PRODUCT MANUAL

MH60

48 articles · Complete website edition

Includes all article text, tables and available illustrations. Videos and interactive resources are linked. Printed page numbers restart with each article. Use the clickable contents or PDF bookmarks to navigate.

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Miltech Simulations MH60

Welcome to the MH60

In partnership with Blackbird Simulations

Caution
SIMULATION USE ONLY - DO NOT USE THIS DOCUMENTATION ON A REAL AIRCRAFT
An active internet connection is required on initial activation of the aircraft.

Caution
Blade Fold Disabled Temporarily
Due to several bugs affecting the Blade Fold feature, we've decided to temporarily disable it for the initial release and postpone its availability to a future update.

Note
Make sure your hardware is correctly configured for Helicopter Flight: Recommended Hardware Configuration
Keybinds Guide

Overview

At Miltech Simulations, we continue innovating. Following the success of our previous releases, we now present the result of over a year of development on one of the most versatile military helicopters ever built. The MH60 is ready for deployment in Microsoft Flight Simulator, in partnership with Blackbird Simulations.

Miltech Simulations MH60 is a multi-mission maritime helicopter, capable of executing complex operations such as anti-submarine warfare, search and rescue, medevac, and special operations. Its powerful engines, rugged airframe, and advanced avionics make it a dependable platform for even the most demanding scenarios. Designed with precision and realism in mind, the MH60 brings authentic mission capabilities to the virtual skies.

Get Started

We've put together some helpful guides for you to get set up with our product quickly and easily.

Requirements

- Microsoft Flight Simulator - PC or Xbox. Latest version available.
- A valid product license from Miltechsimulations.com, IniBuilds or the MS Marketplace
- Joystick Controller (Recommended) or Xbox controller
- CPU: Quad-core processor or better.
- GPU: At least 8GB of dedicated memory, Nvidia 2070 or better.
- RAM: 8GB Minimum.
- Hard Disk: At least 8GB Recommended.

Where to Buy?

1. Miltech Simulations: https://miltechsimulations.com/collections/aircraft
2. Microsoft Flight Simulator in-game Marketplace

Installation - Miltech Simulations Webstore

Products distributed via Miltechsimulations.com are downloaded and updated via Contrail. Download the Contrail App here: https://cdn-eu.29palms.de/contrail/releases/ContrailSetup.exe

1. Download and Launch Contrail
2. Click on **"Accounts"** on the bottom left corner and "Connect" Miltech Simulations Account (log-in with your Miltech Simulations credentials)
3. Click on **"Downloads"**. Your products will download and install automatically.'

Installation - MS Marketplace

1. Launch Microsoft Flight Simulator
2. Open the Marketplace
3. Search the product
4. Click “Install” and wait for the product to install successfully.

Serial Key Activation

Review the Serial Key Activation Guide

Ready to Fly? ✈

Follow our Quick Start Guide for a quick overview into all main systems.

Removal

The product can be removed from Contrail, IniBuilds or the MS Marketplace, by clicking on the uninstall button. For more details, please contact the corresponding vendor.

Miltech Simulations MH60

Introduction

Thank you for purchasing the Miltech Simulations MH60, in partnership with Blackbird Simulations.

At Miltech Simulations, we remain committed to pushing the boundaries of what’s possible in Microsoft Flight Simulator. Following the success of our CH47D and other military platforms, we now present our most advanced rotary-wing project to date: the legendary MH60, brought to life after over a year of intensive development.

The Miltech Simulations MH60 is a multi-role, maritime helicopter capable of performing a wide variety of missions, from anti-submarine warfare and search-and-rescue, to medevac and special operations support. With advanced mission systems, modular configurations, and a highly detailed 3D model, the MH60 delivers a new level of features depth and realism to the sim.

This product is the result of a close collaboration with Blackbird Simulations, a renowned name in the flight simulation industry. Combining Blackbird’s world-class visual modeling with our own expertise in systems programming and mission integration, the MH60 sets a new standard for helicopter simulation.

We are proud to share this ambitious project with the community, and we hope it becomes a core part of your sim experience.

Miltech Simulations & Blackbird Simulations.

Miltech Simulations MH60

Activating the Aircraft

Caution
An active internet connection is required on initial activation of the aircraft.
After this, the aircraft can be used offline for a period of time. Our system will automatically check your license sporadically.
If you require assistance or have a setup that prevents this from functioning correctly, please contact us at contact@miltechsimulations.com

Miltech Simulations' MH-60 uses a lightweight activation and version control system to ensure your product license is valid and always up to date.

Depending on where you purchased the product, activation may differ:

- **MiltechSimulations.com / Contrail App**\ A serial key is generated and automatically entered into the product. Under normal circumstances, activation happens silently and without user input.
- **iniBuilds / BlackbirdSim.com**\ A serial key is provided at the time of purchase. You must copy and paste this key into the aircraft's **PFD Popup activation panel** upon first simulator load.
- **MS Marketplace**\ No activation key is required. The product activates automatically through the simulator platform.

Common Activation Issues

If the product fails to activate correctly, it may present in one or more of the following ways:

- **Primary Flight Display (PFD) and Multi-Function Display (MFD) appear completely black**
- **Error messages appear on one or both avionics screens upon loading the aircraft**
- **Activation prompt fails to accept a valid key or does not respond**

If you experience any of these issues, please contact our support team with your purchase information and a brief description of the problem. We're here to help.

contact@miltechsimulations.com

Miltech Simulations MH60

Disclaimer and Credits

Warning
WARNING: This product may potentially trigger seizures for people with photosensitive epilepsy. If you suffer from this condition, please do not flight the aicraft at night.

Caution
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Caution
This product was exclusively developed and distributed for entertainment and educational purposes. Any commercial, training, professional, or military use of this product is strictly prohibited and not endorsed by Miltech Simulations, or any other company or individual related to this project.

Caution
Although this simulated aircraft resembles its real-world counterparts in many aspects, the product does not accurately represent (nor intends to accurately represent) the performance, systems, design, and/or features of the real-life counterpart.

Caution
This product has been independently developed using open-source information. This product is an artistic impression of the aircraft, protected under the 1st Amendment, and does not accurately represent (nor intends to represent) the performance, systems, design and/or features of any real-life aircraft. The depiction of any weapon or vehicle in the simulator does not indicate affiliation, sponsorship, or endorsement by any weapon or vehicle manufacturer. The documentation included with this product is strictly restricted to Simulation Use Only and represents the depth of systems, equipment, and dynamics of this product.

Caution
This product has been developed using the available resources. The scope is limited to “As realistic as practical”, and though some systems have been accurately developed, others have been greatly simplified. For that reason, the systems, performance, operations, and procedures shall be considered purely fictional and not representative (nor intends to accurately represent) the real counterpart.

Credits

Blackbird Simulations:

- Collin & Team: Original MH60S 3D Assets, Cockpit and Underlying Systems

Miltech Simulations:

- Daniel D: Variant Conversion and 3D Modeling, Art Revisions, XML and Integration. FS24 Migration.
- Nace420: Flight & Engine Models. Underlying Systems (Fuel, Electrical). XML and Checklists.
- Rhys B: Decals, Liveries, Easter Eggs. Testing and QA.
- Vasy: Decals, Liveries. Testing and QA.
- Liam T: Mission Integration, Mission Hub.
- Brayan L: Secondary 3D Assets, Scenery Integration.

- John H: Quality Assurance, Subject Matter Expert. Project Scope definition.
- Max E: 3D/2D Asset Design.
- Maryadi: Weapons System Integration.
- Propair Flight (Peter, Viktor & Team): HTML/JS Avionics, Underlying Systems.
- Echo19 (Tyler & Team): Sound Design, Marketing.
- Gabriel V: Quality Assurance, Project Management, Marketing, Community Engagement. HTML/JS Avionics, WASM Integration. Documentation.

External Help:

- Distribution: Vantech North America LLC, IniBuilds LTD, Microsoft, Contrail Services Limited.
- Video and Promotion Materials: AviationLads, CaptainKenobi, Echo19 Team, Contrail Services Limited, IniBuilds LTD.
- Special Thanks to the Crew of HDMS Triton (Royal Danish Navy) and the amazing people of Greenland for letting us get close to an active MH60R.
- Thanks to all USCG and US Navy Subject Matter Experts who have approached us in the past few months of development and have guided us and validated the project.
- Thanks to all independent Beta Testers and Subject Matter Experts - including those who provided feedback during FSExpo 2025.

The “WaterDrop visual effect” used in this product is licensed under the MIT License. Copyright (c) 2021 Alex Marko\ Source: https://github.com/thealx-eech/msfs-effects-lib

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Miltech Simulations MH60

Product Support

All support for this product will be handled initially by Miltech Simulations. Support is available via our support forum: https://miltechsimulations.talkyard.net/latest

Our support is also offered via email in a 1-to-1 manner, through our Email Address: contact@miltechsimulations.com

For company/business inquiries, please contact hello@vantech.dev

Miltech Simulations MH60

Product Roadmap

The following roadmap outlines planned features, improvements, and major updates for the MH60 project. This timeline and features described here are **tentative** and may shift based on testing, feedback, or MSFS platform limitations.

Completed on Initial Release

- **MH60S / MH60R / MH60T Base Variants**
- Advanced Avionics System
- Keyset Interface v1.0
- Weapon Systems and External Loadouts
- FLIR and Acoustics Integration
- Mission Hub Compatibility (v1)

V1.0.1/V1.0.2

- Improvements, modeling and texturing of the cyclic.
- Improved blade coning.
- Significant performance/VRAM Optimization improvements.
- FS24 Improvements to draw distance of the hoist - up close.
- QOL and Accuracy improvements.
- Improved autopilot response.
- Improved flight modeling.

In Progress

- Blade Fold full implementation in FS24.
- New high-resolution crew models.
- Modular Keyset Refactor (per-page JS, reduced loops, potentially support for Copilot's side)
- Distance/Bearing/ETA To Base calculations improved
- Explosion effects on impact of Hellfire Missiles.
- Better handling of sonodipper/sonobuoys while flying over ground.
- Increased granularity of Autopilot Lateral/Longitudinal Speeds (HOVER Mode)
- Loads can be picked up again after being dropped on the ground.
- Improved PCL Interactions and Animations. PCL Keybinds.
- Improved Multiplayer support.

Planned / R\&D

- Navigraph Integration (PLAN MD Page), SimBrief Integration
- IHADSS (Integrated Helmet and Display Sight System)
- Night Vision Goggles
- ESM MD Page - Electronic Support Measures
- Sling Load Inertia
- Multiplayer-Linked Helo Assets (Weapons, ships, divers, accessories)

Miltech Simulations MH60

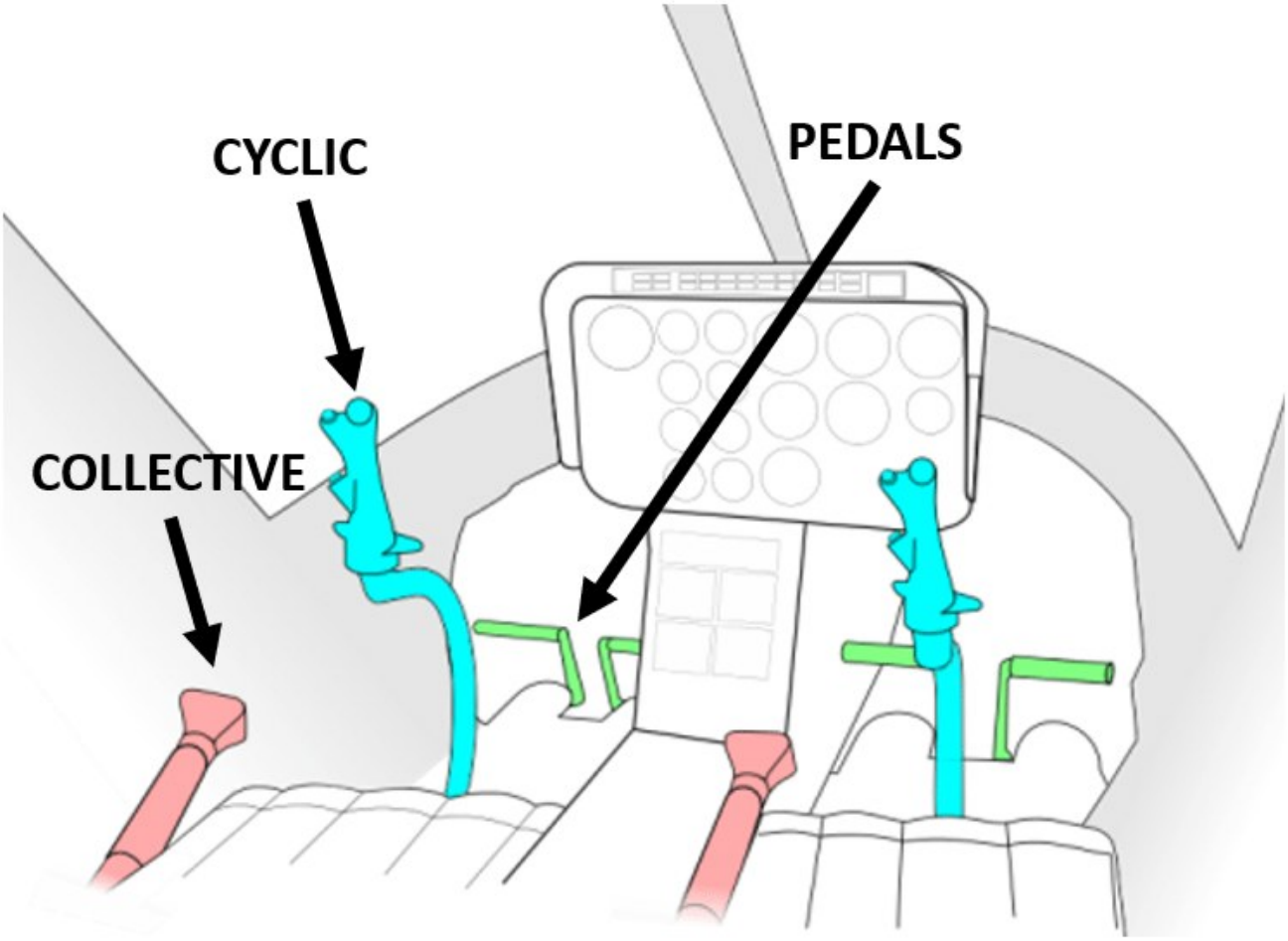
Recommended Hardware Configuration

Warning
A minimum 2% Deadzone in Collective and Pedal (In some cases up to 5% on old or inaccurate hardware) is required for AFCS to function correctly. Not enough deadzone will result in the input controllers and the system inputs conflicting with each other, leading to erratic or unexpected behavior. No deadzone is required on Cyclic, fully supporting unsprung cyclics.

Primary Flight Controls Configuration

If you are not familiar with helicopters, this guide should help you understand the basic controls that make them fly, and help you configure the controls correctly.

- **The Cyclic:** This stick sits between your legs. Moving it forward or back controls the helicopter's pitch (nose up or down). Moving it side-to-side controls the helicopter's roll (leaning left or right).
- Pitch Binding: ELEVATOR AXIS or CYCLIC LONGITUDINAL AXIS
- Roll Binding: AILERONS AXIS or CYCLIC LATERAL AXIS
- Both Pitch and Roll can be trimmed, making flight more comfortable for the user:
- Cyclic Pitch Trim Binding: INCREASE ROTOR LONGITUDINAL TRIM and DECREASE ROTOR LONGITUDINAL TRIM
- Cyclic Roll Trim Binding: INCREASE ROTOR LATERAL TRIM and DECREASE ROTOR LATERAL TRIM
- **The Collective:** This lever is on your left side. Raising the collective increases the pitch of all rotor blades at once, generating more lift and making the helicopter rise. Lowering it causes the helicopter to descend.
- Collective Binding: THROTTLE AXIS or COLLECTIVE AXIS
- **Is there Throttle?:** The MH60 does NOT have manual throttle control. Instead, the governor (device that automatically maintains a constant rotor speed (RPM) in a helicopter) will adjust the throttle as required. **DO NOT USE** HELICOPTER THROTTLE AXIS
- **Directional Pedals:** These are on the floor at your feet. Pushing the pedals lets you turn the helicopter nose left or right.
- Directional Pedals Binding: RUDDER AXIS or TAIL ROTOR AXIS



Primary Helicopter Controls

- Rotor Brake: Hydraulic system used to stop or slow the main rotor blades after engine shutdown. Rotor brake Binding: ROTOR BRAKE

Control Sensitivity Configuration

The design of the MH60 makes it an inherently stable aircraft. No pedal input is required to keep the aircraft under control. For this reason, Control Sensibility is a personal preference of the user and we don't have any particular recommendations to make.

Xbox Controller users may benefit from dampened sensibility in the cyclic axis for more precise control in hover.

Keybinds, LVARs and HEvents

A growing number of functions will be supported for Keybinding and Hardware Interaction over the upcoming updates. The Keybind Guide is frequently updated, and available here: Keybinds Guide

Miltech Simulations MH60

Keybinds Guide

Note
CLICKABLE IN COCKPIT COLUMN
:x:: There is no clickable switch in the cockpit, keybind/axis bind must be used
:white_check_mark:: There is a physical button in the cockpit, keybind is optional

Primary Flight Controls

Function	MSFS Axis Bindings	Clickable in Cockpit
Collective	THROTTLE AXIS or COLLECTIVE AXIS	
Cyclic Pitch	ELEVATOR AXIS or CYCLIC LONGITUDINAL AXIS	
Cyclic Roll	AILERONS AXIS or CYCLIC LATERAL AXIS	
Directional Pedals	RUDDER AXIS or TAIL ROTOR AXIS - You may have to use the Split Rudder Axis depending on your hardware configuration (RUDDER AXIS LEFT and RUDDER AXIS RIGHT)	
Steering Control	RUDDER AXIS or TAIL ROTOR AXIS - No dedicated axis for Steering Control.	
Rotor Brake (Press+Hold)	ROTOR BRAKE Configure keybind for press+hold (Input repetition must be enabled in FS24).	
Rotor Brake (Toggle On/Off)	TOGGLE ROTOR BRAKE	
Parking Brake	TOGGLE PARKING BRAKE	
Tail Wheel Lock	TOGGLE TAIL HOOK HANDLE	
Engine 1 PCL	THROTTLE 3 INCREASE Moves PCL OFF->IDLE->FLT. THROTTLE 3 DECREASE Moves FLT->IDLE->OFF.	
Engine 2 PCL	THROTTLE 4 INCREASE Moves PCL OFF->IDLE->FLT. THROTTLE 4 DECREASE Moves FLT->IDLE->OFF.	
Engine Autostart	ENGINE AUTO START	
Engine Auto Shutdown	ENGINE AUTO SHUTDOWN	

DO NOT USE HELICOPTER THROTTLE AXIS , the helicopter governor will control throttle automatically.

Trims

Function	MSFS Key Bindings	Clickable in Cockpit
Cyclic Pitch Trim	INCREASE ROTOR LONGITUDINAL TRIM and DECREASE ROTOR LONGITUDINAL TRIM Note that these keybinds are shared with Increase Target Speed/Decrease Target Speed, which only applies to Autopilot modes.	
Cyclic Roll Trim	INCREASE ROTOR LATERAL TRIM and DECREASE ROTOR LATERAL TRIM	
Trim Release	TOGGLE MARKER SOUND Configure keybind for press+hold (Input repetition must be enabled).	

Electrical

Function	MSFS Key Bindings	Clickable in Cockpit
Battery	TOGGLE MASTER BATTERY OR MASTER BATTERY ON MASTER BATTERY OFF	
Engine Ignition Switch	TOGGLE MASTER IGNITION SWITCH	
Auxiliary Power Unit Start	APU STARTER	
Auxiliary Power Unit Shutdown	APU OFF	
APU Toggle (Single Keybind Start/Off + Generator)	TOGGLE APU	
Generator 1	TOGGLE ALTERNATOR 1	
Generator 2	TOGGLE ALTERNATOR 2	
External Power	TOGGLE EXTERNAL POWER	

Lights

Function	MSFS Key Bindings	Clickable in Cockpit
Landing Light	TOGGLE LANDING LIGHTS	
Position Lights	TOGGLE NAV LIGHTS	
Anti-Collision Light	TOGGLE BEACON LIGHTS	
Formation Light	TOGGLE LOGO LIGHTS	
Move Search Light Right/Left (Only available on MH60-T)	INCREASE COWL FLAP 3 DECREASE COWL FLAP 3	

Function	MSFS Key Bindings	Clickable in Cockpit
Move Search Light Up/Down (Only available on MH60-T)	INCREASE COWL FLAP 4 DECREASE COWL FLAP 4	
Search Lights On/Off	TOGGLE RECOGNITION LIGHTS	

FLIR (Forward Looking Infrared) and NVG

Function	MSFS Key Bindings	Clickable in Cockpit
Move FLIR Right/Left	INCREASE MIXTURE 3 DECREASE MIXTURE 3	
Move FLIR Up/Down	INCREASE MIXTURE 4 DECREASE MIXTURE 4	
Increase/Decrease Zoom	INCREASE MAGNETO 3 DECREASE MAGNETO 3	
Night Vision Goggles (FS24)	TOGGLE NIGHT VISION	

AFCS, Autopilot, SAS

Autopilot Modes are subject to engage conditions. For more information, please read: Automatic Flight Control System (AFCS) and Stability Augmentation System (SAS)

Function	MSFS Key Bindings	Clickable in Cockpit
Toggle Autopilot Master	TOGGLE AUTOPILOT MASTER	
Toggle AFCS Mode - BARO ALT HOLD	TOGGLE AUTOPILOT ALTITUDE HOLD	
Toggle AFCS Mode - RAD ALT HOLD	TOGGLE AUTOPILOT RADIO ALTITUDE HOLD	
Toggle Approach/Hover Mode	TOGGLE AUTOPILOT WING LEVELER	
Toggle Crew Hover Mode	TOGGLE AUTOPILOT VS HOLD	
Toggle Depart Mode	TOGGLE AUTOPILOT MACH HOLD	
Crew Mode - Increase Lateral Velocity	INCREASE AUTOPILOT REFERENCE MACH	
Crew Mode - Decrease Lateral Velocity	DECREASE AUTOPILOT REFERENCE MACH	
Crew Mode - Increase Longitudinal Velocity	INCREASE AUTOPILOT REFERENCE AIRSPEED	
Crew Mode - Decrease Longitudinal Velocity	DECREASE AUTOPILOT REFERENCE AIRSPEED	

Function	MSFS Key Bindings	Clickable in Cockpit
Increase Hover Altitude	INCREASE AUTOPILOT REFERENCE ALTITUDE	
Decrease Hover Altitude	DECREASE AUTOPILOT REFERENCE ALTITUDE	
Increase Longitudinal Hover Speed	INCREASE AP PITCH HOLD REFERENCE	
Decrease Longitudinal Hover Speed	DECREASE AP PITCH HOLD REFERENCE	
Increase Lateral Hover Speed	INCREASE AUTOPILOT MAX BANK	
Decrease Lateral Hover Speed	DECREASE AUTOPILOT MAX BANK	
TRIM Button On/Off	TOGGLE SPOILERS	
Temporary Autopilot Disconnect, attitude control	SET AUTOPILOT DISENGAGE (on any Force Trim Mode) Press+Hold, Input Repetition must be ON (FS24)	
Increase Target Speed (6 Kias)	INCREASE ROTOR LONGITUDINAL TRIM Functions in altitude AFCS Modes (RAD or BARO) only.	
Decrease Target Speed (6 Kias)	DECREASE ROTOR LONGITUDINAL TRIM Functions in altitude AFCS Modes (RAD or BARO) only.	
AFCS Heading Trim	INCREASE HEADING BUG DECREASE HEADING BUG Adjusts heading trim by ±1°, like the collective-grip switch.	

Weapons, Countermeasures and Sonars

> Note
> Weapons Master Arm is required to be ON to deploy both Weapons and Sonobuoys. Master Arm is not keybindable.

Function	MSFS Key Bindings	Clickable in Cockpit
Fire (1) Helfire Missile OR Torpedo (Not available on MH60-T)	TOGGLE WATER RUDDER (FS20) or TOGGLE PRIMER 4 (FS24)	
Deploy Flares (Not available on MH60-T)	TOGGLE ALTERNATOR 3	
Deploy (1) Sonobuoy (Only available on MH60-R)	TOGGLE ALTERNATOR 4	

Rescue Hoist

Function	MSFS Key Bindings	Clickable in Cockpit
Rescue Hoist Power On/Off	FLAPS 1	
Raise Rescue Hoist	INCREASE FLAPS	
Lower Rescue Hoist	DECREASE FLAPS	

Miscellaneous

Function	MSFS Key Bindings	Clickable in Cockpit
Release Water (Bambi Bucket Full)	TOGGLE WATER BALLAST VALVE (FS20) or TOGGLE SPRAY (FS24)	
Master Caution Acknowledge	ACKNOWLEDGE MASTER WARNING	
COM 1 RADIO VOLUME	COM1 VOLUME INCREASE / COM1 VOLUME DECREASE	
COM 2 RADIO VOLUME	COM2 VOLUME INCREASE / COM2 VOLUME DECREASE	

LVARs

Note
We highly recommend binding switches using their corresponding B:Events instead of LVARs, if you are familiar with the process.

Nearly all switches (unless those with default MSFS Keybinds) can be keybinded to hardware using software such as SPAD.next and LVARs. The LVAR list is too long to fit here, but there are several methods to retrieve LVARs for any 3rd party aircraft. All LVARs on the MH60 are clearly named to make them easy to locate and bind.

If you are inexperienced with finding LVARs, please read the following article by our friends at JustFlight.
https://community.justflight.com/topic/5324/lvar-list/2

Miltech Simulations MH60

Included Sceneries

As usual in recent Miltech Simulations releases, we include **4 detailed mini-sceneries** with the aircraft, each tailored for mission-oriented operations:

KLDR - San Diego Coast Guard Air Station (USA)\ A busy USCG facility located along the San Diego waterfront, supporting maritime patrol, SAR, and border operations.

LEPM - Peñón de Vélez de la Gomera Helipad (Spain)\ A remote outpost on the Mediterranean coast, suited for Strait of Gibraltar patrols, anti-submarine warfare missions, and confined landing practice with the MH-60R.

KCGK - Kodiak Coast Guard Air Station (USA)\ One of the largest Coast Guard bases in the United States, situated in the rugged terrain of Kodiak Island, Alaska, and home to long-range SAR and patrol missions.

YGAD - Garden Island Naval Base (Australia)\ A key Royal Australian Navy installation near Perth, optimized for MH60R operations, including ASW, training, and fleet support.

All these locations feature helipads (for Ready to Fly start) and "Parking Spots" (for Cold and Dark Start).

Miltech Simulations MH60

FAQs and Common Problems

Any Sim: MFD and PFD are black, nonfunctional

1. Do you have electric power? if yes:
2. Are the OFF/DAY/NIGHT mode in a position different to off? if yes:

You may be experiencing an issue related to aircraft activation. Please refer to Activating the Aircraft

Unable to operate the rotor fold

Rotor fold has been temporarily disabled for initial V1.0.0 release of MH60, due to bugs and the impact on rotor animations. This will be soon enabled for FS24 in a future update.

Unable to operate the Rotor Brake

Rotor Brake cannot be clicked in the cockpit. Its position interferes with other overhead panel switches and levers. Instead, we have designated a keybind for Rotor Brake.

Use ROTOR BRAKE

Configure keybind for press+hold (Input repetition must be enabled). Do not use "Toggle Rotor Brake" as it may be interrupted by execution or PCL code.

Miltech Simulations MH60

Low VRAM Version

[FS20] Low VRAM

A Low VRAM Version is available for users with limited hardware, particularly GPUs with 8GBs or less VRAM. If you are experiencing low FPS, it is most likely attributed to this.

Just unzip directly onto your community folder. Replace all files.

Low VRAM total Reduction is aprox. 2.5GB, at moderate visual impact.

https://www.dropbox.com/t/AiiygEMissFTBMoS

[FS24] Low VRAM

A Low VRAM Version is available for users with limited hardware, particularly GPUs with 8GBs or less VRAM. If you are experiencing low FPS, it is most likely attributed to this.

Just unzip directly onto your community folder. Replace all files.

Low VRAM total Reduction is aprox. 2GB, at low visual impact.

https://www.dropbox.com/t/6sR4wXEX5iBClKf4

[FS24] Ultra-Low VRAM

An ultra-low VRAM version is available for users with GPUs with 6GBs or less VRAM.

Just unzip directly onto your community folder. Replace all files.

Ultra Low VRAM total reduction is aprox. 3.5 GB at moderate visual impact.

https://www.dropbox.com/t/VrzFi36doWEy9N4f

Miltech Simulations MH60

Paintkit

A paintkit is available for **MH60 Sierra** only.

Paintkits for other variants will be available in the future.

https://www.dropbox.com/t/dWd0RNwxnyiDPh6h

Miltech Simulations MH60

Quick Start Guide

Getting Started

The MH60 is a modern, twin-engine, multi-role helicopter equipped with advanced avionics, a sophisticated autopilot, and a Stability Augmentation System (SAS). These systems work together to ease pilot workload and provide a highly stable flight experience. Unlike traditional helicopters, the SAS automatically manages torque compensation - meaning **no pedal input is required during normal flight**.

