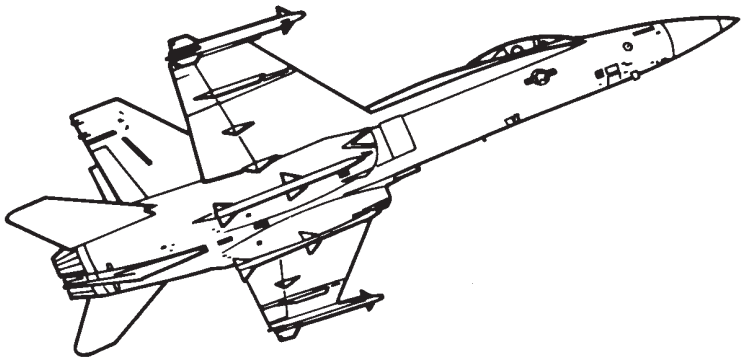
Pocket Checklist

F/A-18C AIRCRAFT

REV: 20220606



Procedures

Systems

APG-73 Radar

TGP JHMCS

A/G Weapons

A/A Weapons

DISCLAIMER

This document represents a personal project and is intended for entertainment purposes only. Do not use for training purposes or in real life scenarios.

Contents

Chapter 1

PROCEDURES

Contents

1.1 START-UP

1.1.1 PRE-START

1.	**Ejection Seat test**	**DOWN & ARMED**
2.	**Harness Lever**	**FWD**
3.	**Parking Brake**	**ENGAGED**
4.	**Master Arm**	**SAFE**

1.1.2 ENGINE START

1.	**Battery**	**ON**
2.	**Hyd. Brake**	> 3000psi
3.	**Fire Test**	(a) **FIRE TEST** ..... **TEST A** (b) **BATT** ..... cycle **OFF** then **ON** (c) **FIRE TEST** ..... **TEST B**
4.	**APU Start**	(a) **APU Caution Light** ..... verify OFF (b) **APU Switch** ..... **ON** (c) **READY Light** ..... illuminated (30s)
5.	**Right Engine Start**	(a) **ENG CRANK** ..... **R** (b) **R Eng RPM** ..... 15-25% (c) **R Throttle** ..... **IDLE**
6.	**Stabilized Parameters**	• **IFEI** ..... Check – **RPM** – 60-65% – **EGT** – < 750C until stable • **Cautions** ..... none for **ENG 2** • **GPWS Voice Alerts** ..... Check
7.	**Master Caution**	**RESET**
8.	**Displays**	(a) **Left DDI** ..... **ON** (b) **Right DDI** ..... **ON** (c) **AMPCD** ..... **ON**

9.	**UFC**	(a) **HUD** ..... **ON** (b) **ALT Switch** ..... **RDR** (c) **ATT Switch** ..... **AUTO**
10.	**BLEED AIR Knob**	Cycle thru **OFF** to **NORM** (shutoff valves closed during fire test)
11.	**Left Engine Start**	(a) **ENG CRANK** ..... **L** (b) **L Eng RPM** ..... 15-25% (c) **L Throttle** ..... **IDLE**
12.	**Stabilized Parameters**	• **IFEI** ..... Check – **RPM** – 60-65% – **EGT** – < 750C until stable • **Cautions** ..... none for **ENG 1** • **L GEN Caution** ..... Extinguished

1.1.3 POST-START

1.	**Canopy**	**CLOSED**
2.	**Start INS Align**	(a) **INS Selector** ..... **GND** or **CV** (as required) (b) **HSI** ..... select **STD HDG** (if available) *(significantly reduces align time to approx. 90s)*
3.	**RADAR**	**OPR**
4.	**FCS Reset**	(a) **WING FOLD** ..... **SPREAD ONLY IF ON GROUND** (b) **Left DDI** ..... **FCS** page (c) **MASTER CAUTION** ..... **PRESS** twice (restacks cautions) (d) **FCS RESET** ..... **PRESS**
5.	**Lights Test**	**Check**
6.	**Hook Bypass**	**As Required**
7.	**Flaps**	**HALF**
8.	**FCS BIT**	(a) **BIT Failures** ..... press FCS-MC (b) **MC1 & MC2** ..... GO (c) **FCSA & FCSB** ..... PBIT GO (d) **FCS BIT Switch** ..... press & hold (e) **FCS-MC** ..... press FCS OSB (f) **FCSA & FCSB** ..... GO

9.	**ANTI SKID**	**OFF** if CV, else **ON**
10.	**Trim**	**PRESS T/O Trim**
11.	**PITOT**	**AUTO**
12.	**Displays**	(a) **Left DDI** ..... **HUD Repeater** (b) **Right DDI** ..... **FCS Page**
13.	**RADALT Warning**	• **GND** ..... 200 ft • **CV** ..... 80 ft
14.	**Standby Attitude Indicator**	**UNCAGED**
15.	**Bingo Fuel**	**As desired** (8000lbs)
16.	**Altimeter**	**Set**
17.	**Mission Data**	**ENTER**
18.	**Weapons/Sensors**	**As Required**
19.	**STORES Page**	**Verify proper inventory installed**
20.	**HMD Alignment**	(a) **SUPT/HMD/ALIGN Page** ..... **SELECT** (b) Superimpose **HMD** alignment cross on **HUD/BRU** alignment cross (c) **CAGE/UNCAGE** ..... **PRESS & HOLD** until **ALIGN OK** **Fine Align** (a) With **FA DXDY** displayed, use **TDC** to align azimuth and elevation **HMD** alignment crosses with **HUD/BRU** alignment cross (b) **CAGE/UNCAGE** ..... **PRESS & RELEASE** (c) With **FA DROLL** displayed, use **TDC** to align roll axis **HMD** alignment crosses with **HUD/BRU** alignment cross (d) **CAGE/UNCAGE** ..... **PRESS & RELEASE**
21.	**OBOGS**	**ON**
22.	**Complete INS Align**	**INS Selector** to **NAV** or **IFA** (if available)
23.	**Defensive Systems**	(a) **ALR-67 RWR** ..... **ON** (b) **ECM Selector** ..... **STBY** (c) **Dispenser** ..... **ON** (middle)

24.	**Lights**	(a) **Strobe** ..... **ON** (b) **POS Lights** ..... **BRT** (c) **LDG/TAXI Lights** ..... **ON**
25.	**Network**	(a) **IFF** ..... **ON** (b) **D/L** ..... **ON**, set desired frequency
26.	**Parking Brake**	**DISENGAGE**
27.	**Chocks**	**REMOVED**
28.	**Audio**	**Volume as required**

1.2 TAKEOFF & LANDING

1.2.1 PRE-TAXI

1.	**ANTI SKID**	As required • Field – **ON** • Carrier – **OFF**
2.	**FLAPS**	**HALF**
3.	**CHOCKS**	**REMOVED**
4.	**LAUNCH BAR**	**RETRACTED**
5.	**HOOK BYPASS**	As required
6.	**PARKING BRAKE**	**DISENGAGED**

1.2.2 TAKEOFF - SHORE

		After Lining Up On Runway
1.	**ANTI SKID** **SPOILER BK**	**BOTH (UP)**
2.	**FLAPS**	**UP**
3.	**TRIM**	**T/O**
4.	**NWS**	**LOW GAIN**
5.	**Takeoff**	(a) **BRAKES** ..... hold (b) **THROTTLE** ..... **MIL** (c) **BRAKES** ..... release (d) **THROTTLE** ..... **MAX** *if desired* (e) **Rotation** ..... approx 150 KIAS *hold 7 deg AOA* (f) **GEAR** ..... **UP** < 240 KIAS (g) **FLAPS** ..... **AUTO** once airborn (h) **ALT** ..... **BARO** at 3000 agl

1.2.3 TAKEOFF - CARRIER

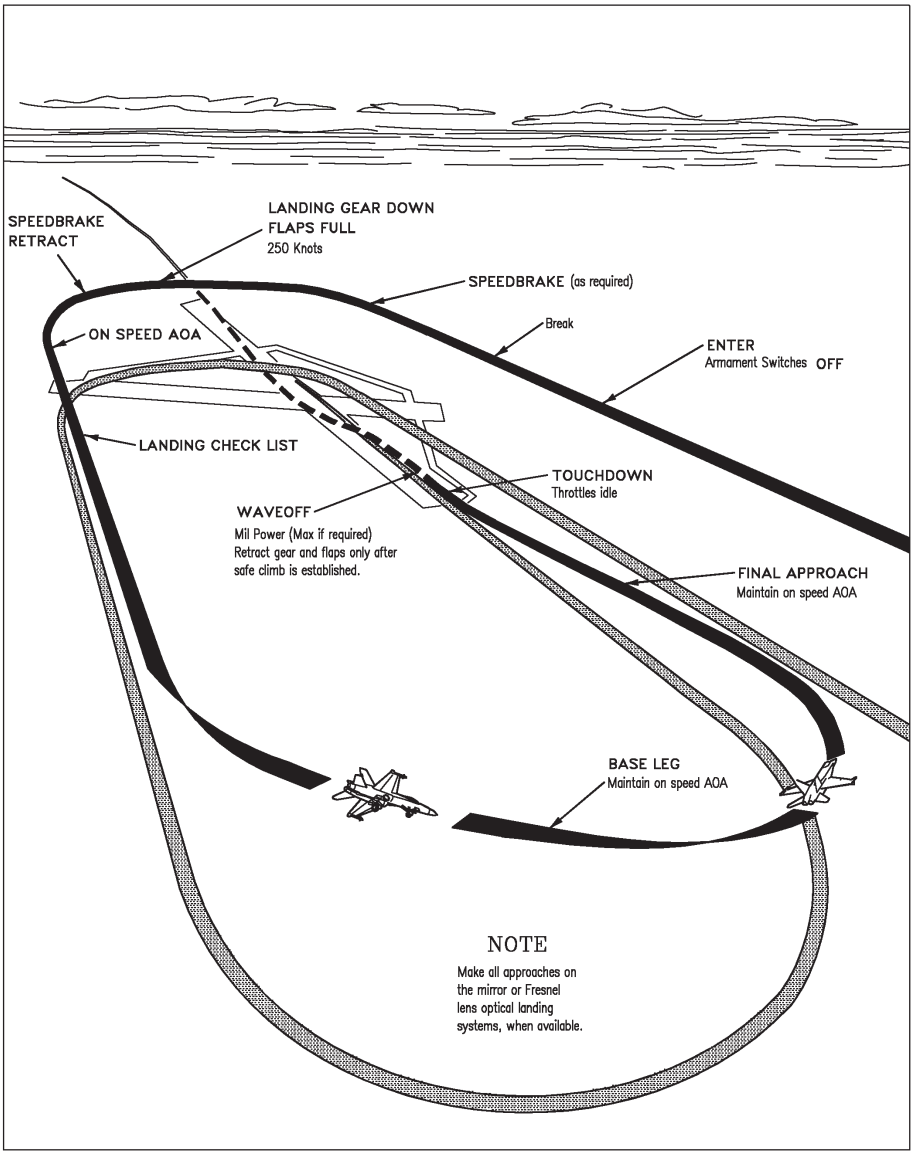
	Lineup	• Wait behind JBD until Catapult is clear • Follow Taxi Directors Instructions to line up on Catapult
1.	**WING FOLD**	(a) **WING FOLD** ..... **SPREAD** when directed wait until fully spread (b) **WING FOLD** ..... **LOCK** (c) **HUD Repeater** .... no **WING UNLK** caution
2.	**FLAPS**	**HALF**
3.	**Launch Bar Preparation**	(a) **LAUNCH BAR** ..... **EXTEND** when directed (b) **Throttle** ..... **UP** when directed (c) **Taxi** ..... launch bar into shuttle (d) **Throttle** ..... **IDLE** when directed (e) **Wait** for holdback installation & checks (f) **LAUNCH BAR** ..... **RETRACT**
4.	**Trim**	Refer to **NOTE** below
5.	**Speed Brakes**	**IN**
6.	**Final Checks**	(a) **Throttle** ..... **MIL** when directed (b) **Control Wipeout** • Stick Full Forward • Stick Full Aft • Stick Full Left • Stick Full Right • Rudder Full Left • Rudder Full Right (c) **Eng. Inst.** ..... **Checked** (d) **Caution/Warnings** ..... **None**
7.	**Catapult Shot**	(a) **Salute** ..... **CAT SHOT** (b) **Gear** ..... **UP** < 240 KIAS (c) **Flaps** ..... **AUTO** (d) **ALT** ..... **BARO** at 3000 agl
8.	**Clearing Turn**	

