3.6 AGM-84 HARPOON

The AGM-84 Harpoon is an all-weather, over-the-horizon, anti-shipping missile system produced by McDonnell Douglas (now Boeing). Its low-level, sea-skimming cruise capability, active radar guidance and warhead design assure high survivability and effectiveness. It is carried by the Block 40, 40 EAF, 52+ EAF, KF-16, F/A-18, F-15K and AV-8B+.

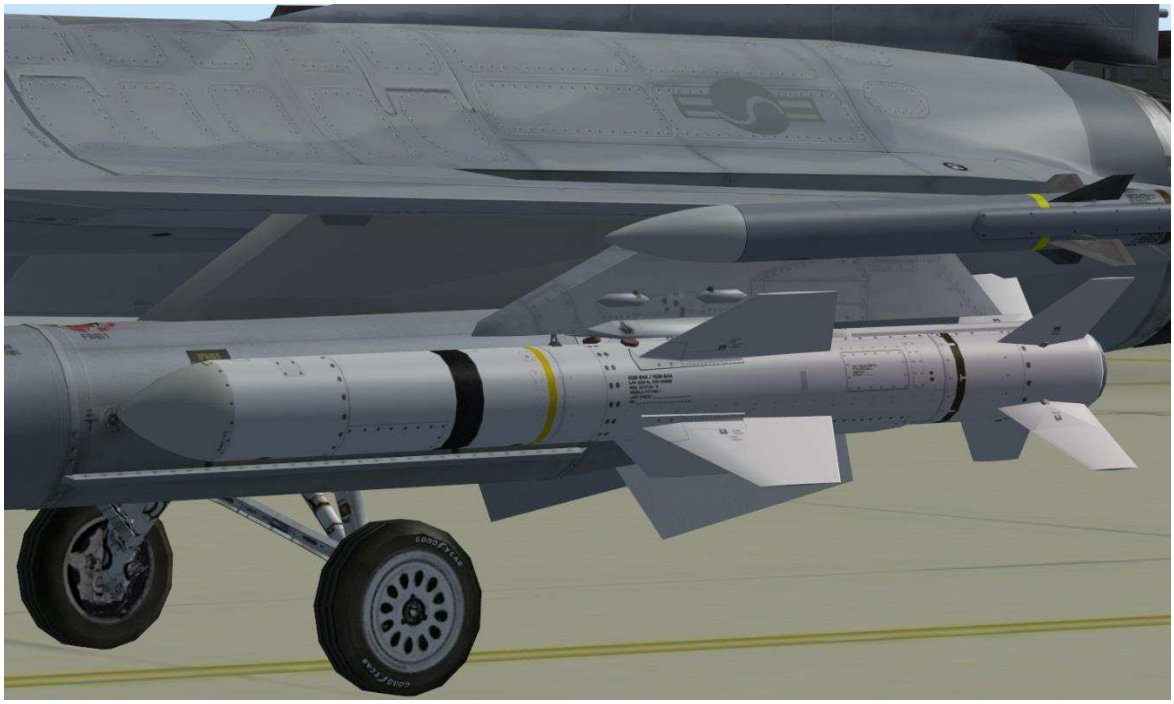

Figure 113 AGM-84A Harpoon

3.6.1 SMS Base Page

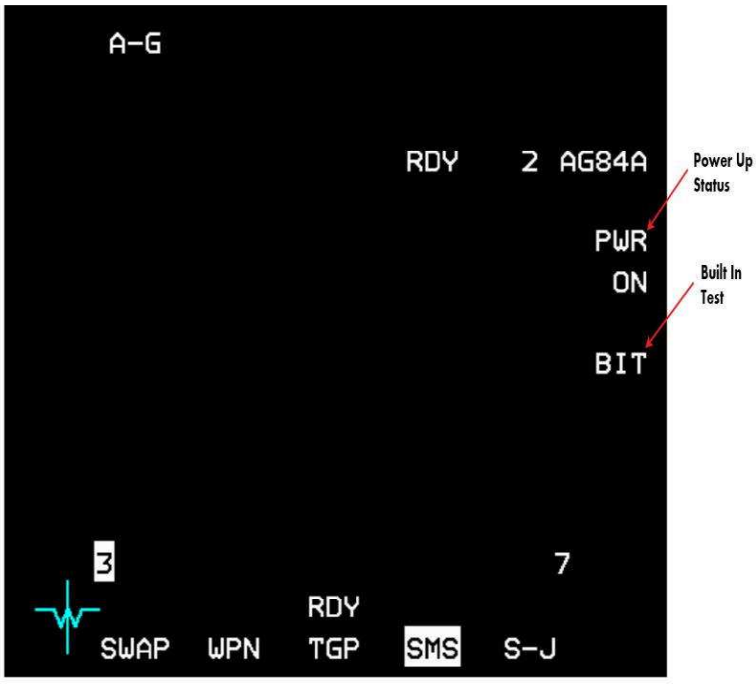

Figure 114 Harpoon SMS Page

When a Harpoon missile is selected,"AG84" is displayed adjacent to OSB 6 and the total number of Harpoon missiles loaded in inventory is displayed left of the mnemonic.