The Miltech Simulations MH60 package includes the three primary variants of the helicopter:

- **MH60S (Sierra)** serves as a versatile Navy utility platform, ideal for cargo transport, SAR, and Vertical Replenishment.
- **MH60R (Romeo)** is a frontline anti-submarine and anti-surface warfare helicopter. It additionally performs Search and Rescue and VERTREP Operations.
- **MH60T (Tango)** represents the U.S. Coast Guard’s airframe, specialized for long-range search and rescue, medevac, and maritime patrol missions.

Configuring your Controls and Keybinds

Note
Rotor Brake: Keybind must be correctly configured, as otherwise it may interrupt the execution of other functions, or result in an incorrect activation.
ROTOR BRAKE
Configure keybind for press+hold (Input repetition must be enabled).
You may also use TOGGLE ROTOR BRAKE to lock it into position (ON/OFF without requiring input repetition)

Out of the box, MSFS will map your default throttle, elevator, and aileron axes to collective, cyclic longitudinal, and cyclic lateral control, respectively. This is generally sufficient to get you flying. However, it is important that if you are used to flying other helicopters, the MH60 **does not make use of "Helicopter Throttle Axis"** and therefore you must keep it deactivated on your hardware.

In addition, several mission and utility systems on the MH-60 require manual keybind configuration. These include:

- **FLIR Turret Control** (Pan/Tilt - recommended to use a joystick hat or camera pan axis)
- **Searchlight Control** (Pan/Tilt)
- **Weapons Control**

We strongly recommend reviewing the Recommended Hardware Configuration and Keybinds Guide

Included Sceneries

As usual in recent Miltech Simulations releases, the MH60 includes four detailed mission-oriented mini-sceneries.

KLDR (San Diego Coast Guard Air Station, USA) supports SAR and maritime patrol missions.

LEPM (Peñón de Vélez de la Gomera, Spain) offers a confined outpost ideal for ASW training and Strait of Gibraltar patrols.

KCGK (Kodiak Coast Guard Air Station, USA) provides a rugged environment for long-range SAR and patrol missions.

YGAD (Garden Island Naval Base, Australia) is a Royal Australian Navy facility optimized for MH60R operations, including training and fleet support.

Starting the Aircraft

This is a simplified Start-up Guide for all MH60 Variants. For detailed procedures, please review the: Normal Procedures - S, R, T

Power Startup

- **Parking Brake** - SET
- **↔ Tail Wheel Switch** - LOCKED
- **↔ Battery Switch** - ON
- **Interior/Exterior NVD Lighting** - AS REQUIRED
- **↔ APU Contr Switch** - ON
- **APU Generator** - ON
- **Flight and Mission Displays** - DAY/NIGHT AS REQD
- **↔ PRI and BU CMPTR PWR Switches** - BOTH ON
- **↔ 1 and 2 EGI PWR Switches** - ON, Wait for Alignment

Walkaround and/or Remove Covers:

In FS20 and FS24 Ported Builds:

- **Wheel Chocks** - REMOVED [KEYSET-Config-Chocks OFF]
- **Exhaust Plugs and Pitot Static Covers** - REMOVED [KEYSET-Config-Covers OFF]

In FS24 Native Build:

- **Walkaround Mode** - ACTIVE [CTRL+C or click Door Handle]
- **Wheel Chocks** - REMOVED
- **Exhaust Plugs** - REMOVED
- **Pitot Static Covers** - REMOVED

Instrument Alignment

- **BARO Alts, Clocks, Stby Instruments** - SET/UNCAGE
- **MD Systems Page** - SELECT/CHECK
- **Cautions and Advisories** - ACKNOWLEDGE

- **Fuel Quantity and Readouts** - CHECKED
- **Radar Altimeter** - SET DH
- **COMM/NAV/XPDR** - TEST/SET
- **SAS1, SAS2, TRIM** - ALL ON, Caution Extinguished
- **Stabilator Auto Control** - ON

Engine Start

- ↔ **Engine Ignition Switch** - NORM
- ◇ **#1, #2 Fuel Selector Levels** - XFD
- ▣ **Starter #1 Button** - PRESSED
- **PCL ENG 1** - IDLE
- **Engine #1 Values** - WITHIN LIMITS
- ▣ **Starter #2 Button** - PRESSED
- **PCL ENG 2** - IDLE
- **Engine #2 Values** - WITHIN LIMITS
- **Engine Oil Pressures** - CHECKED
- **Rotor Brake** - OFF
- **PCL#1 and PCL#2 -** FLY
- ◇ **Fuel Selector Levers 1 and 2** - DIR
- ↔ **#1 and #2 Generator Switches** - ON
- **Air Source ECS** - ENG
- **APU Generator** - OFF
- ↔ **APU Contr Switch** - OFF

Quick System Overview

Stability Augmentation and Autopilot

The Stability Augmentation System (SAS) uses two redundant computers to counteract small, rapid oscillations (especially in pitch, roll, and yaw). This helps stabilize the aircraft and reduces pilot workload. Both SAS Computers should always be ON (#1 and #2 on the SAS Panel)

TRIM Control should generally be ON (#3 on the SAS Panel), especially if you have self-centering hardware. For more advanced users, review the options available in Force Trim System

Autopilot provides Speed, Altitude (BARO/RAD) and Attitude Control. It does not provide any heading control - No Heading Select or LNAV Modes are available on this aircraft. Automatic Hover and Crew Hover modes are available. Refer to the Automatic Flight Control System (AFCS) and Stability Augmentation System (SAS) section of this manual.

More information:

Automatic Flight Control System (AFCS) and Stability Augmentation System (SAS)

Weapons

The MH60 is equipped to carry and deploy a range of weapons and countermeasures depending on the selected variant. Please note that copies distributed from MS Marketplace do not feature functional weapons or flares.

- Type of Weapons Available: Weapons & Countermeasures Systems
- Loading Weapons: Weapons & Countermeasures Systems
- Using Weapons: Weapons & Countermeasures Systems
- Deploying Flares: Weapons & Countermeasures Systems
- Jettison Weapons: Weapons & Countermeasures Systems

Communications

The MH60's communication system is equipped with dual radios, allowing independent operation of COMM 1 and COMM 2 channels. To operate the radios, you must first familiarize yourself with the Keyset: Keyset

To tune COMM Frequencies or XFER Frequencies: Communications Systems

Navigation

The MH-60 features a flexible and powerful navigation system designed to support realistic military operations as well as standard MSFS functionality. To operate the nav systems, you must first familiarize yourself with the Keyset: Keyset

- Entering Flight Plans
- INSPlanner Cloud Sync: Navigation Systems
- FS24 Tablet Sync (via MSFS EFB): Navigation Systems
- MSFS World Map Sync: Navigation Systems
- Manual Waypoint Entry: Navigation Systems
- Modifying Flight Plans
- Edit/Create Waypoints: Navigation Systems
- Delete FTP Flight Plans: Navigation Systems
- Search Patterns: Search Patterns Operations
- Flight Plan back to Base: Navigation Systems
- Navigation Aids
- VOR, TACAN, ADF: Navigation Systems

External Sling Loads

Broken mention

Acoustic and Antisubmarine, Sonobuoy, Sonodipper

Acoustic and Antisubmarine Operations

Search and Rescue, Hoist

Broken mention

Mission System

Broken mention

Tail and Rotor Fold

Tail and Rotor Fold/Unfold Operations

Firefighting Procedures

Broken mention

Miltech Simulations MH60

Normal Procedures - S, R, T

> Caution
> **SIMULATION USE ONLY - DO NOT USE THIS DOCUMENTATION ON A REAL AIRCRAFT**

Sim Operation Remarks

1. Make sure your controls are correctly configured for Helicopter Flight. Check the Recommended Hardware Configuration
2. Make sure your hardware has all the necessary keybinds configured. Check the Keybinds Guide
3. **Rotor Brake:** Keybind must be correctly configured, as otherwise it may interrupt the execution of other functions, or result in an incorrect activation.

ROTOR BRAKE

Configure keybind for press+hold (Input repetition must be enabled). You may also use TOGGLE ROTOR BRAKE to lock it into position (ON/OFF without requiring input repetition)

Before Start Checklist

1. **Wheel Chocks** - SET [KEYSET-Config-Chocks ON]
2. **Parking Brake** - SET
3. **↔ Tail Wheel Switch** - LOCKED
4. **Engine Fire T-Handles** - FORWARD
5. **APU Fire T-Handle** - IN
6. **↔ Battery Switch** - ON
7. **Fire Detection Test 1, 2** - TEST/CHECKED
8. **Interior/Exterior NVD Lighting** - AS REQUIRED
9. **Walkaround/Area** - CLEAR
10. **Exhaust Plugs and Pitot Static Covers** - REMOVED [KEYSET-Config-Covers OFF]
11. **↔ Air Source ECS Switch** - APU
12. **Prime Fuel Pump** - APU BOOST
13. **Fuel Boost Pump #1 and #2** - BOTH ON
14. **↔ APU Contr Switch** - ON
15. **APU Generator** - ON
16. **Air Source ECS** - AS REQD
17. **Flight and Mission Displays** - DAY/NIGHT AS REQD
18. **↔ PRI and BU CMPTR PWR Switches** - BOTH ON
19. **↔ 1 and 2 EGI PWR Switches** - ON, Wait for Alignment
20. **↔ Blade Fold Master Switch** - ON

21. ↔ **Blade Fold Switch** - SPREAD
22. **Pylon Flight and Rotor Spread Lights** - ILLUMINATED
23. ↔ **Utility Hyd Pump Switch** - ON
24. **BARO Alts, Clocks, Stby Instruments** - SET/UNCAGE
25. **MD Systems Page** - SELECT/CHECK
26. **Cautions and Advisories** - ACKNOWLEDGE
27. **Fuel Quantity and Readouts** - CHECKED
28. **Radar Altimeter** - SET DH
29. **COMM/NAV/XPDR** - TEST/SET
30. **Load Equipment, Weapons, FTP** - LOADED (Keyset)

Engine Start Checklist

1. **Area** - CLEAR
2. **Doors** - CLOSED AND LOCKED
3. **SAS1, SAS2, TRIM** - ALL ON, Caution Extinguished
4. **Stabilator Auto Control** - ON
5. ↔ **Engine Ignition Switch** - NORM
6. ◇ **#1, #2 Fuel Selector Levels** - XFD
7. **Lights** - AS REQUIRED
8. ▣ **Starter #1 Button** - PRESSED
9. **TGT ENG 1** - LESS THAN 80 DEGREES
10. **PCL ENG 1** - IDLE
11. **Engine #1 Values** - WITHIN LIMITS
12. ▣ **Starter #2 Button** - PRESSED
13. **TGT ENG 2** - LESS THAN 80 DEGREES
14. **PCL ENG 2** - IDLE
15. **Engine #2 Values** - WITHIN LIMITS
16. **Engine Oil Pressures** - CHECKED
17. **Engine NGs** - MATCHED WITHIN 3%
18. **Rotor Brake** - OFF
19. **PCL#1 and PCL#2 -** FLY
20. ◇ **Fuel Selector Levers 1 and 2** - DIR
21. **TRQs** - MATCHED WITHIN 5%
22. **NP/NR** - 100%
23. ↔ **#1 and #2 Generator Switches** - ON

24. **Air Source ECS** - ENG
25. **APU Generator** - OFF
26. **↔ APU Contr Switch** - OFF
27. **De-Ice System** - AS REQD

Before Taxi Checklist

1. **Chocks** - REMOVED FOR TAXI [KEYSET-Config-Chocks OFF]
2. **Lights** - AS REQD
3. **Parking Brake** - RELEASED
4. **↔ Tail Wheel Switch** - RELEASED AND CHECKED

Before Takeoff Checklist

1. **Lights** - AS REQD
2. **Anti-Ice, Pitot Heat, De-Ice** - AS REQD
3. **SAS1, SAS2, TRIM Pushbuttons** - CHECK ON
4. **Stabilator Auto Control** - CHECK ON
5. **Instruments and WCAs** - CHECKED
6. **Transponder** - SET
7. **↔ Tail Wheel Switch** - LOCKED
8. **Set Takeoff Collective** - SET

Climb and Cruise Checklist

1. **Lights** - AS REQD
2. **Anti-Ice, Pitot Heat, De-Ice** - AS REQD
3. **Autopilot Systems** - AS REQD
4. **Instruments and WCAs** - CHECKED
5. **Fuel Consumption** - CHECKED

Before Landing Checklist

1. **Lights** - AS REQD
2. **Instruments and WCAs** - CHECKED
3. **Fuel Consumption** - CHECKED
4. **↔ Tail Wheel Switch** - LOCKED
5. **Landing Area** - ALL CLEAR

After Landing Checklist

1. **Flight Controls** - NEUTRALIZE
2. **Brakes** - AS REQD

3. ↔ **Tail Wheel Switch** - AS REQD
4. **Lights** - AS REQD
5. **Anti-Ice, Pitot Heat, De-Ice** - OFF
6. ↔ **Air Source ECS Switch** - APU
7. **Prime Fuel Pump** - APU BOOST
8. ↔ **APU Contr Switch** - ON
9. **APU Generator** - ON

Engine Shutoff/Aircraft Switchoff Checklist

1. **Lights** - AS REQD
2. ↔ **Tail Wheel Switch** - LOCKED
3. **Transponder** - STBY
4. **Parking Brake** - SET
5. **Chocks** - SET [KEYSET-Config-Chocks ON]
6. ↔ **#1 and #2 Generator Switches** - OFF
7. ↔ **Engine Ignition Switch** - OFF
8. **#1 and #2 PCL** - IDLE for 1 MIN
9. ◇ **#2 PCL and Fuel Selector Lever** - OFF
10. ◇ **#1 PCL and Fuel Selector Lever** - OFF
11. **Rotor Brake** - ON, AS REQD
12. **Stabilator Auto Control Pushbutton** - OFF
13. **SAS1, SAS2 and TRIM Pushbuttons** - OFF
14. **Utility Hyd Pump** - OFF
15. ↔ **Blade Fold Master and Switch** - AS REQD
16. ↔ **PRI and BU CMPTR PWR Switches** - OFF
17. ↔ **#1 and #2 EGI PWR Switches** - OFF
18. **Flight and Mission Displays** - OFF
19. **Lights** - OFF
20. **APU Generator** - OFF
21. ↔ **Air Source ECS Switch** - OFF
22. ↔ **APU Contr Switch** - OFF
23. **Prime Fuel Pump** - OFF
24. **Boost Fuel Pumps #1 and #2** - OFF
25. ↔ **Battery Switch** - OFF

Miltech Simulations MH60

Other Procedures

- Tail and Rotor Fold/Unfold Operations
- Weapons & Countermeasures Loading and Firing Procedures
- Acoustic and Antisubmarine Operations
- Search Patterns Operations

Miltech Simulations MH60

Tail and Rotor Fold/Unfold Operations

Tail Fold / Unfold

The MH60 features a folding tail boom, allowing the aircraft to reduce its footprint for shipboard or hangar storage. This function is fully animated and can be controlled via in-cockpit switches.

Note

- Aircraft must be on the ground, both engines off, Rotor RPM must be zero to enable Tail Fold.
- Aircraft must be energized, either with Battery, APU or GPU, for both Folding and Unfolding.
- Tail Fold is available on Sierra, Romeo and Tango variants.
- Engines will not start (Starter disengages automatically) if the tail is folded.

Operation:

1. Ensure the aircraft is on the **ground** with the **engines off.**
2. Set **Parking Brake.**
3. On Pilot's Side **Keyset**, [CONFIG] Page, press **TAIL FOLD.** The option is crossed out if conditions are not met.
4. The tail folding sequence will start automatically. Once completed, the keyset option changes to **TAIL *UNFLD***
5. To unfold, press the ▣ **TAIL *UNFLD*** button. The sequence starts automatically until the surfaces are unfolded and locked in place.



Pilot's Side Keyset - [CONFIG] Page, TAIL FOLD Option.

Miltech Simulations MH60

Weapons & Countermeasures Loading and Firing Procedures

Caution
Keybinds must be configured for Weapon and Defensive systems to work correctly. Please refer to the Keybind Guide for more information.

Note
Weapons (Torpedoes and Hellfires) and Flares are not available on copies distributed via the MS Marketplace (PC or Xbox)

The MH60 is equipped to carry and deploy a range of weapons depending on the selected variant. The weapons system is simulated within the limitations of Microsoft Flight Simulator and includes support for both immersive visual effects and functional target engagement in compatible mission scenarios (Requiring Mission Hub).

The MH60 Weapons System is designed exclusively for **PC-based installations** and does **not function on Xbox consoles**. Due to Marketplace restrictions, **the system is not available or functional on copies of Microsoft Flight Simulator purchased via the MS Marketplace**, as Marketplace Rules do not permit the distribution of functional weapons systems. Cosmetic Weapons are still enabled.

As with all weapon systems in MSFS, **no damage or network-synchronized impact effects** are supported. Rockets and missiles function purely for visual and training purposes. Multiplayer users will **not see projectiles or effects**, and there is **no hit registration or scoring**. Missile launches produce only **cosmetic visual effects**. Target lock, radar-guided or infrared missile tracking is **not implemented**.

Countermeasures (flares and chaff) are **entirely cosmetic**, offering no defensive functionality or protection from AI or player weapons in multiplayer.

Weapon Types and Stations

Weapon Type	Stations Available	MH60S	MH60R	MH60T
M240 Door Guns	Crew Left / Right. Cosmetic Only.			
MG50 Door Guns	Crew Left / Right. Cosmetic Only.			
AGM114 Hellfire Missiles	External Pylons L/R	, x8	, x4	
Mk54 Torpedo	External Left Pylon			
Flares & Chaff	CMDS Dispenser			

Note
Note: Although listed under the WPNS Menu on the Keyset, Sonobuoys and Sonodipper are not considered weapons, but rather Acoustic Elements. For more information, Acoustic and Antisubmarine Operations

Loading Weapons

Weapons are configured via the **Keyset Weapons Page**.

Note

- Aircraft must be on the ground to load Weapons.
- Aircraft must be energized, either with Battery, APU or GPU.
- MH60 Tango does not have the "Weapons" Page, as it often does not carry any weapons.
- Options are crossed out when conditions are not met.



Weapons Page, Keyset, MH60R.

1. Using the Pilot's Side Keyset, navigate to the **WPNS Submenu**
2. Use the Keyset Buttons to **Load or Unload** weapon types: * Use the buttons to load weapons onto a station. When loaded, the station will be marked with "**" on the Keyset screen. Pressing the same button again will unload the station. * Available weapon types vary by MH-60 variant. Only compatible weapons will be displayed for each configuration. * Loading weapons increases the aircraft’s weight. Always monitor your total loadout to ensure it remains within Maximum Takeoff Weight (MTOW) limits. * Flares cannot be unloaded once loaded. They can only be released during flight or jettisoned. More information Weapons Jettison
3. You may now return to the menu by pressing WPNS^. The aircraft payloads are ready to be used.

Arming Weapons & Firing Procedures (Hellfire, Torpedos)

Note
Note: Guns are cosmetic only, and have no firing or aiming functionality.

To arm weapons:

1. **Power On Weapons Systems:**

- On the **Armament Control-Indication Panel (ACI Panel)**, set **Master Arm** to *ARMED*.
- Set **↔ Laser Guidance Safe Switch** to *ON*



Armament Control-Indication Panel (ACI Panel), Centre Console, Mid CPLT Side

2. **Select Station:**

- Use the **Weapons Management & Attack Submenu (ATAK) on Keyset** to assign an active pylon/station.
- **Active stations** are those not crossed out and available for selection. Use the second row of Keyset buttons to arm a station. The first row of the Keyset displays a status code for each pylon, respectively:

- NORD: No Ordinance.
- NARM: Not Armed (Master Arm is OFF).
- STBY: System Armed, but pylon Not Active.
- RDY: Pylon Active and Armed, ready to fire.
- Missiles and Torpedoes are unguided in this rendition. **No FLIR Locking is simulated** at this time.
- LOBL- Lock On Before Launch and LOAL- Lock On After Launch are **NOT functional** on this rendition.



Keyset ATAK Submenu.

3. **Fire Selected Weapon:** * Selected Pylon is now armed. **Use the Fire Hellfire/Torpedo Keybind** to deploy the weapon.

- TOGGLE WATER RUDDER or TOGGLE PRIMER 4
- More information on the Keybinds Section Keybind Guide. These functions are not clickable from the cockpit.

- On copies distributed **externally from MS Marketplace**, the weapon animation will now be visible, including VFX and impact craters. On Marketplace purchases, the weapon will just be unloaded from the pylon.

Deploying Flares

1. **Load Flares** through the Keyset WPNS Page. More information on Loading Weapons
2. A single load of flares has a **total of 60 units**, with 30 launched from each side of the aircraft. There is currently no system in place to display the remaining flare count.
3. Use the **Keybind** to deploy flares individually. * TOGGLE ALTERNATOR 3 * More information on the Keybinds Section Keybind Guide. These functions are not clickable from the cockpit.

Weapons Jettison

Weapon Jettison by individual load station is supported on this aircraft. Use the WPNS Jettison Panel to select and release the weapons individually.

1. ↔ **Selective Jettison Master Switch** (SEL JETT) to *ARMED* Position
2. ◇ **Use the Jettison Selector Knob** to select which station to jettison:
3. Buoys for Sonobuoys
4. Right Outbd, Empty
5. Right Inbd for Torpedos and/or Fuel Tanks, or Hellfire Missiles on MH60S
6. CMDS for Flares
7. Left Inbd for Hellfire Missiles and/or Tanks
8. Left Outbd for Fuel Tanks
9. Once Selected, **press JETTISON** to release all loads on the selected pylon.



Jettison Panel

Keybind Guide

Caution

- Weapons Master Arm is required ON to deploy Weapons. Master Arm is not keybindable.
- Both of these Keybinds must be correctly configured for weapons to work correctly. These two functions are not clickable in the cockpit.

Function	MSFS Key Bindings	Clickable in Cockpit
Fire (1) Helfire Missile OR Torpedo (Not available on MH60-T)	TOGGLE WATER RUDDER (FS20) or TOGGLE PRIMER 4 (FS24)	
Deploy Flares (Not available on MH60-T)	TOGGLE ALTERNATOR 3	

Full Keybinds Guide available here: Keybinds Guide

Miltech Simulations MH60

Acoustic and Antisubmarine Operations

Tip
This page only applies to MH60 Romeo.

The Acoustic and ASW System on the MH60R enables detection, localization, and engagement of submerged submarines using a suite of deployable and onboard sensors. It utilizes sonobuoys and/or sonodippers to receive acoustic data.

Sonobuoys

A sonobuoy is a small, expendable sonar system dropped into the ocean from an aircraft or helicopter. Once in the water, it transmits acoustic data back to the aircraft for submarine detection and tracking. They can be Passive (e.g., DIFAR): Listens for noise from submarines (e.g., propellers, engines) or Active (e.g., DICASS): Emits pings and listens for echoes to determine range and bearing. For the terms of MSFS Simulation, either way is identical.

Sonobuoys as modeled in MSFS have a limited transmitting range, and duration of approximately 5 minutes. Few seconds after releasing, the sonobuoy will begin transmitting data to the aircraft on the MD ACST Page

Sonobuoys will remain floating on the surface of the water, and their position is visible from the air as a yellow buoy.

Sonodipper

A Sonodipper is a nickname for the MH-60R’s retractable, active dipping sonar system, officially known as the AN/AQS-22 ALFS (Airborne Low-Frequency Sonar). It consists of a large sonar dome that is lowered into the water by winch when the helicopter hovers. Unlike sonobuoys, which are expendable and left behind, the Sonodipper is a reusable system that provides real-time active sonar data, including precise range and bearing information on submerged targets.

Sonodippers shall remain underwater to receive any data from nearby submarines. This can sometimes be inconvenient as the pilot shall fly very close to the water.

Loading and Deploying Acoustic Elements

Sonobuoys

Use the pilot's side Keyset, under WPNS page to load/unload sonobuoys. This will get you a full load of 25 buoys to release.



Pilot's side Keyset, WPNS Page

Note
Wait 10-15 seconds between each sonobuoy launch. If two buoys are launched too close of each other, they may only show a single return on ACST Page.
In the real aircraft, a wait time of a few seconds is also necessary to rebuild the pneumatic pressure required to launch sonobuoys.

To release, turn on the MASTER ARM switch on the Armament Control-Indicator (ACI) panel, then press the BUOY LAUNCH button. This will deploy one sonobuoy from the left side of the helicopter.



ACI Panel, note MASTER ARM on. Press BUOY LAUNCH to deploy

Sonodipper

Use the pilot's side Keyset, under WPNS page, to load/unload sonodipper. Sonodipper will be visible as soon as loaded, it is recommended to do this as you are flying over water.

Sonodipper does not require arming or releasing. It will begin transmitting as soon as the aircraft is flying above water, and sonodipper is under water.

Using Acoustic Elements

Please note that ACST Pages **will only fuction as depicted with Miltech Mission Hub**, and when using compatible mission modes (Submarine Attack, Submarine Intercept). More information: Broken mention

Use the ACST Button on the Mission Display to open the Acoustics page. Use PG UP and PG DN buttons on the right side bezel to alternate between Sonobuoy and Sonodipper.

We recommend using the Copilot MD for Acoustics, as this display is replicated on the ASW Console in the cabin.

Sonobuoys



Acoustics Page, Sonobuoy

Up to four Sonobuoy instances can be displayed simultaneously. Releasing multiple buoys increases the accuracy of target localization. The vertical axis on the display represents the **bearing to the detected source**, in degrees, while the horizontal axis shows the **distance**, in yards.

Target returns typically appear as **dark spots** on the display. Sonobuoys are relatively cheap and expendable sensors, which means their acoustic returns often include a significant amount of background noise or interference, and have a limited range.

Sonodipper



Acoustics Page, Sonodipper

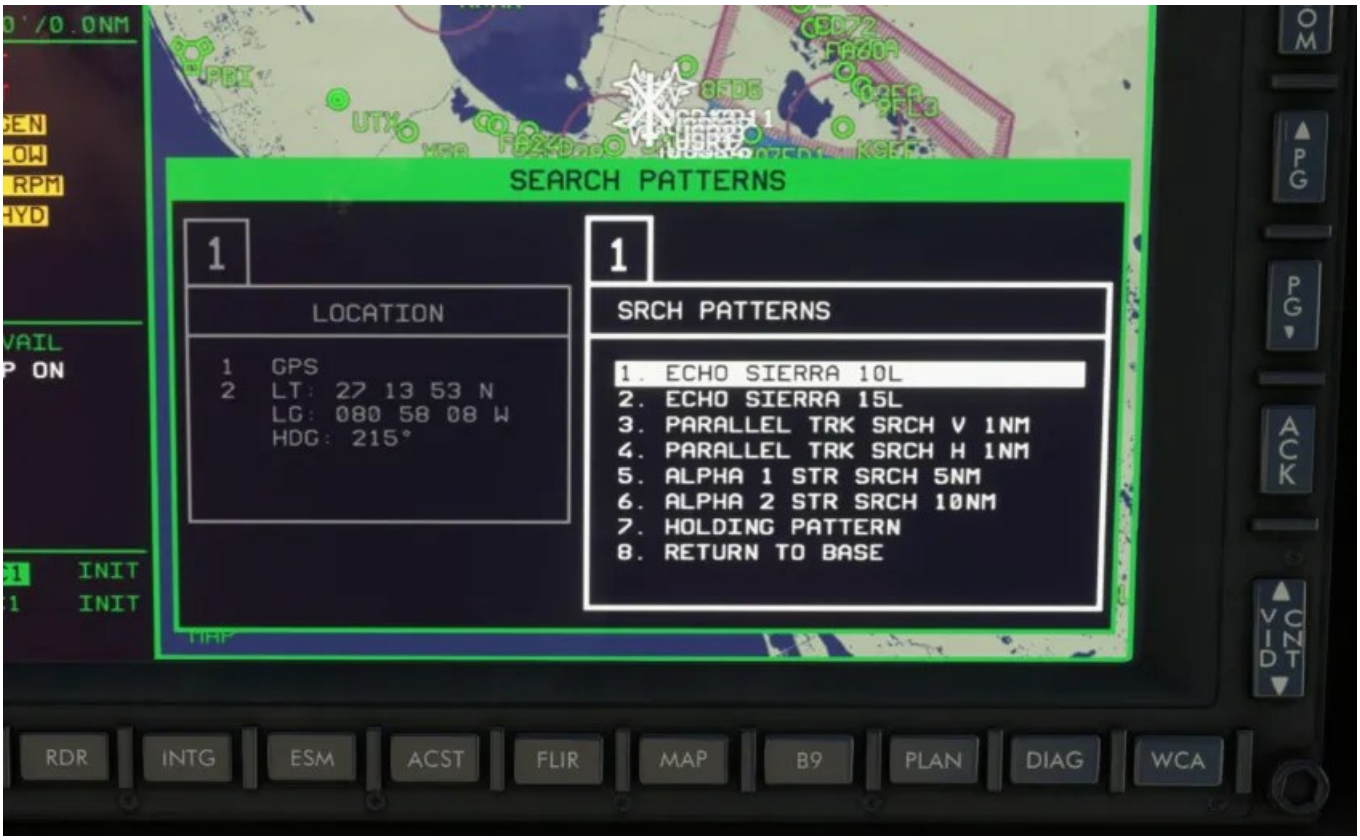
The Sonodipper is a more advanced and precise system compared to sonobuoys, offering greater range and accuracy. Like sonobuoys, it presents contact information on a two-dimensional axis, with bearing to the target on the vertical axis and distance in yards on the horizontal axis. The Sonodipper can accurately determine both range and bearing to a contact, which appears as a green dot on the display. Additionally, the Hydrophone Scope shows the current depth of the sonar transducer below the water surface.