NOTE

- Refer to **CHKLST** page for weight

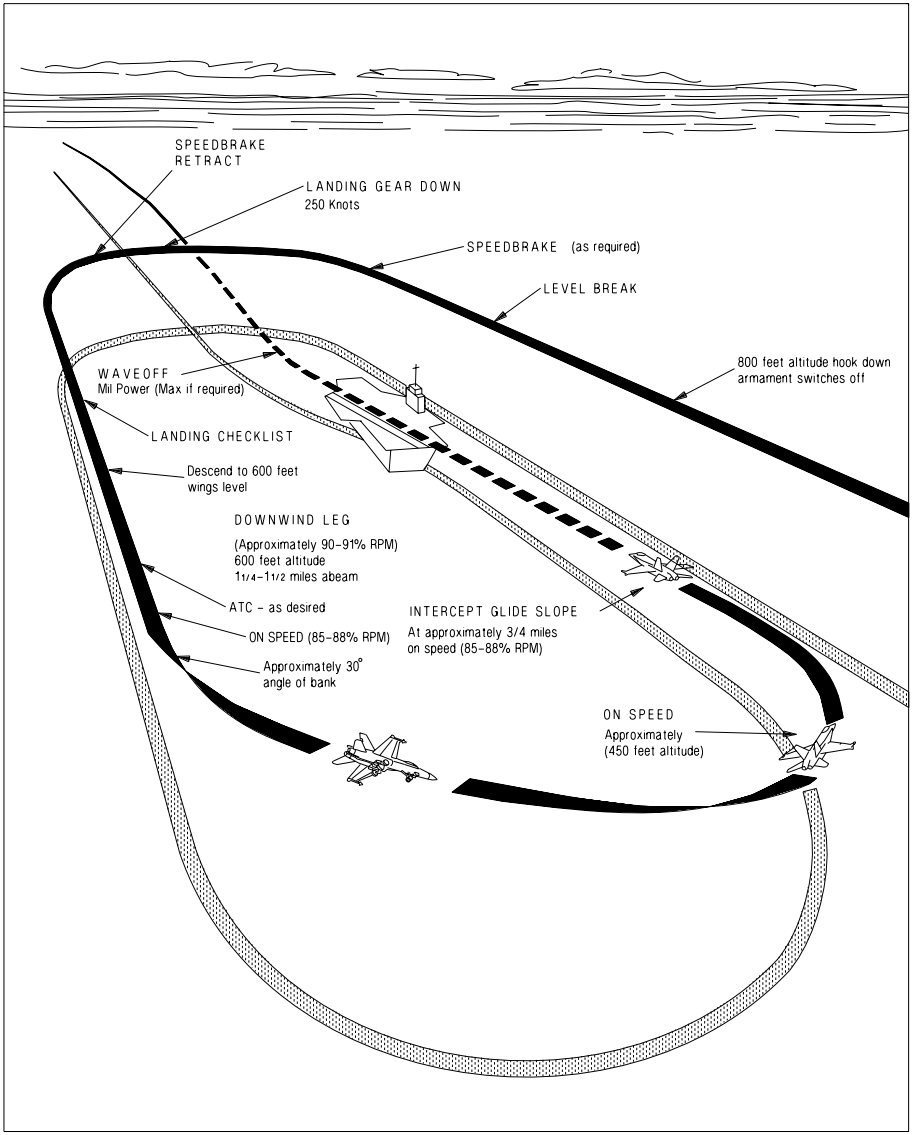
Weight [lbs]	< 44000	44000-48000	> 48000
Trim [deg]	16	17	18
MAX WEIGHT: 51900 lbs			

1.2.4 LANDING - SHORE



• **Initial Approach**	• **HOOK** ..... **UP** • **ANTI-SKID** ..... **ON** • **ALT** ..... **RDR** • **Airspeed** ..... **300-350 KIAS** • **Altitude** ..... **800 ft** • **ARM** ..... **OFF**
• **Initial Break**	• **Break Interval** ..... **15-17 s** • **SPEED BRAKE** ..... **EXTEND** • **Throttle** ..... **IDLE** • **G** ..... 1% of Airspeed • **Altitude** ..... **800 ft**
• **Break Turn**	• **Landing Gear** ..... **DOWN** at 250 KIAS • **FLAPS** ..... **FULL** at 250 KIAS • **SPEED BRAKE** ..... **RETRACT** at 250 KIAS
• **Downwind**	• **Altitude** ..... descend to **600 ft** • **AOA** ..... **ON-SPEED** • **LANDING CHECKLIST**
• **Final Turn**	• **Abeam Pos.** ..... **1-1.2 nmi** **90 Deg Position** • **AOA** ..... **ON-SPEED** • **Altitude** ..... **400-500 ft**
• **Intercept Glides-lope**	• **Distance** ..... **3/4 Mile** • **Altitude** ..... **360 ft** • **AOA** ..... **ON-SPEED**
• **Touchdown**	• No more than 750 ft/min • **DO NOT FLARE**

1.2.5 LANDING - CARRIER CASE I



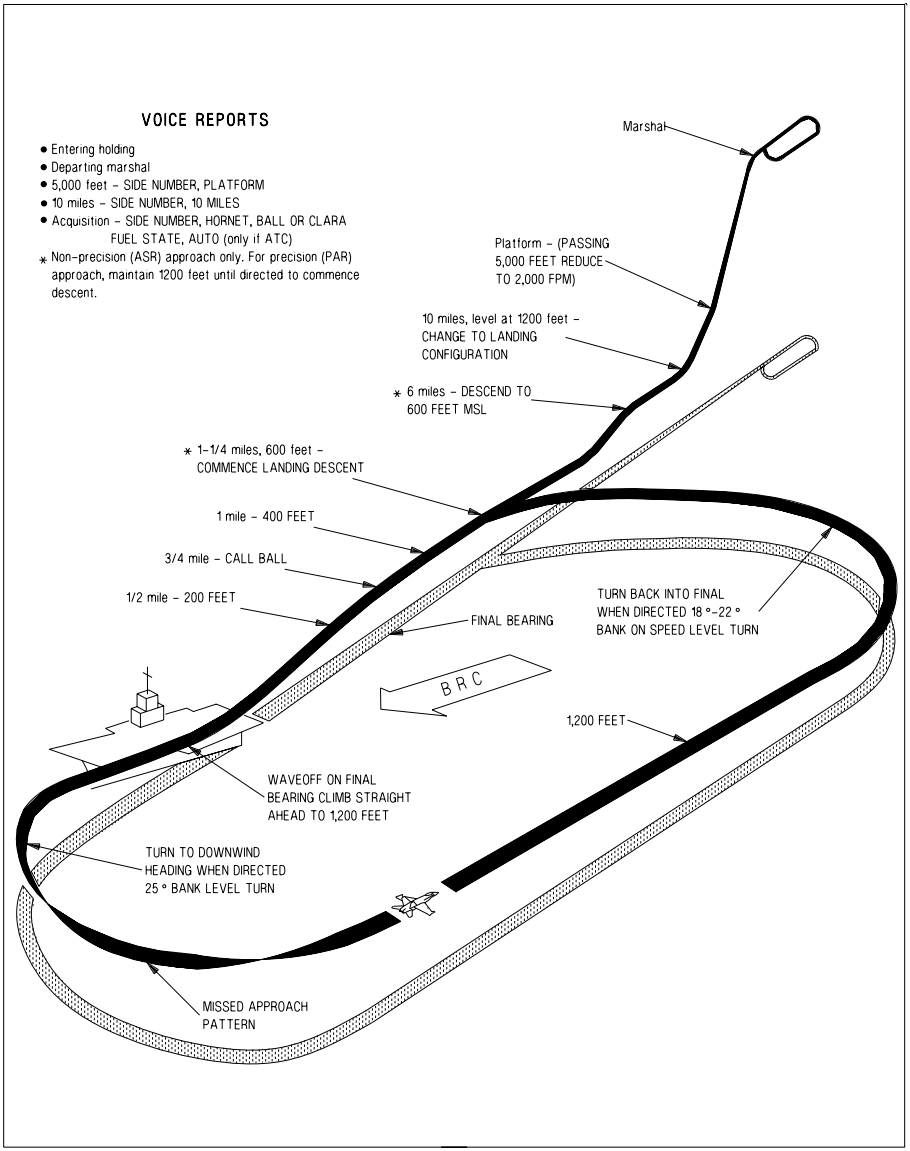
1.	**Navigation**	• **TACAN** ..... **ON** and tuned • **HSI** – **TCN** – **BOXED** – **CRS** – **BRC**
2.	**Pattern Entry**	• **Distance** – approx **5 nm** • **Heading** – **BRC** • **Line Up** – **Right of CV** • **Airspeed** – **300-350 KIAS** • **Altitude** – **800 ft**
3.	**Pre-Break**	• **HOOK** ..... **DOWN** • **ALT** ..... **RDR** • **RADALT** ..... 370 ft • **ANTI-SKID** ..... **OFF** • **HOOK BYPASS** ..... **CARRIER** • **ARM** ..... **OFF** • **HSI Zoom** ..... 10 nm • **Airspeed** ..... **300-350 KIAS** • **Altitude** ..... **800 ft**
4.	**Initial Break**	• **Break Interval** ..... **15-17 s** • **SPEED BRAKE** ..... **EXTEND** • **Throttle** ..... **IDLE** • **G** ..... 1% of Airspeed • **Altitude** ..... **800 ft**
5.	**Break Turn**	• **Landing Gear** ..... **DOWN** at 250 KIAS • **FLAPS** ..... **FULL** at 250 KIAS • **SPEED BRAKE** ..... **RETRACT** at 250 KIAS
6.	**Downwind**	• **Altitude** ..... descend to **600 ft** • **AOA** ..... **ON-SPEED** • **LANDING CHECKLIST**
7.	**Final Turn**	• **Abeam Pos.** ..... **1-1.2 nmi** **90 Deg Position** • **AOA** ..... **ON-SPEED** • **Altitude** ..... **400-500 ft**
8.	**Intercept Glides-lope**	• **Distance** ..... **3/4 Mile** • **Altitude** ..... **360 ft** • **AOA** ..... **ON-SPEED**

