12 PFD Bottom Display Option Examples

3. Press **KNOB 1 (E1)** to select a display option.
 - The menu closes and the selected option displays in the bottom area of the PFD.

104. SELECT MFD TOP DISPLAY

The standard MFD layout used for day familiarization flights is **HALF ENGINE** on the top half of the screen, which should be selected after engine start. Perform this procedure to change the display on the top half of the MFD.

To select the display for the top area of the MFD, complete the following steps:

1. On the MFD, press **KNOB 2 (E2)**.
 - A menu displays in the bottom right corner of the MFD with the different display options (Figure 1-13). The current display is highlighted on the menu.



Figure 1-13 MFD Top Display Options Menu

2. Rotate **KNOB 2 (E2)** to cycle between the display options (Figure 1-14).
 - a. **MAP** – Displays a moving map on the top area of the MFD
 - b. **HSI** – Displays a Horizontal Situation Indicator on the top area of the MFD

1-14 PRIMARY FLIGHT DISPLAY AND MULTIFUNCTION DISPLAY OPTIONS

- c. **NAV LOG** – Displays a navigation log on the top area of the MFD
- d. **TRAFFIC** – Displays a traffic page on the top area of the MFD
- e. **DATALINK** – Displays datalink information, to include weather options, on the top area of the MFD
- f. **HOVER** – Displays a hover page displays on the top area of the MFD
- g. **NRST APD** – Displays the nearest airport diagram on the entire MFD screen
- h. **FULL ENGINE** – Displays the engine parameters on the entire MFD screen. This is the default display for engine start.
- i. **HALF ENGINE** – Displays half of the engine parameters on the top area of the MFD

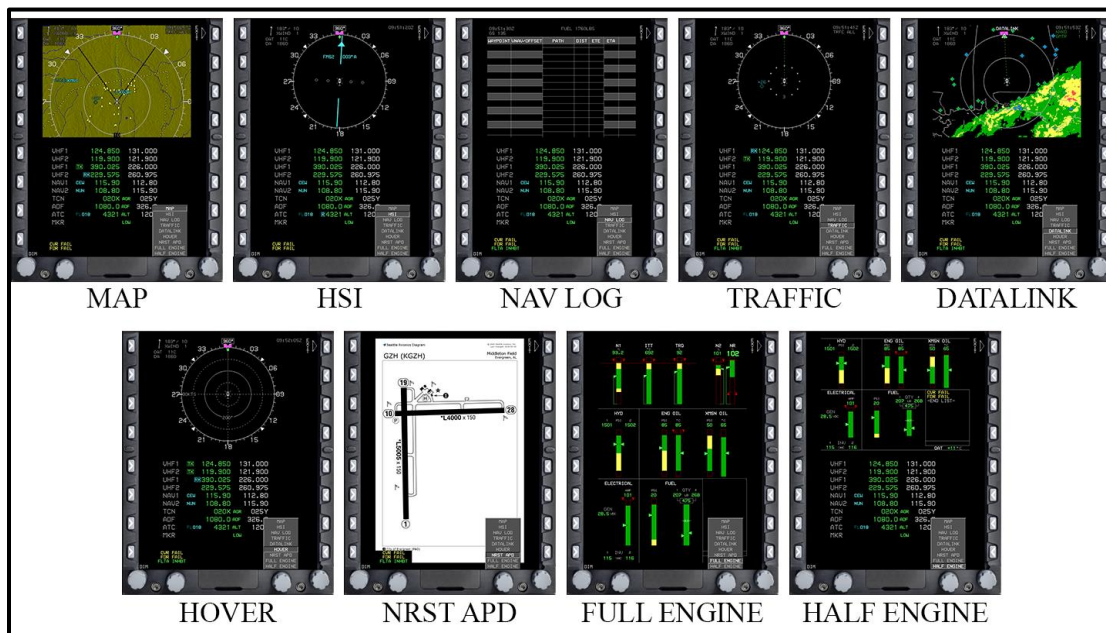


Figure 1-14 MFD Top Display Option Examples

3. Press **KNOB 2 (E2)** to select an option.
 - The menu closes and the selected option displays in the top area of the MFD.

105. SELECT MFD BOTTOM TOP DISPLAY

The standard MFD layout used for day familiarization flights is **AUDIO/RADIO** on the bottom half of the screen, which should be selected after engine start. Perform this procedure to customize the display on the bottom half of the MFD.

To select the display for the bottom area of the MFD, complete the following steps:

1. On the MFD, press **KNOB 1 (E1)**.
 - A menu displays in the bottom right corner of the MFD with the different display options (Figure 1-15). The current display is highlighted on the menu.

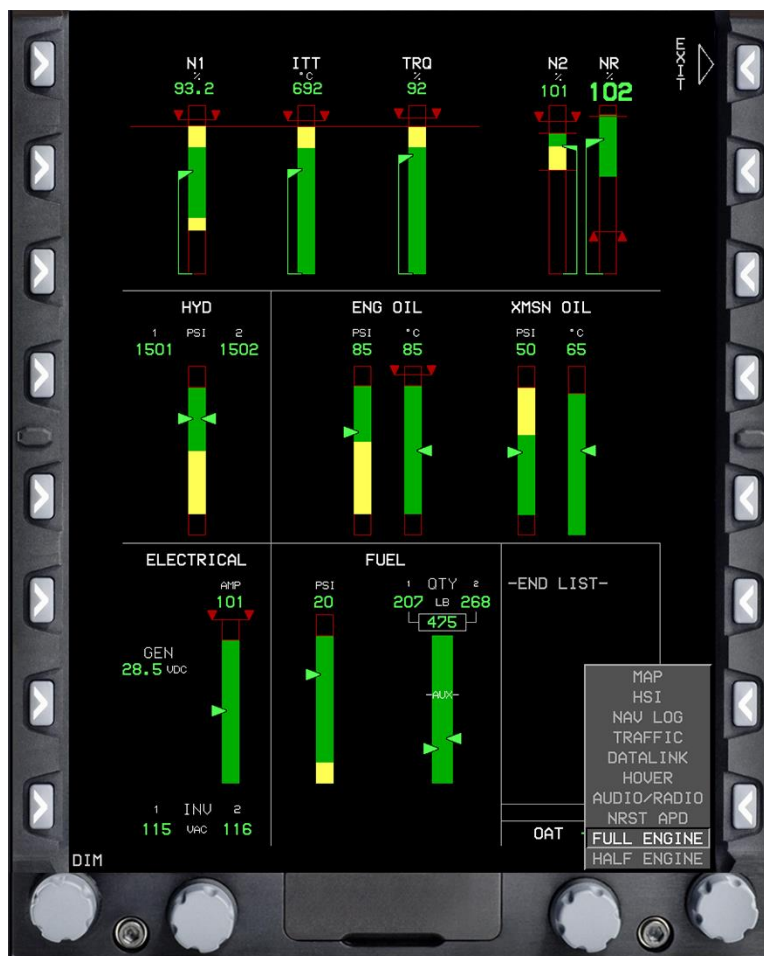


Figure 1-15 MFD Bottom Display Options Menu

2. Rotate **KNOB 1 (E1)** to cycle between the options (Figure 1-16).
 - a. **MAP** – Displays a moving map on the bottom area of the MFD
 - b. **HSI** – Displays a Horizontal Situation Indicator on the bottom area of the MFD. This is the primary display for the MFD bottom after start.
 - c. **NAV LOG** – Displays a navigation log on the bottom area of the MFD
 - d. **TRAFFIC** – Displays a traffic page on the bottom area of the MFD
 - e. **DATALINK** – Displays datalink information to include weather options on the bottom area of the MFD
 - f. **HOVER** – Displays a hover page on the bottom area of the MFD
 - g. **AUDIO/RADIO** – Displays the radio page on the bottom area of the MFD
 - h. **NRST APD** – Displays the nearest airport diagram on the entire MFD screen
 - i. **FULL ENGINE** – Displays the engine parameters on the entire MFD screen. This is the default display for engine start.
 - j. **HALF ENGINE** – Displays half of the engine parameters on the bottom area of the MFD