Miltech Simulations MH60

Search Patterns Operations

Create Search Pattern

1. Navigate to the NAV Menu, and select SRCH PTTR option. This will open up the SEARCH PATTERN Pop-up menu on the Mission Display.
2. Use the PG UP or PG DN keys, either on the Keyset or MD Bezel, to move the cursor. Press ACK to select a Search Pattern. The FTP Flightplan will now be overwritten with the selected Search Pattern.



Search Patterns Pop-up Menu. Note PG UP, PG DN and ACK Buttons on the right bezel for navigation.

3. You may now close the Pop-up by pressing SRCH *PTTR*. Adjust Map Range as desired and fly the Search Pattern manually.

All Search Patterns are predefined and non-editable. They all originate from the aircraft location at the time of activation.

Available Search Patterns

- SIERRA SIERRA: Expanding Square
- Sierra Sierra 10L (10 Legs)
- Sierra Sierra 15L (15 Legs)
- The search area is small,

- The location of the search object is known within relatively close \ limits, but some doubt exists about the distress position, and
- A concentrated search is desired
- VICTOR SIERRA: Sector Search
- Victor Sierra 5NM (5 Nautical Miles per Leg)
- Victor Sierra 10NM (10 Nautical Miles per Leg)
- The search area is small,
- The location of the search object is well known, and
- A concentrated search is desired.
- CHARLIE SIERRA: Creeping Line Search
- Charlie Sierra 1NM (1 Nautical Mile spacing between Legs)
- The search area is large,
- The location of the search object is approximate, but there is \ a greater chance that the search object is at one end of the \ search area versus the other (i.e. debris was found on one \ end during a previous search), and
- Uniform coverage is desired.
- PAPA SIERRA: Parallel Search
- Papa Sierra 1NM (1 Nautical Mile spacing between Legs)
- The search area is large,
- The location of the search object is approximate, and
- Uniform coverage is desired.

Miltech Simulations MH60

Overview - Exterior

MH60-Sierra



MH60-Romeo



MH60-Tango



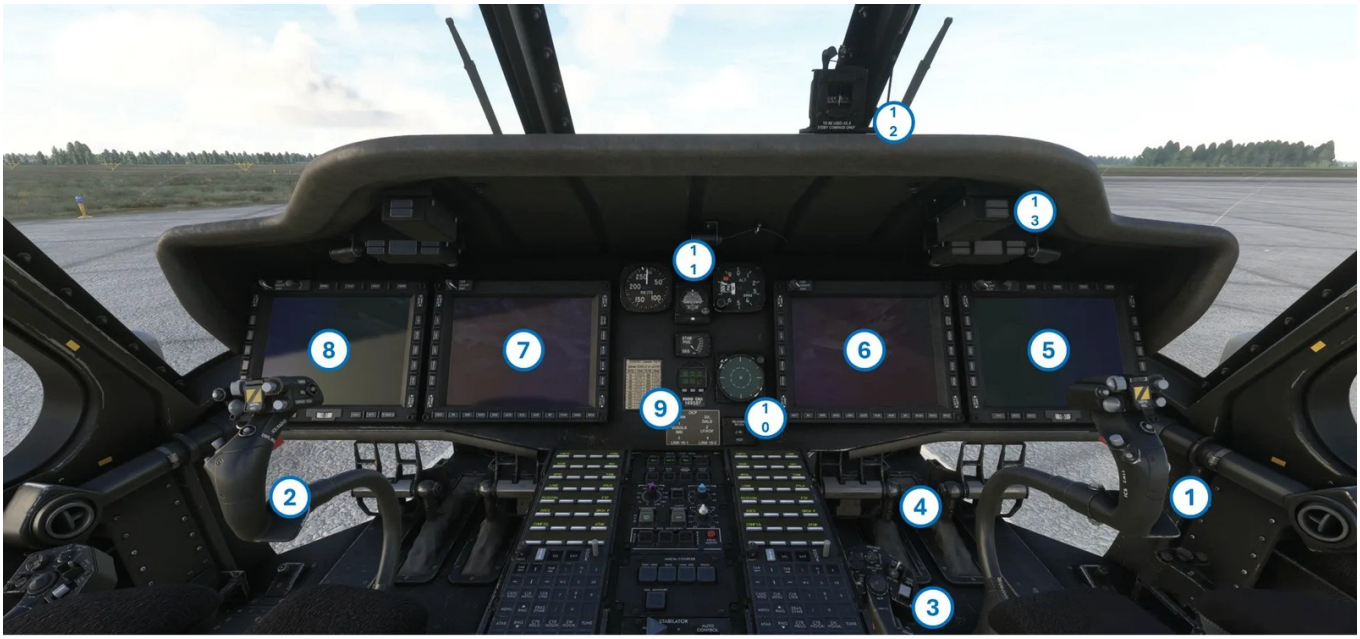
Miltech Simulations MH60

Overview - Cockpit

- Main Instrument Panel
- Overhead Panel
- Center Console

Miltech Simulations MH60

Main Instrument Panel



1. **Pilot’s Cyclic**: Primary flight control used to command pitch and roll by tilting the rotor disc. Controls forward, aft, and lateral movement of the aircraft.
2. **Copilot’s Cyclic**: Primary flight control used to command pitch and roll by tilting the rotor disc. Controls forward, aft, and lateral movement of the aircraft.
3. **Pilots’ Collective**: Shared control used to adjust the pitch of all main rotor blades simultaneously, controlling vertical lift. Integrated with throttle grip and engine power levers.
4. **Pilots’ Antitorque Pedals**: Control the pitch of the tail rotor blades to manage yaw (nose direction) and counteract main rotor torque.
5. **Pilot Primary Display**: Digital flight display showing attitude, airspeed, altitude, heading, vertical speed, and navigation symbology. More information Primary Display (PD)
6. **Pilot Mission/Multifunction Display:** Displays various mission elements such as Maps, FLIR, Sensor Integration, WCA, etc. More Information Mission/Multi-Function Display (MFD)
7. **Copilot Mission Display**: Digital flight display showing attitude, airspeed, altitude, heading, vertical speed, and navigation symbology. More information Primary Display (PD)
8. **Copilot Primary Display:** Displays various mission elements such as Maps, FLIR, Sensor Integration, WCA, etc. More Information Mission/Multi-Function Display (MFD)
9. **Chronometer:** Provides digital timekeeping for mission timing, navigation, etc.
10. **Radar Warning Receiver (RWR):** Not Modeled
11. **Standby Instruments:** Airspeed Indicator, Attitude Director Indicator, Altimeter, Stabilator Indicator.
12. **Standby Compass:** Magnetic compass used as a backup heading reference.
13. **Warning and Caution Lights:** Master Warning, Master Caution, Rotor RPM, etc.

Miltech Simulations MH60

Overhead Panel



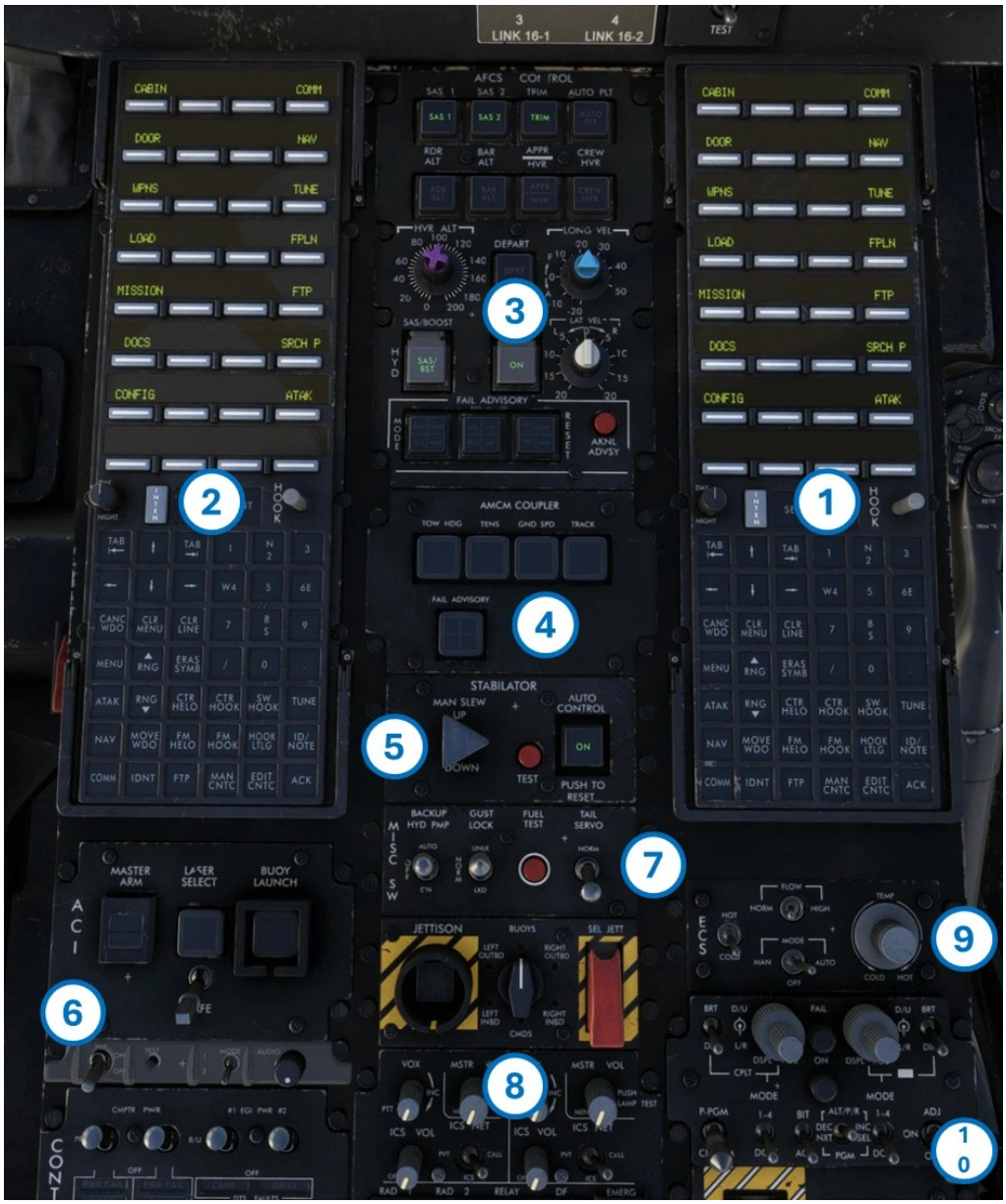
1. **Engine Power Control Levers 1/2:** OFF, IDLE, FLY. Also equipped with their corresponding starter buttons.
2. **Fuel Control Levers 1/2:** OFF, DIR, XFED. Determines from which tank does fuel feed into the engines.
3. OFF: Fuel valves are closed, no fuel enters the engine.
4. DIR: Direct fuel feed, Tank 1 feeds Engine 2, Tank 2 feeds Engine 2
5. XFED: Both tanks feed both engines.
6. **Anti-Ice and De-Ice System Panel:** Controls the activation of engine inlet anti-ice, pitot tube heat, and blade de-icing systems.
7. **Console and Instrument Lights Panel:** Adjusts the brightness of cockpit console and instrument panel lighting.
8. **↔ Engine Ignition Switch:** Enables or disables ignition circuitry for engine start.
9. **Windshield Wipers:** Controls the speed and activation of the pilot and copilot windshield wipers for visibility in rain or wet conditions.
10. **Cargo Hook Panel:** Controls the status of the hook and external cargo hook system.
11. CONTR/ARMED Switch will power on and arm the Cargo Hook. Arming is required for Sling Load operations. Armed ALL and Armed COCKPIT positions both will power on and arm the hook.
12. EMERG RELEASE has no utility in the simulator.

13. **Utility Hyd Pump:** Not used in the simulator.
14. **Rescue Hoist:** Powers on, and arms the rescue hoist system.
15. PWR/ARMED provides power to the rescue hoist system. You may either use the ALL or COCKPIT positions to power it on.
16. CONTROL switch provides Up/Down control of the rescue hoist.
17. **Electrical System Panel:** Provides control of the aircraft's electrical power sources and distribution. Includes generator switches, battery, etc. For more information, Electrical System
18. ◉ **Fire Test Knob:** Used to test the fire detection and warning systems for the engines and APU.
19. ↔ **APU Control Switches:** Starts, stops, and controls the Auxiliary Power Unit, which provides electrical and pneumatic power for ground operations.
20. ◉ **Interior Lighting Panel, Formation Lights Knob:** Controls cockpit glareshield lights, console lamps, and copilot instruments lighting. The formation lights knob adjusts brightness of external low-visibility lighting used during formation flight.
21. **Exterior Lighting Panel:** Controls aircraft position lights, anti-collision lights, landing/search lights, and other external lighting for ground and flight operations.

Miltech Simulations MH60

Center Console

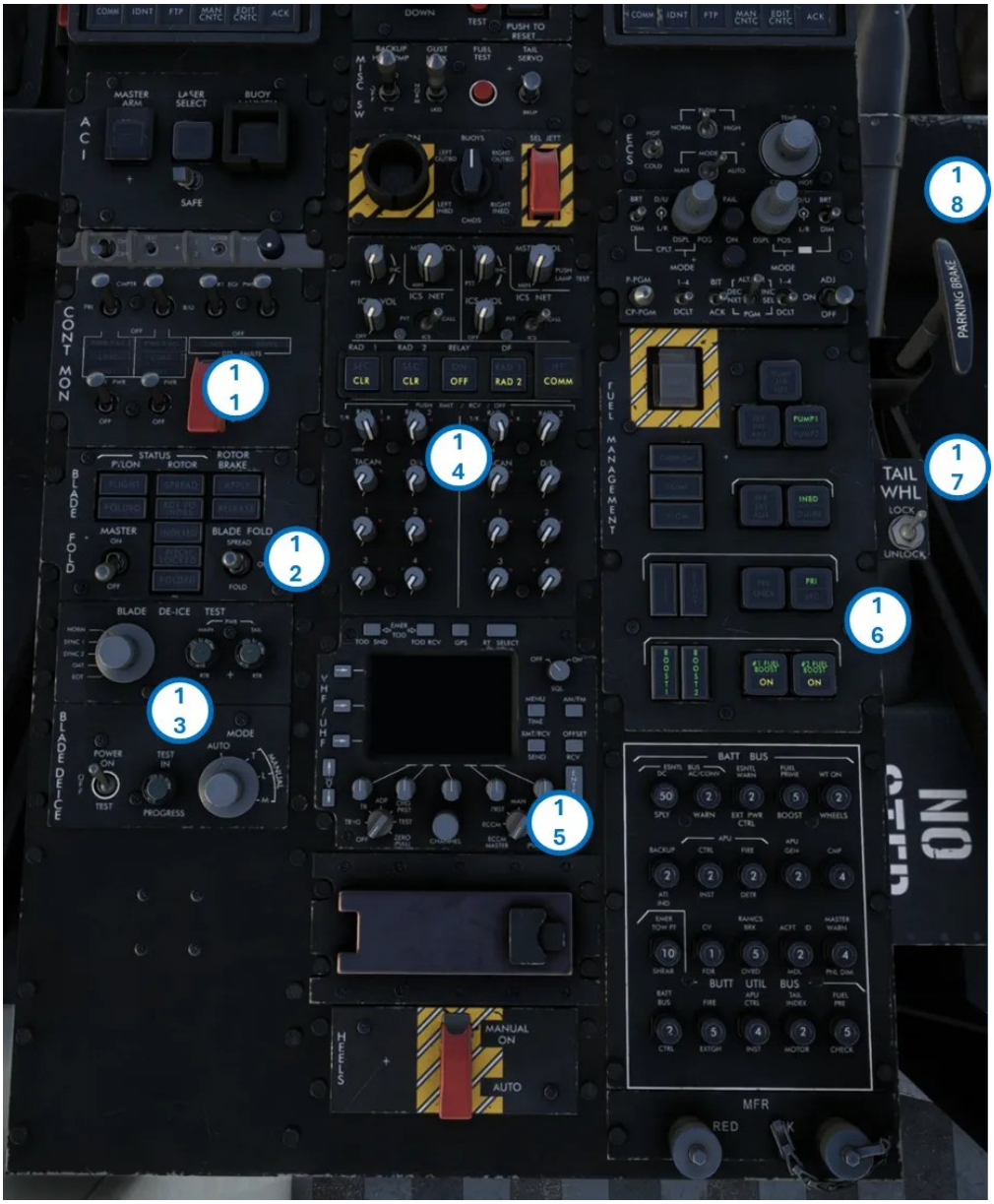
Upper Center Console



1. **Pilot's Side Keyset:** The Keyset is the primary interface used to interact with the Communication, Navigation, Mission and Weapons Management Systems onboard the MH60. It also provides submenus to configure the aircraft's cabin layout, equipment loadout, and other mission-specific settings. For more information, Keyset
2. **Copilot's Side Keyset:** Temporarily disabled for input for performance considerations.
3. **Autopilot System Control Panel:** Controls the Autopilot System, Stability Augmentation System and related systems. For more information, Automatic Flight Control System (AFCS) and Stability Augmentation System (SAS)
4. **Airborne Mine Counter Measures (AMCM) Coupler Panel:** Not modeled.

5. **Stabilator Control Panel:** Provides power and manual command to the automatic Stabilator System.
6. **Armament Control-Indication (ACI) Panel:** Energizes the Armament control panel, provides a clickable input to deploy sonobuoys (MH60R). More information Weapons & Countermeasures Loading and Firing Procedures
7. **Miscellaneous Switch Panel:** Hosts controls for auxiliary systems, including the Backup Hydraulic Pump, Tail Servo ON/OFF, and Gust Lock engagement.
8. **Pylon Jettison Panel:** Provides emergency jettison capability for external weapon pylons or stores. Jettison can be done individually by pylon selected. More information Weapons & Countermeasures Loading and Firing Procedures
9. **Environmental Control System:** Controls cabin heating, ventilation, and cooling functions. For display purposes only.
10. **IHADSS (Integrated Helmet and Display Sight System):** Visor is currently not modeled in MSFS. A visor prototype is under R\&D.

Lower Center Console



11. **Control Monitor Panel:** Provides power to the computers and EGI/INS-GPS System of the aircraft
12. **Blade Fold Panel:** Manages the operation of the blade fold and tail fold mechanisms for shipboard storage. More information: Tail and Rotor Fold/Unfold Operations
13. **Blade De-Ice Panel:** Controls the rotor blade anti-ice system.
14. **Operator Control Panel:** Enables control of volume of different communication channels.
15. **Backup Radio Control Unit:** Provides redundant communication capability in case of failure of the primary radio systems.
16. **Fuel Management Control Panel:** Displays fuel levels and controls fuel transfer between tanks. Supports management of auxiliary tanks, fuel balancing, and refueling operations. More information: Broken mention
17. **Tail Wheel Lock:** Locks the tail wheel in place for ground handling stability. Unlocks for taxi and maneuvering as needed.
18. **Parking Brake Lever:** Engages the Parking Brake.

Miltech Simulations MH60

Aircraft Displays

- Primary Display (PD)
- Primary Display Overview
- Mission/Multi-Function Display (MFD)
- Left Side Panel
- WCA Page
- DIAG Page
- MAP, PLAN and TACT Pages
- ACST Page
- Keyset
- Main Menu (MENU)
- Communications Menu (COMM)
- Navigation Menu (NAV)
- Attack Menu (ATAK)
- MD Popups

Miltech Simulations MH60

Primary Display (PD)



Primary Display

1. ↔ **OFF/DAY/NIGHT Switch:** Applies power and boots the FD when switched from the OFF position. Provides luminance mode control with selections for NIGHT mode and DAY mode.
2. ◉ **Universal Control Knob (UCK):** Allows entry of values for: Barometric Altitude (BARO), Heading Bug (HDG), Decision Height (DH), and Course (CRS). More information, Using the Universal Control Knob (UCK)
3. ▣ **SYNC Button:** When the selection of HDG, DH, or CRS, the respective pilot´s adjustable parameter is matched to the current aircraft parameter. This function is temporarily disabled.
4. ▣ **TIMER Button:** Initiates start, stop, and reset of the 24-hour timer. Use Timer controls on the standalone Timer instrument.
5. ▣ **DCLT Button:** Not implemented.
6. ▣ **MSTR Button:** Allows the operator to sync the CRS and HDG settings from the other flight display.
7. ▣ **DSP BRT Button:** Provides overall display brightness control. Use mouse wheel while hovering over buttons to adjust.

8. ▣ **FMC Button:** This switch allows selection of the FMC Input channel. On MSFS, a single FMC is simulated, hence it always selects FMC1.
9. ▣ **DTC Button:** Inoperative. This switch allows selection of the Data Concentrator, which does not apply to this simulation.
10. ▣ **ADC Button:** Inoperative. This switch allows selection of the Air Data Computer, which does not apply to this simulation.
11. ▣ **EGI Button:** Displays the Embedded GPS/INS (EGI) popup submenu, which shows the current EGI status, alignment timer, and additional INS-related information.
12. ▣ **ATT Button:** Inoperative. This switch allows selection of the Attitude Input Channel, which does not apply to this simulation.
13. ▣ **CNT VID Button:** Inoperative. This switch has no function described in the NATOPS manual for this aircraft.
14. ▣ **RNG Button:** Allows selection of the range for the MAP Mode on HSI. Use the mouse wheel while hovering over buttons to adjust.
15. ▣ **M/T Button:** Magnetic-True selector. Allows the selection of Heading and Course data in Magnetic or True. This function is temporarily disabled.
16. ▣ **N/H/T Button:** Selects map mode orientation, NORTH UP, HEADING UP or TRACK UP. This will control both the HSI Map, as well as the MFD Maps.
17. **Turn and Slip Indicator:** Shows the rate of turn and whether the aircraft is in coordinated flight.
18. ◇ **BRG2 Selector:** Allows the operator to view the BRG2 source selection menu and select one of the BRG2 sources to drive the BRG2 needle on the HSI or MAP display.
19. ◇ **BRG1 Selector:** Allows the operator to view the BRG1 source selection menu and to select one of the BRG1 sources to drive the BRG1 needle on the HSI or MAP display.
20. ◇ **NAV Selector:** Allows the operator to view the NAV menu and select one of the navigation sources to drive the NAV needle on the HSI or MAP display.
21. **VID BRT:** Inoperative. This switch has no function described in the NATOPS manual for this aircraft.
22. ◇ **MODE Selector:** Allows the operator to toggle between the following HSI display formats. More information, Primary Display Overview

1. Horizontal situation indicator (HSI)
2. Hover (HVR)
3. Map (MAP)

23. ▣ **CRS Button:** Allows the operator to adjust the desired course using the UCK. The range of the CRS bezel value is 000° to 359° with 1° increments. More information, Using the Universal Control Knob (UCK)
24. ▣ **DH Button:** Allows the operator to adjust the desired Decision Height using the UCK, by 10ft increments. The DH bug is a white circle located on the outside of the RADALT dial. More information, Using the Universal Control Knob (UCK)
25. ▣ **HDG Button:** Allows the operator to adjust the heading bug value using the UCK. The range of the heading bug value is 000° to 359° with 1° increments. More information, Using the Universal Control Knob (UCK)
26. ▣ **BARO Button:** Allows the operator to adjust the local barometric pressure settings, using the UCK, in the Kohlsman window. More information, Using the Universal Control Knob (UCK)

27. **SYM BRT:** Inoperative. This switch has no function described in the NATOPS manual for this aircraft.

Using the Universal Control Knob (UCK)

The UCK Knob, located on both Pilot and Copilot PFD Bezels, functions as a multi-purpose rotary control selector for various functions, including selecting Heading, Course, Decision Height and Kollsman BARO.

Changing Heading

> Note
> MH60 Autopilot system does not have a "Heading Select" mode. Therefore, the heading bug is only used for visual reference.

As a practical example, let's adjust the selected heading using the ◉ **Universal Control Knob**:

1. ▣ **Press the HDG Button** on the left side of the PFD bezel (▣ **Button #25** on the diagram above).\ This will highlight **"HDG"** near the airspeed tape, indicating that heading selection is now active.
2. **Rotate the UCK** (by clicking and dragging, or using the mouse wheel) to increase or decrease the desired heading.
3. Once the desired heading is set, simply **release the UCK**. After a few seconds of inactivity, the heading selection mode will close automatically, and the **HDG indicator** near the airspeed tape will disappear.

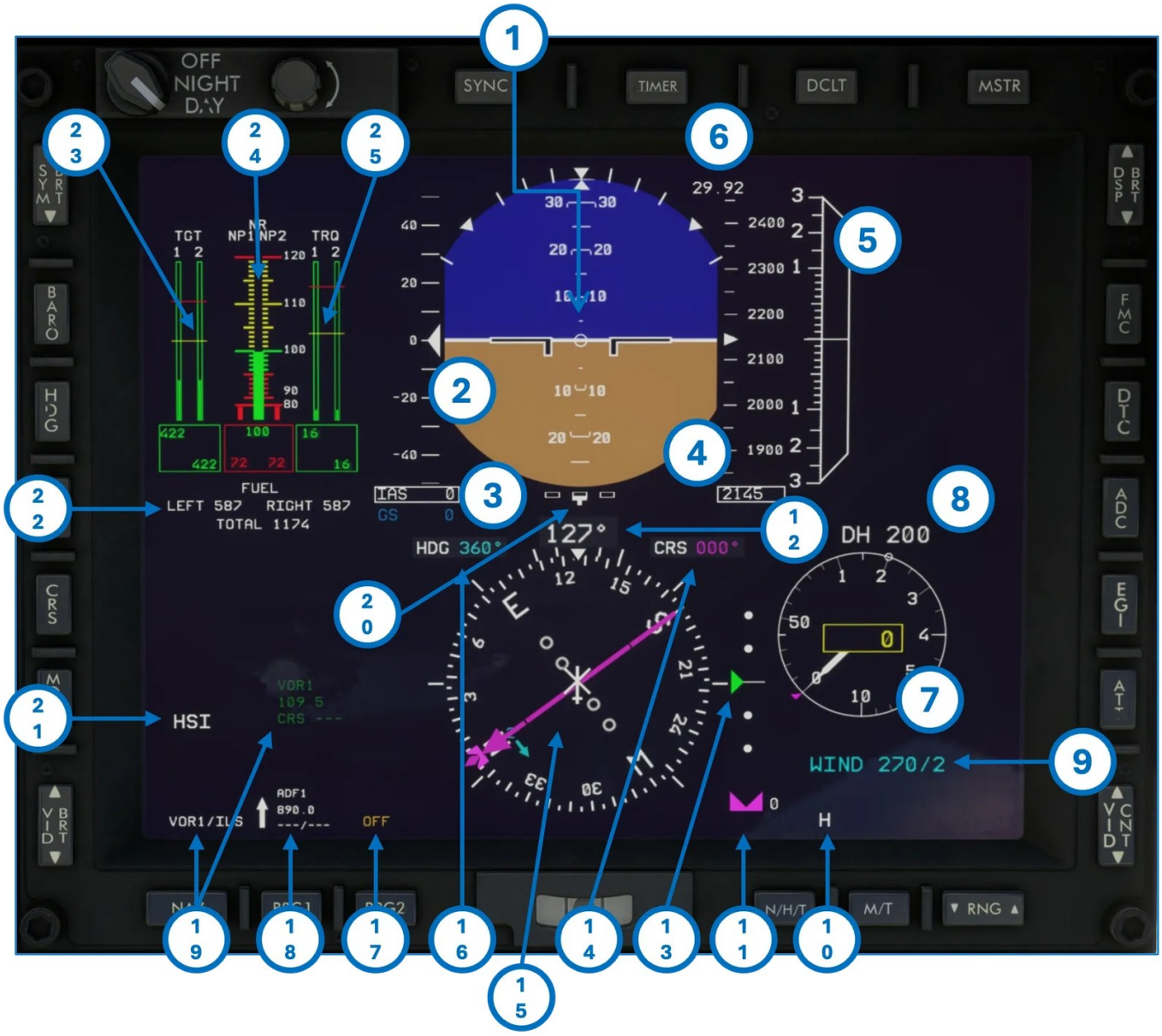
Changing Course, Decision Height or Kollsman BARO

You may follow the steps above, pressing ▣ **CRS (Button 23), DH (Button 24), or BARO (Button 26)** respectively.