9.	**Touchdown**	• No more than 750 ft/min • **DO NOT FLARE**

NOTE

- **HSI** L wingtip will touch BRC line when 1.2nm abeam
- **HSI** heading to boat is 5 deg behind abeam heading when rounddown visible
- **Tip** during approach turn, do not peak before the 90

1.2.6 LANDING - CARRIER CASE III



Work In Progress

1.2.7 LANDING - ICLS CASE III

Work In Progress

1.3 IN-FLIGHT

1.3.1 A/A REFUELING

Work In Progress

Chapter 2

SYSTEMS

Contents

2.1 SYSTEMS

2.1.1 ARC-210 RADIO

• **ARC-210**	• Provides T/R of AM/FM in 30-399.975MHz • Contains 2 radios: COMM1 & COMM2 • Controlled from UFC
• **Power On**	Rotate Vol knobs of COMM1 & COMM2
• **Preset Channels**	• M: Manual • 1-20: Preset Channels • G: Guard (243.000) • C: Cue Channel for SINCGARS • S: Maritime (Sea)
• **OSB 1: GRCV**	Toggles Guard Receive
• **OSB 2: SQCH**	Toggles Squelch
• **OSB 3: CPHR**	Toggles Cipher modes (plain, cipher, delay) (not implemented)
• **OSB 4: AM / FM**	Selects Frequency Band (only visible when in AM/FM overlap)
• **OSB 5: MENU**	Menu Button
• **Manually Set Freq**	(a) Set desired channel with channel knob (b) Enter desired Frequency on UFC, ENT (c) Confirm all options as desired

2.1.2 AFCS - MODES

• **ATTH**	**Attitude Hold:** Aircraft will maintain existing pitch attitude and +/- 70 deg roll attitude
• **BALT**	**Barometric Altitude Hold:** Aircraft will maintain current heading and barometric altitude 0-70000 ft
• **HSEL**	**Heading Select:** Aircraft will turn and maintain heading selected on HSD
• **RALT**	**Radar Altitude Hold:** Aircraft will maintain current heading and radar altitude 0-5000 ft

2.1.3 AFCS - PROCEDURES

• **Conditions**	• Stick: Centered • HSD: heading selected (if required)
• **Activation**	(a) Press A/P OSB (b) Select Submode OSB
• **Deactivation**	press Paddle Switch

2.1.4 ATC - APPROACH MODE

• **Conditions**	• Flaps: HALF/FULL • TE Flaps: >27 deg
• **Activation**	ATC button
• **Effect**	Computer modulates thrust to maintain on speed AOA, pilot controls flightpath with pitch command
• **Deactivation**	Any of the following: • ATC button • Flaps: AUTO • Weight On Wheels • Bank Angle > 70deg • Sensor Failure

2.1.5 ATC - CRUISE MODE

• **Conditions**	• Flaps: AUTO
• **Activation**	ATC button
• **Effect**	Computer modulates thrust to maintain existing airspeed
• **Deactivation**	• ATC button • Flaps: HALF/FULL • Sensor Failure

2.2 NAVIGATION

2.2.1 WAYPOINT

• **Waypoints**	Pre-planned navigational points of reference to follow on route to area of operation Maximum: 60
• **Activate WAY-POINT Nav**	Press WYPT OSB on HSI
• **Select Sequence**	press SEQ# OSB
• **Display Lines**	box SEQ on HSI
• **HSI Info (Top Right)**	Bearing (deg) / Distance (Nm) Time-to-Go to Waypoint (min:sec)
• **Automatic Se-quencing**	box AUTO on HSI Waypoint will automatically advance

2.2.2 WAYPOINT - ADD

1.	**DATA Page**	Press DATA OSB on HSI verify correct sequence is selected
2.	**Activate UFC**	press SEQUFC OSB
3.	**Insert Waypoint**	(a) press INS OSB on UFC (b) input desired number, ENT
4.	**Edit Coordinates**	As described in **Section 2.2.4 or 2.2.5**

2.2.3 WAYPOINT - REMOVE

1.	**DATA Page**	Press DATA OSB on HSI verify correct sequence is selected
2.	**Activate UFC**	press SEQUFC OSB
3.	**Delete Waypoint**	(a) press DEL OSB on UFC (b) input desired number, ENT

2.2.4 WAYPOINT - EDIT LAT/LONG

1.	**DATA Page**	Press DATA OSB on HSI
2.	**Select Waypoint**	using Increment/Decrement OSBs
3.	**Activate UFC**	(a) press UFC OSB (b) press POSN OSB
4.	**Edit Coordinates**	(a) Input Latitude, ENT (b) Input Longitude, ENT

2.2.5 WAYPOINT - EDIT GRID COORDS

1.	**DATA Page**	Press DATA OSB on HSI
2.	**Select Waypoint**	using Increment/Decrement OSBs
3.	**Activate UFC**	(a) press UFC OSB (b) press GRID OSB (c) HSI now displays Grid Menu
4.	**Edit Coordinates**	(a) Verify TDC slaved to HSI (b) Press & Hold TDC DEPRESS to slew (c) Release TDC when over desired square (d) Input remaining coords on UFC

2.2.6 WAYPOINT - PRECISE COORDS

• **Normal Coordinates**	• LAT/LONG: deg/min/sec • GRID: 6 digits
• **Precise Coordinates**	• LAT/LONG: deg/min/sec.xx • GRID: 10 digits
• **Activation**	(a) press DATA OSB on HSI (b) box PRECISE

2.2.7 MARKPOINT

• **Markpoint**	Used to mark a point of interest Maximum: 9

• **Activate Navigation**	• WYPT boxed on HSI • M# selected with Increment/Decrement OSBs
• **Examine MKPT Data**	press DATA OSB on HSI and select Markpoint as required
• **Employment**	(a) Select desired markpoint with Increment / Decrement OSBs (b) Box WPDSG OSB to designate markpoint as the target point

2.2.8 MARKPOINT - ADD

• **Overfly Method**	(a) Verify no target designated (b) press MK# OSB on HSI/SA to create Markpoint on current location
• **Target Designate Method**	(a) Designate Target with sensor as required (b) Press MK# OSB on HSI/SA to create Markpoint on current designation
• **Note**	After MK9 has been created the next Markpoint will overwrite MK1

2.2.9 ADF

1.	**ADF Switch**	To desired COMM
2.	**Matching COMM**	Set ADF frequency as required (FM)
3.	**HSI**	Circle will appear indicating direction of ADF beacon on compass rose

2.2.10 TACAN

• **TACAN**	Tactical Air Navigation Provide direction & distance to beacon

• **UFC Activation**	(a) Press TCN OSB and cycle to ON (b) Verify T/R mode active (c) Input channel ## , EN (d) Set X/Y as required (e) Set A/A mode if required
• **HSI Activation**	(a) Box TCN OSB (b) Set CRS as required
• **TACAN Data**	press DATA OSB on HSI while TCN boxed to view TACAN Database of all stations and their coordinates

2.2.11 AN/ALR-67 RWR

SURFACE

U		Unknown
S		Search Radar
T		ATC
3	SA-3	“Goa”
6	SA-6	“Gainful”
8	SA-8	“Gecko”
10	SA-10	“Grumble”
11	SA-11	“Gadfly”
12	SA-12	“Gladiator”
13	SA-13	“Gopher”
40		Spruance Class
48		Nimitz Class
49		Perry Class
HK	MIM-23	Hawk
PT	MIM-104	Patriot

AIRBORNE

U		Unknown
M		Active missile
11	F-111	Aardvark
13	C-130	Hercules
14	F-14	Tomcat
15	F-15	Eagle
16	F-16	Fighting Falcon
17	C-17	Globemaster III
18	F/A-18	Hornet
19	MiG-19	“Farmer”
21	MiG-21	“Fishbed”
22	Tu-22	“Blinder”
23	MiG-23	“Flogger”
24	Su-24	“Fencer”
25	MiG-25	“Foxbat”
29	MiG-29	“Fulcrum”
	Su-27	“Flanker”
	Su-30	“Flanker-C”
	Su-33	“Flanker-D”
31	MiG-31	“Foxhound”
34	Su-34	“Fullback”
39	Su-25M	“Frogfoot”
52	B-52	Stratofortress
76	IL-76	“Candid”
78	IL-78	“Midas”
AN	AN-26B	“Curl”
	AN-30M	“Clank”
B1	B-1	Lancer
BE	Tu-95	“Bear”
BF	Tu-22	“Backfire”
BJ	Tu-160	“Blackjack”
E2	E-2	Hawkeye
E3	E-3	Sentry
F4	F-4	Phantom
F-5	F-5	Tiger
HX	Ka-27	“Helix”
KC	KC-135	Stratotanker
KJ	KJ-2000	“Mainring”
M2	Mirage 2k	
S3	S-3	Viking
SH	SH-60	Seahawk

2.2.12 AN/ALE-47 ACMDS

• **ACMDS**	Airborne Countermeasures Dispenser System
• **Conditions**	• Master Arm: ON • DISPENSER Switch: ON (MIDDLE) • ALE-47 Mode: not STBY
• **Self-Test**	Once airborne ALE-47 enters SF TEST before cycling to STBY
• **Set Mode**	MODE OSB with ALE-47 Boxed
• **Program Creation**	(a) Box ALE-47 OSB (b) Press ARM OSB (c) Press CHAFF/FLAR OSBs, set # (d) press RPT OSB, set # repetitions (e) press INT OSB, set interval (f) press SAVE OSB to save program • **Note:** Use INCREMENT / DECREMENT OSBs to change values
• **Activation**	• Dispense Switch: AFT activates selected program • Dispense Switch: FWD activates program 5 by default, can be cycled with STEP OSB