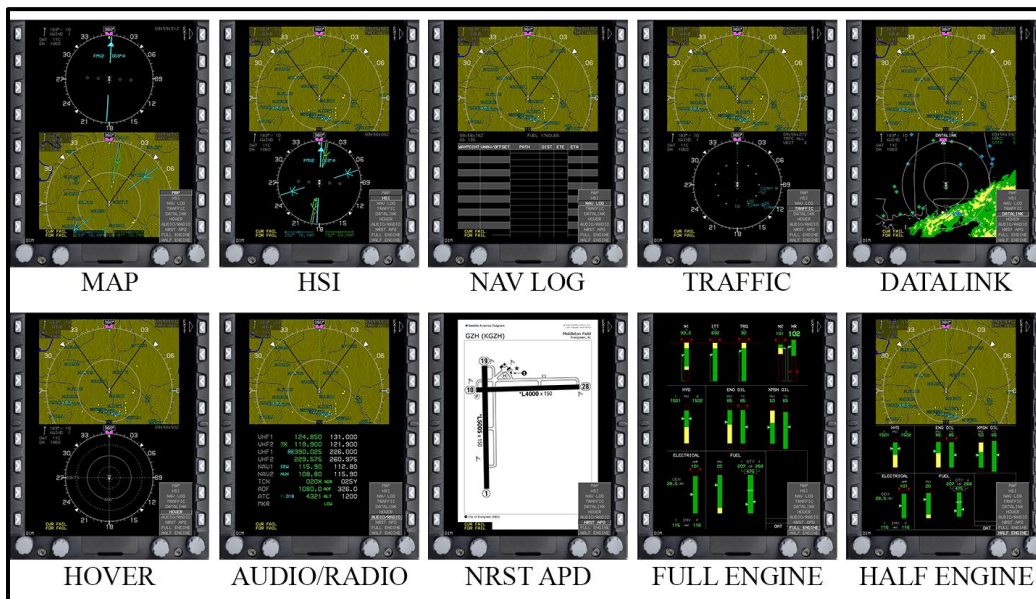


Figure 1-16 MFD Bottom Screen Display Options

3. Press **KNOB 1 (E1)** to select an option.
 - The menu closes, and the selected option displays in the bottom area of the MFD.

106. DISPLAY LINEAR RADAR ALTIMETER

AGL altitude data can be displayed on the bottom half of the PFD on the HSI display next to the N2 bar 500 feet AGL and below. This data is an optional display. Consider displaying the RADALT during low altitude flights and when conducting familiarization maneuvers for situational awareness of altitude above terrain.

Perform this procedure to display a linear RADALT on the HSI display.

To display a linear RADALT, complete the following steps:

1. From the **HSI** display on the bottom area of the PFD, press the **MENU (R1)** button to display additional menu levels (Figure 1-17).

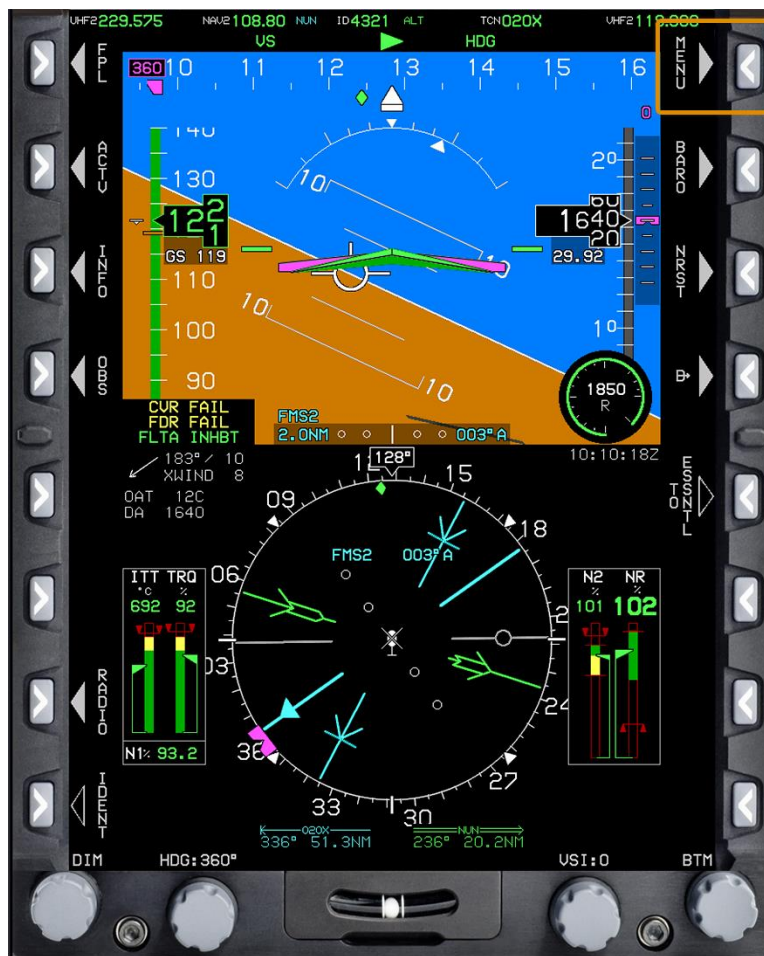


Figure 1-17 HSI Menu Button

2. Press the **DCLTR (R8)** button (Figure 1-18).
 - A menu displays in the bottom right corner of the PFD with pointer and RADALT options.

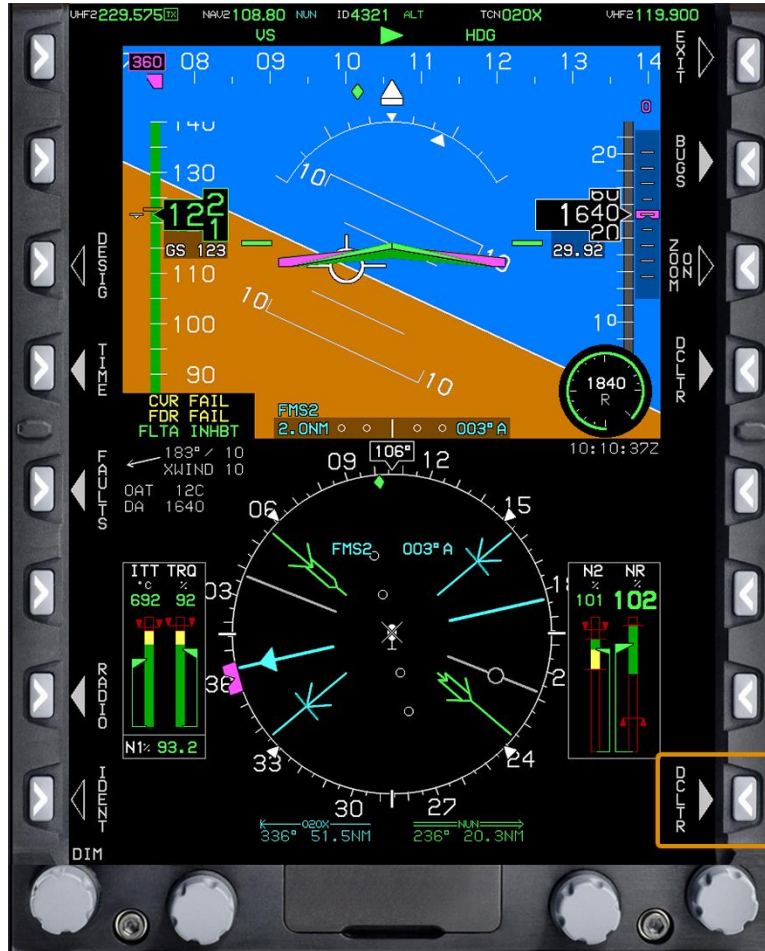


Figure 1-18 DCLTR Button

3. Rotate **KNOB 1 (E1)** to **LIN RAD ALT** (linear RADALT) and press to select (Figure 1-19). Multiple options can be selected.
 - A check mark displays to confirm the selection and the data displays on the bottom half of the PFD screen.



Figure 1-19 PFD Pointer and RADALT Options Menu

4. Press the **EXIT (R1)** button to close the menu.

CHAPTER TWO BUGS FUNCTION

200. INTRODUCTION

This chapter provides the steps required to set an AGL altitude to provide an aural warning when the set value is attained.

The following procedures are provided:

- Set Aural Warning at Decision Height
- Remove Decision Height Aural Warning

201. SET AURAL WARNING AT DECISION HEIGHT

Perform this procedure to set an aural warning when the aircraft descends below a set altitude on the RADALT. This is particularly useful when flying at low altitudes, at night with reduced visual references, and during familiarization pattern work.

To set an aural warning when a set radio altitude height is achieved, complete the following steps:

1. On the PFD, press the **MENU (R1)** button to display additional menu levels.
2. Press the **BUGS (R2)** button (Figure 2-1) to display additional menu levels.