Miltech Simulations MH60

Primary Display Overview

Display Overview



Primary Display Overview

1. **Attitude Direction Indicator (ADI):** Displays the aircraft's orientation relative to the horizon. It provides the pilot with critical pitch (nose-up or nose-down) and bank (left or right roll) information. The scale is graduated in 5º Increments.
2. **Indicated Airspeed Indicator:** Moving scale in 10 KIAS Increments with numbers displayed every 20 KIAS. Maximum indicated speed is 180 KIAS.
3. **Indicated Airspeed/Ground Speed:** Numerical indication of Indicated Air Speed and Ground Speed.
4. **Barometric Altitude Indicator:** There are two barometric altitude indicators: a tape scale and a digital readout window. The tape indicator is a moving scale with a stationary arrow displaying the barometric altitude.

5. **Vertical Speed Indicator (VSI):** Displays the aircraft's vertical speed. The 1, 2, and 3 indicate the positive or negative vertical speed in thousands of feet per minute.
6. **Kollsman Setting, inHg:** Displays the local barometric pressure setting. The operator can change the setting by turning the Universal Control Knob (UCK) when the BARO bezel key is selected on the FD. UCK Info Primary Display (PD)
7. **Ground Altitude Indicator:** Displays radar altitude in a dial/digital format with associated indicators for decision height and hover altitude. Hover Altitude is indicated as a triangular pink bug on the outer ring of the Ground Speed indicator. Hover altitude can be selected from the Autopilot Control Panel.
8. **Decision Height Display:** Displays the current variable altitude decision height value selected by the operator. The operator can change the DH by turning the Universal Control Knob (UCK) when the DH bezel key is selected on the FD. Decision Height is also displayed as a circular bug on the Radar Altimeter indicator. UCK Info Primary Display (PD)
9. **Wind Speed Indicator:** Displays current wind direction and velocity, in Knots.
10. **Map Mode Indicator:** Indicates Map Direction Mode, for both MD and PFD. H indicates HEADING UP, N indicates NORTH UP, T indicates TRACK UP. Can be selected using the N/H/T Button.
11. **Heading Selected:** Displays the current heading selected. Heading can be selected using the Bezel HDG Button in combination with the UCK. More information Primary Display (PD). Redundant with #16
12. **Magnetic Heading:** Displays the current magnetic heading, in Degrees.
13. **Glideslope Indicator:** When a valid ILS Frequency is tuned and intercepted, displays the deviation from the glideslope path.
14. **Course Selected:** Displays the current course selected. Course can be selected using the Bezel CRS Button in combination with the UCK. More information Primary Display (PD).
15. **Horizontal Situation Indicator (HSI):** Navigation instrument that combines heading, course, and navigation source information into a single display. It enhances situational awareness by providing a top-down view of the aircraft's orientation relative to the selected course or navigation aid.
16. **Heading Selected:** Displays the current heading selected. Heading can be selected using the Bezel HDG Button in combination with the UCK. More information Primary Display (PD). Redundant with #11
17. **BRG2 Indicator:** Allows the operator to view the BRG2 source selected driving the BRG2 needle on the HSI or MAP display.
18. **BRG1 Indicator:** Allows the operator to view the BRG1 source selected driving the BRG1 needle on the HSI or MAP display.
19. **NAV Indicator:** Allows the operator to view the NAV source selected driving the NAV needle on the HSI or MAP display.
20. **Turn and Slip Indicator:** Shows the rate of turn and whether the aircraft is in coordinated flight.
21. **HSI Mode Indicator:** Allows the operator to see the HSI Mode selected. More information, Primary Display Overview

1. Horizontal situation indicator (HSI)
2. Hover (HVR)
3. Map (MAP)

22. **Fuel Quantity:** Displays fuel quantity on tanks 1 and 2, in Pounds, as well as total quantity on internal tanks. Fuel quantity on external tanks is not displayed here.

23. **Turbine Gas Temperature #1, #2:** Displays the exhaust gas temperature of each engine. TGT is a key indicator of engine thermal performance and is monitored to avoid overheating and ensure safe power settings during all flight phases.
24. **Power Turbine Speeds #1, #2, Rotor Speed:** Shows the rotational speed of each engine's power turbine (NP1, NP2) and the main rotor speed (NR), expressed as a percentage of nominal RPM.
25. **Engine Torque #1, #2:** Indicates the amount of torque being produced by each engine, shown as a percentage of maximum rated output.

HSI Mode Selector

HSI Mode

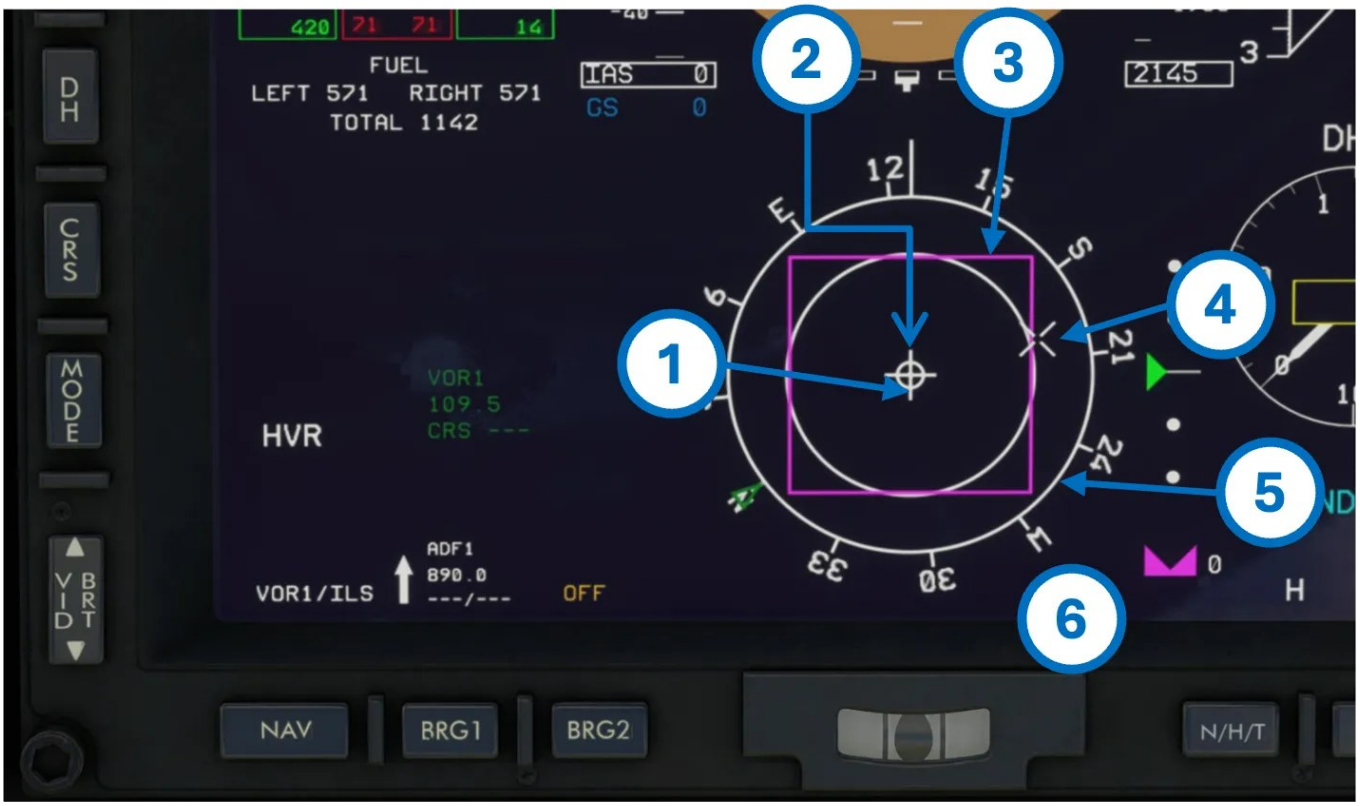
The standard HSI (Horizontal Situation Indicator) is displayed, combining heading, selected course, and navigation source information into a single integrated view. Note that the flight plan route (Either Sim-Created or FTP) is not displayed on this mode.

Map Mode

This mode prioritizes the background map display, prominently showing the flight plan route. It also includes BRG1, BRG2, and a reduced-format HSI indicator for basic heading and course awareness.

Note: This is a clean map with a black background and no additional overlays.\ For topographic maps, tactical overlays, and facility information, refer to the Mission Display (MD).

Hover Mode



Hover Mode

1. **Helicopter Position Indicator:** Indicates the datum, position of the helicopter.
2. **Hover Position Point:** Provides a directional cue to the operator when approaching the hover position.

3. **Hover Altitude Indicator:** A graphical representation of the error between the selected hover altitude and actual hover altitude. The size and position of the hover altitude error box represent the error\ between the selected hover altitude and the actual hover altitude as described below:
4. If Selected Hover Altitude equals Radar Altitude; then the box corners lie on the inner range ring. This indicates on altitude.
5. If the aircraft is below the Selected Hover Height, the box increases in size until its corners lie on the outer compass ring.
6. If the aircraft is above the Selected Hover Height, the box decreases in size until it collapses to its minimum size.
7. **Position of Load Indicator:** Displays where the cargo is located with respect to aircraft, if external loads have been selected for pickup.
8. **Compass Rose:** Provides aircraft heading while in HVR mode. Labeled every 30°
9. **Velocity Vector (NOT PICTURED):** A green vector representing aircraft velocity magnitude and direction. The velocity vector emanates from the center of the inner range ring and points in the direction that the aircraft is drifting.

Embedded GPS/INS (EGI) Popup

The EGI Popup provides real-time information on the status of the Embedded GPS/INS system, including:

- Alignment Status (e.g., OFF, ALIGNING, ALIGNED)
- Time Remaining to Full Alignment
- Current EGI Mode or Errors (if any)



EGI Popup

1. ▣ **EGI Button:** Displays the Embedded GPS/INS (EGI) popup submenu, which shows the current EGI status, alignment timer, and additional INS-related information.
2. **EGI Pop-up Display.**

EGI Not Aligned

When the EGIs are not aligned, the Primary Flight Display (PFD) will appear degraded or partially blank, indicating unavailable navigation data.

The Embedded GPS/INS systems (EGIs) serve as the aircraft’s primary source of navigation, positioning, and attitude reference data, and are critical for flight operations. Proper alignment is essential before takeoff to ensure accurate heading, flight plan tracking, and system integration.



EGI Not Aligned Page

To align EGIs, locate the EGI PWR #1 and #2 Switches on the Copilot side of the centre console. Both of these switches must be turned ON, along with CMPTR PWR, to start the automatic alignment process.



EGIs PWR Switch #1 and #2

Alignment has been simulated to last approximately 15 seconds. In reality, alignment on these aircraft is much longer, taking over 15 minutes and, at times, up to half an hour.

Miltech Simulations MH60

Mission/Multi-Function Display (MFD)



Multi-Function Display

1. ↔ **OFF/DAY/NIGHT Switch:** Applies power and boots the FD when switched from the OFF position. Provides luminance mode control with selections for NIGHT mode and DAY mode.
2. ▣ **DSP BRT Button:** Provides overall display brightness control. Use mouse wheel while hovering over buttons to adjust.
3. ◇ **STN HELO Selector** - Switches the left-side panel position information between Land Station (BASE) and Helicopter (HELO) view.
4. ▣ **ZOOM Button:** Not currently implemented.
5. ▣ **PAGE UP (PG UP) Button:** Scrolls up through available pages or data fields. Used for map zoom, scrolling up/down through popups and menus, tune frequencies, etc.

6. ▣ **PAGE DOWN (PG DN) Button:** Scrolls down through pages or data sets. Used for map zoom, scrolling up/down through popups and menus, tune frequencies, etc.
7. ▣ **ACKNOWLEDGE (ACK) Button:** Acknowledges an action when appropriate - think of it as a "Click" button. Often interchangeable with SEL. Can also be accessed from the MD Bezel (ACK Button).
8. ▣ **VID CNT Button:** Video Contrast on FLIR, not implemented.
9. ▣ **WCA Button:** Opens the Warnings, Cautions, and Advisories (WCA) page for reviewing alerts and status of systems. More information WCA Page
10. ▣ **DIAG Button:** Opens system diagnostics or status page. More information DIAG Page
11. ▣ **PLAN Button:** Opens the PLAN map page. More information MAP, PLAN and TACT Pages
12. ▣ **B9 Button:** Not used.
13. ▣ **MAP Button:** Opens the MAP page. More information MAP, PLAN and TACT Pages
14. ▣ **FLIR Button:** Activates and opens the FLIR Page. More Information FLIR (Forward Looking Infrared)
15. ▣ **ACST Button:** Opens Acoustic System page for sonobuoy and sonar management (Only fully functional on MH60R). More information ACST Page
16. ▣ **ESM Button:** To be implemented in the future, Electronic Support Measures interface for signal detection.
17. ▣ **INTG Button:** Not used.
18. ▣ **RDR Button:** Not used.
19. ▣ **B2 Button:** Not used.
20. ▣ **TACT Button:** Opens Tactical Display map with situational overlay. For more informationMAP, PLAN and TACT Pages
21. ▣ **VID BRT Button:** Video Brightness on FLIR, not implemented.
22. ▣ **OVLY Button:** Not used.
23. ▣ **RPTO Button:** Not used.
24. ↔ **L3 Switch:** Left-side rotary selectors or push-buttons for sensor modes, layers, or brightness depending on configuration. For example, switch between FLIR modes.
25. ↔ **L2 Switch:** Left-side rotary selectors or push-buttons for sensor modes, layers, or brightness depending on configuration. For example, switch between FLIR modes.
26. ↔ **L1 Switch:** Left-side rotary selectors or push-buttons for sensor modes, layers, or brightness depending on configuration. For example, switch between FLIR modes.
27. **SYM BRT:** Inoperative. This switch has no function described in the NATOPS manual for this aircraft.

Pages, Subpages, Panels and Pop-Ups

- Pages & Subpages:

WCA Page

DIAG Page

MAP, PLAN and TACT Pages

ACST Page

- Panels:

Left Side Panel

- Pop-Ups

MD Popups

Miltech Simulations MH60

Left Side Panel



1. **Weight on Wheels Indicator:** Displays whether the helicopter is on the ground (weight on wheels detected) or airborne.
2. **Misc. Sling Load Information:** Displays sling load status such as distance to load, bearing to load, attachment status, or release readiness. Only active during sling load operations.
3. **HELO/BASE Indicator:** Shows whether the information is currently centered on the **HELO** (your aircraft) or on the **BASE** (your assigned landing/recovery station). Matches the state of the STN/HELO Selector.
4. **HELO/BASE Coordinates and information:** Displays coordinates, elevation, and/or bearing/range to the HELO or BASE, depending on selection. Useful for return-to-base navigation, offset planning, or SAR station keeping.
5. **Warnings and Cautions:** Critical messages alerting the pilot to system malfunctions or safety-related issues. These are highlighted prominently, often requiring acknowledgment.
6. Warnings display in **RED**, and indicate conditions that require immediate crew awareness and corrective action. These messages represent serious system malfunctions or flight conditions that may compromise safety if not promptly addressed.
7. Cautions are displayed in **YELLOW** and signify conditions that require attention but are not immediately hazardous. They typically indicate a system anomaly, configuration issue, or limitation that the crew

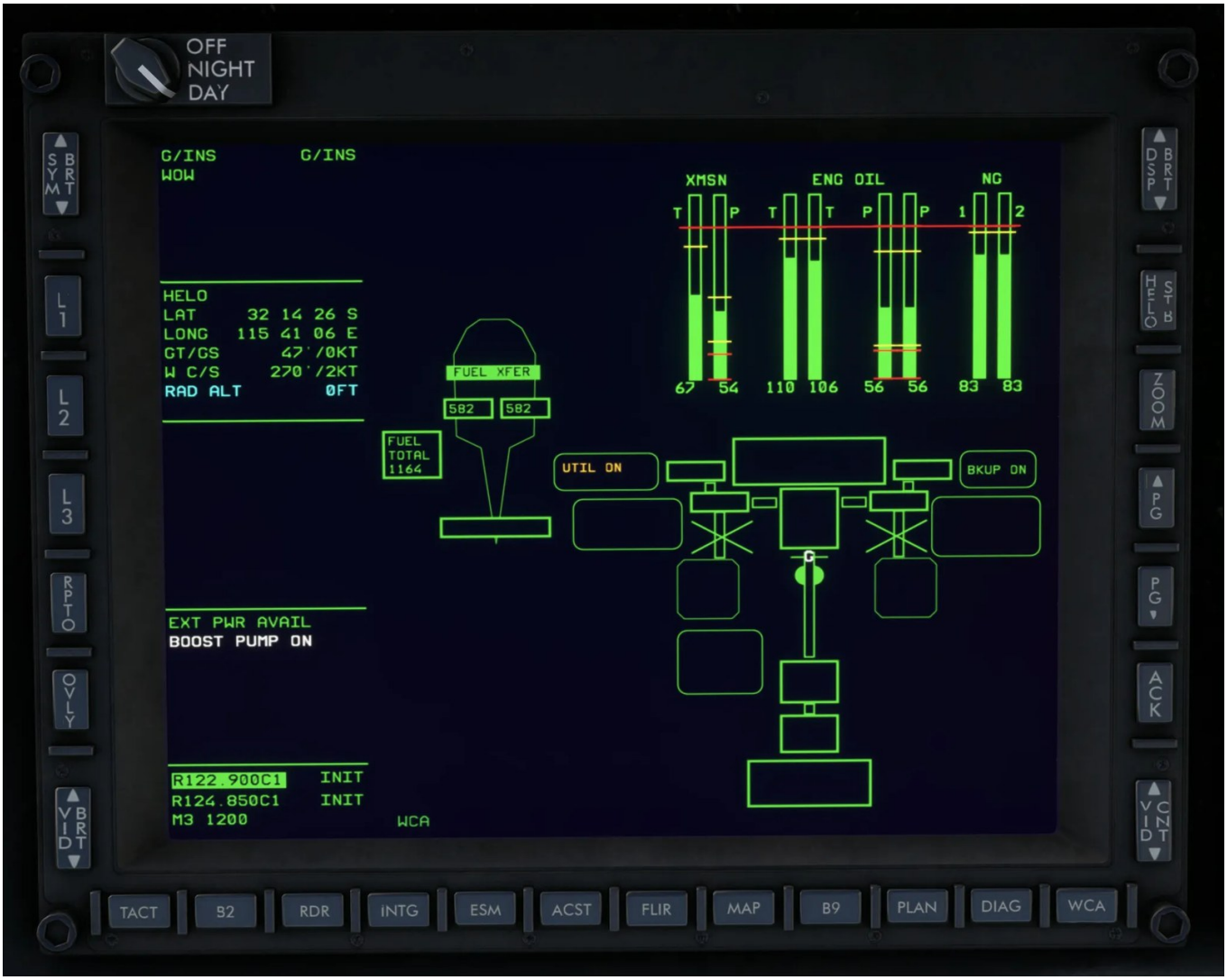
should monitor and correct as soon as practical.

- A YELLOW background with black text identifies a caution message that has not yet been acknowledged. This visual distinction helps the crew quickly identify new or pending cautions.
- To acknowledge a caution, the crew must press the Master Caution button located on the glareshield. Once pressed, the background color reverts to standard yellow text on a black background, confirming that the caution has been acknowledged.
- FUEL QTY LOW Caution indicates fuel is under BINGO quantity. The HELO/BASE indicator automatically switches to BASE, displaying the heading and bearing to the base. Upon this caution, the pilot shall take immediate action to return to the base, or land at a suitable place.

8. **Advisories:** Non-critical messages providing status updates, configuration reminders, or informational system notifications.
9. **Radio Frequencies:** Shows current active and standby frequencies for the aircraft’s radios. Displays latest frequency entered on the TUNE Page. For example, if the latest frequency entered is COMM2, it will display R (radio), followed by the frequency, followed by C2. If the latest frequency inputted is an ADF1 Station, displays as R(Frequency)A1
10. **Transponder Code:** Displays the current squawk code (Transponder ID, also known as IFF Code)
11. **↔ HELO/BASE Switch Pushbutton:** Allows quick toggling between HELO and BASE information focus.

Miltech Simulations MH60

WCA Page



Warnings, Cautions, and Advisories (WCA) Page

The **WCA Page** provides a centralized display of all **system warnings, cautions, and advisories** for the MH-60. It allows the crew to quickly assess aircraft status and respond appropriately to abnormal or fault conditions.

Page Layout

The WCA Page is divided into two main sections:

- **Message Display Area** (center)
- **System Parameters Area** (upper right corner)

1. System Parameters Area (Upper Right Corner)

The upper right corner of the WCA Page continuously displays the following essential engine and transmission parameters for quick reference:

- **XMSN TEMP (T):** Transmission oil temperature.
- **XMSN PRESS (P):** Transmission oil pressure.
- **ENG OIL TEMP:** Engine oil temperature (for both engines).
- **ENG OIL PRESS:** Engine oil pressure (for both engines).
- **NG:** Gas generator speed (%).

These parameters are presented in a column format with color-coded limits (green for normal operation, yellow for caution range, and red for limit exceedance).

2. Message Display Area

The main area of the WCA Page presents system alerts and advisories. Unlike a simple text list, these messages are arranged in a format that mirrors the helicopter’s system layout, helping the crew quickly identify the origin and relation of each indication.

Messages appear **color-coded**:

- **Warnings (RED):** Indicate critical malfunctions or hazardous conditions requiring immediate corrective action.
- **Cautions (YELLOW):** Indicate non-critical system faults or configuration issues that require attention.
- **Advisories (WHITE or GREEN):** Indicate system status changes or normal operational modes.

Miltech Simulations MH60

DIAG Page

The DIAG (Diagnostic) Page provides access to system diagnostic and maintenance-related submenus. These pages are primarily intended for ground support personnel and system monitoring, offering insight into subsystem performance and configuration data.

Purpose

The DIAG Page is designed to display diagnostic information, system status summaries, and built-in test (BIT) results for various aircraft systems. It serves as a maintenance and troubleshooting interface within the avionics suite.

However, in this simulation, the **DIAG Page and its associated submenus are not fully modeled**. They are included for **display and reference purposes only** and do not provide active system interaction or live diagnostic functionality.



Miltech Simulations MH60

MAP, PLAN and TACT Pages

MAP Page

The **MAP Page** provides the crew with a full-color, moving-map display that enhances situational awareness by integrating navigational data, aircraft position, and nearby traffic or terrain features. It serves as the primary tactical and navigation reference within the avionics suite.

Overview

The MAP Page displays a real-time geographic representation of the helicopter’s current position and surrounding environment. It integrates multiple data layers, including:

- **Airspaces** (controlled, restricted, and special-use areas)
- **Navaids** (VORs, NDBs, TACANs, waypoints, and fixes)
- **Flight plan route and waypoints**
- **Terrain and elevation shading**
- **Airports and navigation facilities**

The page automatically updates as the aircraft moves, keeping the helicopter symbol centered or track-oriented depending on the selected mode.



Display Features

- **Full-Color Map Rendering:**\ The background map is rendered in full color, with terrain, coastlines, and airspace boundaries clearly distinguished for easy interpretation.
- **Orientation Modes:** The orientation mode can be selected using the N/H/T Button located on the Primary Display (#16 on this diagram) Primary Display (PD)
- **Heading Up:** The map rotates to match the aircraft's current heading.
- **North Up:** The map remains north-oriented while the aircraft symbol rotates according to heading.
- **Zoom Levels:** Adjustable range scales allow the crew to select the desired map range for enroute or terminal operations. Zoom can be adjusted with the PG UP and PG DN buttons, located both on the bezel of the MFD (#5 and #6 on this diagram Mission/Multi-Function Display (MFD)) or on the Keyset Keyboard.

PLAN and TACT Pages

The PLAN and TACT Pages provide simplified, high-contrast navigation and tactical displays designed for mission planning, route verification, and tactical situational awareness. Both PLAN and TACT Pages present the same symbology and flight information found on the MAP Page - such as waypoints, flight plan legs, airspaces, and navaids - but are displayed on a solid green background rather than a full-color map. As such, these do not display any terrain or elevation shading.


OFF
NIGHT
DAY
G/INS
WOW
G/INS
HELO
LAT 32 14 26 S
LONG 115 41 06 E
GT/GS 47'/0KT
W C/S 270'/2KT
RAD ALT 0FT
EXT PWR AVAIL
BOOST PUMP ON
R122.900C1 INIT
R124.850C1 INIT
M3 1200
32 14 26 S / 115 41 06 E
06:04:58
YRTI
YGAD
PLAN
TACT
B2
RDR
INTG
ESM
ACST
FLIR
MAP
B9
PLAN
DIAG
WCA

Miltech Simulations MH60

ACST Page



1. ▣ **ACST Page Button**
2. ▣ **PG UP Button:** Alternate between Sonobuoy and Sonodipper pages.
3. ▣ **PG DN Button:** Alternate between Sonobuoy and Sonodipper pages.
4. **Instrument Return Information**

Loading and Deploying Acoustic Elements

Please read Acoustic and Antisubmarine Operations

Using Acoustic Elements

Please note that ACST Pages **will only fuction as depicted with Miltech Mission Hub**, and when using compatible mission modes (Submarine Attack, Submarine Intercept). More information: Broken mention

Use the ACST Button on the Mission Display to open the Acoustics page. Use PG UP and PG DN buttons on the right side bezel to alternate between Sonobuoy and Sonodipper.

We recommend using the Copilot MD for Acoustics, as this display is replicated on the ASW Console in the cabin.

Sonobuoys



Acoustics Page, Sonobuoy

Up to four Sonobuoy instances can be displayed simultaneously. Releasing multiple buoys increases the accuracy of target localization. The vertical axis on the display represents the **bearing to the detected source**, in degrees, while the horizontal axis shows the **distance**, in yards.

Target returns typically appear as **dark spots** on the display. Sonobuoys are relatively cheap and expendable sensors, which means their acoustic returns often include a significant amount of background noise or interference, and have a limited range.

Sonodipper



Acoustics Page, Sonodipper

The Sonodipper is a more advanced and precise system compared to sonobuoys, offering greater range and accuracy. Like sonobuoys, it presents contact information on a two-dimensional axis, with bearing to the target on the vertical axis and distance in yards on the horizontal axis. The Sonodipper can accurately determine both range and bearing to a contact, which appears as a green dot on the display. Additionally, the Hydrophone Scope shows the current depth of the sonar transducer below the water surface.

Miltech Simulations MH60

Keyset

Caution

Brief pauses of approx. 300ms when switching pages are normal and intentional, as the system refreshes all individual displays during each page change. This ensures the pages are fully refreshed before interactable.

- To optimize performance, only the **Pilot-side Keyset** is functional. The **Copilot-side Keyset** is modeled visually but does not execute any code. CPLT Side Keyset may be enabled in the future, depending on the stability of the systems across multiple platforms.

The Keyset is the primary interface used to interact with the Communication, Navigation, Mission and Weapons Management Systems onboard the MH60. It also provides submenus to configure the aircraft's cabin layout, equipment loadout, and other mission-specific settings.

The layout and functionality of the Keyset are designed to replicate real-world multi-function keypads found in this family of military rotorcraft. The Keyset has, however, been adapted and simplified for the simulation environment.

Modern MH60 Blocks (Block II onwards) utilize FMCs instead of the Keyset. These FMCs are, however, fully undocumented and classified due to the sensitivity of the aircraft. There is extensive publicly available documentation on the Keyset systems, as it has been phased out by most operators.