2.2.13 AN/ALE-47 ACMDS - MODES

• **MAN**	**Manual:** Program can be stored and edited, Chosen by pilot
• **AUTO**	**Automatic:** ALE-47 chooses when and what countermeasures to deploy **Very Wasteful**
• **S/A**	**Semi-Automatic:** ALE-47 chooses program. Pilot controls release
• **STBY**	**Standby Mode**

2.2.14 AN/ALQ-165 ASPJ

• **OFF**	Turns off ECM Pod
• **STBY**	Standby Mode
• **BIT**	ECM jammer pod Build-In-Test
• **REC**	**Receive Mode:** Jammer is passive • Collects information on detected radars • Does NOT transmit jamming signal
• **X-MIT**	**Transmit Mode:** Jammer is active • ECM pod will automatically transmit jamming signal when radar lock detected on own aircraft • When ASPJ is actively jamming own radar will be unavailable

2.2.15 DATALINK

Work In Progress

2.2.16 IFF

Work In Progress

2.2.17 SA PAGE

Work In Progress

Chapter 3

AN/APG-73 RADAR

Contents

3.1 RWS - RANGE WHILE SEARCH

3.1.1 RWS

• **Range While Scan**	**Default A/A Radar Mode** • Long range BVR mode. • Antenna follows designated search pattern and displays all tracks discovered in each sweep
• **Sensor Select Switch**	• **FWD:** Switch to ACM Boresight • **AFT:** Assign TDC to AMPCD • **LEFT:** Assign TDC to left DDI • **RIGHT:** Assign TDC to right DDI

3.1.2 RWS - LTWS

• **Latent Track While Scan**	**RWS Submode** • Allows HAFU symbology for contacts and integration of offboard trackfiles
• **Activation**	DATA subpage on Radar Page
• **HAFU Symbology**	• Only displayed if TDC cursor is over trackfile or trackfile is L&S or DT2 • Offboard only tracks always displayed as HAFU • Launch acceptable ranges displayed for L&S and DT2
• **IFF Interrogation**	Automatically when target under cursor

3.2 TWS - TRACK WHILE SCAN

3.2.1 TWS - DESIGNATION

• **Conditions**	• TWS selected • TDC slaved to current radar screen
• **L&S (Primary Target)**	TDC DEPRESS while over trackfile
• **Cycle L&S**	UNDESIGNATE Button (no DT2 designated)
• **DT2 (Secondary Target)**	TDC DEPRESS while over second trackfile
• **Swap L&S DT2**	UNDESIGNATE Button
• **STT Lock**	TDC DEPRESS again over L&S trackfile

3.2.2 TWS - SCAN CENTERING METHODS

• **MAN**	Manual: Azimuth centered on TDC cursor. Elevation can also be manually manipulated
• **AUTO**	Automatic: Azimuth, Elevation centered on L&S trackfile. If L&S trackfile lost returns to MAN
• **BIAS**	TDC DEPRESS on empty area to center azimuth there. Elevation controlled manually. Allows TDC to move separately from scan azimuth

3.2.3 TWS - SCAN RAID

• **SCAN RAID Mode**	• 22 deg, 3 bar scan centered on L&S • Radar will attempt to find multiple targets out of single target
• **Conditions**	• L&S trackfile selected
• **Activation**	• RAID button • RAID OSB

• **Deactivation**	• RAID deselect • RSET OSB • UNDESIGNATE button • L&S lost

3.2.4 TWS - EXP

• **EXP Mode**	10nm x 20 deg centered around L&S
• **Conditions**	• L&S trackfile selected
• **Activation**	EXP OSB
• **Deactivation**	• EXP OSB • RSET OSB • L&S lost

3.3 ACM - AIR COMBAT MANEUVERING

3.3.1 ACM - BST

• **Boresight**	• ± 1.7 deg vertical • ± 3.3 deg azimuth • **Range:** 10nm
• **Conditions**	• Master Mode: A/A • HMD: OFF
• **Activation**	SCS: FWD (enters BST)
• **Deactivation**	UNDESIGNATE button

3.3.2 ACM - VACQ

• **Vertical Acquis.**	• -13 deg to 46 deg vertical • 6 deg azimuth • Range: 5nm
• **Conditions**	• Master Mode: A/A • HMD: OFF
• **Activation**	(a) SCS: FWD (enters BST) (b) then AFT (enters VACQ)
• **Deactivation**	UNDESIGNATE button

3.3.3 ACM - WACQ

• **Caged Wide Acquis.**	• -9 deg to +6 deg vertical • 60 deg azimuth
• **Uncaged Wide Acquis.**	NOT IMPLEMENTED
• **Conditions**	• Master Mode: A/A • HMD: OFF
• **Activation**	(a) SCS: FWD (enters BST) (b) then LEFT (enters WACQ)
• **Toggle Mode**	CAGE/UNCAGE
• **Deactivation**	UNDESIGNATE button

3.3.4 ACM - GACQ

• **Gun Acquisition**	• -14 deg to +6 deg vertical • 20 deg azimuth
• **Conditions**	• Master Mode: A/A • HMD: OFF
• **Activation**	Automatically enabled upon guns selection
• **Deactivation**	UNDESIGNATE button

3.4 LOCK ACQUISITION

3.4.1 STT

• **Conditions**	• Master Mode: A/A • TDC slaved to current radar scree
• **RWS Designation**	TDC DEPRESS to STT
• **LTWS Designation**	TDC DEPRESS to designate L&S second TDC DEPRESS to STT
• **TWS Designation**	TDC DEPRESS to designate L&S second TDC DEPRESS to STT
• **Undesignate**	UNDESIGNATE button

3.4.2 AACQ

• **Automatic Acquisition**	Fast method to acquire lock from BVR mode
• **Conditions**	• Master Mode: A/A • TDC slaved to current radar screen • Radar not in an ACM mode
• **Designation**	SCS towards radar screen
• **Deactivate**	SCS AFT

3.4.3 JHMCS

• **LHACQ**	Long Range Helmet Acquisition: 40nm
• **HACQ**	Helmet Acquisition: 10nm
• **Conditions**	• Master Mode: A/A • HMD: BRT
• **LHACQ Activation**	SCS: FWD long (>0.8s)
• **HACQ Activation**	SCS: FWD short (<0.8s)
• **Deactivate**	SCS AFT

3.5 MAP

3.5.1 MAP

• **Conditions**	• Radar: OPR
• **Activation**	• Master Mode: A/G • or SURF OSB on RDR ATTK page
• **PEN**	Scans small area on ground
• **FAN**	Broader/quicker scan, less defined image • narrow in azimuth, broad in elevation

3.5.2 MAP - DESIGNATION

• **Conditions**	• Master Mode: A/G • TDC slaved to current radar screen
• **Designation**	TDC DEPRESS while over desired location • Range will auto adjust • Cross marks designated point on Radar • Diamond marks designated point on HUD
• **Zoom**	using EXP1, EXP2, EXP3 modes
• **Undesignation**	UNDESIGNATE button

3.5.3 MAP - EXP1

• **EXP1**	• Lowest resolution expanded mode • Range: 40nm • Azimuth: 45deg • Not ground stabilized unless designation exists (snowplow)
• **Conditions**	• Radar Mode: MAP • TDC slaved to current radar screen

• **Activation**	(a) EXP1 OSB (b) Press & hold TDC DEPRESS (c) Slew to desired region (d) Release TDC DEPRESS • Range will auto adjust
• **FAST Option**	Boxing FAST scan option doubles radar's rate of scan for approximately half the scan quality
• **Doppler Shift**	Area directly in front and at extreme edges of radar not visible
• **Deactivation**	UNDESIGNATE button

3.5.4 MAP - EXP2

• **EXP2**	• Next higher resolution from EXP1 • Range: 40nm • Ground stabilized regardless if designation exists unless outside of radar gimbal limits
• **Conditions**	• Radar Mode: MAP • or Radar Mode: EXP1 • TDC slaved to current radar screen
• **Activation**	(a) EXP2 OSB (b) Press & hold TDC DEPRESS (c) Slew to desired region (d) Release TDC DEPRESS • Range will auto adjust
• **FAST Option**	Boxing FAST scan option doubles radar's rate of scan for approximately half the scan quality
• **Doppler Shift**	Area directly in front and at extreme edges of radar not visible
• **Deactivation**	UNDESIGNATE button

3.5.5 MAP - EXP3

• **EXP3**	• Synthetic-Aperture Radar (SAR) Map • Range: 30nm • Ground stabilized even w/o designation. • 1.2 × 1.2nm, constant area and resolution regardless of range
• **Conditions**	• Radar Mode: MAP • or Radar Mode: EXP1/EXP2 • TDC slaved to current radar screen
• **Activation**	(a) EXP3 OSB (b) Press & hold TDC DEPRESS (c) Slew to desired region (d) Release TDC DEPRESS • Range will auto adjust
• **FAST Option**	Boxing FAST scan option doubles radar's rate of scan for approximately half the scan quality
• **Doppler Shift**	Area directly in front and at extreme edges of radar not visible
• **Deactivation**	UNDESIGNATE button

3.5.6 MAP - EXP DESIGNATION

• **Conditions**	• Radar Mode: EXP (EXP3 recommended) • TDC slaved to current radar screen
• **Activation**	(a) Press & hold TDC DEPRESS (b) Slew to desired spot (c) Release TDC DEPRESS to designate
• **Symbology**	• Range will auto adjust • Cross marks designated point on Radar • Diamond marks designated point on HUD
• **TGP**	Targeting pod will automatically slave to designated point if FLIR ON and TGP unstowed
• **Deactivation**	UNDESIGNATE button

3.5.7 GMT

• **GMT Mode**	Ground Moving Target radar mode scans for highlights & moving targets through doppler shift. Trackfiles displayed as bricks
• **Conditions**	• RDR: OPR • Master Mode: A/G
• **Activation**	press MAP OSB from A/G MAP pag
• **Interleaved Option**	Press INTL OSB GMT & MAP modes interleaved, mode is GMT/MAP

3.5.8 GMT - GMTT

• **GMTT**	Ground Moving Target Track Range: 10nm
• **Conditions**	• Master Mode: A/G • TDC slaved to current radar screen • Radar Mode: GMT
• **Activation**	1. Slew TDC over desired target 2. SCS: Towards current radar screen to command acquisition
• **Symbology**	• Radar page: brick with motion vector, speed, & heading • HUD: diamond • point can be used/slaved to by other sensors
• **Deactivation**	UNDESIGNATE Button

3.5.9 SEA

• **SEA Mode**	SEA radar mode scans for highlights & moving naval targets through doppler shift. Trackfiles displayed as bricks. Additional filtering applied & scan rates reduced
• **Conditions**	• RDR: OPR • Master Mode: A/G
• **Activation**	press MAP OSB from A/G MAP pag