Figure 2-1 PFD BUGS Button

2-2 BUGS FUNCTION

3. Press the **MINS (R3)** (Minimums) button (Figure 2-2).
 - A menu displays in the bottom right corner of the PFD.



Figure 2-2 PFD MINS Button

4. Rotate **KNOB 1 (E1)** to the **DEC HT** (Decision Height) option in the menu (Figure 2-3) and press to display the decision height altitude numbers.



Figure 2-3 PFD MINS Option Menu

5. Rotate **KNOB 1 (E1)** to the desired altitude and press to select.
 - The decision height displays on the screen (Figure 2-4).



Figure 2-4 DEC HT Altitude Selection

6. Press the **EXIT (R1)** button to close the menu.

202. REMOVE DECISION HEIGHT AURAL WARNING

Perform this procedure to remove the decision height aural warning setting if it is no longer required or becomes overly distracting.

To remove the decision height aural warning, complete the following steps:

1. On the PFD, press the **MENU (R1)** button to display additional menu levels.
2. Press the **BUGS (R2)** button to display additional menu levels.
3. Press the **MINS (R3)** button to display a menu in the bottom right corner of the PFD.
4. Rotate **KNOB 1 (E1)** to the **DEC HT** option and press to select.
5. Press the **OFF (R4)** button to remove the warning and close the menu (Figure 2-5).



Figure 2-5 DEC HT OFF Button

CHAPTER THREE CLOCK AND TIMER FUNCTIONS

300. INTRODUCTION

This chapter provides the steps required to set the clock and timer functions. The following procedures are provided:

- Start Count Up Timer
- Stop Count Up Timer
- Start Countdown Timer
- Stop Countdown Timer
- Change UTC Offset Time
- Display Elapsed Time

301. START COUNT UP TIMER

A count up or a countdown timer can be displayed above the large aircraft reference marks. Perform this procedure to start a count up timer. The count up timer is useful for calculating fuel burn, timing VOR and localizer approaches, tracking route segment timing for navigation, and conducting Basic Instrument (BI) maneuvers.

To start a count up timer, complete the following steps:

1. On the PFD, press the **MENU (R1)** button to display additional menu levels.
2. Within 10 seconds, press the **TIME (L4)** button (Figure 3-1) to open the time menu.
 - The time menu displays in the bottom right corner of the PFD.



Figure 3-1 TIME Button

3-2 CLOCK AND TIMER FUNCTIONS

3. Rotate **KNOB 1 (E1)** to the **COUNT UP** option on the menu (Figure 3-2) and press to select.



Figure 3-2 Count Up Option

- The menu closes and a timer displays in the PFI area below the bank scale that starts counting up from 00:00:00 (Figure 3-3).



Figure 3-3 Count Up Timer

To stop the timer, complete the following steps:

1. Press the **MENU (R1)** button.
2. Within 10 seconds, press the **TIME (L4)** button.
3. Press the **OFF (R4)** button to clear the timer from the PFI (Figure 3-4).



Figure 3-4 Count Up Timer OFF Button

302. START COUNTDOWN TIMER

Perform this procedure to start a timer that counts down for a specified time period. A countdown timer could be set when flying a VOR approach or an Automatic Direction Finder (ADF) approach to provide a countdown from the Final Approach Fix (FAF) to the Missed Approach Point (MAP).

To start a countdown timer, complete the following steps:

1. On the PFD, press the **MENU (R1)** button to display additional menu levels.
2. Press the **TIME (L4)** button.
 - A menu displays in the bottom right corner of the PFD.
3. Rotate **KNOB 1 (E1)** to the **COUNT DN** option on the menu (Figure 3-5) and press to select.



Figure 3-5 Countdown Option

3-6 CLOCK AND TIMER FUNCTIONS

- The menu changes to a single line with a time in MM:SS format (Figure 3-6).



Figure 3-6 Countdown Time Selection

4. Press the **+5 MIN (R2)** button to add five minutes to the countdown start time in the menu, as needed.
5. Press the **-5 MIN (R3)** button to remove five minutes from the timer, as needed.

6. Rotate **KNOB 1 (E1)** to adjust the timer in one-second increments, as needed.
7. Press **KNOB 1 (E1)** to start the countdown timer. Do not press **KNOB 1 (E1)** until you want to start the countdown timer.
 - a. The menu closes and a timer starts counting down from the selected time on the pitch scale above the aircraft symbol reference (Figure 3-7).
 - b. A chime sound occurs when the countdown timer reaches 00:00:00.



Figure 3-7 Countdown Timer

To stop the countdown timer, complete the following steps:

1. Press the **MENU (R1)** button.
2. Within 10 seconds, press the **TIME (L4)** button.
3. Press the **OFF (R4)** button (Figure 3-8) to stop and remove the digital timer display.



Figure 3-8 Countdown Timer OFF Button

303. CHANGE UTC OFFSET TIME

Clock displays are located in the upper right corner of each DU, except for the PFI, HALF ENGINE, and FULL ENGINE. The NAV LOG screen displays the timer in the upper left.

Perform this procedure to change the clock display between Coordinated Universal Time (UTC) and local time, as desired. Changing UTC offset time sets the local time displayed on the PFD/MFDs. At Naval Air Station (NAS) South Whiting Field (KNDZ), it is either -5+00 UTC (summer/daylight saving time) or -6+00 UTC (winter).

To change the time, complete the following steps:

1. On the PFD, press the **MENU (R1)** button to display additional menu levels.
2. Press the **TIME (L4)** button.
 - A menu displays in the bottom right corner of the PFD.
3. Rotate **KNOB 1 (E1)** to the **UTC OFFSET** option on the menu (Figure 3-9) and press to select.



Figure 3-9 UTC OFFSET Option

- The menu changes to display the current Zulu time and the local time based on the previously established offset. The bottom line of the menu shows the established offset (Figure 3-10).



Figure 3-10 UTC OFFSET Selection

4. Rotate **KNOB 1 (E1)** to adjust the offset time in increments of 15 minutes.
5. Press **KNOB 1 (E1)** to establish the offset and close the menu.
 - The local time displays instead of the Zulu time (Figure 3-11). You can tell which time is displayed by the presence of either an “L” (local) or a “Z” (Zulu) at the end of the time.



Figure 3-11 Local Time Display

304. DISPLAY ELAPSED TIME

Perform this procedure to display the current elapsed flight time since the aircraft transitioned from the ground to air after takeoff. The time cannot be manipulated.

To display the elapsed time, complete the following steps:

1. On the PFD, press the **MENU (R1)** button to display additional menu levels.
2. Press the **TIME (L4)** button.
 - A menu displays in the bottom right corner of the PFD.
3. Rotate **KNOB 1 (E1)** to the **FLT TIME** option on the menu (Figure 3-12) and press to select.



Figure 3-12 FLT TIME Option

- The menu changes to a single line with 00:00:00, which displays for 10 seconds or until any button is pressed (Figure 3-13).



Figure 3-13 FLT TIME Selection

CHAPTER FOUR COMMUNICATION AND NAVIGATION RADIO

400. INTRODUCTION

This chapter provides the steps required to tune the communication and navigation radios and adjust the transponder settings.

The following procedures are provided:

- Tune Very High Frequency (VHF)/Ultra High Frequency (UHF) and NAV Radios
- Tune the Tactical Air Navigation (TACAN) Receiver
- Adjust Transponder Settings
- Set the Flight Identifier

401. TUNE VHF/UHF AND NAV RADIOS

This is the most basic way to tune a radio or navigation frequency required for flight. Use the RADIO page to tune VHF and UHF frequencies as well as transponder codes, as needed.