Keyset Overview and Distribution



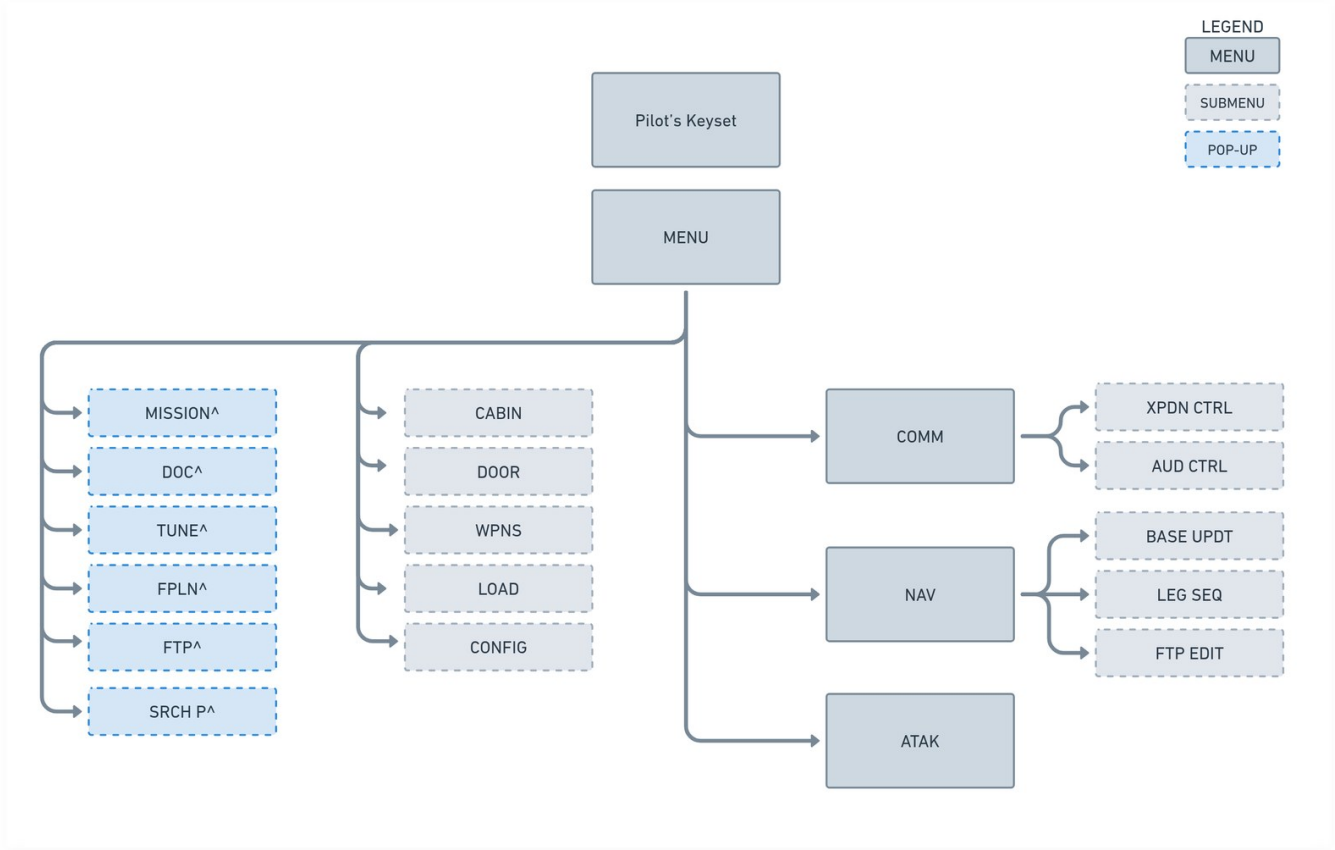
1. **Programmable Key Area (PK):** The PK area provides control keys all the major Keyset menu modes. This area consists of a 4 x 8 matrix of 32 keys and displays. There are three type of events that could occur when a key is depressed:
2. On-Screen Table and Menus: Some keys may result in the display of a pop-up screen on the MD or PFD. Primary window tables are used when large amounts of information must be displayed. These tables are generally interactable using the keyset keys. These are displayed with an upwards-pointing arrow (^) when the Pop-up Menu is displayed (eg. DOCS^). DOCS, MISSION, TUNE, FPLN, FTP and SRCH P are Pop-up Menus.
3. Menu Navigation: Some keys may result in the navigation from one menu to the other, or from a menu to a sub-menu within the keyset hierarchy.
1. Menus: Full page change, generally with Sub-menus and a "RTN" button on the lower-right display. COMM, NAV, and ATAK are full menus. RTN will always trigger a return to the main MENU.

2. Submenus: Partial or full page change, contained within a Menu. Generally found under MENU, COMM and NAV, for specific functions like: LOAD, WPNS, BASE UPDT, XPND CTRL, etc.

4. Immediate action or toggle on/off. When depression of a PK results in the activation of a toggle\ on/off key function, asterisks (* *) appear until the key is depressed again/function is deactivated.

Refer to Keyset Hierarchy Diagram for more information. 2. ▣ **ENTER (ENT) Button:** Enters information where appropriate (eg. on input fields). It also functions as quick XFER Button anytime the TUNE Page is active. 3. **Numeric Keypad:** Enters numbers 0-9 where appropriate (eg. on input fields). Note that keys 2, 4, 6 and 8 also correspond to North, West, East and South, respectively, for coordinate input fields. 4. **Erase Functions (CLR MENU, ERAS SYMB):** CLR MENU Erases entire string of text or numbers from memory. ERAS SYMB Erases the latest inputted character or number. 5. **TUNE Shortcut:** Opens the TUNE Pop-up menu on MD, from where the user may tune the radios and navigation aids by channel and/or frequency. 6. ▣ **ACKNOWLEDGE (ACK) Button:** Acknowledges an action when appropriate - think of it as a "Click" button. Often interchangeable with SEL. Can also be accessed from the MD Bezel (ACK Button). 7. **FLY-TO-POINT (FTP) Shortcut:** Opens the FTP Pop-up menu on MD, which allows the operator to generate, edit, and review FTPs. 8. ▣ **IDENT Button:** Transmits (20 seconds) an IFF transponder-coded response to an interrogation issued by a civilian air traffic controller. 9. **COMMUNICATIONS (COMM) Shortcut:** Displays COMM mode menu, which permits manipulation of the communications system. 10. **NAVIGATION (NAV) Shortcut:** Displays NAV mode menu, which permits manipulation of the navigation system. 11. **ATTACK (ATAK) Shortcut:** Displays ATTACK mode menu, which permits manipulation of the attack and weapons system. ATAK is not available on MH60T. 12. **MENU Shortcut:** Displays the main keyset Menu. 13. **Range Up/Range Down:** Manipulates the Map Range Scale, regardless of MD Page currently selected. Range can also be manipulated with PG UP or PG DN from the MD Bezel or Keyset, but only when selected page is MAP, PLAN or TACT, and no other Pop-up is displayed on MD. 14. **Arrow Keypad:** Equivalent to PG UP, PG DN, PG LEFT, PG RIGHT functions of MD Bezel. Moves selector up/down/left/right accordingly. Used primarily with conjunction of MD Pop-up and pages for navigation. Tabulation keys are not functional. 15. ▣ **SELECT (SEL) Button:** Selects an action when appropriate - think of it as a "Click" button. Often interchangeable with ACK.

Keyset Hierarchy Diagram



Find here the Menu/Submenu hierarchy of the Pilot's Keyset. Please note that this hierarchy has been adapted and simplified for simulator use, based on real aircraft NATOPS Manuals. The real aircraft has several more pages that are not applicable to MSFS or the scope of this project.

Keyset Submenus and Functions

(1) Main Menu

Initial point of entry of the Keyset. Provides easy access to all other menus (COMM, NAV, ATAK), Pop-Ups, as well as access to the various fictional "Aircraft Configuration" submenus.

This page does not exist on the real aircraft. It has been added for ease of navigation on a simulation environment, as well as means to configure the aircraft. It has 5 directly dependent Submenus:

- CABIN
- DOOR
- WPNS
- LOAD
- CONFIG

For more information and details on each of these pages: Main Menu (MENU)

Additionally, various Mission Display (MD) Pop-ups can be enabled from here. For more information: MD Popups

(2) Communications Menu (COMM)

The Communications Menu permits manipulation of the communications system. From here, users may switch transponder modes, tune in frequencies, XFER Frequencies, deactivate the Virtual Crew Chief, among other functions.

For more information and details on this menu: Communications Menu (COMM)

(3) Navigation Menu (NAV)

The Navigation Menu permits manipulation of the navigation system. From here, users may tune in Nav Frequencies, change TACAN Mode, modify Base coordinates, modify FTP Flightplans, and import flightplans over-the-cloud from INSPlanner.

For more information and details on this menu: Navigation Menu (NAV)

(4) Attack Menu (ATAK)

The Attack Menu permits manipulation of the attack and weapons system. ATAK is not available on MH60T. From here, users may configure the weapon pylons and arm Hellfires/torpedos for launch.

For more information and details on this menu: Attack Menu (ATAK)

Keyset Functions and Tasks

The Keyset is designed to be a multi-functional interface and a central control point for a wide range of mission-related tasks. These include:

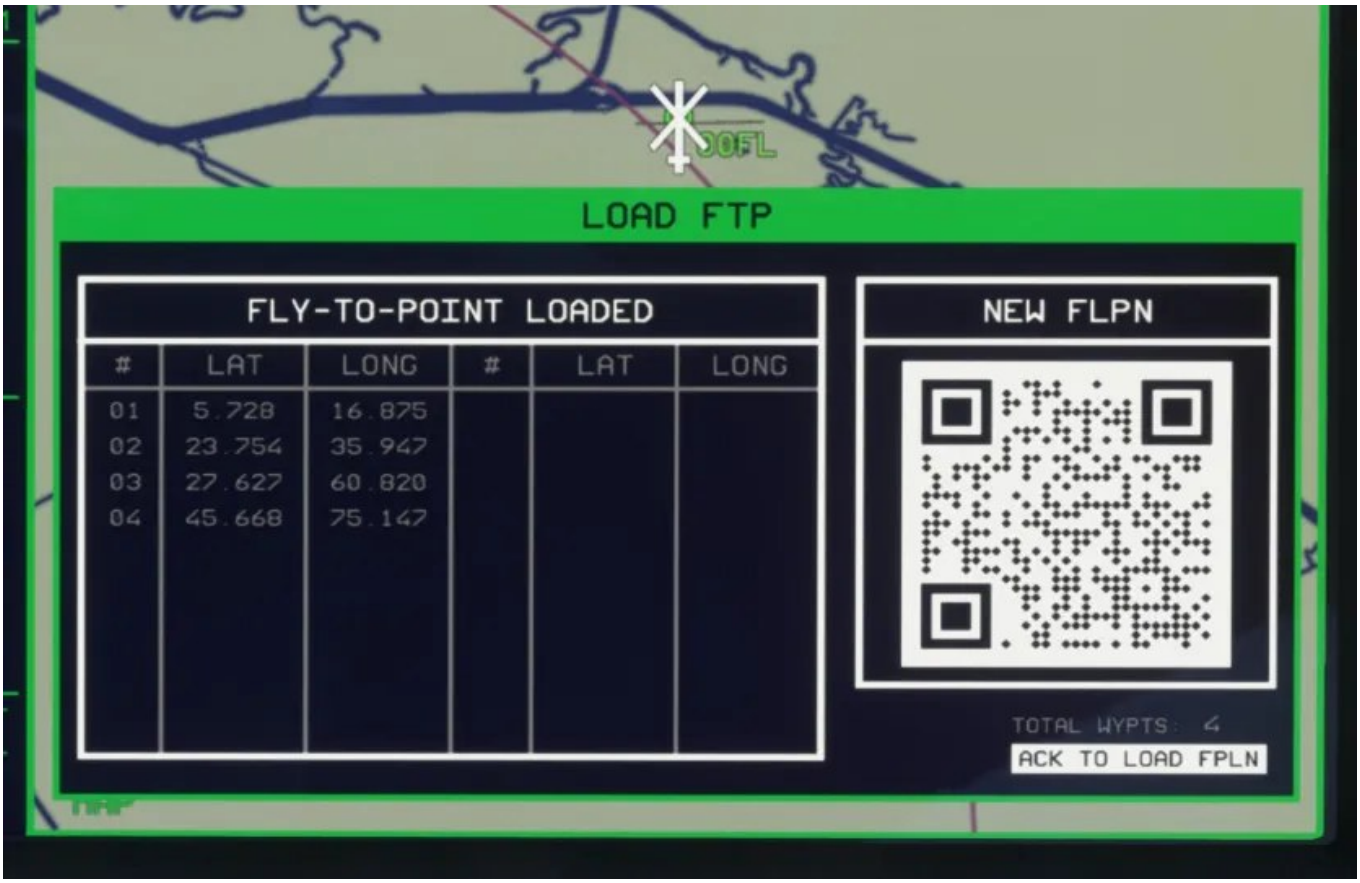
Quickly Load FTP (Fly-To-Point) Flightplans and "Datacards" from the Cloud

1. Navigate to the NAV Menu, and select LOAD FPLN.
2. The LOAD FTP Pop-up will display on the Mission Display (MD). PK Option on Keyset will now display as *FPLN*
3. Scan QR Code or enter insplanner.miltechsimulations.com. Use your mouse click to create waypoints on the map.
4. When the route has been completed, click on "Send to Aircraft". A 6-digit numeric code will be generated.
5. Return to the simulator, and using the Keyset numberpad, enter the 6-digit code. Press ENT to enter.



Flightplan #123456 has been entered. Press ENT

6. A preview of the loaded flight plan will render on the MD Pop-up. If the flight plan looks correct, press ACK (either on the Keyset or MD Bezel) to load into the map. If changes are made, you may reenter the code and press ENT to refresh.



Pop-up displaying Loaded Waypoints. Press ACK to continue.

7. You should now see your flight plan loaded onto the map. You may close the Pop-up by clicking on the *FPLN* PK Option on the Keyset.

This function simulates loading of coordinate-based Flight Plans on Datacards, which is the most commonly used navigation method on this sort of naval helicopters.

Edit and/or Create FTP (Fly-To-Point) Flightplans

1. Navigate to the NAV Menu, and select the FTP EDIT Submenu.
2. Three new options will open up on the Keyset PK Menu. Additionally, the NORM FTP Pop-up will display on the Mission Display.



FTP Edit Submenu, displaying option EDIT WYPT

3. Use the PG UP or PG DN keys, either on the Keyset or MD Bezel, to select a waypoint. "FTP---" Displays the selected waypoint number. Remember, anytime you see a white box highlighted WHITE, it is a cursor that may be interacted with PG UP/DN/LEFT/RIGHT.
4. After selecting the waypoint you wish to edit or enter, press EDIT WYPT on the Keyset. The waypoint’s coordinates will appear with a green background, indicating that the field is now active and ready to receive input.



NORM FTP Pop-up, Waypoint FTP002 Selected. Fields are highlighted green, indicating active for editing. Notice PG UP and PG DN buttons on the right bezel.

5. Use the Keyset numberpad to enter coordinates, starting with LATITUDE. First number indicates the direction - 2 for NORTH, 8 for SOUTH. Any other number is interpreted as NORTH. Then type the Degrees, Minutes and Seconds. Press ENT to insert.
6. If the entered coordinate is not valid, it will default to N00 00 00.
7. To deactivate editing and return to the previously stored value, you may press EDIT *WYPT* at any time.
8. Use the Keyset numberpad to enter LONGITUDE. First number indicates the direction - 3 for WEST, 5 for EAST. Any other number is interpreted as WEST. Then type the Degrees, Minutes Seconds. Press ENT to insert.
9. Once both coordinates are inserted, the flight plan will automatically reconstruct and reload.

You may repeat these steps to continue manually adding waypoints, or edit waypoints from existing flight plans.

If you prefer, you may also use LVAR L:MH60_Numeric_Stream to directly type into the fields using your keyboard.

Fly Direct-To-Point

1. Assuming you have an FTP Flightplan loaded, you may fly directly to any waypoint on the route, including search patterns. If you do not have an FTP Flightplan already, you may review the two expandables above.
2. Navigate to the NAV Menu, and select the FTP EDIT Submenu.
3. Three new options will open up on the Keyset PK Menu. Additionally, the NORM FTP Pop-up will display on the Mission Display.



FTP Edit Submenu, displaying option DRCT TO --

4. Use the PG UP or PG DN keys, either on the Keyset or MD Bezel, to select a waypoint. "FTP---" Displays the selected waypoint number. Remember, anytime you see a white box highlighted WHITE, it is a cursor that may be interacted with PG UP/DN/LEFT/RIGHT.
5. After selecting the waypoint you wish to fly directly to, press "DRCT TO --" on the keyset. The aircraft will automatically delete all other waypoints on your FTP Route, and create a Direct-To route from the current location to the selected waypoint (now FTP002).

Please note that this is a "destructive method" - eg. it will erase all other waypoints on your route. Direct-To waypoint while conserving the rest of the route is not supported at this time.

Delete FTP Flightplans

1. Assuming you have an FTP or Simulator Flightplan loaded, you may fully delete any waypoints or routing stored in memory. If you do not have an FTP Flightplan already, you may review the expandables above.
2. Navigate to the NAV Menu, and select the FTP EDIT Submenu.
3. Three new options will open up on the Keyset PK Menu. Additionally, the NORM FTP Pop-up will display on the Mission Display.

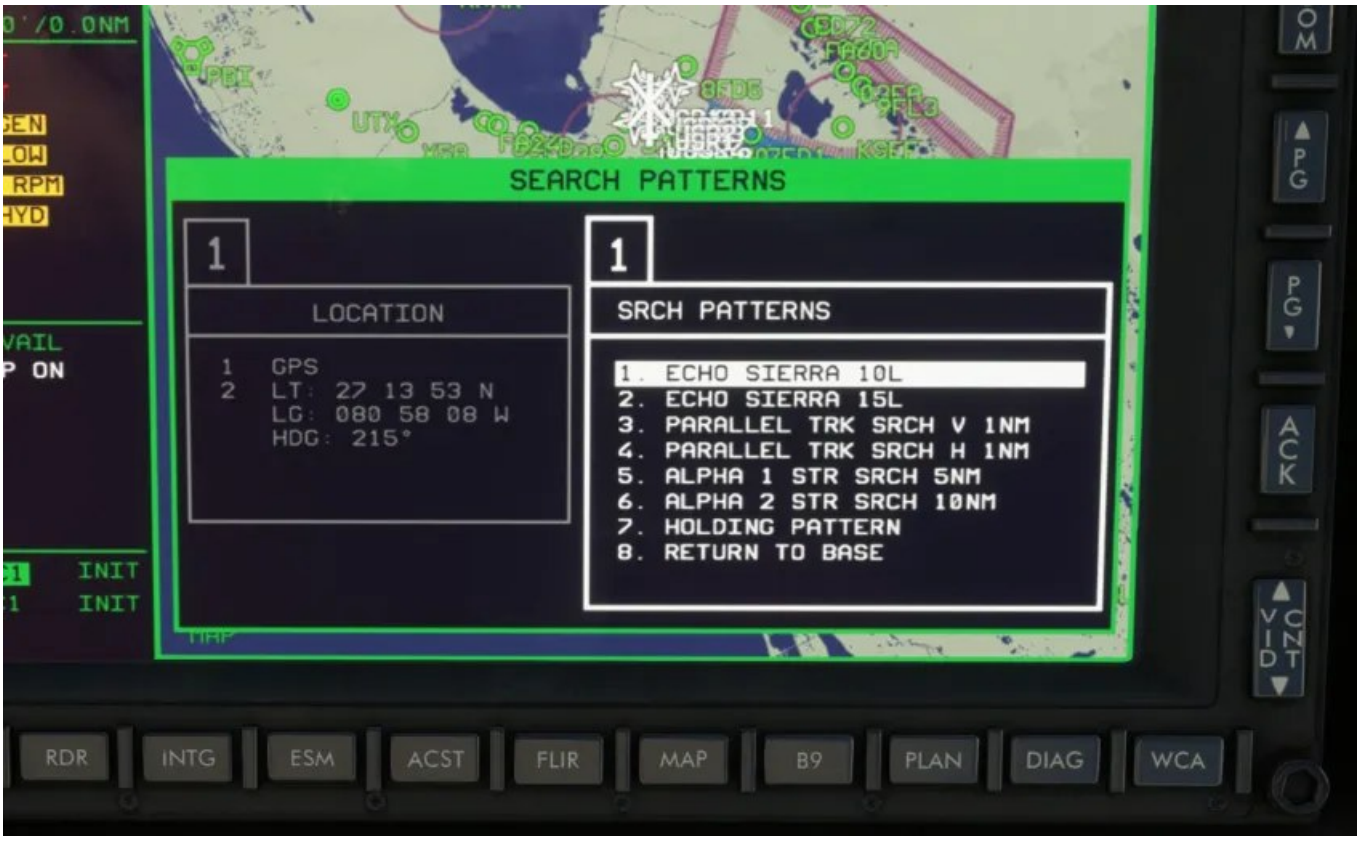


FTP Edit Submenu, displaying option CLR FPLN

4. Press CLR FPLN. This option will fully clear all waypoints from memory, as well as any route that has been loaded into the map. You may now create a new route.

Create Search Patterns

1. Navigate to the NAV Menu, and select SRCH PTTR option. This will open up the SEARCH PATTERN Pop-up menu on the Mission Display.
2. Use the PG UP or PG DN keys, either on the Keyset or MD Bezel, to move the cursor. Press ACK to select a Search Pattern. The FTP Flightplan will now be overwritten with the selected Search Pattern.



Search Patterns Pop-up Menu. Note PG UP, PG DN and ACK Buttons on the right bezel for navigation.

3. You may now close the Pop-up by pressing SRCH *PTTR*. Adjust Map Range as desired and fly the Search Pattern manually.

All Search Patterns are predefined and non-editable. They all originate from the aircraft location at the time of activation.

Set or Edit Base Location

Your "BASE" is defined as the location where the mission was initiated and/or a designated safe point for return and recovery. When the aircraft is first started up and EGIs are aligned, the Keyset will automatically set the current aircraft location as Base. However, the user may want to modify this base location manually.

1. Navigate to the NAV Menu, and select BASE UPDT. This will open up the Base Update submenu.
2. Three new options will appear:
3. SET BASE: Depressing this option will automatically set the current Latitude and Longitude as the base.
4. LAT: Displays the current Base Latitude.
5. LONG: Displays the current Base Longitude.



BASE UPDT Submenu, displaying LAT, LONG, SET BASE

3. To manually enter a base LAT/LONG, depress the corresponding button on the Keyset. The field now becomes an active input field (Highlighted by asterisks).
4. Use the keyset numberpad to enter the coordinates. The first number will represent direction:
5. For LAT: 2 is NORTH, 8 is SOUTH, any other number defaults to NORTH.
6. For LONG: 4 is WEST, 6 is EAST, any other number defaults to WEST.
7. Proceed with entering Degrees, Minutes and Seconds. Once complete, press ENT to enter. If the coordinate is valid, it will now be displayed on the keyset and represent the new Base location. If the coordinate is invalid, it will default to N00 00 00, or W000 00 00

Having an up-to-date base location is important, as Bingo Fuel calculations are based on this location. The MH60 also features a Quick Return-to-Base to take the most efficient and direct route back to the set base.

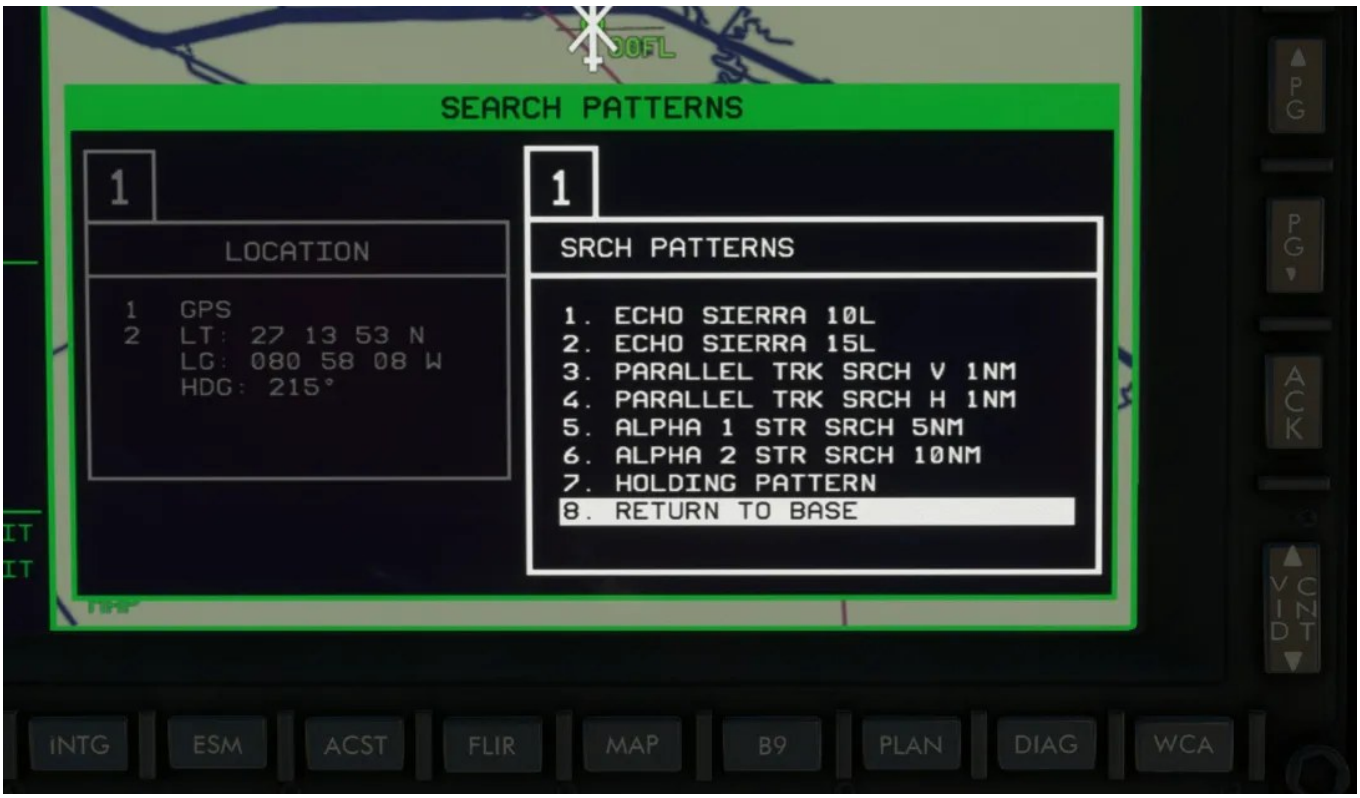
Quick Return-to-Base

Your "BASE" is defined as the location where the mission was initiated and/or a designated safe point for return and recovery. To set a Base, please see the expandable above.

To quickly return to your base, either because your mission is completed, or due to Bingo Fuel, follow these steps:

1. Navigate to the NAV Menu, and select BASE UPDT. This will open up the Base Update submenu.
2. Verify that LAT and LONG are correct, and correspond to the location of your base.

3. On NAV Menu, press SRCH PTTR. This will open up the SEARCH PATTERN Pop-up on Mission Display.
4. Use PG DN Key, either on the Keyset or MD Bezel, to navigate to the option "RETURN TO BASE". Press ACK to select.



SEARCH PATTERNS Pop-Up. Return to Base selected. Note PG DN and ACK Buttons on the right bezel

5. The aircraft will now automatically create a direct route between its current position and the base as defined by LAT, LONG on the keyset.

Handfly the route safely back to your base. The helicopter estimates a cruise speed of 100 knots, with a 20% safety margin for Bingo Fuel calculations.

Tune Communication Radios

1. Use the quick TUNE access from the Keyset Menu, or TUNE button on the Keyset keyboard, to access the TUNE Pop-up on Mission Display.
2. Use PG UP or PG DN, either on the Keyset or MD Bezel, to select a radio to tune. Remember, anytime you see a white box highlighted WHITE, it is a cursor that may be interacted with PG UP/DN/LEFT/RIGHT.
3. Once selected, press ACK or SEL (MD Bezel or Keyset) to enter a frequency.
4. The STBY FREQ will now appear with a green background, indicating that the field is now active and ready to receive input.
5. Use the Keyset numberpad to enter frequency. The decimal period is added automatically.



TUNE Pop-up. Note the green box indicating active for input on STBY. Note PG UP/PG DN/ACK Buttons on Bezel

4. Once completed, press ACK again to validate and change frequency. If the entered frequency is invalid, frequency will not be changed.
5. Alternatively, you may press ENT to directly validate the frequency and XFER to Active. You may also use ENT at any time while the TUNE Pop-up is open to XFER the frequencies selected.

Note
Alternatively, you may access V-UHF1 and V-UHF2 from COMM Menu, V/U1 and V/U2 respectively.
XFER is always available under COMM Menu without requiring TUNE Pop-up to be opened.

Tune Navigation Radios

1. Use the quick TUNE access from the Keyset Menu, or TUNE button on the Keyset keyboard, to access the TUNE Pop-up on Mission Display.
2. Use PG UP or PG DN, either on the Keyset or MD Bezel, to select a radio to tune. Remember, anytime you see a white box highlighted WHITE, it is a cursor that may be interacted with PG UP/DN/LEFT/RIGHT.
3. Once selected, press ACK or SEL (MD Bezel or Keyset) to enter a frequency.
4. The STBY FREQ will now appear with a green background, indicating that the field is now active and ready to receive input.
5. Use the Keyset numberpad to enter frequency. The decimal period is added automatically.



TUNE Pop-up. Note the green box indicating active for input on STBY. Note PG UP/PG DN/ACK Buttons on Bezel

4. Once completed, press ACK again to validate and change frequency. If the entered frequency is invalid, frequency will not be changed.
5. Alternatively, you may press ENT to directly validate the frequency and XFER to Active. You may also use ENT at any time while the TUNE Pop-up is open to XFER the frequencies selected.

Note
Alternatively, you may access LADF1 and VORTAC from NAV Menu, LADF TUNE and VTAC TUNE respectively. TACAN Mode X/Y (Affecting both TACAN1 and TACAN2) can be switched from NAV Menu/TACN MDE

Load and Arm Weapons

Loading and arming weapons (Hellfire Missiles, Torpedos and Guns) is executed from the Keyset.

Please refer to Weapons & Countermeasures Loading and Firing Procedures for full procedures.

Configure Aircraft and Cabin

Submenus "CABIN", "DOOR", and "CONFIG" can be used to easily and quickly configure the aircraft.

From these menus you may change the aircraft´s cabin for different type of activities (eg. Antisubmarine Warfare, Search and Rescue, etc.); load external Fuel Tanks or ERLP Rafts, among other functions.

For more information, refer to Main Menu (MENU)

Load External Sling Cargo

Loading External Sling Cargo is done from the Keyset, LOAD page.