• **Interleaved Option**	Press INTL OSB GMT & MAP modes interleaved, mode is SEA/MAP

3.5.10 SEA - TARGET TRACKING

• **Conditions**	• Master Mode: A/G • TDC slaved to current radar screen • Radar Mode: SEA
• **Activation**	(a) Slew TDC over desired target (b) SCS: Towards current radar screen to command acquisition
• **Symbology**	• Radar page: brick with motion vector, speed, & heading • HUD: diamond • point can be used/slaved to by other sensors
• **Harpoon Conditions**	• Master Mode: A/G • Target Locked • HPD Mode: R/BL
• **Deactivation**	UNDESIGNATE Button

Chapter 4

TGP & JHMCS

Contents

4.1 AAQ-28 LITENING II

4.1.1 CONTROLS

• **Display Selection**	SCS: towards Targeting pod display
• **Toggle PTRK/ATRK**	SCS: towards Selected Display
• **Zoom**	• Radar Elevation Control • Zoom OSBs
• **Toggle Wide/Nar FOV**	• RAID/FLIR Button short • NAR/WIDE OSB
• **Toggle CCD/FLIR**	• RAID/FLIR Button long • FLIR/CCD OS
• **Slew Reticle**	TDC Slew
• **Designate**	TDC DEPRESS
• **Undesignate**	NWS/UNDESIGNATE Button
• **Toggle LST**	CAGE/UNCAGE Button
• **Lase**	TRIGGER if TRIG mode boxed

4.1.2 POINTING METHODS

• **VVSLV**	FLIR slaved to line of sight of velocity vector
• **Snowplow**	Default mode when no Target designated
• **Stabilized Pointing**	Entered when target designated from Snowplow or cycled from ATRK/PTRK
• **Waypoint Slaving**	Available using HSI (TGP snaps to WYPT)
• **ATRK**	Tracks specific area. Best for fixed targets
• **PTRK**	Tracks specific Point. Best for moving targets

4.1.3 POINTING METHODS - VVSLV

• **VVSLV**	FLIR slaved to line of sight of velocity vector
• **Conditions**	• TDC slaved to current FLIR page

• **Activation**	• Press UNDESIGNATE twice • or press VVSLV OSB on FLIR page
• **RTCL**	Box RTCL OSB to display TGP reticle
• **Designation**	TDC DEPRESS

4.1.4 POINTING METHODS - SNOWPLOW

• **Snowplow**	Default mode when no Target designated • 0 deg left/right • -8 deg down
• **Conditions**	• TDC slaved to current FLIR page
• **Activation**	1. Press UNDESIGNATE twice to select VVSLV & unstow TGP 2. Press UNDESIGNATE twice to deselect VVSLV
• **Designation**	TDC DEPRESS

4.1.5 POINTING METHODS - STABILIZED POINTING

• **Stabilized Pointing**	FLIR can be slewed freely. Designated target is constantly updated to current location. Ground stabilized
• **Activation**	Entered automatically when • Target designated from Snowplow • Cycled to from Auto Track or Point Track
• **Designation**	Constantly updated

4.1.6 POINTING METHODS - WAYPOINT SLAVED

• **Conditions**	• TDC slaved to current FLIR page • HSI: Desired waypoint selected • HSI: WYPT boxed on
• **Activation**	HSI: press WPSDG to designate waypoint as target and slave TGP
• **Slew**	TDC slew to adjust TGP

4.1.7 POINTING METHODS - AREA TRACK

• **Conditions**	• TDC slaved to current FLIR page
• **Activation**	1. Unstow TGP with VVSLV 2. SCS towards FLIR page to toggle ATRK/PTRK
• **Slew**	Not possibe in Area Track
• **Designation**	TDC DEPRESS
• **Deactivation**	Press UNDESIGNATE to revert to Snowplow

4.1.8 POINTING METHODS - POINT TRACK

• **Conditions**	• TDC slaved to current FLIR page
• **Activation**	1. Unstow TGP with VVSLV 2. SCS towards FLIR page to toggle ATRK/PTRK
• **Slew**	Not possibe in Point Track
• **Designation**	TDC DEPRESS
• **Deactivation**	Press UNDESIGNATE to revert to Snowplow

4.1.9 POINTING METHODS - TGP OFFSET

• **Conditions**	• In ATRK/PTRK
• **OFFSET**	TDC DEPRESS to activate OFFSET • + cross (Offset Cursor) appears • Slew with TDC
• **Designation**	TDC DEPRESS again to designate Offset Cursor as new Target
• **FLIR to Cursor**	SCS in direction of FLIR page to snap TGP to location of Offset Cursor (while in PTRK)

4.1.10 START-UP & LASING

1.	**Start-Up**	(a) FLIR Switch: STBY (b) Open FLIR page, monitor warm-up (c) FLIR Switch: ON when STBY displayed (d) Confirm mode displays OPR
2.	**Unstow**	(a) Select VVSLV (b) Unselect VVSLV to enter Snowplow
3.	**DDI**	Contrast & Brightness as required
4.	**LTD/R**	(a) ARM (b) Confirm L ARM indication
5.	**TDC**	Slew to Target
6.	**Zoom**	as required (WIDE/NAR)
7.	**Camera Mode**	as required (CCD/FLIR)
8.	**Pointing Method**	as required
9.	**Laser Code**	(a) Press UFC OSB (b) Press LTDC, enter desired code (c) Press ENT
10.	**Designate Target**	TDC DEPRESS (will slave A/G weapons to TGP)
11.	**Lasing**	• TRIG boxed: press & hold trigger to lase • TRIG unboxed: AUTO lasing

4.1.11 LASER SPOT TRACKER (LST)

• **Conditions**	• Master Mode: A/G • TGP: ON • LST/NFLR: ON
• **Set Laser Code**	1. UFC OSB on FLIR page 2. Press LSTC, enter Code on Keypad, ENT
• **Begin Search**	1. Set TGP to Snowplow, slew to vicinity of laser 2. Press LST OSB on FLIR page, or press CAGE/UNCAGE
• **Searching**	• FLIR image blank • LST flashes on FLIR page

4.1.12 LASER MARKING

Note CANNOT be used for weapons guidance, only visible in NVG

1. **TPOD** ..... on and ready
2. **LTD/R** ..... ARM
3. **SCS** ..... press in direction of FLIR to focus
4. **VVSLV** ..... press UNDESIGNATE twice rapidly to select vel vector slave mode (or press VVSLV OSB)
5. **Snowplow** ..... press UNDESIGNATE twice rapidly to select snowplow mode(or press VVSLV OSB to deselect)
6. **TDC** ..... slew to target
7. **TDC** ..... depress to designate target
8. **TRIG** ..... boxed
9. **MARK** ..... boxed, activates M-Arm
10. **Laser** ..... press TRIGGER to mark again to cease marking

4.1.13 A/A POINT TRACK

1. **TPOD** ..... on & ready
2. **Master Mode** ..... A/A
3. **SCS** ..... in direction of FLIR display
4. **VVSLV** ..... press UNDESIGNATE twice rapidly to select vel vector slave mode (or press VVSLV OSB)
5. **RTCL OSB** ..... press to display reticle
6. **Maneuver** ..... to place vel. vector near target aircraft
7. **Zoom** ..... as desired
8. **FLIR/CCD Mode** ..... as desired
9. **SCS** ..... towards FLIR display to attempt Point Track
10. **Designation Box** ..... good track
11. **Dump Target** ..... SCS towards FLIR display

To slave radar to TPOD

1. **Radar** ..... OPR
2. **Point Track** ..... acquired
3. **FLIR Page** ..... press SLAVE OSB

4.1.14 A/A RADAR SLAVING

1. **TPOD** ..... on & ready
2. **Radar** ..... OPR
3. **Master Mode** ..... A/A
4. **R DDI** ..... RDR ATTK page
5. **L DDI** ..... FLIR page
6. **SCS** ..... towards RDR ATTK page
7. **Radar Lock** ..... acquired
8. **RRSLV OSB** ..... press, slaves TPOD to radar
9. **SCS** ..... towards FLIR page
10. **Zoom** ..... as desired
11. **FLIR/CCD Mode** ..... as desired
12. **SCS** ..... towards FLIR page to attempt Point Track

4.2 ASQ-228 ATFLIR

4.2.1 CONTROLS

•	**Display Selection**	SCS: towards Targeting pod display
•	**Toggle SCENE/AUTO**	SCS: towards Selected Display
•	**Zoom**	• Radar Elevation Control • Zoom OSBs
• **WFOV/MFOV/NAR**	**Toggle** • FOV OSB	• RAID/FLIR Button short
•	**Toggle CCD/FLIR**	• RAID/FLIR Button long • FLIR/CCD OS
•	**Slew Reticle**	TDC Slew
•	**Designate**	TDC DEPRESS
•	**Undesignate**	NWS/UNDESIGNATE Button
•	**Lase**	TRIGGER if TRIG mode boxed

4.2.2 POINTING METHODS

• **VVSLV**	FLIR slaved to line of sight of velocity vector
• **Snowplow**	Default mode when no Target designated
• **Stabilized Pointing**	Entered when target designated from Snowplow or cycled from Auto Track / Point Track
• **Waypoint Slaving**	Available using HSI (TGP snaps to WYPT)
• **Scene Track**	Tracks specific area. Best for fixed targets
• **Auto Track**	Tracks specific Point. Best for moving targets
• **INR / Stabilized Pointing**	Active when TGP is slewed, maintains orientation to AC using inertial data

4.2.3 POINTING METHODS - VVSLV

• **VVSLV**	FLIR slaved to line of sight of velocity vector

• **Conditions**	• TDC slaved to current FLIR page
• **Activation**	• Press UNDESIGNATE twice • or press VVSLV OSB on FLIR page
• **RTCL**	Box RTCL OSB to display TGP reticle
• **Designation**	TDC DEPRESS

4.2.4 POINTING METHODS - SNOWPLOW

• **Snowplow**	Default mode when no Target designated • 0 deg left/right • -8 deg down
• **Conditions**	• TDC slaved to current FLIR page
• **Activation**	1. Press UNDESIGNATE twice to select VVSLV & unstow TGP 2. Press UNDESIGNATE twice to deselect VVSLV
• **Designation**	TDC DEPRESS

4.2.5 POINTING METHODS - WAYPOINT SLAVED

• **Conditions**	• TDC slaved to current FLIR page • HSI: Desired waypoint selected • HSI: WYPT boxed on
• **Activation**	HSI: press WPSDG to designate waypoint as target and slave TGP
• **Slew**	TDC slew to adjust TGP