To tune the VHF/UHF and NAV radios, complete the following steps:

1. From the MFD, press the **RADIO (L7)** button (Figure 4-1) to open the radio menu.

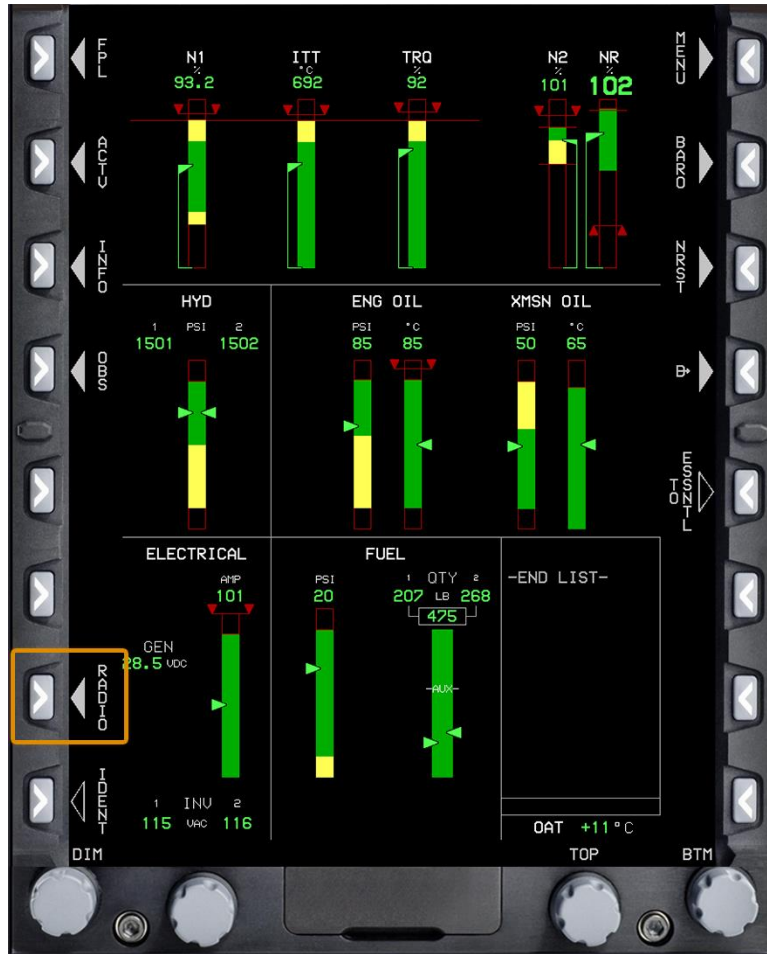


Figure 4-1 RADIO Button

2. Toggle the **CH MODE (R4)** (Channel Mode) (Figure 4-2) or **FREQ MODE (R4)** (Frequency Mode) button to cycle between **CH MODE** and **FREQ MODE**.

- Channel mode allows the user to cycle through preset frequencies. The presets are primarily used for common UHF frequencies in the KNDZ area.

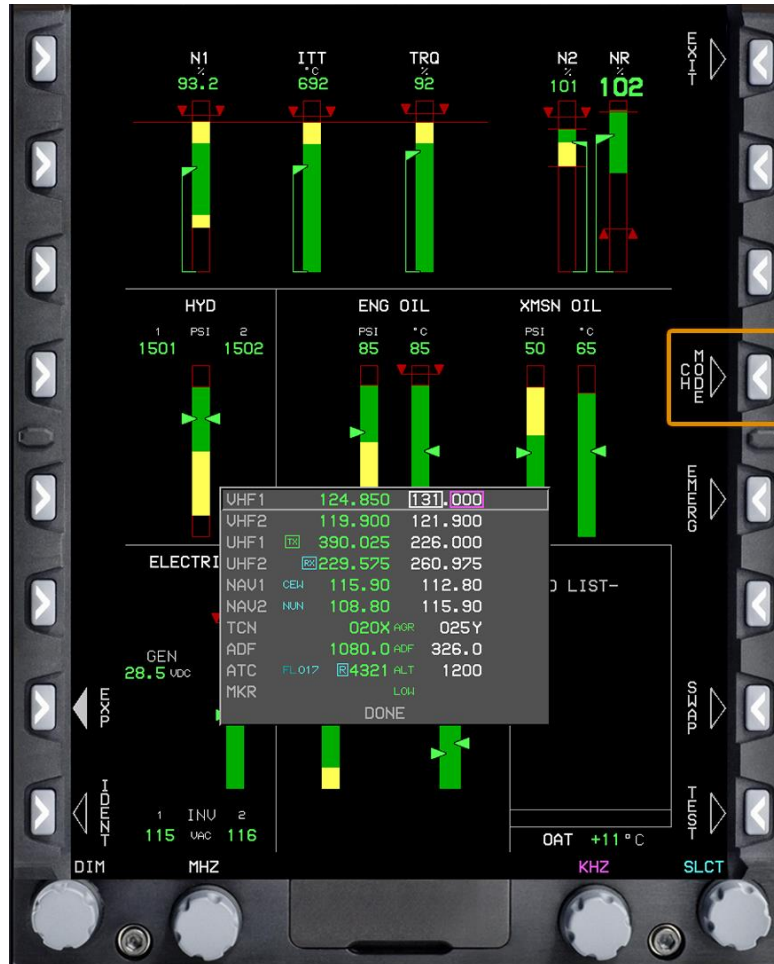


Figure 4-2 Radio Menu in Channel Mode

3. In frequency mode, rotate **KNOB 1 (E1)** to scroll through and highlight a radio on the radio menu.

- The Radio menu displays a row for each communication and navigation radio, including the transponder.
- The radio selected for tuning is indicated by a light grey box around the entire row. The frequency is manipulated in standby and can be swapped to active for use.
- Two frequencies are displayed next to each radio:

- i. The active frequency is displayed in green on the center column.
 - ii. The standby frequency is displayed in white on the right column.
- d. A white box displays around the MHZ portion of the frequency and a magenta box displays around the KHZ portion of the frequency.
4. Rotate **KNOB 2 (E2)** to adjust the KHZ portion (Figure 4-3) of the standby frequency (outlined in magenta).
 5. Rotate **KNOB 3 (E3)** to adjust the MHZ portion of the standby frequency (outlined in white).

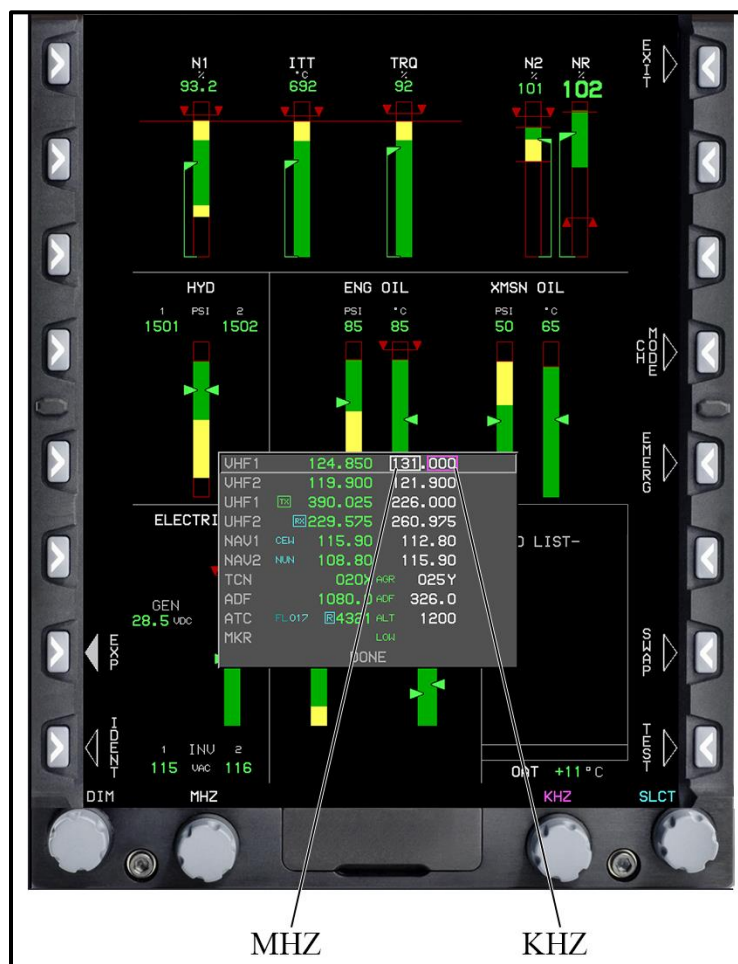


Figure 4-3 Radio Menu in Frequency Mode

6. Press the **EXP (L7)** (Expand) button to enter the expanded radio menu (Figure 4-4) for a highlighted radio.
 - The most likely uses of the expanded radio menu would be to adjust the squelch or to select whether or not to monitor that radio band's guard frequency.