Missile Power: Missile power is selected via OSB 7. Each Harpoon missile must be powered on separately. Once powered up, the missile will stay powered on until it's powered off, A-G mode is exited or another weapon type is selected. The missile doesn't have to be powered on for setup operations but must be powered on before launch.

Built In Test: Harpoon BIT mnemonic will show up adjacent to OSB 8 when the missile has power. Pressing OSB 8 will perform a BIT on the selected station. Bit takes a couple of seconds and the BIT mnemonic will be highlighted when BIT is ongoing. After BIT finished, the missile status will show up at the station numbers display area, if BIT passed successfully then the station number will show up, otherwise there will be a "F" for a failed station, "D" for degraded or "H" for Hung station.

3.6.2 WPN Page

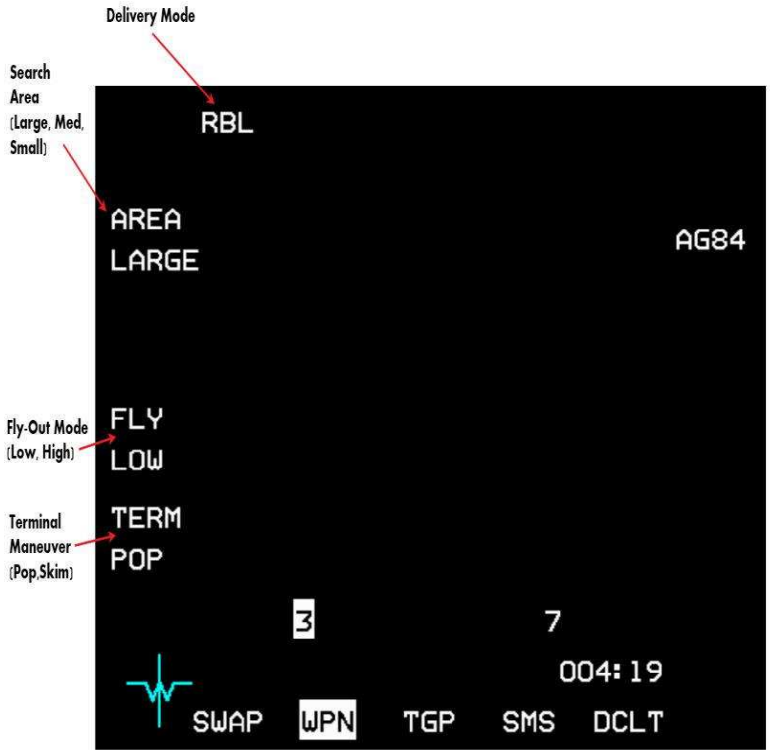

Figure 115 Harpoon WPN Page

3.6.3 Harpoon HUD

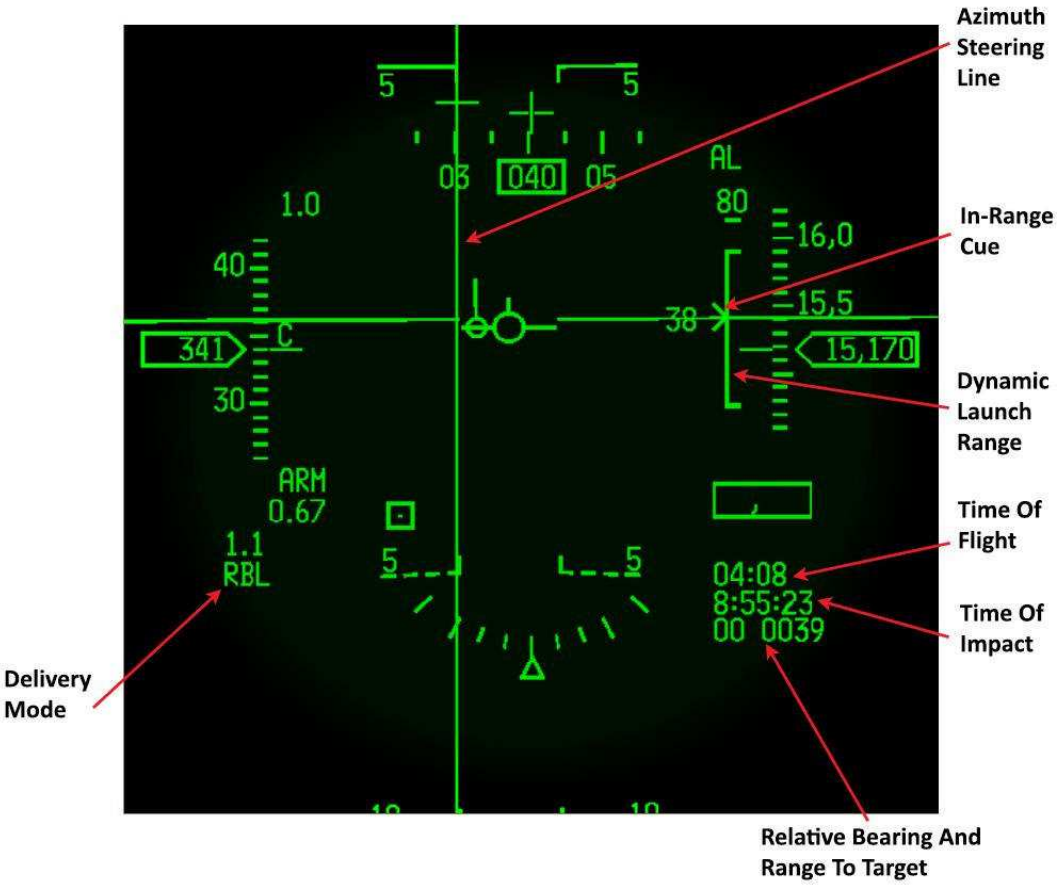

Figure 116 Harpoon HUD Symbology

HUD Harpoon Symbology: In RBL mode on the right side of the HUD is a Harpoon dynamic launch zone (DLZ) scale (the DLZ is not displayed in the BOL or LOS modes). Displayed just left of the in–range cue is the current range to target in nautical miles. The bearing and range to the target, is displayed in the bottom right corner of the HUD. Above the bearing and range is the estimated time of impact. Above the time of impact is the missile time of flight. In BOL and LOS modes the ASL isn't displayed, there is no TD-Box and no DLZ scale.

3.6.4 RBL – Range and Bearing Launch Mode

RBL mode is used when target position is well known. The Harpoon in RBL mode will launch against the SPI position and will search for a target in the SPI area according to the pre-defined search pattern.

Harpoon Search Area Size: The search area size appears in RBL mode only adjacent to OSB 20 and commands the Harpoon search distance from the SPI. Small and Medium options are recommended to be used when there is a group of ships at the target area that some must be avoided. The Large search size is the default.

Harpoon Fly-Out Mode: Fly out mode appears adjacent to OSB 18 in RBL and BOL modes and after launch the Harpoon will fly in a low or high profile according to the selected value (HIGH or LOW). Even if High fly out mode is selected, the Harpoon will switch to low profile after some distance from the launch point.