4.2.6 POINTING METHODS - SCENE TRACK

• **Conditions**	• TDC slaved to current FLIR page
• **Activation**	1. Unstow TGP with VVSLV 2. SCS towards FLIR page to toggle SCENE/AUTO
• **Slew**	Scene Track reticle still slewable with TDC

• **Designation**	Automatic in SCENE Track
• **Deactivation**	Press UNDESIGNATE to revert to Snowplow

4.2.7 POINTING METHODS - AUTO TRACK

• **Conditions**	• TDC slaved to current FLIR page
• **Activation**	1. Unstow TGP with VVSLV 2. SCS towards FLIR page to toggle SCENE/AUTO
• **Slew**	Not possibe in Auto Track
• **Designation**	Automatic in AUTO Track
• **Deactivation**	Press UNDESIGNATE to revert to Snowplow

4.2.8 POINTING METHODS - TGP OFFSET

• **Conditions**	• AUTO Track
• **OFFSET**	TDC DEPRESS to activate OFFSET • + cross (Offset Cursor) appears • Slew with TDC
• **Designation**	SCS towards FLIR to designate Offset Cursor
• **FLIR to Cursor**	SCS in direction of FLIR page to snap TGP to location of Offset Cursor (while in PTRK)

4.2.9 LASER SPOT TRACKER (LST)

• **Conditions**	• Master Mode: A/G • TGP: ON • LST/NFLR: ON
• **Set Laser Code**	1. UFC OSB on FLIR page 2. Press LSTC, enter Code on Keypad, ENT
• **Begin Search**	1. Set TGP to Snowplow, slew to vicinity of laser 2. Press LST OSB on FLIR page

• **Searching**	• FLIR image blank • LST flashes on FLIR page
• **Designation**	TDC DEPRESS

4.2.10 A/A OPERATION MODES

4.2.11 A/A AUTO TRACK

4.2.12 A/A L+S SLAVE

4.3 JHMCS

4.3.1 CONTROLS

• **HMD Brightness**	BRT Powers on JHMCS
• **Master Mode**	A/A & A/G Master Mode buttons symbology changes depending on selected mode
• **HMD Blanking Toggle**	Even Marker “Recce” Button Toggles manual blanking
• **LHACQ Activation**	• Master Mode: A/A • SCS: FWD long (>0.8s)
• **HACQ Activation**	• Master Mode: A/A • SCS: FWD short (<0.8s)
• **Toggle Selected Sensor**	• Master Mode: A/G • SCS: FWD • Toggles between HUD and HMD
• **Undesignate**	UNDESIGNATE

4.3.2 SYMBOLOGY

4.3.3 SETUP - FORMAT

4.3.4 SETUP - BLANKING

4.3.5 SETUP - REJECT

4.3.6 SETUP - MIDS

4.3.7 TARGET DESIGNATION - A/G

• **Conditions**	• Master Mode: A/G • JHMCS: ON • TDC slaved to HUD or HMD
• **Symbology**	• HUD: dot in VV indicates HUD slaved • HMD: Aiming Reticle indicates HMD slaved
• **Designation**	TDC DEPRESS
• **Slew Diamond**	TDC slew

• **Undesignate**	UNDESIGNATE

4.3.8 TARGET DESIGNATION - A/A Radar

• **LHACQ**	Long Range Helmet Acquisition: 40nm
• **HACQ**	Helmet Acquisition: 10nm
• **Conditions**	• Master Mode: A/A • HMD: BRT
• **LHACQ Activation**	SCS: FWD long (>0.8s)
• **HACQ Activation**	SCS: FWD short (<0.8s)
• **Deactivate**	SCS AFT

4.3.9 AIM-9X - UP-LOOK

• **Up-Look**	Slaves AIM-9X to Up-Look reticle (significantly above HMD Line of Sight)
• **Conditions**	• Master Mode: A/A • HMD: BRT • AIM-9X: Selected
• **Activation**	SCS: FWD (slave TDC to HMD)
• **Uncage**	CAGE/UNCAGE button

Chapter 5

A/G WEAPONS

Contents

5.1 A/G OVERVIEW

Weapon	SMS	Type
		Unguided
LAU-61 **LAU-68** **LAU-10**	61S/R 68S/R 10S/R	2.75-in Hydra rockets (19x) 2.75-in Hydra rockets (7x) 5-in Zuni rockets (4x)
MK-82 **MK-82 SE** **MK-82 Bal** **MK-83** **MK-84**	82B 82XT 82YT 83B 84	500 lbs low-drag unguided bomb 500 lbs retarded unguided bomb 500 lbs retarded unguided bomb 1000 lbs low-drag unguided bomb 2000lbs low-drag unguided bomb
BDU-33		25 lbs unguided training bomb
MK-20 RE **CBU-99**	RE RET	500 lbs Unguided cluster bomb 500 lbs anti-tank cluster bomb
		Laser-Guided Bombs
GBU-12 **GBU-16** **GBU-10** **GBU-24**	82LG 83LG 84LG GB24	500 lbs PAVEWAY II LGB 1000 lbs PAVEWAY II LGB 2000 lbs PAVEWAY II LGB 2000 lbs PAVEWAY III LGB Penetrator
		GPS Munitions
GBU-38 **GBU-32** **GBU-31** **GBU-31(V)**	J-82 J-83 J-84 J-109	500 lbs JDAM 1000 lbs JDAM 2000 lbs JDAM 2000 lbs JDAM Penetrator
AGM-154A **AGM-154C**	JSA JSC	JSOW Cluster JSOW Penetrator
		A/G Missiles
AGM-65E **AGM-65F**	MAV MAVF	Laser Guided A/G missile IR Guided A/G missile
AGM-88C	HARM	High-Speed Anti-Radiation Missile
AGM-84D **AGM-84E**	HPD SLMR	Harpoon anti-ship missile SLAM-ER
AGM-62	WEDL	2000 lbs TV-guided bomb

5.2 SELECTIVE ORDNANCE JETTISON

1. **Master Arm** ..... ARM
2. **SMS** ..... check stores
3. **Jettison Stores** ..... select desired jettison stations on pushbuttons
4. **Selective Jett. Knob** ..... rotate to desired stations
5. **Jett. Button** ..... press & hold
6. **Selective Jett. Knob** ..... SAFE

5.3 FORWARD FIRING

5.3.1 M61A2 GUN - A/G

1. **Master Arm** ..... ARM
2. **Master Mode** ..... A/G
3. **SMS** ..... select GUN
   - **Rounds** MK-50 or PGU-28
   - **Firing Rate** HI or LO
   - **Mode** CCIP
4. **Reticle** ..... on target
5. **Fire** ..... once IN RNG cue
6. **Break Away** ..... before X cue

5.3.2 ROCKETS

1. **Master Arm** ..... ARM
2. **Master Mode** ..... A/G
3. **SMS** ..... select pod (68R)
   - **Firing Mode** SGL or SAL
   - **MTR** M4 or M66
   - **Mode** CCIP
4. **Reticle** ..... on target
5. **Fire** ..... once IN RNG cue appears
6. **Break Away** ..... before X cue

5.4 UNGUIDED FREE-FALL MUNITIONS

5.4.1 UNGUIDED BOMB - CCIP

1. **Master Arm** ..... ARM
2. **Master Mode** ..... A/G
3. **SMS** ..... select desired bomb (82B)
   (a) Create delivery PROG 1
   (b) **Mode** ..... CCIP
   (c) **MFUZ** ..... NOSE
   (d) **EFUZ** ..... DLY1 or INST
   (e) **DRAG** ..... FF or RET based on bomb type
4. **UFC** ..... press UFC OSB on SMS page
   - **QTY** bombs per release
   - **MULT** bombs per salvo in release
   - **INT** interval between salvo in feet
5. **Dive** ..... 30-45 deg
6. **DIL** ..... Displayed Impact Line over target
7. **CCIP Cross** ..... appears once computed
8. **Maneuver** ..... keep CCIP CROSS & DIL on target
9. **Release** ..... when CCIP CROSS on target
10. **Pull Up** ..... before vel vector reaches PULL UP cue

5.4.2 UNGUIDED BOMB - CCRP

1. **Master Arm** ..... ARM
2. **Master Mode** ..... A/G
3. **SMS** ..... select desired bomb (82B)
   (a) Create delivery PROG 1
   (b) **Mode** ..... CCRP
   (c) **MFUZ** ..... NOSE
   (d) **EFUZ** ..... DLY1 or INST
   (e) **DRAG** ..... FF or RET based on bomb type
4. **UFC** ..... press OSB for UFC on SMS page
   - **QTY** bombs per release
   - **MULT** bombs per salvo in release
   - **INT** interval between salvo in feet
5. **SCS** ..... FWD to slave TDC to HUD

6. **Symbology** ..... "Ball & Chain"
7. **Dive** ..... 25 deg to place vel vector on target
8. **TDC** ..... DEPRESS to designate target
9. **TDC** ..... SLEW target designator
10. **Level Flight** .....keep vel vector aligned with ASL (azimuth steering line)
11. **Release** ..when weapon cue appears, hold until all ordnance released
12. **Pull Up** .....before vel vector reaches PULL UP cue

5.4.3 MK-20 CLUSTER BOMB - CCIP

1. **Master Arm** ..... ARM
2. **Master Mode** .....A/G
3. **SMS** ..... select desired bomb (RE)
   (a) Create delivery PROG 1
   (b) **Mode** ..... CCIP
   (c) **MFUZ** ..... VT
   (d) **HT OSB** .....press to cycle
4. **UFC** ..... press UFC OSB on SMS page
   - **QTY** bombs per release
   - **MULT** bombs per salvo in release
   - **INT** interval between salvo in feet
5. **Dive** ..... 30-45 deg
6. **DIL** .....Displayed Impact Line over target
7. **CCIP Cross** .....appears once computed
8. **Maneuver** .....keep CCIP CROSS & DIL on target
9. **Release** .....when CCIP CROSS on target
10. **Pull Up** .....before vel vector reaches PULL UP cue

5.5 GPS GUIDED MUNITIONS

5.5.1 JDAM/JSOW - PP

Weapon Setup

1. **Coord.** ..... prepare in format DEG MIN SEC : DEC-SEC
2. **SMS** ..... while on ground
   (a) Select desired JDAM (J-82) or JSOW (JSA/JSC)
   (b) **Wait** ..... for GOOD align (3 min)
   (c) **Mode** ..... PP
   (d) **Fuzing** ..... INST
3. **JDAM Display** ..... press JDAM DSPLY OSB
4. **Release Type** ..... MANUAL
5. **QTY** ... press QTY OSB select desired stations (recommend: all) press RTN OSB, now STEP OSB cycles between stations
6. **MSN Page** ..... crossed out PP mean no coordinates
7. **Select PP1** ..... press PP1 OSB
8. **Data Entry** ..... press TGT UFC OSB
   (a) **HT** ..... enter height for cluster dispersal (only for JSA)
   (b) **Return** ..... press TGT UFC twice to return to main UFC page
   (c) **ELEV** ..... select ELEV on UFC
   (d) **Return** ..... press TGT UFC twice to return to main UFC page
   (e) **POSN** ..... select POSN on UFC
   (f) **LAT** ..... input DEG MIN SEC, ENT input DEC-SEC, ENT
   (g) **LON** ..... input DEG MIN SEC, ENT input DEC-SEC, ENT
   (h) **Return** ..... press TGT UFC twice to return to main UFC page
9. **Verify** ..... PP1 no longer crossed
10. **Repeat** ..... for remaining stations