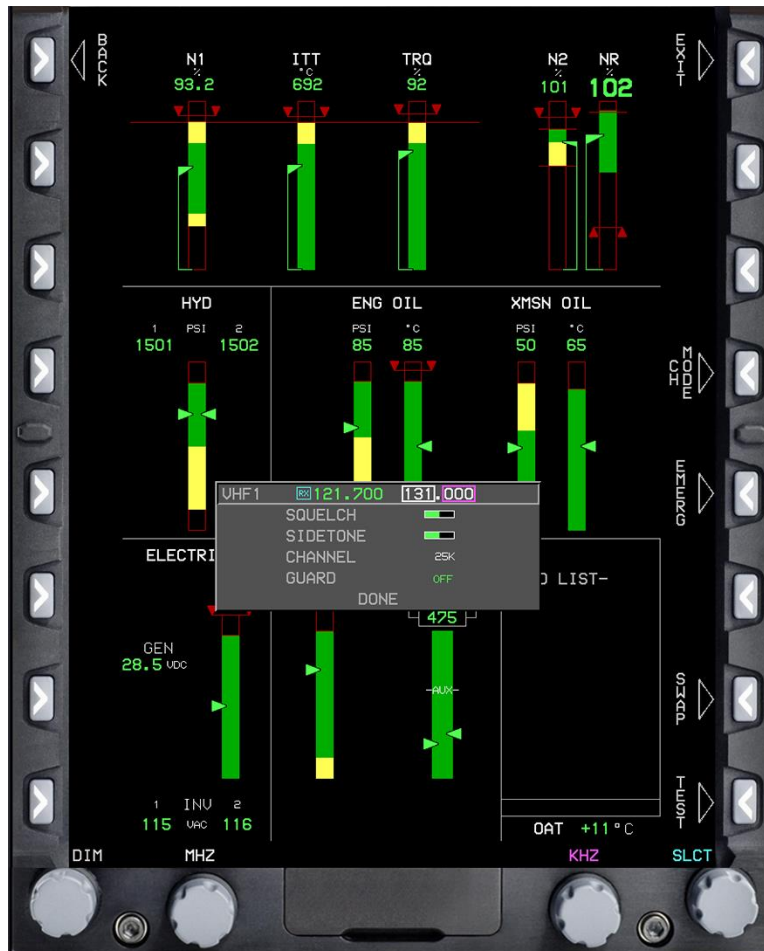


Figure 4-4 Expanded Radio Menu

7. Press the **BACK (L1)** button to return the radio menu.

8. Press the **SWAP (R7)** button (Figure 4-5) to swap the active and standby frequencies of the highlighted radio.

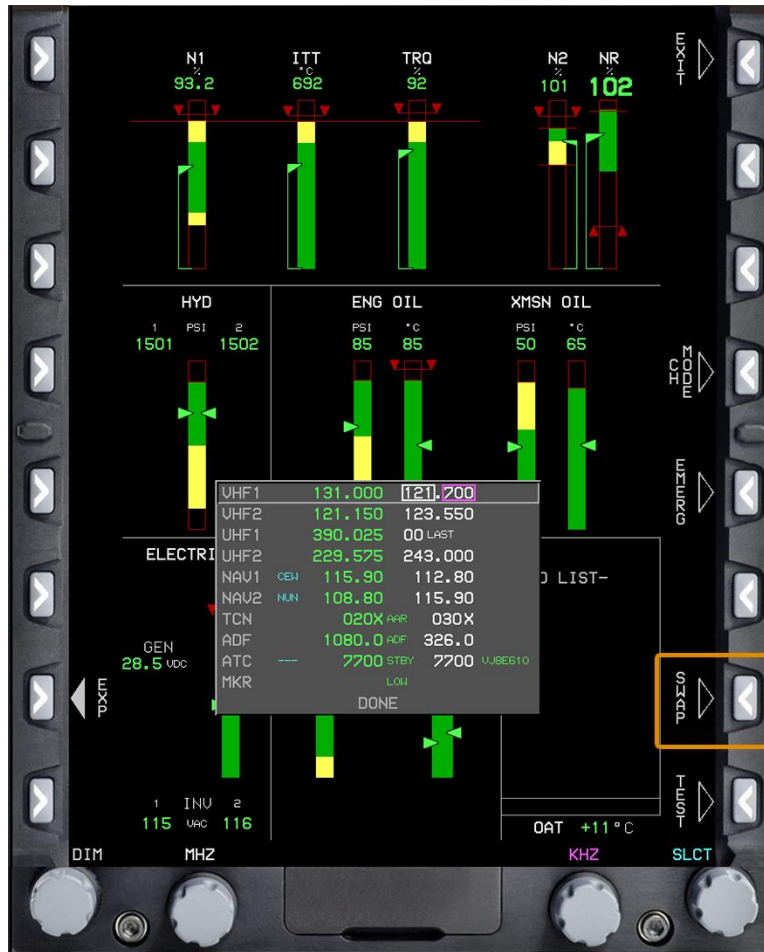


Figure 4-5 SWAP Button

9. Press the **EMERG (R5)** (Emergency) button to tune the guard frequency to the standby frequency for the highlighted radio.

10. Press the **EXIT (R1)** button to close the radio menu.

402. TUNE TACAN RECEIVER

For the majority of flights, the TACAN receiver mode should be set to AGTR (Air-to Ground Transmit Receive). The AGTR mode is required to receive the TACAN frequency for an instrument approach.

The AATR (Air-to-Air Transmit Receive) can be used to display distance from another aircraft (i.e., formation flight).

To tune the TACAN receiver, complete the following steps:

1. From the MFD, press the **RADIO (L7)** button to open the radio menu.
2. Rotate **KNOB 1 (E1)** to the **TCN** option on the menu.
3. Rotate **KNOB 2 (E2)** to adjust the standby channel outlined in magenta (Figure 4-6).
 - The code on the left is the active channel. The code on the right is the standby channel that can be changed.

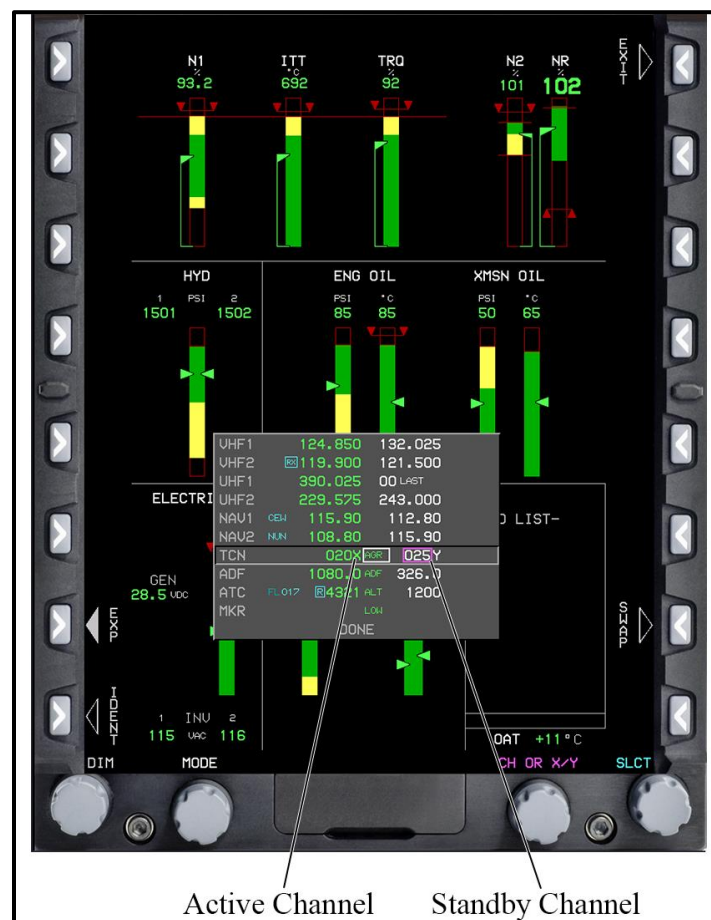


Figure 4-6 TACAN Channel Selection

- Press **KNOB 2 (E2)** to outline the **X/Y** position in magenta (Figure 4-7).