Harpoon Terminal Maneuver: The Harpoon terminal maneuver option is displayed adjacent to OSB 17 in RBL and BOL modes and the Harpoon will fly the selected profile for the terminal phase. The Pop option causes the missile to be a more difficult target for ship's air defenses.

Harpoon Delivery Mode: The selected delivery mode displays adjacent to OSB 1, the options are RBL, BOL and LOS.

RBL Weapon Delivery Procedure:

1. Select the station that the Harpoon should be launched from.
2. Select the desired STPT and slew the SPI as necessary to be the closest to the target position.
3. Select missile parameters as required (Search area, flight profile, terminal maneuver).
4. Power up the missile and wait for it to be ready.
5. Verify on the HUD that the missile is in-range.
6. Hold the pickle until the missile is released.

3.6.5 BOL – Bearing Only Launch Mode

BOL mode is a mode that can be used when the target bearing is known but target range is unknown. In BOL mode there is no search area selection. After release the missile will keep heading towards the aircraft heading at launch moment (Boresight). After some time the missile will turn on its radar and will start searching for the target closest to its flight path.

BOL Weapon Delivery Procedure:

1. Select the station that the Harpoon should be launched from.
2. Point the aircraft heading towards the bearing of the target.
3. Select missile parameters as required (flight profile, terminal maneuver).
4. Power up the missile and wait for it to be ready.
5. Hold the pickle until the missile is released.

3.6.6 LOS – Line Of Sight Launch Mode

LOS mode is a degraded mode that usually used when there is some malfunction that causes RBL and BOL modes to be unavailable. In LOS mode the missile will keep heading towards the aircraft heading at launch moment (boresight) and will start searching for a target immediately afterwards. In LOS mode the missile will lock on the first target that is acquired by its radar.

Weapon Base Page: In LOS mode all the options are removed from the WPN page and the missile will use default and pre-plan patterns to find the target after launch.

LOS Weapon Delivery Procedure:

1. Select the station that the Harpoon should be launched from.
2. Select LOS mode.
3. Point the aircraft heading towards the estimated bearing of the target.
4. Power up the missile and wait for it to be ready.
5. Hold the pickle until the missile is released.