1. Select a load from the menu.
2. Arm hook from the Overhead Panel.

3. Load will spawn 100 meters to the left or right of the aircraft, as selected on the keyset.
4. Takeoff and hover above the load for 5 seconds. Load will automatically attach.

Miltech Simulations MH60

Main Menu (MENU)



Tip
Manual Page to be Expanded. Please check again in 24hrs.

Miltech Simulations MH60

Communications Menu (COMM)




HTW
A/V
GPWS
ON
ICS
ON
CHIEF
RODEO
AUD
CTRL^
RTN



Tip
Manual Page to be Expanded. Please check again in 24hrs.

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Navigation Menu (NAV)







Tip
Manual Page to be Expanded. Please check again in 24hrs.

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Attack Menu (ATAK)



Tip
Manual Page to be Expanded. Please check again in 24hrs.

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MD Popups

MFD Popup Screens Overview

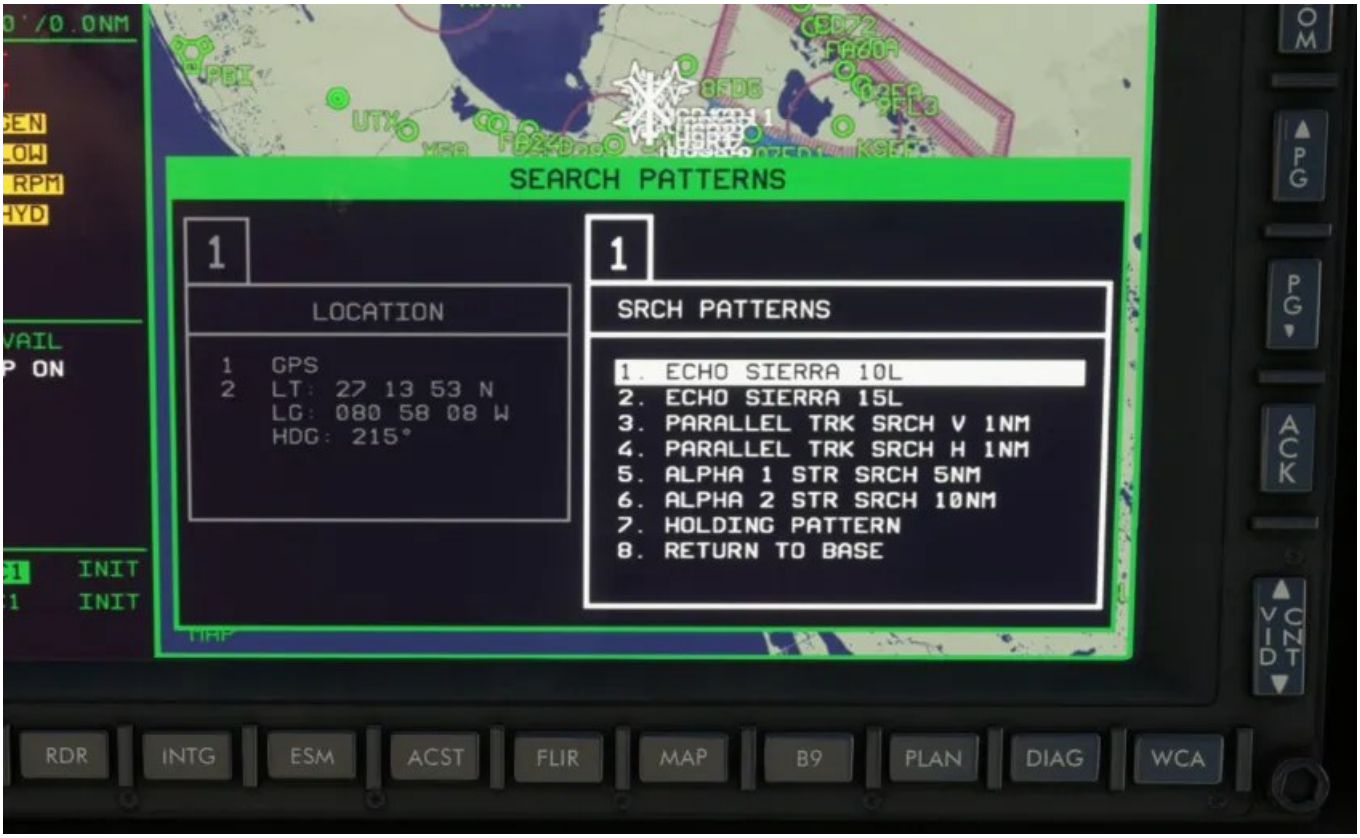
The MH-60's Multi-Function Displays (MFDs) include several specialized popup screens accessible via the Keyset. These provide quick access to mission-specific or configuration-specific functions.

Search Pattern

The Search Pattern popup allows the crew to define and execute automated search patterns during Search and Rescue (SAR) or reconnaissance missions. Several options are available, as displayed below.

Create Search Patterns

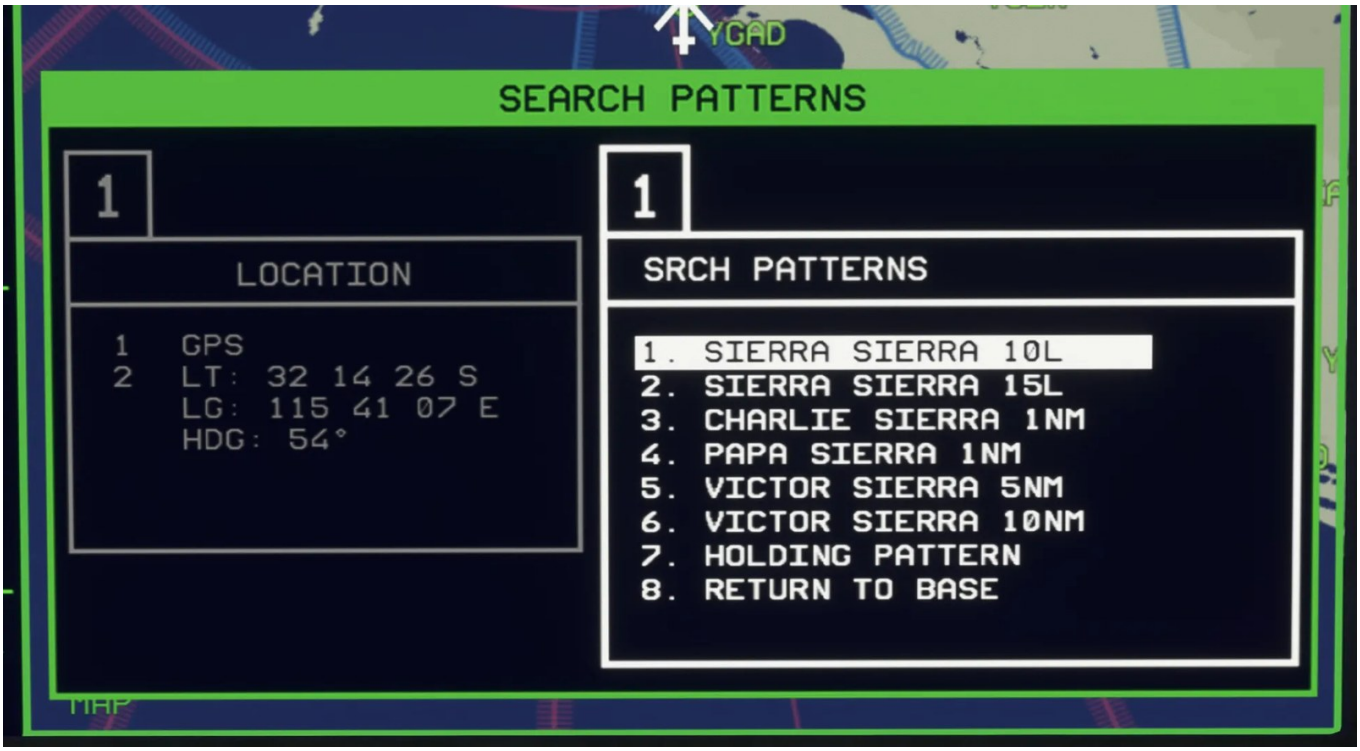
1. Navigate to the NAV Menu, and select SRCH PTTR option. This will open up the SEARCH PATTERN Pop-up menu on the Mission Display.
2. Use the PG UP or PG DN keys, either on the Keyset or MD Bezel, to move the cursor. Press ACK to select a Search Pattern. The FTP Flightplan will now be overwritten with the selected Search Pattern.



Search Patterns Pop-up Menu. Note PG UP, PG DN and ACK Buttons on the right bezel for navigation.

3. You may now close the Pop-up by pressing SRCH *PTTR*. Adjust Map Range as desired and fly the Search Pattern manually.

All Search Patterns are predefined and non-editable. They all originate from the aircraft location at the time of activation.



Norm FTP

The Norm FTP (Normal Flight-To-Point) popup allows the crew to create or edit a flight plan consisting of sequential navigation points (FTP Points). This tool is used to define custom flight routes directly from the MFD without requiring external mission files.

Edit and/or Create FTP (Fly-To-Point) Flightplans

1. Navigate to the NAV Menu, and select the FTP EDIT Submenu.
2. Three new options will open up on the Keyset PK Menu. Additionally, the NORM FTP Pop-up will display on the Mission Display.



FTP Edit Submenu, displaying option EDIT WYPT

3. Use the PG UP or PG DN keys, either on the Keyset or MD Bezel, to select a waypoint. "FTP---" Displays the selected waypoint number. Remember, anytime you see a white box highlighted WHITE, it is a cursor that may be interacted with PG UP/DN/LEFT/RIGHT.
4. After selecting the waypoint you wish to edit or enter, press EDIT WYPT on the Keyset. The waypoint's coordinates will appear with a green background, indicating that the field is now active and ready to receive input.

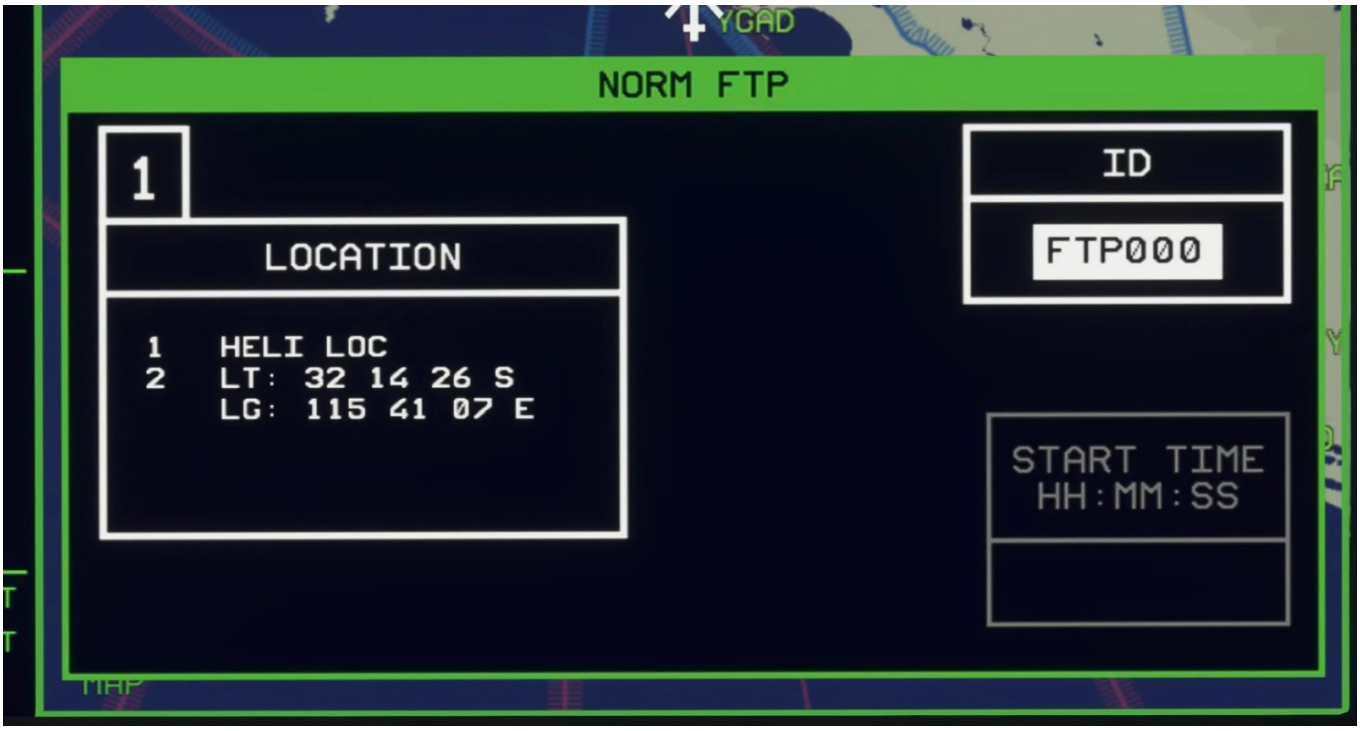


NORM FTP Pop-up, Waypoint FTP002 Selected. Fields are highlighted green, indicating active for editing. Notice PG UP and PG DN buttons on the right bezel.

5. Use the Keyset numberpad to enter coordinates, starting with LATITUDE. First number indicates the direction - 2 for NORTH, 8 for SOUTH. Any other number is interpreted as NORTH. Then type the Degrees, Minutes and Seconds. Press ENT to insert.
6. If the entered coordinate is not valid, it will default to N00 00 00.
7. To deactivate editing and return to the previously stored value, you may press EDIT *WYPT* at any time.
8. Use the Keyset numberpad to enter LONGITUDE. First number indicates the direction - 3 for WEST, 5 for EAST. Any other number is interpreted as WEST. Then type the Degrees, Minutes Seconds. Press ENT to insert.
9. Once both coordinates are inserted, the flight plan will automatically reconstruct and reload.

You may repeat these steps to continue manually adding waypoints, or edit waypoints from existing flight plans.

If you prefer, you may also use LVAR L:MH60_Numeric_Stream to directly type into the fields using your keyboard.



Load FTP

The Load FTP (Load Flight-To-Point) popup allows the crew to retrieve and load pre-planned Flight Plans directly from the cloud through the Miltech Simulations INSPlanner system.

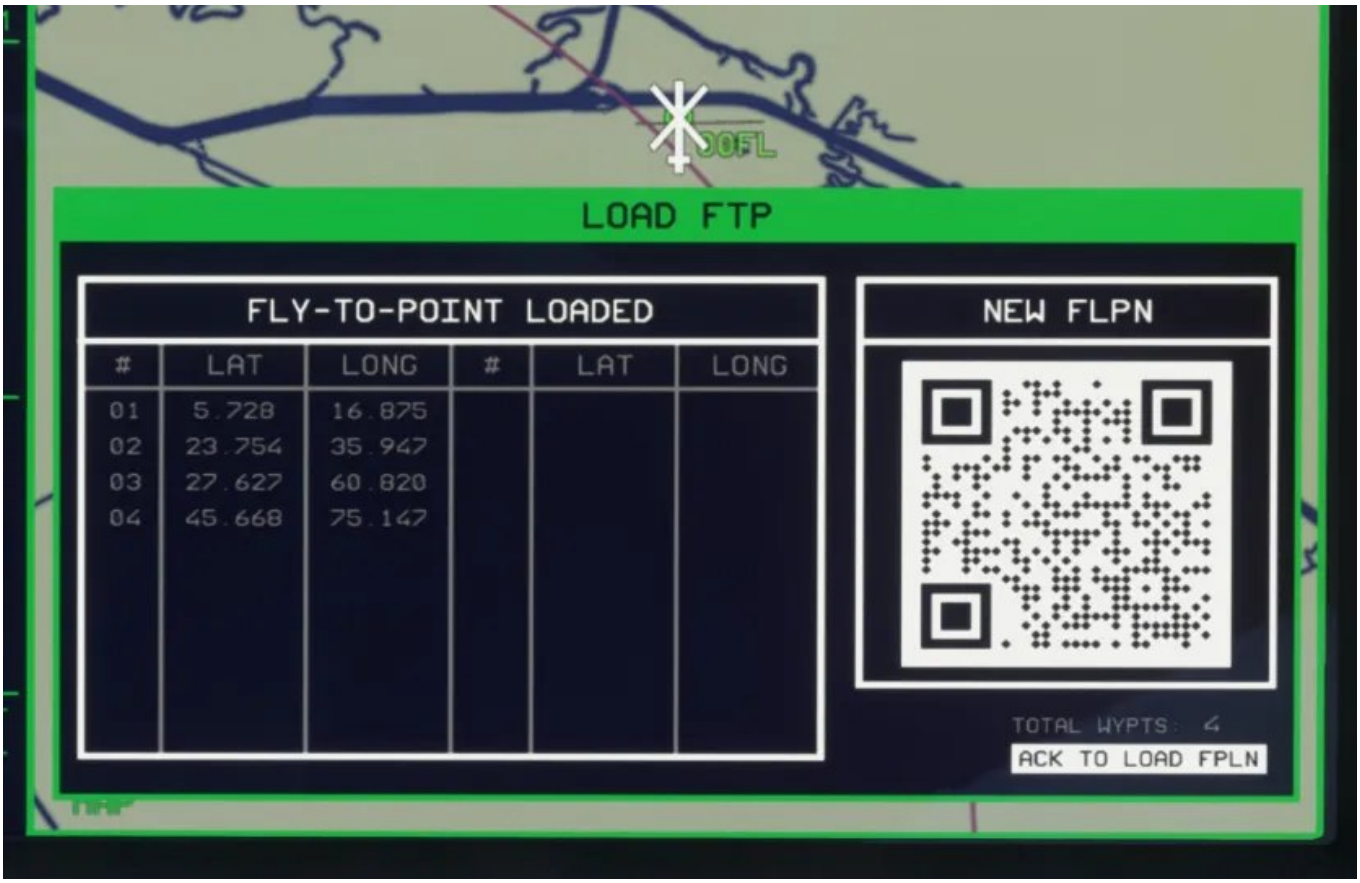
Quickly Load FTP (Fly-To-Point) Flightplans and "Datacards" from the Cloud

1. Navigate to the NAV Menu, and select LOAD FPLN.
2. The LOAD FTP Pop-up will display on the Mission Display (MD). PK Option on Keyset will now display as *FPLN*
3. Scan QR Code or enter insplanner.miltechsimulations.com. Use your mouse click to create waypoints on the map.
4. When the route has been completed, click on "Send to Aircraft". A 6-digit numeric code will be generated.
5. Return to the simulator, and using the Keyset numberpad, enter the 6-digit code. Press ENT to enter.



Flightplan #123456 has been entered. Press ENT

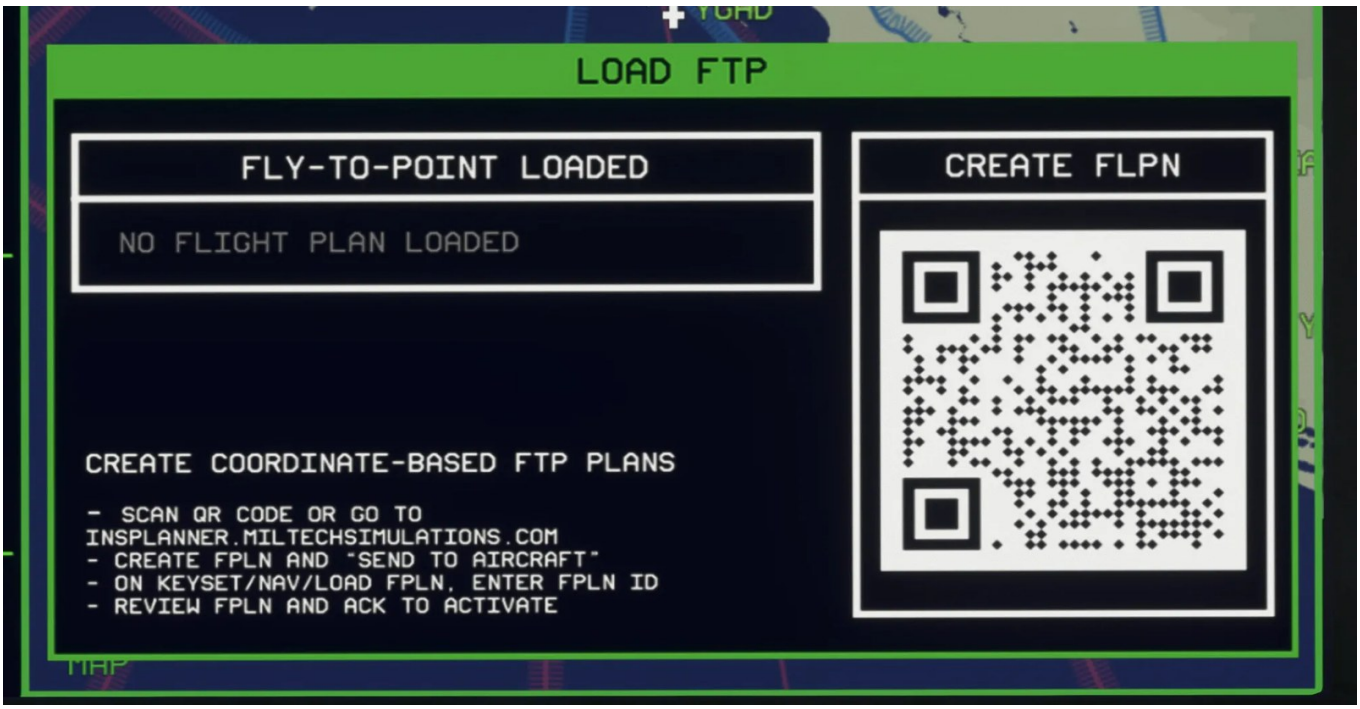
6. A preview of the loaded flight plan will render on the MD Pop-up. If the flight plan looks correct, press ACK (either on the Keyset or MD Bezel) to load into the map. If changes are made, you may reenter the code and press ENT to refresh.



Pop-up displaying Loaded Waypoints. Press ACK to continue.

7. You should now see your flight plan loaded onto the map. You may close the Pop-up by clicking on the *FPLN* PK Option on the Keyset.

This function simulates loading of coordinate-based Flight Plans on Datacards, which is the most commonly used navigation method on this sort of naval helicopters.



Tune

The Tune popup provides a streamlined interface for radio and navigation frequency management, allowing the crew to set and monitor all communication and navigation radios directly from the MFD.

Tune Communication Radios

1. Use the quick TUNE access from the Keyset Menu, or TUNE button on the Keyset keyboard, to access the TUNE Pop-up on Mission Display.
2. Use PG UP or PG DN, either on the Keyset or MD Bezel, to select a radio to tune. Remember, anytime you see a white box highlighted WHITE, it is a cursor that may be interacted with PG UP/DN/LEFT/RIGHT.
3. Once selected, press ACK or SEL (MD Bezel or Keyset) to enter a frequency.
4. The STBY FREQ will now appear with a green background, indicating that the field is now active and ready to receive input.
5. Use the Keyset numberpad to enter frequency. The decimal period is added automatically.



TUNE Pop-up. Note the green box indicating active for input on STBY. Note PG UP/PG DN/ACK Buttons on Bezel

4. Once completed, press ACK again to validate and change frequency. If the entered frequency is invalid, frequency will not be changed.
5. Alternatively, you may press ENT to directly validate the frequency and XFER to Active. You may also use ENT at any time while the TUNE Pop-up is open to XFER the frequencies selected.

Note
Alternatively, you may access V-UHF1 and V-UHF2 from COMM Menu, V/U1 and V/U2 respectively.
XFER is always available under COMM Menu without requiring TUNE Pop-up to be opened.

Tune Navigation Radios

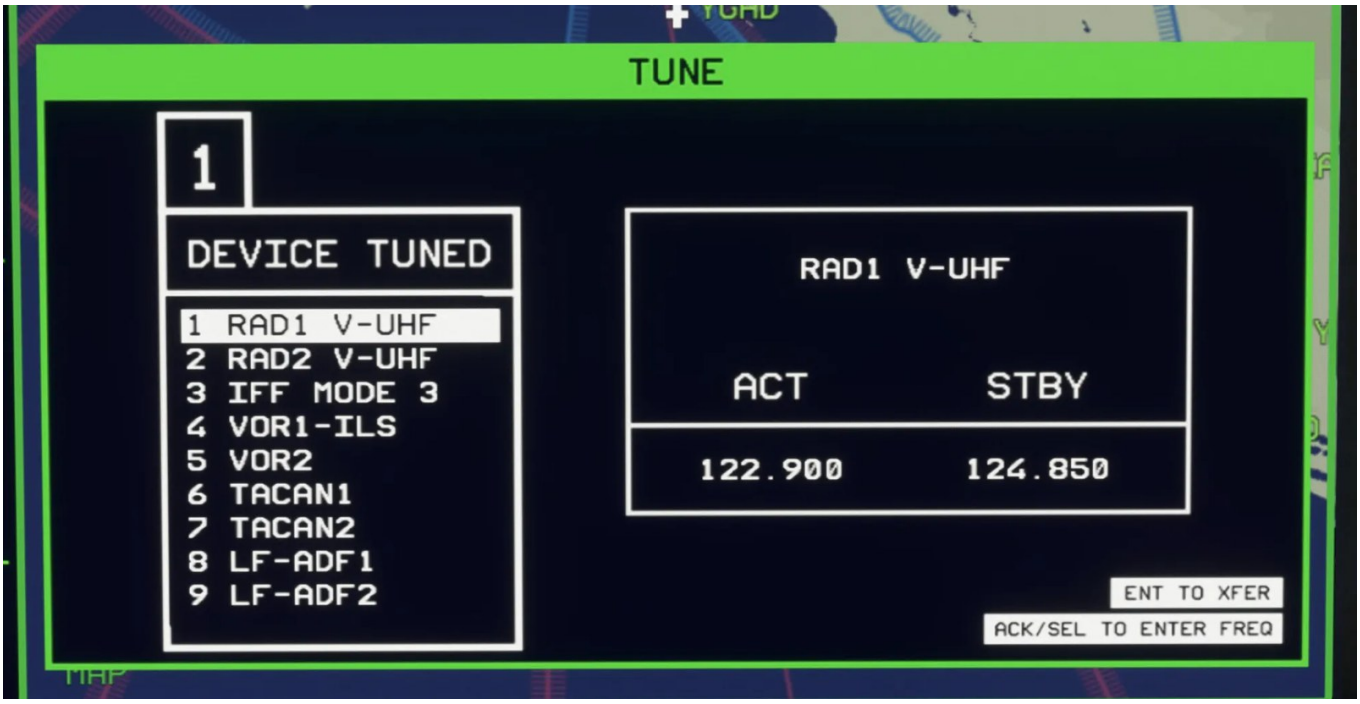
1. Use the quick TUNE access from the Keyset Menu, or TUNE button on the Keyset keyboard, to access the TUNE Pop-up on Mission Display.
2. Use PG UP or PG DN, either on the Keyset or MD Bezel, to select a radio to tune. Remember, anytime you see a white box highlighted WHITE, it is a cursor that may be interacted with PG UP/DN/LEFT/RIGHT.
3. Once selected, press ACK or SEL (MD Bezel or Keyset) to enter a frequency.
4. The STBY FREQ will now appear with a green background, indicating that the field is now active and ready to receive input.
5. Use the Keyset numberpad to enter frequency. The decimal period is added automatically.



TUNE Pop-up. Note the green box indicating active for input on STBY. Note PG UP/PG DN/ACK Buttons on Bezel

4. Once completed, press ACK again to validate and change frequency. If the entered frequency is invalid, frequency will not be changed.
5. Alternatively, you may press ENT to directly validate the frequency and XFER to Active. You may also use ENT at any time while the TUNE Pop-up is open to XFER the frequencies selected.

Note
Alternatively, you may access LADF1 and VORTAC from NAV Menu, LADF TUNE and VTAC TUNE respectively. TACAN Mode X/Y (Affecting both TACAN1 and TACAN2) can be switched from NAV Menu/TACN MDE


TUNE
1
DEVICE TUNED
1 RAD1 V-UHF
2 RAD2 V-UHF
3 IFF MODE 3
4 VOR1-ILS
5 VOR2
6 TACAN1
7 TACAN2
8 LF-ADF1
9 LF-ADF2
RAD1 V-UHF
ACT
STBY
122.900
124.850
ENT TO XFER
ACK/SEL TO ENTER FREQ

Miltech Simulations MH60

Aircraft Systems

- Communications Systems
- Navigation Systems
- Electrical System
- Automatic Flight Control System (AFCS) and Stability Augmentation System (SAS)
- Force Trim System
- FLIR (Forward Looking Infrared)
- Acoustic and Anti-Submarine Systems
- Weapons & Countermeasures Systems

Miltech Simulations MH60

Communications Systems

The MH60’s communication system is equipped with dual radios, allowing independent operation of **COMM 1** and **COMM 2** channels. In the current MSFS implementation, the system is limited to supporting only **standard VHF/UHF COMM frequencies** as defined by the simulator. This means the radios cannot tune to NAV, HF, or encrypted channels.