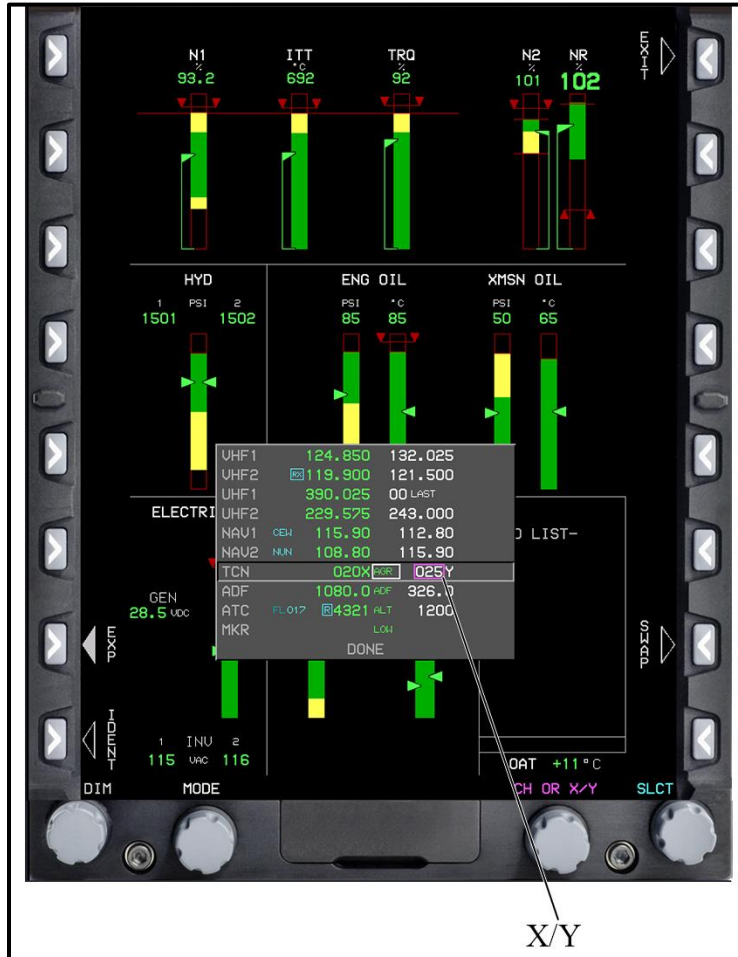


Figure 4-7 TACAN X/Y Selection

- Rotate **KNOB 2 (E2)** to display **X** or **Y**.

6. Rotate **KNOB 3 (E3)** to change the TACAN mode to **AAR** (Air-to-Air Receive), **AATR**, **AGR** (Air-to-Ground Receive), or **AGTR** (Figure 4-8).

- The mode displays next to the active channel.

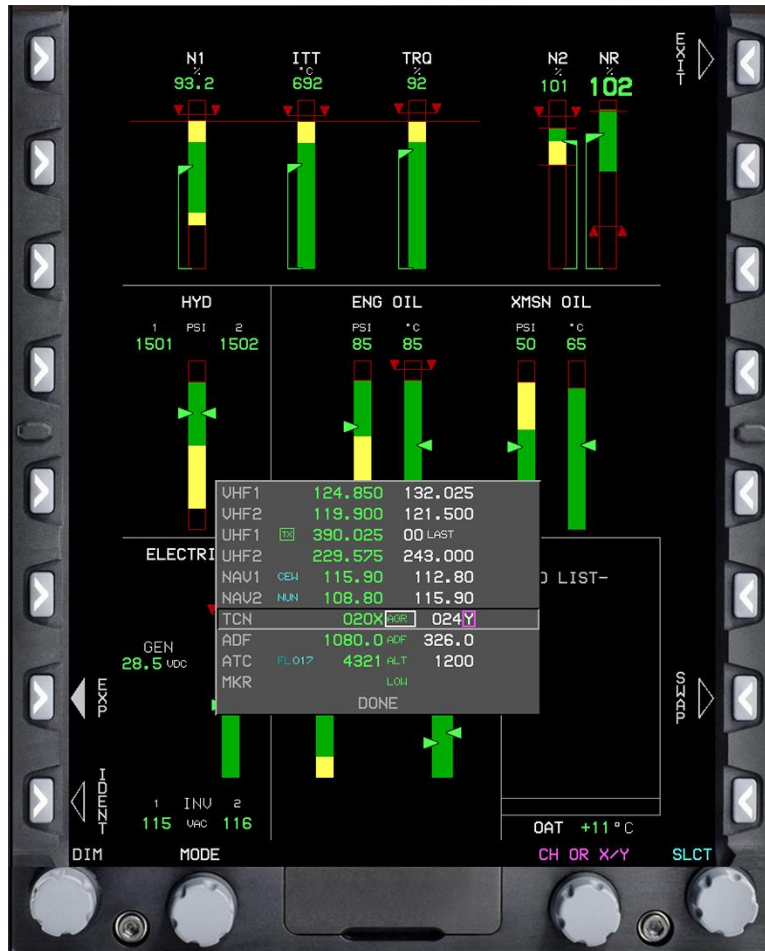


Figure 4-8 TACAN Mode

7. Press the **EXIT (R1)** button to close the radio menu.

403. ADJUST TRANSPONDER SETTINGS

Adjust the transponder settings when a certain transponder code is required during flight (e.g., 0100 for outbound KNDZ VFR traffic). Ensure the Flight Identifier (FLT ID) is set to specific squadron and side number for Air Traffic Control (ATC) tracking purposes.

To adjust the transponder settings, complete the following steps:

1. From the MFD, press the **RADIO (L7)** button to open the radio menu.
2. Rotate **KNOB 1 (E1)** to the **ATC** option on the menu (Figure 4-9).
 - a. The code on the left is the active code.
 - b. The code on the right is the standby code.
 - c. The first digit of the standby code is highlighted with a magenta box, indicating it can be modified.

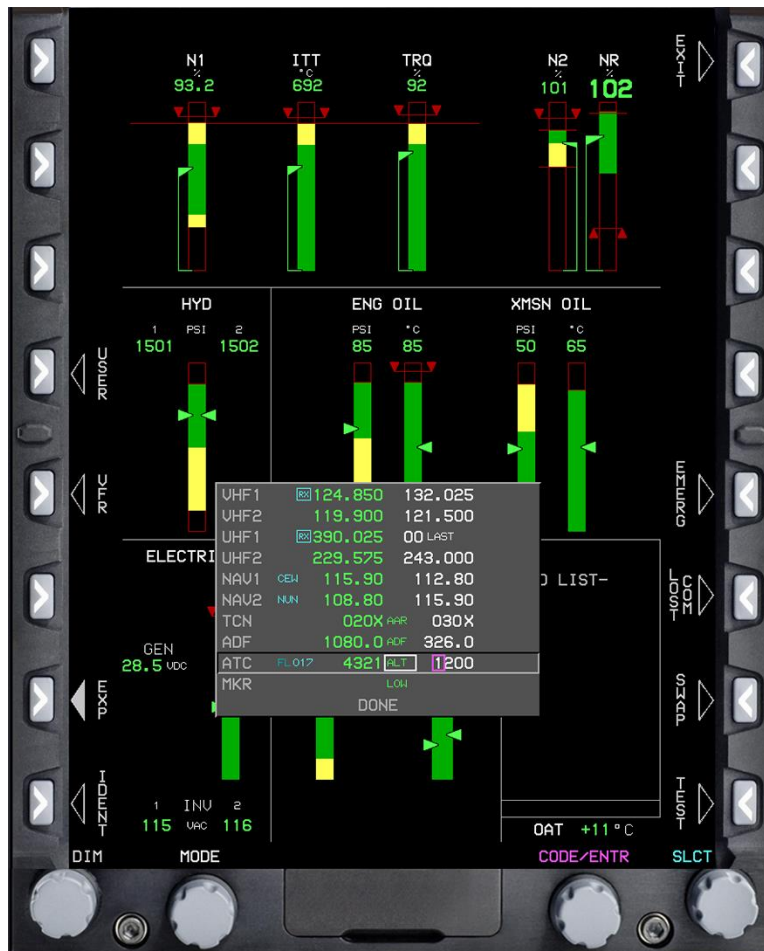


Figure 4-9 ATC Radio Option

3. Rotate **KNOB 2 (E2)** to adjust the first digit of the standby code.
4. Press **KNOB 2 (E2)** to highlight the next digit of the standby code and rotate to modify the number. Continue for the remaining digits in the code (Figure 4-10) until the code is set.