Weapon Launch

1. **Master Arm** ..... ARM

2. **Master Mode** ..... A/G
3. **SMS** ..... verify J-82 boxed
4. **R DDI** ..... HSI page
5. **L DDI** ..... JDAM page
6. **Verify** ..... MANUAL release, PP, desired station
7. **Maneuver** ..... with steering cues
8. **TMR** ..... Time to Minimum Range
9. **IN RNG** ..... In Range
10. **Fire** ..... hold weapon release
11. **Next** ..... system will auto cycle to next JDAM
12. **Verify** ..... MANUAL release, PP, desired station
13. **Repeat** ..... for remaining bombs

Note each JDAM can have 4 PP targets

5.5.2 JDAM/JSOW - TOO WYPT

Weapon Setup

1. **Waypoints** ..... verify
   (a) **SUPT HSI**
   (b) **DATA** ..... cycle through waypoints
   (c) **Precise** ..... push PRECISE OSB to add DEC-SEC
2. **SMS** ..... while on ground
   (a) Select desired JDAM (J-82) or JSOW (JSA/JSC)
   (b) **Wait** ..... for GOOD align (3 min)
   (c) **Mode** ..... TOO
   (d) **Fuzing** ..... INST
3. **JDAM Display** ..... press JDAM DSPLY OSB
4. **Release Type** ..... MANUAL
5. **QTY** ... press QTY OSB select desired stations (recommend: all), press RTN OSB, now STEP OSB cycles between stations
6. **MSN Page** ..... press TOO1
7. **Data Entry**
   (a) **TOO UFC**
   (b) **HT** ..... enter height for cluster dispersal (only for JSA)
   (c) **Return** ..... press TGT UFC twice to return to main UFC

8. **Repeat** ..... for remaining stations

Weapon Launch

1. **Master Arm** ..... ARM
2. **Master Mode** ..... A/G
3. **SMS** ..... verify J-82 boxed
4. **R DDI** ..... HSI page
5. **L DDI** ..... JDAM page
6. **Verify** ..... MANUAL release, TOO, desired station
7. **HSI** ..... select waypoint 1
8. **Designate** ..... press WPDSG
9. **Maneuver** ..... with steering cues
10. **TMR** ..... Time to Minimum Range
11. **IN RNG** ..... In Range
12. **Fire** ..... hold weapon release
13. **Next** ..... system will auto cycle to next JDAM
14. **Verify** ..... MANUAL release, TOO, desired station
15. **Repeat** ..... for remaining bombs & waypoints

5.5.3 JDAM/JSOW - TOO TPOD

Weapon Setup

1. **SMS** ..... while on ground
   (a) Select desired JDAM (J-82) or JSOW (JSA/JSC)
   (b) **Wait** ..... for GOOD align (3 min)
   (c) **Mode** ..... TOO
   (d) **Fuzing** ..... INST
2. **JDAM Display** ..... press JDAM DSPLY OSB
3. **Release Type** ..... MANUAL
4. **QTY** ... press QTY OSB select desired stations (recommend: all), press RTN OSB, now STEP OSB cycles between stations
5. **MSN Page** ..... press TOO1
6. **Data Entry**
   (a) **TOO UFC**
   (b) **HT** ..... enter height for cluster dispersal (only for JSA)

(c) **Return** ..... press TGT UFC twice to return to main UFC

7. **FLIR** ..... STBY
8. **DDI/AMPCD** ..... select FLIR, monitor warm up
9. **FLIR** ..... ON, once ready
10. **Master Mode** ..... A/G
11. **LTD/R** ..... ARM
12. **SCS** ..... in direction of FLIR DDI/AMPCD
13. **TDC** ..... slew TPOD reticle over target
14. **SCS** towards FLIR display to toggle
    - **PTRK** tracks moving target (vehicle)
    - **ATRK** track static target
15. **Designate** depress TDC to designate target, coordinates will auto transfer to JDAM/JSOW
16. **Verify** ..... updated coordinates in JDAM MSN page

NOTE CAN ONLY GIVE COORD TO 1 JDAM, CANNOT TRANSFER COORD FROM TOO TO PP

WEAPON LAUNCH

1. **Master Arm** ..... ARM
2. **Master Mode** ..... A/G
3. **SMS** ..... verify J-82 boxed
4. **AMPCD** ..... HSI
5. **R DDI** ..... FLIR page
6. **L DDI** ..... JDAM page
7. **Verify** ..... MANUAL release, TOO, desired station
8. **Maneuver** ..... with steering cues
9. **TMR** ..... Time to Minimum Range
10. **IN RNG** ..... In Range
11. **Fire** ..... hold weapon release

5.6 LASER GUIDED MUNITIONS

5.6.1 GBU-12 PAVEWAY II

1. **Master Arm** ..... ARM
2. **Master Mode** ..... A/G
3. **SMS** ..... select desired bomb (82LG)
   (a) Create delivery PROG 1
   (b) **Mode** ..... CCRP (preferred) / CCIP
   (c) **MFUZ** ..... OFF
   (d) **EFUZ** ..... DLY1 or INST
4. **FLIR** ..... STBY
5. **DDI/AMPCD** ..... select FLIR, monitor warm up
6. **FLIR** ..... ON, once ready
7. **LTD/R** ..... ARM
8. **SCS** ..... in direction of FLIR DDI/AMPCD
9. **TDC** ..... slew TPOD reticle over target
10. **SCS** ..... towards FLIR display to toggle
    - **PTRK** tracks moving target (vehicle)
    - **ATRK** track static target
11. **UFC OSB** ..... press to set code on UFC
12. **LTDC** ..... select on UFC, set code , press ENT
13. **SMS** ..... select 82LG
14. **CODE OSB**
15. **UFC** ..... enter CODE
16. **82LG** ..... should display RDY
17. **FLIR** ..... press TRIG OSB
18. **Laser** ..... press gun trigger to fire
19. **TDC** ..... depress to designate laser as target (will slave A/G weapons to laser)
20. **Level Flight** ..... keep vel vector aligned with ASL (azimuth steering line)
21. **Release** ..... when weapon cue appears, hold until ordnance released

Note To drop other GBUs, must re-enter CODE for each bomb

5.6.2 GBU-24 PAVEWAY III

5.7 AGM-65 MAVERICK

5.7.1 AGM-65F/G IR-MAV

COOLING begins upon first selection in SMS, weight on wheels inhibits cooling. Cooldown takes about 3 minutes

1. **Master Mode** A/G
2. **SMS** select MAVF
3. **Wait** for cooldown
4. **Master Arm** ARM
5. **TAC Page** select IMAV DSPLY
   OR
   SMS ..... select MAVF twice
6. **Fuzing** as desired
7. **SCS** towards MAV feed (usually L DDI)
8. **FOV** as desired
9. **Cage/Uncaged**
   - **Caged** seeker points at boresight
   - **Uncaged** missile attempts to lock on to contrast
10. **TDC** slew WHILE depressing
11. **Release TDC** MAV will attempt to lock on, good range 7.5 miles
12. **LOCK ON** cross will disappear
13. **Fire** hold weapon release

5.7.2 AGM-65E LASER-MAV

1. **Master Mode** A/G
2. **Master Arm** ARM
3. **SMS** select MAV
   (a) **Self Test** ..... 30s, monitor in MAV DSPLY
   (b) **Fuzing** ..... INST
4. **MAV DSPLY** press UFC OSB (edits ALL laser codes at once)
5. **CODE** enter on UFC
6. **FLIR** STBY
7. **DDI/AMPCD** select FLIR, monitor warm up
8. **FLIR** ON, once ready
9. **LTD/R** ARM

10. **SCS** in direction of FLIR DDI/AMPCD
11. **TDC** slew TPOD reticle over target
12. **SCS** towards FLIR display to toggle
    - **PTRK** tracks moving target (vehicle)
    - **ATRK** track static target
13. **UFC OSB** press to set code on UFC
14. **LTDC** select on UFC, set code , press ENT
15. **FLIR** press TRIG OSB
16. **Laser** press gun trigger to fire
17. **SCS** to MAV DSPLY DDI
18. **MAV DSPLY** select desired station using STEP OSB
19. **Uncage** missile

NOTE MAV DSPLY must be selected, else will boresight TPOD

1. **RDY** indication & MAV LKD in HUD indicates ready to fire
2. **Fire** hold weapon release

5.8 AGM-88C HARM

5.8.1 HARM - TOO

1. **Master Arm** ARM
2. **Master Mode** A/G
3. **R DDI** TAC EW page
4. **L DDI** SMS page, select HARM
5. **Mode** TOO (Target Of Opportunity)
6. **SCS** towards HARM DDI
7. **Cycle Emitter** depress RAID/FLIR to cycle, consult HUD, RWR or EW page
8. **Maneuver** align target icon with cross of seeker
9. **Handoff** press CAGE/UNCAGE to lock seeker to target
10. **Fire** hold weapon release

5.8.2 HARM - SP

1. **Master Arm** ARM
2. **Master Mode** A/G
3. **R DDI** TAC EW page
4. **L DDI** SMS page, select HARM
5. **Mode** SP (Self Protect)
6. **Cycle Emitter** depress RAID/FLIR to cycle, consult HUD, RWR or EW page
7. **Fire** hold weapon release

5.8.3 HARM - PULLBACK

If RWR detects critical threat, SP Pullback will automatically select and prepare harm for launch.