The COMM Radios are operated with the Keyset, via the TUNE and COMM menu/popup. For more information omn the keyset, refer to Keyset

Entering COMM Frequencies, XFER

1. Use the quick TUNE access from the Keyset Menu, or TUNE button on the Keyset keyboard, to access the TUNE Pop-up on Mission Display.
2. Use PG UP or PG DN, either on the Keyset or MD Bezel, to select a radio to tune. Remember, anytime you see a white box highlighted WHITE, it is a cursor that may be interacted with PG UP/DN/LEFT/RIGHT.
3. Once selected, press ACK or SEL (MD Bezel or Keyset) to enter a frequency.
4. The STBY FREQ will now appear with a green background, indicating that the field is now active and ready to receive input.
5. Use the Keyset numberpad to enter frequency. The decimal period is added automatically.



TUNE Pop-up. Note the green box indicating active for input on STBY. Note PG UP/PG DN/ACK Buttons on Bezel

4. Once completed, press ACK again to validate and change frequency. If the entered frequency is invalid, frequency will not be changed.

5. Alternatively, you may press ENT to directly validate the frequency and XFER to Active. You may also use ENT at any time while the TUNE Pop-up is open to XFER the frequencies selected.

Note
Alternatively, you may access V-UHF1 and V-UHF2 from COMM Menu, V/U1 and V/U2 respectively.
XFER is always available under COMM Menu without requiring TUNE Pop-up to be opened.

Miltech Simulations MH60

Navigation Systems

The MH-60 features a flexible and powerful navigation system designed to support realistic military operations as well as standard MSFS functionality. The aircraft supports multiple methods of flight plan loading and navigation data entry. The Nav system is interactable with the Keyset, for more information Keyset

[1] Entering Flight Plans

INSPlanner Cloud Sync

The MH-60 is fully integrated with *INSPlanner*, our proprietary online mission and flight planning tool. Designed to resemble real-world military planning software, INSPlanner allows users to build detailed flight plans and mission routes, from any device, and send directly to the aircraft to execute.

In real-world naval helicopter ops, flight plans are typically coordinate-based and uploaded into the navigation system using datacards. This feature replicates that process - only here, the datacard is transmitted instantly via the cloud.

Access INSPlanner from https://insplanner.miltechsimulations.com/

Creating Flight Plans in INSPlanner

Access INSPlanner from https://insplanner.miltechsimulations.com/

GETTING STARTED

1. Enter a name for your flight plan in the "Flight Plan Name" field.
2. Add waypoints by clicking directly on the map or using the "Add by coordinate" button.
3. Select waypoints by clicking on them in the table or map.
4. Use the Edit menu to delete selected waypoints or clear all waypoints.
5. When completed, you may save the flightplans locally as CSV, or send directly to the aircraft over the cloud.

MENU OPTIONS

- File Menu: Retrieve from Cloud, Send to Aircraft, Save as CSV, Load from CSV
- Edit Menu: Clear All, Delete Selected, Move Selected

TOOLBAR

- Search: Enter a city name, location name or ICAO Code to search for it on the map.
- Delete All: Remove all waypoints from the current flight plan.
- Delete Selected: Remove the currently selected waypoint.
- Move Selected: Change the coordinates of the selected waypoint.

ADDING WAYPOINTS

- Click directly on the map to add a waypoint at that location.

- Use "Add by coordinate" to manually enter latitude and longitude values, in decimal format.

MANAGING WAYPOINTS

- Select a waypoint by clicking on it in the table or map.
- The selected waypoint will be highlighted.
- Use the Edit menu to delete the selected waypoint.

EXPORTING YOUR FLIGHT PLAN

- Use "Send to Aircraft" to transmit the plan to the aircraft over the cloud.
- Use "Save as CSV" to save the plan as a CSV file for later use.

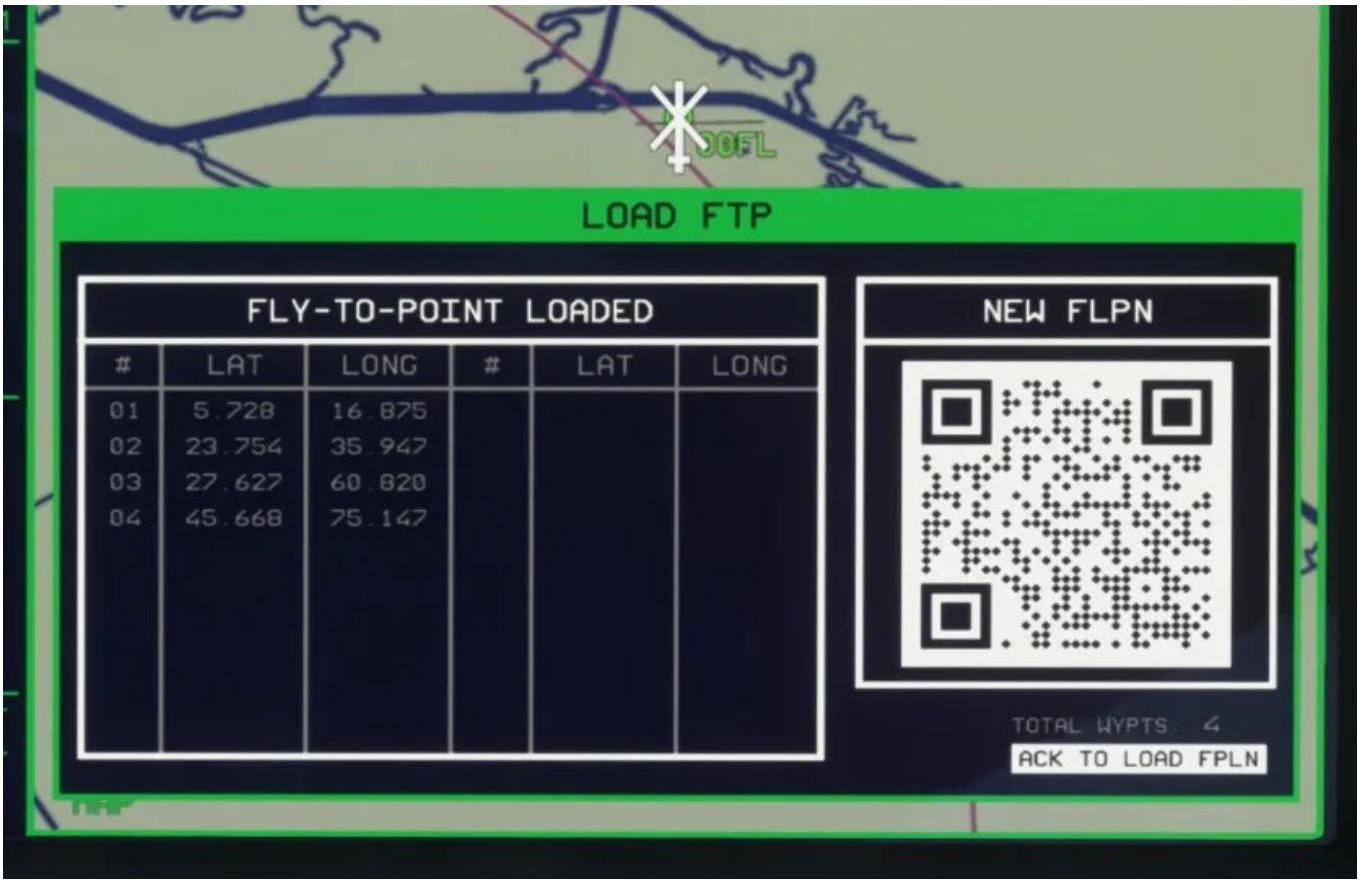
Loading Flight Plan onto Aircraft

1. Navigate to the NAV Menu, and select LOAD FPLN.
2. The LOAD FTP Pop-up will display on the Mission Display (MD). PK Option on Keyset will now display as *FPLN*
3. Scan QR Code or enter insplanner.miltechsimulations.com. Use your mouse click to create waypoints on the map.
4. When the route has been completed, click on "Send to Aircraft". A 6-digit numeric code will be generated.
5. Return to the simulator, and using the Keyset numberpad, enter the 6-digit code. Press ENT to enter.



Flightplan #123456 has been entered. Press ENT

6. A preview of the loaded flight plan will render on the MD Pop-up. If the flight plan looks correct, press ACK (either on the Keyset or MD Bezel) to load into the map. If changes are made, you may reenter the code and press ENT to refresh.



Pop-up displaying Loaded Waypoints. Press ACK to continue.

7. You should now see your flight plan loaded onto the map. You may close the Pop-up by clicking on the *FPLN* PK Option on the Keyset.

FS24 Tablet Sync (via MSFS EFB)

The MH60 can read and import flight plans created in the new FS2024 flight planner system, embedded on the FS24 EFB Tablet. These are parsed directly from the MSFS Tablet and loaded into the internal avionics. This method offers an intuitive, user-friendly interface for creating routes in FS24, using IFR Procedures.

Simply create your flight plan using the tablet EFB, then click "Send to Aircraft".

MSFS World Map Sync

For users starting a flight from the World Map (pre-flight), the MH60 can auto-import the standard MSFS flight plan (PLN format). Simply create a flight plan on the WorldMap, in FS20 or FS24, and start your flight normally.

In FS20, the flight plan is automatically loaded onto your avionics.

In FS24, you may have to click on "Send to Avionics" on the tablet EFB.

Manual Waypoint Entry (via Keyset)

Users can create Fly-to-Point (FTP) Flight Plans, by manually inputting waypoints via the MH60's Keyset interface. These waypoints will form a route that will appear on the aircraft's instrumentation.

Users may also edit flightplans loaded onto the aircraft, by editing, deleting or creating new waypoints following the guides below.

Edit and/or Create FTP (Fly-To-Point) Flightplans

1. Navigate to the NAV Menu, and select the FTP EDIT Submenu.
2. Three new options will open up on the Keyset PK Menu. Additionally, the NORM FTP Pop-up will display on the Mission Display.



FTP Edit Submenu, displaying option EDIT WYPT

3. Use the PG UP or PG DN keys, either on the Keyset or MD Bezel, to select a waypoint. "FTP---" Displays the selected waypoint number. Remember, anytime you see a white box highlighted WHITE, it is a cursor that may be interacted with PG UP/DN/LEFT/RIGHT.
4. After selecting the waypoint you wish to edit or enter, press EDIT WYPT on the Keyset. The waypoint’s coordinates will appear with a green background, indicating that the field is now active and ready to receive input.



NORM FTP Pop-up, Waypoint FTP002 Selected. Fields are highlighted green, indicating active for editing. Notice PG UP and PG DN buttons on the right bezel.

5. Use the Keyset numberpad to enter coordinates, starting with LATITUDE. First number indicates the direction - 2 for NORTH, 8 for SOUTH. Any other number is interpreted as NORTH. Then type the Degrees, Minutes and Seconds. Press ENT to insert.
6. If the entered coordinate is not valid, it will default to N00 00 00.
7. To deactivate editing and return to the previously stored value, you may press EDIT *WYPT* at any time.
8. Use the Keyset numberpad to enter LONGITUDE. First number indicates the direction - 3 for WEST, 5 for EAST. Any other number is interpreted as WEST. Then type the Degrees, Minutes Seconds. Press ENT to insert.
9. Once both coordinates are inserted, the flight plan will automatically reconstruct and reload.

You may repeat these steps to continue manually adding waypoints, or edit waypoints from existing flight plans.

If you prefer, you may also use LVAR L:MH60_Numeric_Stream to directly type into the fields using your keyboard.

Fly Direct-To-Point

1. Assuming you have an FTP Flightplan loaded, you may fly directly to any waypoint on the route, including search patterns. If you do not have an FTP Flightplan already, you may review the two expandables above.
2. Navigate to the NAV Menu, and select the FTP EDIT Submenu.
3. Three new options will open up on the Keyset PK Menu. Additionally, the NORM FTP Pop-up will display on the Mission Display.



FTP Edit Submenu, displaying option DRCT TO --

4. Use the PG UP or PG DN keys, either on the Keyset or MD Bezel, to select a waypoint. "FTP---" Displays the selected waypoint number. Remember, anytime you see a white box highlighted WHITE, it is a cursor that may be interacted with PG UP/DN/LEFT/RIGHT.
5. After selecting the waypoint you wish to fly directly to, press "DRCT TO --" on the keyset. The aircraft will automatically delete all other waypoints on your FTP Route, and create a Direct-To route from the current location to the selected waypoint (now FTP002).

Please note that this is a "destructive method" - eg. it will erase all other waypoints on your route. Direct-To waypoint while conserving the rest of the route is not supported at this time.

Delete FTP Flightplans

1. Assuming you have an FTP or Simulator Flightplan loaded, you may fully delete any waypoints or routing stored in memory. If you do not have an FTP Flightplan already, you may review the expandables above.
2. Navigate to the NAV Menu, and select the FTP EDIT Submenu.
3. Three new options will open up on the Keyset PK Menu. Additionally, the NORM FTP Pop-up will display on the Mission Display.



FTP Edit Submenu, displaying option CLR FPLN

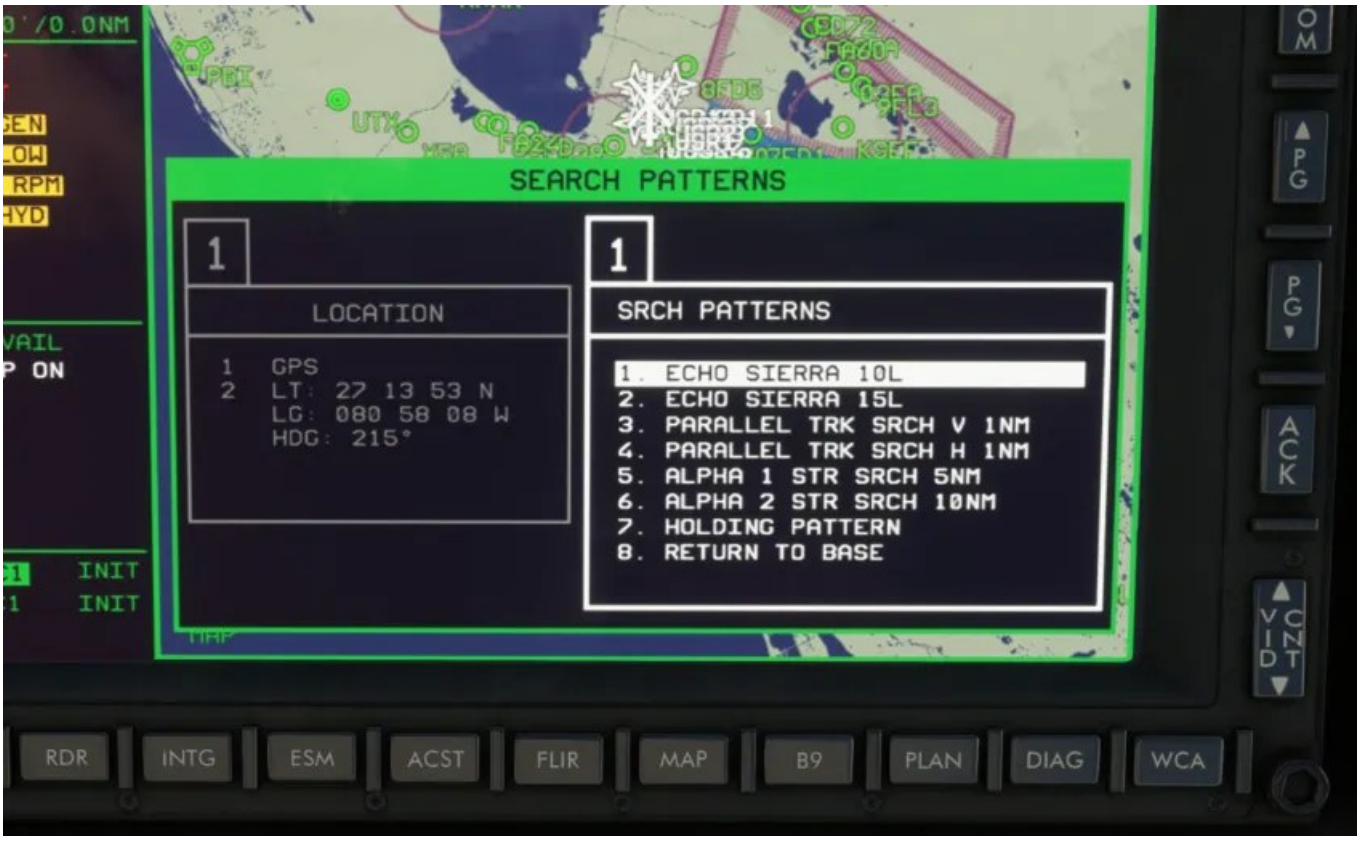
4. Press CLR FPLN. This option will fully clear all waypoints from memory, as well as any route that has been loaded into the map. You may now create a new route.

Predefined Search Patterns

Users can fly a search pattern by generating it directly with the Keyset, selecting from standard formats such as Expanding Square, Creeping Line, or Sector Search. Once synced to the MH-60, the pattern is loaded as a waypoint sequence into the MAP system, allowing the aircraft to fly the pattern manually.

Create Search Patterns

1. Navigate to the NAV Menu, and select SRCH PTTR option. This will open up the SEARCH PATTERN Pop-up menu on the Mission Display.
2. Use the PG UP or PG DN keys, either on the Keyset or MD Bezel, to move the cursor. Press ACK to select a Search Pattern. The FTP Flightplan will now be overwritten with the selected Search Pattern.



Search Patterns Pop-up Menu. Note PG UP, PG DN and ACK Buttons on the right bezel for navigation.

3. You may now close the Pop-up by pressing SRCH *PTTR*. Adjust Map Range as desired and fly the Search Pattern manually.

All Search Patterns are predefined and non-editable. They all originate from the aircraft location at the time of activation.

Flight Plan back to Base

MH60 can automatically generate a return-to-base route from current aircraft position. This ensures you have a clear navigation path back to your home base or recovery point, complete with updated distances and headings.

Set or Edit Base Location

Your "BASE" is defined as the location where the mission was initiated and/or a designated safe point for return and recovery. When the aircraft is first started up and EGIs are aligned, the Keyset will automatically set the current aircraft location as Base. However, the user may want to modify this base location manually.

1. Navigate to the NAV Menu, and select BASE UPDT. This will open up the Base Update submenu.
2. Three new options will appear:
3. SET BASE: Depressing this option will automatically set the current Latitude and Longitude as the base.
4. LAT: Displays the current Base Latitude.
5. LONG: Displays the current Base Longitude.



BASE UPDT Submenu, displaying LAT, LONG, SET BASE

3. To manually enter a base LAT/LONG, depress the corresponding button on the Keyset. The field now becomes an active input field (Highlighted by asterisks).
4. Use the keyset numberpad to enter the coordinates. The first number will represent direction:
5. For LAT: 2 is NORTH, 8 is SOUTH, any other number defaults to NORTH.
6. For LONG: 4 is WEST, 6 is EAST, any other number defaults to WEST.
7. Proceed with entering Degrees, Minutes and Seconds. Once complete, press ENT to enter. If the coordinate is valid, it will now be displayed on the keyset and represent the new Base location. If the coordinate is invalid, it will default to N00 00 00, or W000 00 00

Having an up-to-date base location is important, as Bingo Fuel calculations are based on this location. The MH60 also features a Quick Return-to-Base to take the most efficient and direct route back to the set base.

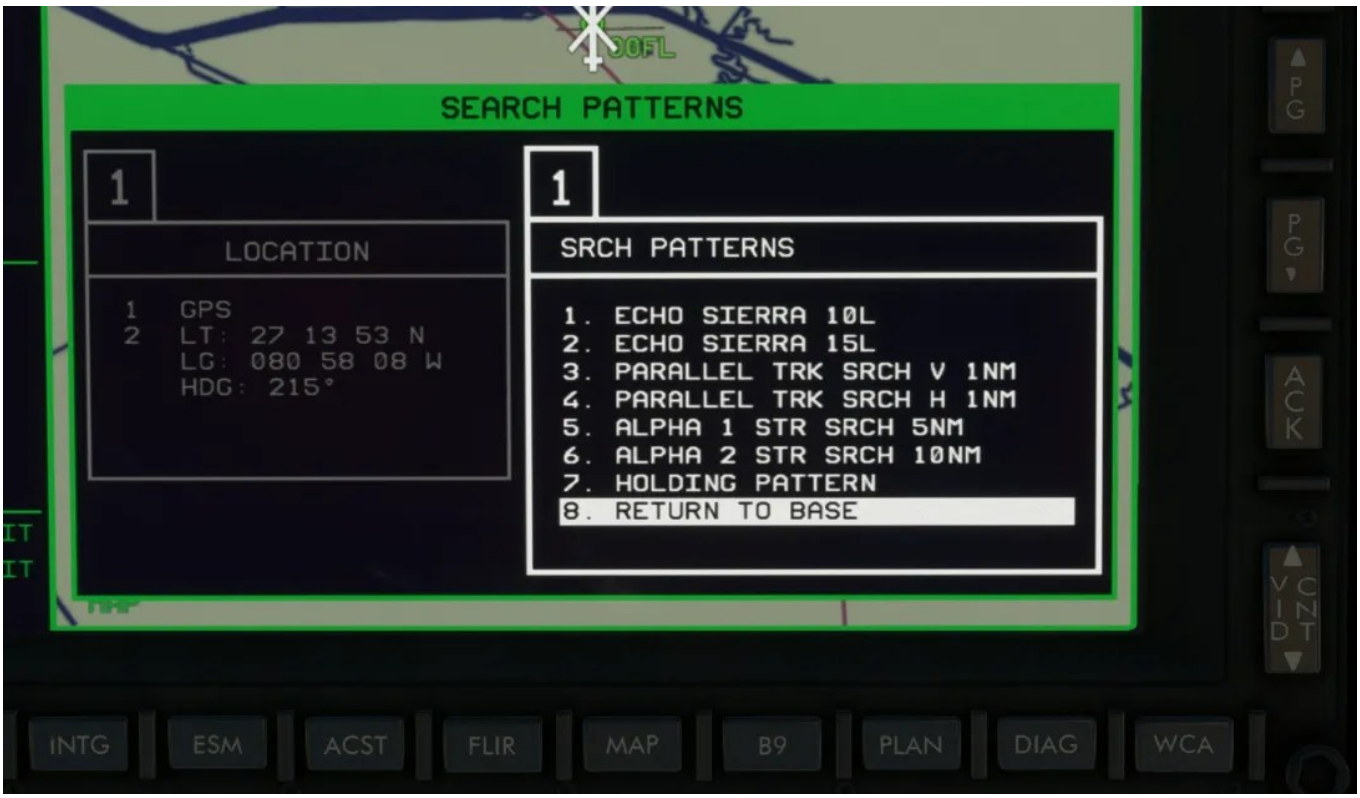
Quick Return-to-Base

Your "BASE" is defined as the location where the mission was initiated and/or a designated safe point for return and recovery. To set a Base, please see the expandable above.

To quickly return to your base, either because your mission is completed, or due to Bingo Fuel, follow these steps:

1. Navigate to the NAV Menu, and select BASE UPDT. This will open up the Base Update submenu.
2. Verify that LAT and LONG are correct, and correspond to the location of your base.

3. On NAV Menu, press SRCH PTTR. This will open up the SEARCH PATTERN Pop-up on Mission Display.
4. Use PG DN Key, either on the Keyset or MD Bezel, to navigate to the option "RETURN TO BASE". Press ACK to select.



SEARCH PATTERNS Pop-Up. Return to Base selected. Note PG DN and ACK Buttons on the right bezel

5. The aircraft will now automatically create a direct route between its current position and the base as defined by LAT, LONG on the keyset.

Handfly the route safely back to your base. The helicopter estimates a cruise speed of 100 knots, with a 20% safety margin for Bingo Fuel calculations.

Navigation Aids

Typical Radio navigation is also supported - fully supporting TACAN1/2, NAV1/2 and ADF1/2.

Tune Navigation Radios (VOR1/VOR2/ADF1/ADF2)

1. Use the quick TUNE access from the Keyset Menu, or TUNE button on the Keyset keyboard, to access the TUNE Pop-up on Mission Display.
2. Use PG UP or PG DN, either on the Keyset or MD Bezel, to select a radio to tune. Remember, anytime you see a white box highlighted WHITE, it is a cursor that may be interacted with PG UP/DN/LEFT/RIGHT.
3. Once selected, press ACK or SEL (MD Bezel or Keyset) to enter a frequency.
4. The STBY FREQ will now appear with a green background, indicating that the field is now active and ready to receive input.
5. Use the Keyset numberpad to enter frequency. The decimal period is added automatically.



TUNE Pop-up. Note the green box indicating active for input on STBY. Note PG UP/PG DN/ACK Buttons on Bezel

4. Once completed, press ACK again to validate and change frequency. If the entered frequency is invalid, frequency will not be changed.
5. Alternatively, you may press ENT to directly validate the frequency and XFER to Active. You may also use ENT at any time while the TUNE Pop-up is open to XFER the frequencies selected.

> Note
> Alternatively, you may access LADF1 and VORTAC from NAV Menu, LADF TUNE and VTAC TUNE respectively.

Tune TACAN1/TACAN2

> Tip
> Manual Section to be Expanded

TACAN Mode X/Y (Affecting both TACAN1 and TACAN2) can be switched from NAV Menu/TACN MDE

Miltech Simulations MH60

Electrical System

The electrical system of the MH60 is designed to provide reliable power to all essential aircraft systems, including avionics, flight controls, sensors, and mission equipment. It consists of two **main AC generators**, each driven by one of the aircraft's engines, and a third **APU generator** that provides power during ground operations or engine start.

Each generator feeds into a **primary power bus**, which supplies power to critical systems. These buses are connected through power distribution relays and circuit breakers to the avionics and systems. Circuit breakers are not modeled in MSFS.

A **battery** provides power to essential flight instruments during startup, and in case of generator failure. A ground power unit can be connected for startup as well.

The electrical system is managed from the Electrical Panel, located on the overhead panel. More information: Overhead Panel

Miltech Simulations MH60

Automatic Flight Control System (AFCS) and Stability Augmentation System (SAS)

Warning
A minimum 2% Extremity Deadzone on Collective (In some cases up to 5% on old or inaccurate hardware) is required for AFCS to function correctly. Not enough deadzone will result in the input controllers and the system inputs conflicting with each other, leading to erratic or unexpected behavior. No deadzone is required on Cyclic, fully supporting unsprung cyclics.

Understanding the Pilot Assistance and Stability Systems

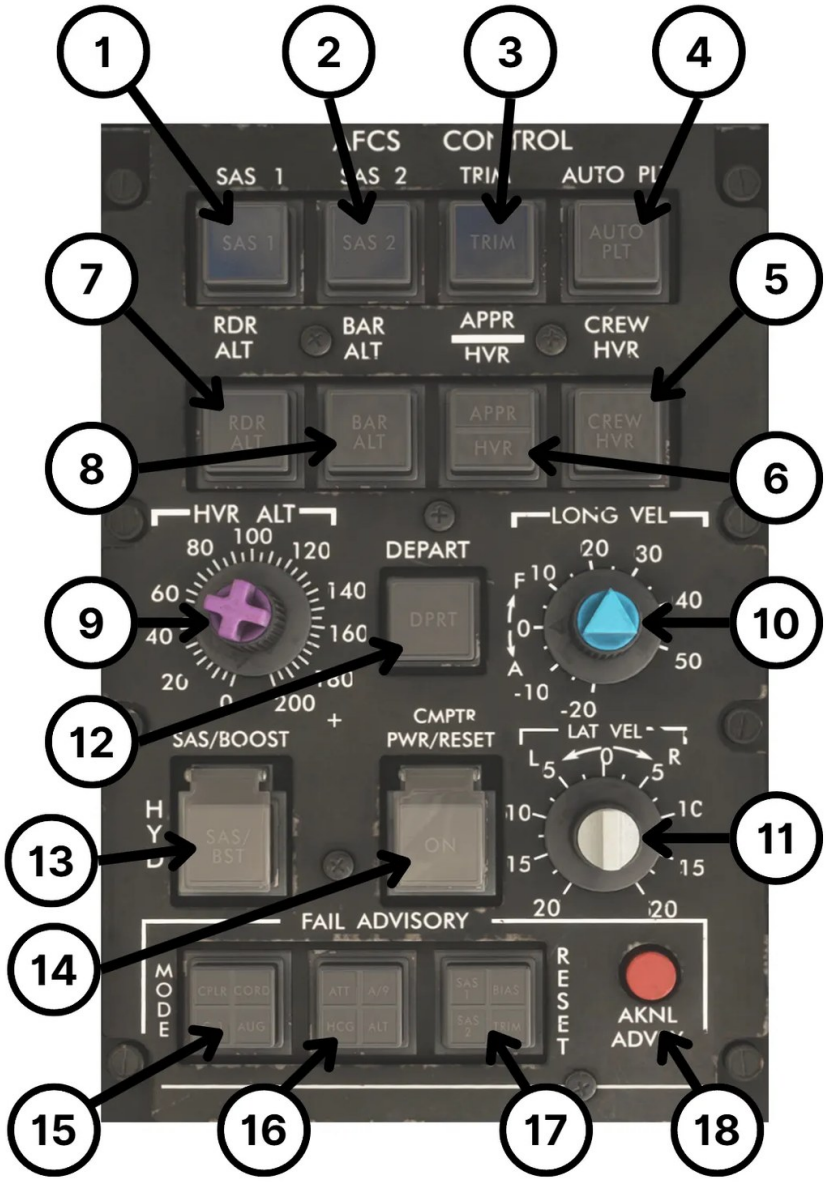
The **Automatic Flight Control System (AFCS)** in the MH60 Series is an integrated system designed to enhance stability, handling, and autopilot functions. It reduces pilot workload by providing both **short-term stability (via SAS)** and **long-term flight path control** (via trim, autopilot, and attitude hold features).