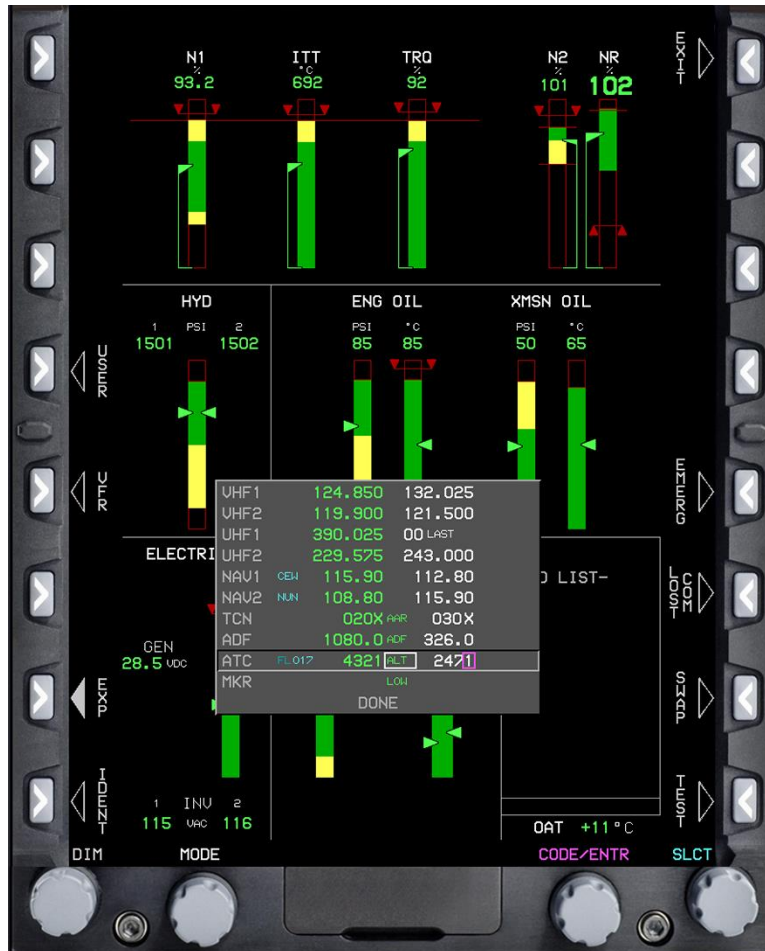


Figure 4-10 ATC Code Selection

5. Rotate **KNOB 3 (E3)** to change the transponder mode to **STBY** (Standby) (Figure 4-11). The mode automatically changes to **ALT** (Pressure Altitude) when the aircraft lifts.

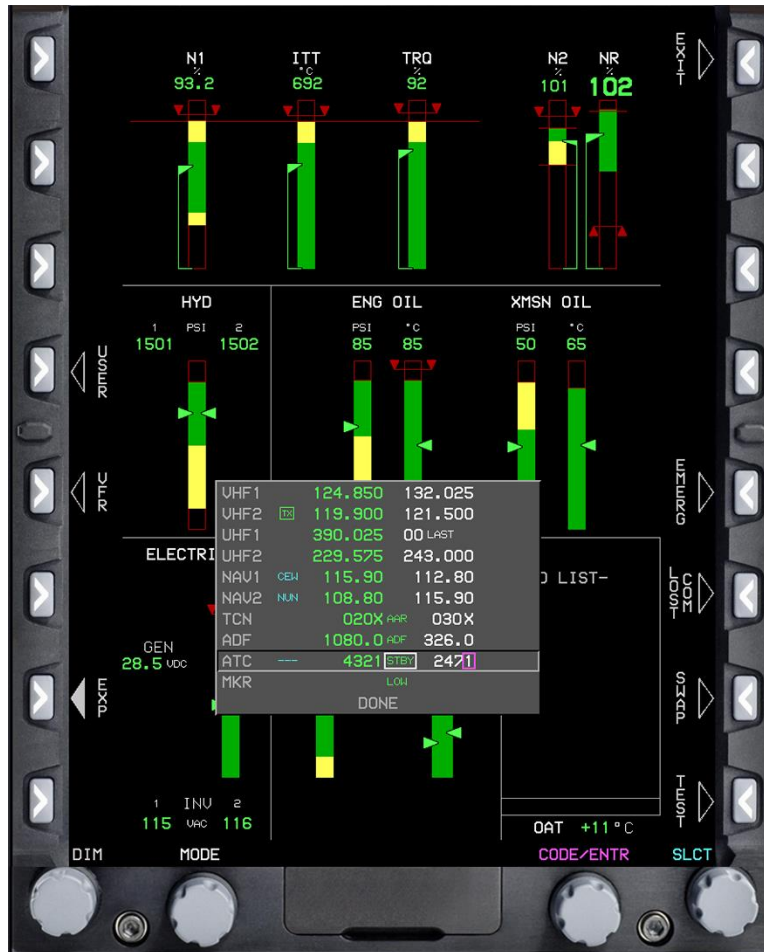


Figure 4-11 Standby Mode

6. Press the **EMERG (R5)** button to change the standby code to 7700.
7. Press the **LOST COMM (R6)** (Lost Communications) button to change the standby code to 7600.
8. Press the **VFR (L5)** button to change the standby code to 1200.
9. Press the **IDENT (L8)** (Transponder Identification) button to activate the IDENT feature of transponder
10. Press the **SWAP (R7)** button to make the standby code the active transponder code.
11. Press the **EXIT (R1)** button to close the radio menu.

4-12 COMMUNICATION/NAVIGATION RADIO

404. SET THE FLIGHT IDENTIFIER

The FLT ID represents the Automatic Dependent Surveillance-Broadcast (ADS-B) code (Figure 4-12) displayed to ATC (e.g., VV8E610). Check and set the FLT ID at the beginning of every flight based on the squadron identifier and aircraft side number.

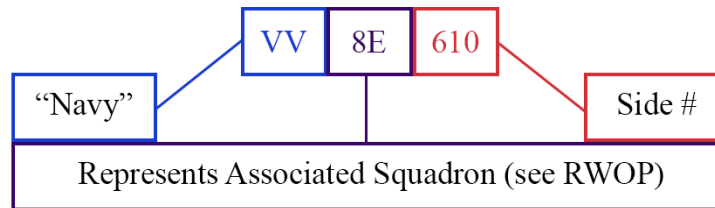


Figure 4-12 ADS-B Code

To set the FLT ID, complete the following steps:

1. From the MFD, press the **RADIO (L7)** button to open the radio menu.
2. Rotate **KNOB 1 (E1)** to the **ATC** option on the menu.
3. Rotate **KNOB 3 (E3)** to change the transponder mode to **STBY**.
 - a. The FLT ID can **ONLY** be changed in **STBY** mode.
 - b. The mode automatically changes to **ALT** mode when the aircraft lifts.

