Miltech Simulations MV-22B Tiltrotor

Autopilot Console

The Osprey is equipped with a completely modeled autopilot system.

> Note
> Autopilot functions are limited during CONV/VTOL/STOL mode, as the simulation cannot correctly handle the angle of the nacelles. During APLN flight, the autopilot behaves normally.

Autopilot buttons are equipped with green “ARM”, “CAP” and “ACT” indicators:

- **ARM:** Indicates that the current mode is available and can be activated. This can light up under different conditions (Nacelles angle, indicated airspeed, windspeed, etc.)
- **CAP:** Indicates that current mode is active (only for INAV and ENAV buttons)
- **ACT:** Indicates that respective autopilot mode is active (HVR CPLD, CPLD, AutoNAC)

The aircraft also references two types of navigation systems:

- **ENAV:** External Navigation (VOR, ILS, TACAN and GPS)
- **INAV:** Internal Navigation



Figure: Autopilot Panel

1. ▣ **CPLD (Coupled) Buttons:** Autopilot master button. Both have the exact same functionality. CPLD engages CRS, HDG, SPEED, ALT and V/S Control. CPLD lights up with “ARM” under APLN flight, and therefore this mode is only fully available when nacelles are at 0 deg.
2. **ENAV:** External Navigation - Must be activated to use ILS/VOR and WYPT Navigation.
3. **Search Path INAV:** INOP
4. **VOR/ILS:** Two modes are available - NAV 1 and NAV 2. VOR frequencies are inputted through the CDU. ENAV must be ON for VOR/ILS to engage.
5. **APPR (Approach):** Used for ILS Approaches. See Normal Procedures on BFWS for more information
6. **TACAN:** Enables TACAN. TACAN Frequencies are inputted through CDU. ENAV must be ON.
7. **WYPT (Waypoint):** Uses default GPS Waypoint navigation. Used in conjunction with MSFS flight plans for GPS Navigation. ENAV Must be ON for WYPT to engage.
8. ◉ **Brightness Knob:** Controls the screen brightness of the autopilot LCDs
9. ◉ **CRS Knob:** Selects the desired course. The outer knob increases amount by the unit, while the inner increases amount by tens (degrees). CRS is followed with active navigation (VOR-1, VOR-2 and WYPT)

10. ◉ **HDG Knob and Hold Button:** Selects the desired heading. The outer knob increases amount by the unit, while the inner increases amount by tens (degrees).
11. ◉ **Speed Knob and Hold Button:** Selects the desired Indicated Airspeed. The outer knob increases amount by the unit, while the inner increases amount by tens (knots). Autothrottle is only designed to be used on APLN mode.
12. ◉ **ALT Knob and Hold Button:** Selects the desired Altitude. The outer knob increases amount by hundreds, while the inner increases amount by thousands (feet).
13. ◉ **V/S Knob and Hold Button:** Selects the desired Vertical Speed. The outer knob increases amount by hundreds, while the inner increases amount by thousands (feet/min).
14. **Auto NAC:** INOP
15. **HVR CPLD (Hover Coupled):** Hover-hold functionality. This function only becomes available (“ARM” comes on) under stable hover (VTOL) and calm wind conditions. Radio altitude must be between 40ft and 300ft, at stable forward and lateral speeds. Vertical speed must be no more than 500ft/min, either upwards or downwards, and wind speed must not be more than 25kts(Forward), 20kts(Sideways) and/or 10kts(Backwards). HVR CPLD will automatically deactivate if any of these variables go out of the specified bounds, sudden input from the control stick or throttle/collector, or change of nacelles angle
16. **TF:** INOP
17. **REM HVR (Remove Hover):** INOP