The AFCS in the MH-60 consists of three primary subsystems:

1. **Stability Augmentation System (SAS)** * Provides short-term rate damping to smooth out small, rapid oscillations. * Two independent channels: SAS 1 (FCC 1) and SAS 2 (FCC 2). * Deactivation of one, or both of the SAS Computers is considered an emergency, and requires immediate landing. The aircraft becomes really difficult to maneuver when SAS is off.
2. **Force Trim System** * Provides long-term stability and flight path control. Enables force trim, allowing the pilot to "set and hold" control positions.
3. **Autopilot (AFCS) Coupler** * Provides automated flight modes such as:

- **Attitude Hold** (Pitch/Roll/Yaw)
- **Altitude Hold** (Baro/Rad)
- **Hover Hold** (Pilot/Crew)
- **Departure Mode** (also known as Go-Around mode)

AFCS/SAS Panel



AFCS/SAS Panel

Note
More information on Stability Augmentation System: Stability Augmentation System (SAS)
More information on Autopilot Modes: AFCS Coupler (Helicopter Autopilot)

1. **SAS 1:** Toggles Stability Augmentation System computer 1. Always engaged in normal flight, deactivation may lead to reduced stability and increased pilot workload.
2. **SAS 2:** Toggles Stability Augmentation System computer 2. Always engaged in normal flight, deactivation may lead to reduced stability and increased pilot workload.
3. **TRIM:** Disables automatic and manual Force Trim functions. For more information, refer to Force Trim System
4. **AUTO PILOT:** Autopilot Master. Required for any other Autopilot mode to engage. Additionally, this mode provides attitude hold/speed hold, depending on airspeed.

5. **CREW HOVER:** Transfers Hover Control to "Crew Control", generally used for SAR operations. This mode only engages if APPROACH/HOVER is engaged. Please refer toAFCS Coupler (Helicopter Autopilot) for more information.
6. **APPROACH/HOVER:** The aircraft will automatically enter the "approximation and hover mode". Aircraft speed (longitudinal and lateral) and altitude will be dictated by the HVR ALT/LONG VEL/LAT VEL knobs.
7. **RADAR ALTITUDE HOLD:** This mode automatically controls the collective to hold a constant altitude above the terrain using the radio altimeter. RADAR ALT will not engage if AGL is higher than 5000ft.
8. **BARO ALTITUDE HOLD:** This mode automatically controls the collective to hold a constant altitude using the barometric altimeter.
9. ◉ **HOVER ALTITUDE KNOB:** Selects hover altitude above ground, in Feet, when APPR/HVR mode is engaged.
10. ◉ **LONGITUDINAL VELOCITY KNOB:** Selects longitudinal (forward) speed, in knots, when APPR/HVR mode is engaged.
11. ◉ **LATERAL VELOCITY KNOB:** Selects lateral speed, in knots, when APPR/HVR mode is engaged.
12. **DEPART MODE:** This mode, also referred to as "Go-around" mode, will quickly and automatically take the aircraft from a coupled hover to cruise flight (Altitude of at least 200ft above ground, and speed of 120 knots). This mode can only be engaged if the aircraft is flying at an indicated airspeed of 50 knots or under.
13. **SAS HYD BOOST:** INOP
14. **CMPTR PWR/RESET:** INOP
15. **FAIL ADVISORY RESET 1:** INOP
16. **FAIL ADVISORY RESET 2:** INOP
17. **FAIL ADVISORY RESET 3:** INOP
18. **ACKNOWLEDGE ADVISORY:** INOP

Stability Augmentation System (SAS)

> Caution
> You generally do not want to deactivate SAS at any circumstance, as this may lead to reduced stability and increased pilot workload. It is generally considered an emergency, and requires immediate landing.

The SAS System consists primarily of two channels (SAS1 and SAS2), controlled by two separate Flight Control Computers for redundancy. SAS primarily provides **rate damping** to counteract small, rapid oscillations (especially in pitch, roll, and yaw). This helps stabilize the aircraft and reduces pilot workload.

Many people compare SAS to Fly By Wire on an aircraft - though both are similar in many ways, FBW is typically designed to keep the aircraft's attitude when no pilot input is detected. SAS does not keep attitude stable; it only functions as a system that actively counteracts reactions from helicopter oscillations.

The SAS System is generally always enabled, both when starting Cold and Dark, or starting from the Runway.

AFCS Coupler (Helicopter Autopilot)

Warning
A minimum 2% Extremity Deadzone on Collective (In some cases up to 5% on old or inaccurate hardware) is required for AFCS to function correctly. Not enough deadzone will result in the input controllers and the system inputs conflicting with each other, leading to erratic or unexpected behavior. No deadzone is required on Cyclic, fully supporting unsprung cyclics.

Caution
In general, all modes require BOTH SAS 1 AND SAS 2 computers to be enabled. None of these modes will enable if the aircraft is on the ground, or SAS has failed/deactivated.
Altitude Modes rely on a fast refresh rate, which is directly tied to the FPS. Frame Rates under 20 FPS may result in severe oscillations in altitude. Make sure Glass Cockpit Refresh Rate is set to Medium or High on your MSFS Settings.

Note
MH60 is not equipped with Heading Select or LNAV modes, as per the real aircraft.
If Significant Cyclic Input is detected (greater than 20% on any direction), **Hover and Crew Hover** modes will automatically disconnect. On Springless systems, it is recommended to return your cyclic as close to neutral as possible.

Miltech Simulations MH60 features a complex Autopilot system, with several modes modeled.

1. **AUTO PILOT:** Autopilot Master Switch. This switch must be depressed for other modes to engage. Additionally, it functions as a basic attitude hold/speed hold Autopilot Mode.
2. At airspeeds **under 50 knots**, this switch only functions as Autopilot Master switch, to combine with Altitude modes. Force Trim system remains in effect.
3. At airspeeds **over 50 knots**, enabling this mode will automatically hold the aircraft's airspeed at the time of engagement. Aircraft manages the attitude automatically to achieve leveled flight at this speed. Additionally, functions as Autopilot Master switch, to combine with Altitude modes.
4. If the 50-knot threshold is crossed at any time, the mode will automatically switch modes.
5. To change speed, first disengage this mode, adjust speed, and then reengage.
6. To change heading, perform a turn with cyclic and/or pedals.
7. A temporary ATT disconnect is available. SET AUTOPILOT DISENGAGE (on any Force Trim Mode). Press+Hold, Input Repetition must be ON (FS24)
8. This mode does not control the aircraft's altitude - it can be coupled along with either ALT mode.
9. INCREASE ROTOR LONGITUDINAL TRIM and DECREASE ROTOR LONGITUDINAL TRIM will increase/decrease target speed by 6 Kias on this mode.
10. **RADAR ALT:** This mode automatically controls the collective to maintain a constant altitude above the terrain using the radio altimeter.
11. RADAR ALT will not engage if the altitude above ground (AGL) is higher than 5000ft.
12. This system will maintain the altitude above ground at the time of engagement.
13. To change altitude, disengage the system, manually fly to the desired altitude and then reengage.
14. Beware that Radio ALT Hold has a high sampling rate, and as such the system may perform aggressive corrections on unstable terrain. The aircraft will also react to ground obstacles, such as buildings and

vegetation, as these are detected by the radio altimeter.

15. After engaging this mode, reduce the collective to 0% and ensure a sufficient extremity deadzone is set. Not doing so may cause control conflicts with the system.
16. INCREASE ROTOR LONGITUDINAL TRIM and DECREASE ROTOR LONGITUDINAL TRIM will increase/decrease target speed by 6 Kias on this mode.
17. **BARO ALT:** This mode automatically controls the collective to maintain a constant barometric altitude.
18. This system will maintain the barometric altitude at the time of engagement.
19. To change altitude, disengage the system, manually fly to the desired altitude and then reengage.
20. After engaging this mode, reduce the collective to 0% and ensure a sufficient extremity deadzone is set. Not doing so may cause control conflicts with the system.
21. INCREASE ROTOR LONGITUDINAL TRIM and DECREASE ROTOR LONGITUDINAL TRIM will increase/decrease target speed by 6 Kias on this mode.
22. **APP/HOVER:** The aircraft will automatically enter the "approximation and hover mode". Aircraft speed (longitudinal and lateral) and altitude will be dictated by the three knobs on the AFCS Panel.
23. If airspeed is above 50 knots, and/or altitude is above 250ft, aircraft will quickly and safely decelerate and descend to 50 knots and 200 feet above ground ("Approach" Regime). The APPR light will be displayed on the APP/HVR button.
24. Under 50 knots/250ft, the aircraft enters "Hover" regime, in which the altitude, lateral, and logitudinal ground speeds are dictated by the three knobs on the AFCS Panel.
25. Aircraft will automatically manage pitch to control longitudinal speed, targeting the selected speed on the LONG VELOCITY knob (from -20 Knots Ground Speed (KGS) to +50 KGS)
26. Aircraft will automatically manage roll to control lateral speed, targeting the selected speed on the LAT VELOCITY knob (from -20 KGS to +20 KGS)
27. Aircraft will automatically manage collective, targeting the altitude (as measured by the radar altimeter) selected on the HVR ALT knob.
28. The pilot will continue to have full pedal control to modify the heading.
29. After engaging this mode, reduce the collective to 0% and ensure a sufficient extremity deadzone is set. Not doing so may cause control conflicts with the system.
30. **CREW HOVER:** Upon engaging, Hover Controlled is transferred to "Crew Control", generally used for SAR operations. The user can now move the aircraft from the cabin by using keybinds.
31. This mode can only be engaged if the aircraft's APP/HOVER is engaged, and aircraft is on HVR Regime.
32. Use keybinds: INCREASE AUTOPILOT REFERENCE AIRSPEED and DECREASE AUTOPILOT REFERENCE AIRSPEED to increase/decrease longitudinal velocity by plus/minus 1 knot Ground Speed on each keypress; up to +/- 5 knots.
33. Use keybinds: INCREASE AUTOPILOT REFERENCE MACH and DECREASE AUTOPILOT REFERENCE MACH to increase/decrease lateral velocity by plus/minus 1 knot Ground Speed on each keypress; up to +/- 5 knots.
34. Speed Knobs in the cockpit are deactivated in this mode. Ground speed is capped at 5 knots in any direction.
35. Hover Altitude continues to be controlled by the HVR ALT knob. Heading Control remains on the pilot pedals.

36. After engaging this mode, reduce the collective to 0% and ensure a sufficient extremity deadzone is set. Not doing so may cause control conflicts with the system.
37. **DEPARTURE:** This mode, also referred to as "Go-around" mode, will quickly and safely take the aircraft from a coupled hover to cruise flight.
38. If aircraft's RDR Altitude is under 150 feet, the collective will take over controls, increase the altitude to 150 feet AGL, and keep a RDR Alt Hold.
39. If aircraft's RDR Altitude is above 150 feet, the aircraft will keep a RDR Alt Hold (or BARO, if above 5000ft) at the altitude at the time of engaging.
40. Aircraft will automatically manage pitch to control longitudinal speed, targeting a speed of 120 knots. If speed is greater than 120 Knots at the time of engaging, the aircraft will decelerate to 120 knots.
41. Roll and Yaw/Heading are fully controlled by the pilot.

Keybinds

All keybinds available for AFCS, SAS and Coupler systems can be found on the Keybinds Guide

Miltech Simulations MH60

Force Trim System

Force Trim is a flight control system used in helicopters to reduce pilot workload by maintaining the cyclic position without constant pressure on the controls. In the MH60 in Microsoft Flight Simulator, four different implementations of the Force Trim System are available.

Tip
Familiarize yourself with the Automatic Flight Control System (AFCS) and Stability Augmentation System (SAS) panel before configuring Force Trim. Memorize the location of SAS1, SAS2 and TRIM pushbuttons.

Automatic Force Trim System (Default)

Recommended for casual simmers or users with self-centering controls (e.g., Xbox controllers, spring-loaded joysticks).

This mode continuously applies trim inputs behind the scenes to maintain the current **longitudinal** (pitch) and **lateral** (roll) attitude of the aircraft. As you release the stick, the system "locks in" the current attitude and trims the controls accordingly.

- **Behavior:**\ When you return the stick to center, the aircraft will maintain its last commanded attitude, rather than snapping back to level flight. You can continue to fly hands-off, and minor inputs will smoothly adjust the trim reference without needing to manage it manually.
- **Ideal For:**
- Plug-and-play setups
- Xbox controllers
- Spring-loaded joysticks
- Users who want stable, forgiving handling without trim micromanagement
- **Required Configuration:**
- STABILITY AUGMENTATION SYSTEM (SAS 1 / SAS 2) must be ON
- TRIM Switch must be ON
- TOGGLE MARKER SOUND Keybind must be removed from your controls, and not pressed on the current simulator session.
- SET HELICOPTER FORCE TRIM RELEASE BUTTON Keybind must be removed from your controls, and not pressed on the current simulator session.

This mode is enabled by default on Runway Starts and functions automatically in the background.

Manual Force Trim System (FS20 Only)

Recommended for advanced users with self-centering controls, seeking a more realistic cyclic trim experience.

This mode simulates a realistic trim release system used in actual military helicopters like the MH-60. It is attitude-based and trim-enabled, meaning it does not physically move the centerpoint of your joystick or collective, but instead applies hidden trim inputs to maintain the aircraft’s current pitch and roll attitude at

the moment you release the switch.

- **Behavior:**\ In this mode, the pilot uses a designated trim release switch to temporarily disconnect automatic trimming. While the button is held, the cyclic can be moved freely. Upon release, the new position is saved as the center point, and trim is applied to maintain that control input, just like in real-world helicopters with a mechanical force trim release.
- **Required Configuration:**
- Set a keybind for TOGGLE MARKER SOUND
- This keybind must be set to Press + Hold.
- STABILITY AUGMENTATION SYSTEM (SAS 1 / SAS 2) must be ON
- TRIM Switch must be ON
- **To Enable**: Configure the keybind and press it once.
- **To Disable**: Remove the keybind and cycle the TRIM switch OFF and ON
- Alternatively, disable TRIM entirely to deactivate all Force Trim modes

FS24 Stock Force Trim System (FS24 Only)

Recommended for advanced users with noncentering and self-centering controls, seeking a more realistic cyclic trim experience, but lack a mechanical trim release switch on their hardware.

This mode leverages the new built-in Force Trim behavior introduced in Microsoft Flight Simulator 2024. It is only available when flying in FS24 and functions independently from the MH60's custom trim systems.

- **Behavior:**\ While holding the assigned keybind, moving the cyclic has no effect on aircraft control surfaces - it allows the pilot to reposition the stick freely. When the button is released, the current position of the stick becomes the new center point, and all future inputs are interpreted relative to this new center.
- **Required Configuration:**
- Set a keybind for SET HELICOPTER FORCE TRIM RELEASE BUTTON
- This keybind must be set to Press + Hold. Input Repetition must be enabled in MSFS control settings (FS24)
- STABILITY AUGMENTATION SYSTEM (SAS 1 / SAS 2) must be ON
- TRIM Switch must be OFF
- **To Enable**: Configure the keybind and press it once.
- **To Disable**: Remove the keybind and cycle the TRIM switch OFF and ON

Force Trim System OFF

Recommended for advanced users with noncentering controls only, that feature a mechanical trim release switch, and are looking for a realistic cyclic experience.

Not recommended unless using hardware with mechanical trim release capability.

This mode disables all force trim behavior - no assistance is provided by the aircraft or MSFS. It is the most raw and direct control mode, intended only for users with advanced hardware capable of maintaining stick position without software input.

- **Behavior:**\ With Force Trim OFF, the helicopter will respond purely to live hardware input at all times. There is no attitude holding, no trim logic, and no recentring. To maintain level flight, your controls must remain physically positioned with constant pressure or held mechanically by your hardware.
- **Required Configuration:**
- STABILITY AUGMENTATION SYSTEM (SAS 1 / SAS 2) must be ON
- TRIM Switch must be OFF
- TOGGLE MARKER SOUND Keybind must be removed from your controls, and not pressed on the current simulator session.
- SET HELICOPTER FORCE TRIM RELEASE BUTTON Keybind must be removed from your controls, and not pressed on the current simulator session.
- **To Enable**: TRIM Switch to OFF, remove keybinds.
- **To Disable**: TRIM Switch to ON

Miltech Simulations MH60

FLIR (Forward Looking Infrared)

The Forward-Looking Infrared (FLIR) system on the MH-60 (Sierra, Romeo, and Tango variants) is simulated as a cosmetic-only feature. While the external 3D model is fully articulated and integrated into the cockpit controls, users should be aware of the following functional limitations:

- **Articulated Turret:** The FLIR ball on the nose of the aircraft is fully animated. It will respond to control inputs (Pan/Tilt) via the assigned keybinds:

Function	MSFS Key Bindings	Clickable in Cockpit
Move FLIR Right/Left	INCREASE MIXTURE 3 DECREASE MIXTURE 3	
Move FLIR Up/Down	INCREASE MIXTURE 4 DECREASE MIXTURE 4	
Increase/Decrease Zoom	INCREASE MAGNETO 3 DECREASE MAGNETO 3	

- **No Thermal Overlay:** The system does not generate a true "thermal" (infrared) image. While you may see a camera feed on the Multi-Function Displays (MFDs), it functions as a standard daylight or low-light digital camera with filters, rather than a heat-signature sensor.
- **Target Tracking:** The "Cosmetic Only" designation means the FLIR cannot autonomously slave to, lock onto, or track AI entities (vehicles, ships, or people) based on heat signatures.
- **Objects rendering limitations:** The FLIR implementation will not render SimObjects (Buildings, Ships, vehicles, aircraft or people). It is limited to render terrain, satellite imagery, and airport grounds, as fed by the Synthetic Vision engine in MSFS.

The primary reason the FLIR system is restricted to a cosmetic or "synthetic" view is the absence of Camera-in-Gauge support within the MSFS SDK.


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HELO
LAT 35 11 58 N
LONG 077 12 01 E
GT/GS 311°/51KT
W C/S 229°/2KT
RAD ALT 2067FT
BOOST PUMP ON
R118.750C1 INIT
R124.850C1 INIT
M3 1200
ZOOM: 1.0
MODEL L01
NEXT MSL
RESET LCHR
C1GE>25J
ARM LRD
C/S XXX/ 0
RNG: XXX
BRG: 311°
LAT:35 11 58N
LON:077 12 01E
CRS: XXX
PRI MSL: NONE
FLIR
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Miltech Simulations MH60

Acoustic and Anti-Submarine Systems

> Tip
> This page only applies to MH60 Romeo.

The Acoustic and ASW System on the MH60R enables detection, localization, and engagement of submerged submarines using a suite of deployable and onboard sensors. It utilizes sonobuoys and/or sonodippers to receive acoustic data.

Sonobuoys

A sonobuoy is a small, expendable sonar system dropped into the ocean from an aircraft or helicopter. Once in the water, it transmits acoustic data back to the aircraft for submarine detection and tracking. They can be Passive (e.g., DIFAR): Listens for noise from submarines (e.g., propellers, engines) or Active (e.g., DICASS): Emits pings and listens for echoes to determine range and bearing. For the terms of MSFS Simulation, either way is identical.

Sonobuoys as modeled in MSFS have a limited transmitting range, and duration of approximately 5 minutes. Few seconds after releasing, the sonobuoy will begin transmitting data to the aircraft on the MD ACST Page

Sonobuoys will remain floating on the surface of the water, and their position is visible from the air as a yellow buoy.

Sonodipper

A Sonodipper is a nickname for the MH-60R’s retractable, active dipping sonar system, officially known as the AN/AQS-22 ALFS (Airborne Low-Frequency Sonar). It consists of a large sonar dome that is lowered into the water by winch when the helicopter hovers. Unlike sonobuoys, which are expendable and left behind, the Sonodipper is a reusable system that provides real-time active sonar data, including precise range and bearing information on submerged targets.

Sonodippers shall remain underwater to receive any data from nearby submarines. This can sometimes be inconvenient as the pilot shall fly very close to the water.

Loading and Deploying Acoustic Elements

Sonobuoys

Use the pilot's side Keyset, under WPNS page to load/unload sonobuoys. This will get you a full load of 25 buoys to release.



Pilot's side Keyset, WPNS Page

Note
Wait 10-15 seconds between each sonobuoy launch. If two buoys are launched too close of each other, they may only show a single return on ACST Page.
In the real aircraft, a wait time of a few seconds is also necessary to rebuild the pneumatic pressure required to launch sonobuoys.

To release, turn on the MASTER ARM switch on the Armament Control-Indicator (ACI) panel, then press the BUOY LAUNCH button. This will deploy one sonobuoy from the left side of the helicopter.



ACI Panel, note MASTER ARM on. Press BUOY LAUNCH to deploy

Sonodipper

Use the pilot's side Keyset, under WPNS page, to load/unload sonodipper. Sonodipper will be visible as soon as loaded, it is recommended to do this as you are flying over water.

Sonodipper does not require arming or releasing. It will begin transmitting as soon as the aircraft is flying above water, and sonodipper is under water.

Using Acoustic Elements

Please note that ACST Pages **will only fuction as depicted with Miltech Mission Hub**, and when using compatible mission modes (Submarine Attack, Submarine Intercept). More information: Broken mention

Use the ACST Button on the Mission Display to open the Acoustics page. Use PG UP and PG DN buttons on the right side bezel to alternate between Sonobuoy and Sonodipper.

We recommend using the Copilot MD for Acoustics, as this display is replicated on the ASW Console in the cabin.

Sonobuoys



Acoustics Page, Sonobuoy

Up to four Sonobuoy instances can be displayed simultaneously. Releasing multiple buoys increases the accuracy of target localization. The vertical axis on the display represents the **bearing to the detected source**, in degrees, while the horizontal axis shows the **distance**, in yards.

Target returns typically appear as **dark spots** on the display. Sonobuoys are relatively cheap and expendable sensors, which means their acoustic returns often include a significant amount of background noise or interference, and have a limited range.

Sonodipper



Acoustics Page, Sonodipper

The Sonodipper is a more advanced and precise system compared to sonobuoys, offering greater range and accuracy. Like sonobuoys, it presents contact information on a two-dimensional axis, with bearing to the target on the vertical axis and distance in yards on the horizontal axis. The Sonodipper can accurately determine both range and bearing to a contact, which appears as a green dot on the display. Additionally, the Hydrophone Scope shows the current depth of the sonar transducer below the water surface.

Miltech Simulations MH60

Weapons & Countermeasures Systems

Caution
Keybinds must be configured for Weapon and Defensive systems to work correctly. Please refer to the Keybind Guide for more information.

The MH60 is equipped to carry and deploy a range of weapons depending on the selected variant. The weapons system is simulated within the limitations of Microsoft Flight Simulator and includes support for both immersive visual effects and functional target engagement in compatible mission scenarios (Requiring Mission Hub).

The MH60 Weapons System is designed exclusively for **PC-based installations** and does **not function on Xbox consoles**. Due to Marketplace restrictions, **the system is not available or functional on copies of Microsoft Flight Simulator purchased via the MS Marketplace**, as Marketplace Rules do not permit the distribution of functional weapons systems. Cosmetic Weapons are still enabled.

As with all weapon systems in MSFS, **no damage or network-synchronized impact effects** are supported. Rockets and missiles function purely for visual and training purposes. Multiplayer users will **not see projectiles or effects**, and there is **no hit registration or scoring**. Missile launches produce only **cosmetic visual effects**. Target lock, radar-guided or infrared missile tracking is **not implemented**.

Countermeasures (flares and chaff) are **entirely cosmetic**, offering no defensive functionality or protection from AI or player weapons in multiplayer.

Weapon Types and Stations

Weapon Type	Stations Available	MH60S	MH60R	MH60T
M240 Door Guns	Crew Left / Right. Cosmetic Only.			
MG50 Door Guns	Crew Left / Right. Cosmetic Only.			
AGM114 Hellfire Missiles	External Pylons L/R	, x8	, x4	
Mk54 Torpedo	External Left Pylon			
Flares & Chaff	CMDS Dispenser			

Note
Note: Although listed under the WPNS Menu on the Keyset, Sonobuoys and Sonodipper are not considered weapons, but rather Acoustic Elements. For more information, Acoustic and Antisubmarine Operations

Loading Weapons

Weapons are configured via the **Keyset Weapons Page**.

Note

- Aircraft must be on the ground to load Weapons.
- Aircraft must be energized, either with Battery, APU or GPU.
- MH60 Tango does not have the "Weapons" Page, as it often does not carry any weapons.
- Options are crossed out when conditions are not met.



Weapons Page, Keyset, MH60R.

1. Using the Pilot's Side Keyset, navigate to the **WPNS Submenu**
2. Use the Keyset Buttons to **Load or Unload** weapon types: * Use the buttons to load weapons onto a station. When loaded, the station will be marked with "**" on the Keyset screen. Pressing the same button again will unload the station. * Available weapon types vary by MH-60 variant. Only compatible weapons will be displayed for each configuration. * Loading weapons increases the aircraft’s weight. Always

monitor your total loadout to ensure it remains within Maximum Takeoff Weight (MTOW) limits. * Flares cannot be unloaded once loaded. They can only be released during flight or jettisoned. More information Weapons Jettison

3. You may now return to the menu by pressing WPNS^. The aircraft payloads are ready to be used.

Arming Weapons & Firing Procedures (Hellfire, Torpedos)

Note
Note: Guns are cosmetic only, and have no firing or aiming functionality.

To arm weapons:

1. **Power On Weapons Systems:**

- On the **Armament Control-Indication Panel (ACI Panel)**, set **Master Arm** to *ARMED*.
- Set **↔ Laser Guidance Safe Switch** to *ON*



Armament Control-Indication Panel (ACI Panel), Centre Console, Mid CPLT Side

2. **Select Station:**

- Use the **Weapons Management & Attack Submenu (ATAK) on Keyset** to assign an active pylon/station.
- **Active stations** are those not crossed out and available for selection. Use the second row of Keyset buttons to arm a station. The first row of the Keyset displays a status code for each pylon, respectively:
- NORD: No Ordinance.
- NARM: Not Armed (Master Arm is OFF).
- STBY: System Armed, but pylon Not Active.

- RDY: Pylon Active and Armed, ready to fire.
- Missiles and Torpedoes are unguided in this rendition. **No FLIR Locking is simulated** at this time.
- LOBL- Lock On Before Launch and LOAL- Lock On After Launch are **NOT functional** on this rendition.



Keyset ATAK Submenu.

3. **Fire Selected Weapon:** * Selected Pylon is now armed. **Use the Fire Hellfire/Torpedo Keybind** to deploy the weapon.

- TOGGLE WATER RUDDER or TOGGLE PRIMER 4
- More information on the Keybinds Section Keybind Guide. These functions are not clickable from the cockpit.
- On copies distributed **externally from MS Marketplace**, the weapon animation will now be visible, including VFX and impact craters. On Marketplace purchases, the weapon will just be unloaded from the pylon.

Deploying Flares

1. **Load Flares** through the Keyset WPNS Page. More information on Loading Weapons
2. A single load of flares has a **total of 60 units**, with 30 launched from each side of the aircraft. There is currently no system in place to display the remaining flare count.
3. Use the **Keybind** to deploy flares individually. * TOGGLE ALTERNATOR 3 * More information on the Keybinds Section Keybind Guide. These functions are not clickable from the cockpit.

Weapons Jettison

Weapon Jettison by individual load station is supported on this aircraft. Use the WPNS Jettison Panel to select and release the weapons individually.

1. ↔ **Selective Jettison Master Switch** (SEL JETT) to *ARMED* Position
2. ◇ **Use the Jettison Selector Knob** to select which station to jettison:
3. Buoys for Sonobuoys
4. Right Outbd, Empty
5. Right Inbd for Torpedos and/or Fuel Tanks, or Hellfire Missiles on MH60S
6. CMDS for Flares
7. Left Inbd for Hellfire Missiles and/or Tanks
8. Left Outbd for Fuel Tanks
9. Once Selected, **press JETTISON** to release all loads on the selected pylon.



Jettison Panel

Keybind Guide

Caution

- Weapons Master Arm is required ON to deploy Weapons. Master Arm is not keybindable.
- Both of these Keybinds must be correctly configured for weapons to work correctly. These two functions are not clickable in the cockpit.

Function	MSFS Key Bindings	Clickable in Cockpit
Fire (1) Helfire Missile OR Torpedo (Not available on MH60-T)	TOGGLE WATER RUDDER (FS20) or TOGGLE PRIMER 4 (FS24)	
Deploy Flares (Not available on MH60-T)	TOGGLE ALTERNATOR 3	

Full Keybinds Guide available here: Keybinds Guide