4. Press the **EXP (L7)** button (Figure 4-13) to open the ATC menu.

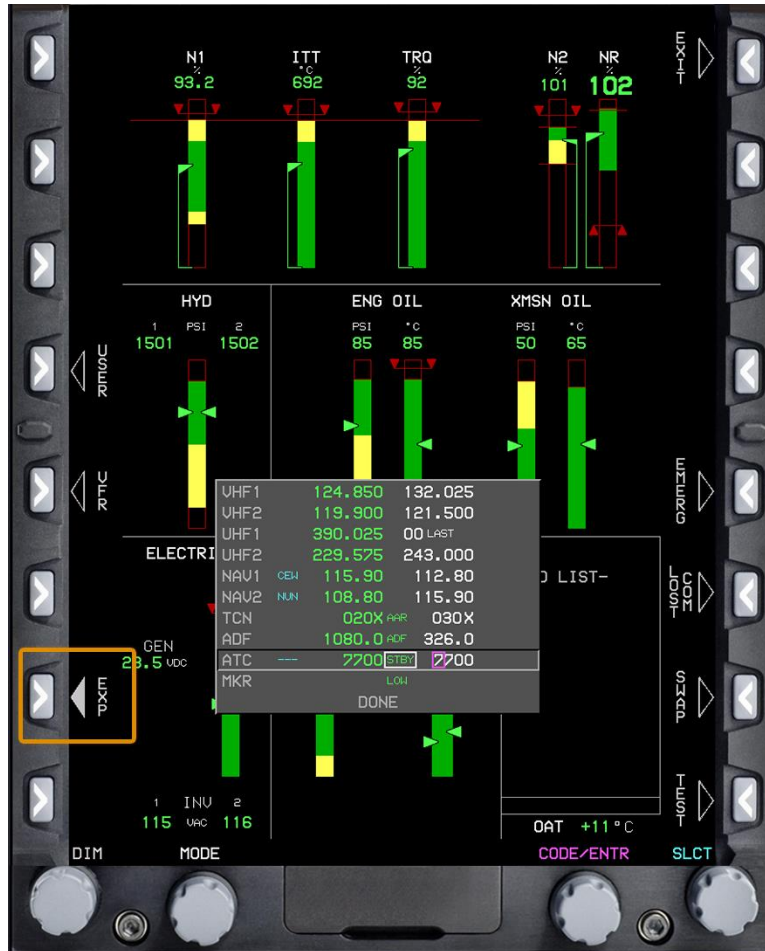


Figure 4-13 EXP Button

5. Rotate **KNOB 1 (E1)** to the **FLT ID** option (Figure 4-14).

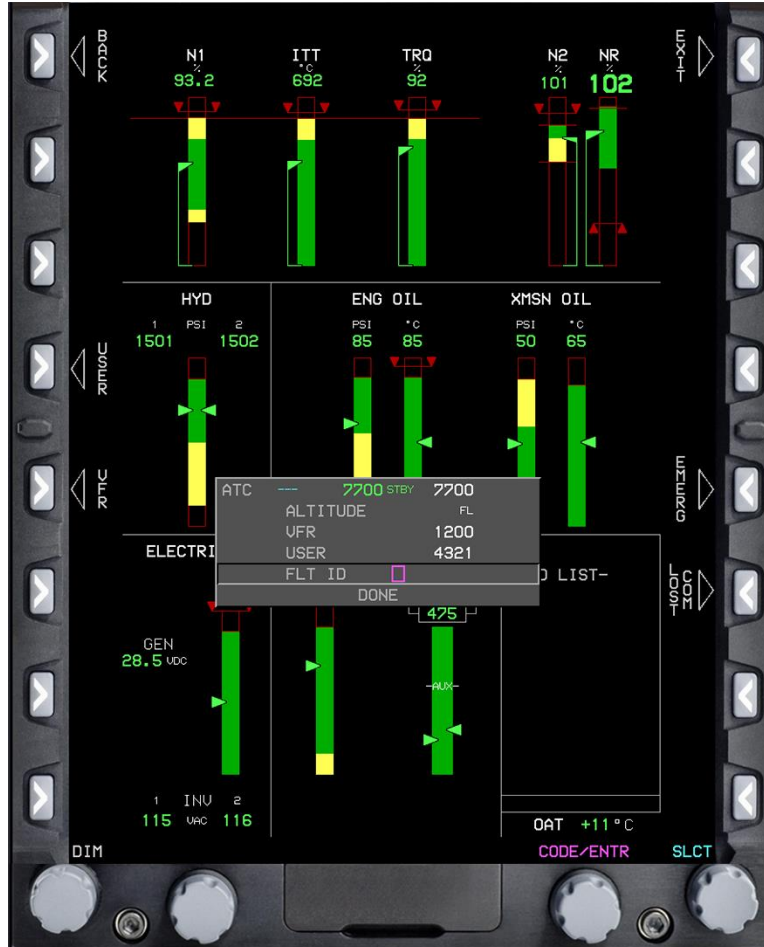


Figure 4-14 FLT ID Number

6. Rotate **KNOB 2 (E2)** to change the FLT ID and press to advance to the next digit.
- Rotating **KNOB 2 (E2)** to the left when on the first digit deletes the entire FLT ID.
 - Typically, the third digit is the only number that must be changed. Press **KNOB 2 (E2)** twice to the third digit and rotate to change the number.

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CHAPTER FIVE BAROMETRIC ALTIMETER SETTINGS

500. INTRODUCTION

This chapter provides the steps required to adjust the altimeter setting from the PFD and the Electronic Standby Instrument System (ESIS).

The following procedures are provided:

- Adjust Altimeter Setting on the PFD
- Adjust Altimeter Setting on the ESIS

501. AST ALTIMETER SETTING ON THE PFD

Altimeter settings must be manually adjusted every time an updated altimeter setting is received. This information will be provided via in-flight weather sources (e.g., ATIS [Automatic Terminal Information System], ASOS [Automatic Surface Observation System], and AWOS [Automated Weather Observing System]) and/or ATC.

To adjust the altimeter setting on the PFD, complete the following steps:

1. On the PFD, press the **BARO (R2)** (Barometric) button (Figure 5-1) to open the barometric setting.

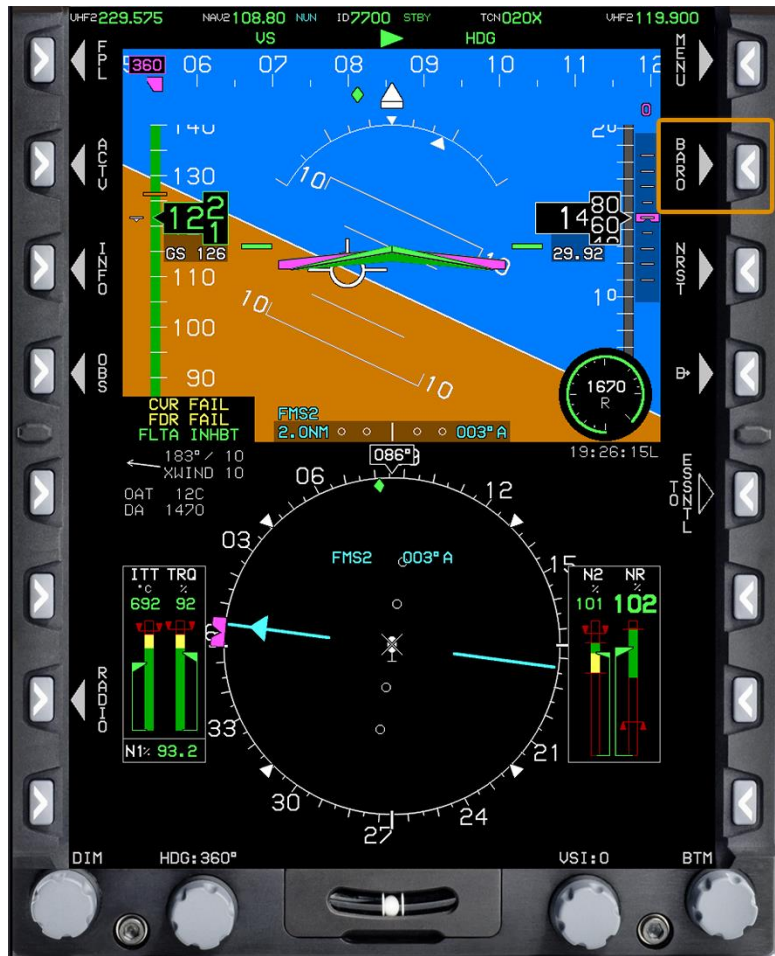


Figure 5-1 BARO Button

5-2 BAROMETRIC ALTIMETER SETTINGS

2. Rotate **KNOB 1 (E1)** clockwise to increase or counter-clockwise to decrease the QNH (Barometric Setting) (Figure 5-2).
 - Allowable setting limits are 22.00 inches Mercury (inHg) (745 Millibar [mbar]) at the lowest and 32.00 inHg (1,100 mbar) at the highest.



Figure 5-2 Barometric Setting

3. Press **KNOB 1 (E1)** to enter the new value and close the barometric setting.
 - The altimeter displays the new altimeter setting.

502. ADJUST ALTIMETER SETTING ON THE ESIS

It is important to keep the altimeter setting accurate on the ESIS just in case it becomes the primary source of altitude information in the event of a complete MFD and PFD failure.

To adjust the altimeter setting on the ESIS, complete the following step:

- From the ESIS (Figure 5-3), rotate the knob to the new altimeter setting and press to select.



Figure 5-3 ESIS Screen

The ESIS allows a one-button push of the knob to set the altimeter to the standard day 29.92 setting. You can then read the current pressure altitude. Use this quick method to attain pressure altitude for conducting power assurance checks. It is much quicker than going through the Genesys displays.

To quickly set the ESIS to the standard day setting of 29.92, complete the following step:

- Press the knob.

5-4 BAROMETRIC ALTIMETER SETTINGS

**APPENDIX A
AVIONICS SETUP FOR TAKEOFF**

Prior to each flight, the PFD/MFD should be set up according to the type of flight event being conducted. Use the following information to set up the avionics for takeoff.

PDF		
TOP Display	BASIC	Turn indicator ON
BTM Display	HSI	Essential Mode is optional
MFD		
TOP Display	HALF ENGINE	
BTM Display	RADIO	Frequency in Active VHF 1: 121.95 VHF 2: 124.85 UHF 1: CH Mode set to appropriate Base HT-8: Channel 5 HT-18: Channel 6 HT-28: Channel 7 HITU: Channel 8 UHF 2: ATIS (CH 1) Nav 1: 108.8 Nav 2: 110.55 TCN: 70X ADF: N/A
TRNSPDR		
Set appropriate outbound code. 0100 for VFR Course Rules Set appropriate FLT ID using squadron code and side #. HT-8: VV8EXXX HT-18: VV1EXXX HT-28: VV7EXXX HITU: VV4EXXX		

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