NOTE HARM OVRD on SMS must be unboxed

1. **Master Arm** ARM
2. **Master Mode** A/G
3. **HRM OVRD** unboxed
4. **RWR** Critical threat
5. **HUD** HARM displayed
6. **Fire** hold weapon release

5.8.4 HARM - PB Intro

5.8.5 HARM - PB Setup

5.8.6 HARM - A/C LOFT

5.8.7 HARM - HRM LOFT

5.9 AGM-84D HARPOON

5.9.1 HARPOON - BOL

Launch Parameters

- **Search Point Distance** 0-105 nm, from launch until start search, or from HPTP to search
- **Self Destruct Distance**
- **Bearing To Target** deg, bearing missile will follow either from launch or after HPTP (Turnpoint)
- **FLT** HIGH 35k, MED 15k, LOW 5k
- **Term.** SKIM/POP

1. **Master Arm** ARM
2. **Master Mode** A/G
3. **SMS** select HPD OSB
4. **Align** monitor from SMS (25 s)
5. **Program Parameters**
   (a) **UFC** ..... press UFC OSB
   (b) **SRCH** ..... input Search Point, ENT
   (c) **DSTR** ..... input Self Destruct, ENT
   (d) **BRG** ..... input Bearing, ENT

   SMS
   (a) **Mode** ..... BOL
   (b) **FLT** ..... LO/MED/HI
   (c) **Term.** ..... SKIM/POP
6. **R DDI** HSI
7. **FXP/HPTP**
   - **FXP** Fixpoint, located 1/2 dis between SRCH and DSTR point, harpoon will fly to FXP and hold that bearing
   - **HPTP** Harpoon Turnpoint
     select waypoint, press HPTP OSB, harpoon will fly to HPTP, then BRG
8. **IN ZONE** follow steering cues until IN ZONE cue appears
9. **Alt** 2500 ft or higher
10. **g** positive
11. **Fire** hold weapon release
12. **RADALT** warning normal

5.9.2 HARPOON - R/BL

Launch Parameters

- **TGT** Target must be designated with WPDSG from HSI, TPOD by depressing TDC, or RDR
- **FLT** HIGH 35k, MED 15k, LOW 5k
- **TERM** SKIM/POP
- **SEEK** search area, SML/MED/LRG

1. **Master Arm** ARM
2. **Master Mode** A/G
3. **SMS** select HPD OSB
   (a) **Align** ..... monitor (25 s)
   (b) **HPTP** ..... Harpoon Turnpoint
   select waypoint, press HPTP OSB, harpoon will fly to HPTP, then TGT Point
   (c) **Mode** ..... R/BL
   with valid TGT
   (d) **FLT** ..... LO/MED/HI
   (e) **Term.** ..... SKIM/POP
   (f) **Seek** ..... SML (5.4 nm)
   MED (10.8 nm)
   LRG (16.2 nm)
4. **R DDI** HSI
5. **IN ZONE** follow steering cues until IN ZONE cue appears
6. **Alt** 2500 ft or higher
7. **g** positive
8. **Fire** hold weapon release
9. **RADALT** warning normal

5.10 AGM-84E/H SLAM & SLAM/ER

5.10.1 SLAM - SETUP

• **Master Mode**	(a) **Master Arm** ..... **ARM** (b) **Master Mode** ..... **A/G**
• **SLAM Power**	(a) **SLAM OSB** ..... **Boxed** • Select desired station with **STEP OSB** • Alignment – approx. 3 min (b) **ALN QUAL** ..... **01 GOOD**
• **Datalink**	(a) **DL13** ..... **Boxed** (b) **WEP OSB** ..... **Press** • Select desired SLAM for datalink (c) Verify **SLAM** indication under boxed DL13
• **Weapon Parameters**	(a) **FLT** ..... **As Desired** • HIGH – 35000 ft • MED – 15000 ft • LOW – 5000 ft (b) **EFUZ** ..... **INST**
• **SLAM DSPLAY Page**	(a) **REL TYPE** ..... **MAN** (b) **UFC OSB** ..... **Boxed** (c) **DIST** ..... **As Required** • **DIST** – Distance from target in NM when seeker head goes active • **Typical Value** – 15 (d) **UFC OSB** ..... **Unbox**
• **Target Designation**	• **TOO WYPT** / **TOO TPOD** / **TOO A/G RDR** • **PP**

5.10.2 SLAM - TOO WYPT

1.	**Generic Setup**	**Refer to Setup Section**
2.	**SLAM DSPLY TOO Setup**	(a) **MODE** ..... **TOO** (b) **MSN Page** ..... **Enter** • Select between TOO1 & TOO2 • Verify **ORP** (**O**ffset **R**elease **P**oint) blank (c) **TERM (Optional)** ..... **As Desired** • Can enter terminal heading, angle and velocity via UFC (d) **O/S (Optional)** ..... **As Desired** • Can input Offset parameters via UFC
3.	**HSI Waypoint Designation**	(a) **WYPT** ..... **Boxed** (b) **Target Waypoint** ..... **Selected** (c) **WPDSG** ..... **Press** • **TGT** will replace **WYPT** as boxed • Min/Max Launch Range circles appear on HSI
4.	**Cueing**	• **MSN Page** – **ORP** shows coordinates of designated waypoint • **HUD** – designation diamond, steering cues, range to target, SLAM, TMR, and TOO indications appear
5.	**Weapon Launch**	**Refer to Launch Section**

5.10.3 SLAM - TOO TPOD

1.	**Generic Setup**	**Refer to Setup Section**
2.	**SLAM DSPLY TOO Setup**	(a) **MODE** ..... **TOO** (b) **MSN Page** ..... **Enter** • Select between TOO1 & TOO2 • Verify **ORP** (**O**ffset **R**elease **P**oint) blank (c) **TERM (Optional)** ..... **As Desired** • Can enter terminal heading, angle and velocity via UFC (d) **O/S (Optional)** ..... **As Desired** • Can input Offset parameters via UFC
3.	**TPOD Designation**	(a) Slew TPOD over target (b) **TDC** ..... **Depress**
4.	**Cueing**	• **MSN Page** – **ORP** shows coordinates of designated waypoint • **HSI Page** – Min/Max launch circles • **HUD** – designation diamond, steering cues, range to target, SLAM, TMR, and TOO indications appear
5.	**Weapon Launch**	**Refer to Launch Section**

NOTE

- **TPOD range < SLAM range** – **IN RNG** cue on designation likely

5.10.4 SLAM - TOO A/G RDR

1.	**Generic Setup**	**Refer to Setup Section**
2.	**SLAM DSPLY TOO Setup**	(a) **MODE** ..... **TOO** (b) **MSN Page** ..... **Enter** • Select between TOO1 & TOO2 • Verify **ORP** (**O**ffset **R**elease **P**oint) blank (c) **TERM (Optional)** ..... **As Desired** • Can enter terminal heading, angle and velocity via UFC (d) **O/S (Optional)** ..... **As Desired** • Can input Offset parameters via UFC
3.	**RDR Designation**	(a) **EXP Mode** ..... **As Required** (b) **TDC** ..... **Depress & Hold** slew, release to designate target
4.	**Cueing**	• **MSN Page** – **ORP** shows coordinates of designated waypoint • **HSI Page** – Min/Max launch circles • **HUD** – designation diamond, steering cues, range to target, SLAM, TMR, and TOO indications appear
5.	**Weapon Launch**	**Refer to Launch Section**

NOTE

- **A/G RDR range < SLAM range** – **IN RNG** cue on designation likely
- **Radar significantly less precise** – if visibility allows FLIR is preferred TOO designation method

5.10.5 SLAM - PP

1.	**Generic Setup**	**Refer to Setup Section**
2.	**SLAM DSPLY TOO Setup**	(a) **MODE** ..... **PP** (b) **MSN Page** ..... **Enter** • Select between PP1-PP5 • Verify **TGT** blank (c) **TERM (Optional)** ..... **As Desired** • Can enter terminal heading, angle and velocity via UFC (d) **O/S (Optional)** ..... **As Desired** • Can input Offset parameters via UFC
3.	**Target Designation**	(a) **Prepare Coordinates** • **LAT/LONG** – DEG MIN SEC : DEC-SEC • **ELEV** – FT (b) **Desired PP** ..... **Boxed** (c) **TGT UFC** ..... **Boxed** (d) **UFC** ..... **Select POSN** • Input LAT, LONG respectively • DEG MIN SEC, **ENTER**, then DEC-SEC (e) **TGT UFC** ..... **Press 2x** (returns to main UFC Menu) (f) **UFC** ..... **Select ELEV** • Select desired unit (FEET / MTRS) • Enter elevation data (g) **TGT UFC** ..... **Press 2x** (returns to main UFC Menu) (h) **MSN Page** • **PP** – Selected PP no longer crossed out • **TGT** – Shows desired coords / elev data
4.	**Cueing**	• **HSI Page** – Min/Max launch circles • **HUD** – designation diamond, steering cues, range to target, SLAM, TMR, and TOO indications appear
5.	**Weapon Launch**	**Refer to Launch Section**

5.10.6 SLAM-ER - STEERPOINTS

1.	**Generic Setup**	**Refer to Setup Section**
2.	**Target Designation**	**Refer to Designation Sections** • **TOO WYPT** / **TOO TPOD** / **TOO A/G RDR** • **PP**
3.	**SMS Page Steerpoint Designation**	**(Optional)** (a) **STP OSB** ..... **Boxed** (b) **UFC** ..... **STP1** • Input desired waypoint number, **ENTER** (c) **Repeat** up to **STP5**
4.	**Weapon Launch**	**Refer to Launch Section**

NOTE

- SLAM-ER is labeled as **SLMR** on **SMS** / **MSN Page**, adjust procedures accordingly
- SLAM-ER has significantly higher range as compared to SLAM

5.10.7 SLAM - LAUNCH

1.	**Generic Setup**	**Refer to Setup Section**
2.	**Target Designation**	• **TOO WYPT / TOO TPOD / TOO A/G RDR** • **PP**
3.	**Cockpit Setup**	• **R DDI – HSI Page** • **L DDI – SMS Page**
4.	**SMS Page Datalink Setup**	(a) **SLAM OSB** ..... **Unboxed** (b) **DL13 OSB** ..... **Boxed** (c) **Datalink Channel** ..... **Set** • Must set to match weapon station • Set via UFC OSB & UFC input
5.	**Launch Conditions**	• **Weapon Station** .....**RDY** • **Range Cue** ..... **IN RNG** • **Release Profile** .....**Set** • **Master Mode** ..... **A/G** • **Master Arm** .....**ARM**
6.	**Weapon Launch**	Hold **WEAPON RELEASE** until separation
7.	**TTS = 0**	• Datalink feed activates • Seeker becomes uncaged • **FOV OSB** toggles field-of-view
8.	**Manual Correction**	• Press & Hold TDC while slewing • Not recommended unless necessary
9.	**Impact**	Datalink feed cuts out

NOTE

- **Cueing**
  - **TTS** – (**T**ime-**T**o-**S**eeker) time until seeker goes active and pilot can take control
  - **TMR** – Time until maximum launch range
  - **IN RNG** – Within maximum launch range
  - **Diamond** – Shows Target location on HUD/HMD

5.11 AGM-84E/H SLAM & SLAM/ER – ALTERNATE FORMAT

5.11.1 SLAM - SETUP

1. **Master Mode**
   - (a) **Master Arm** ..... **ARM**
   - (b) **Master Mode** ..... **A/G**
2. **SLAM Power**
   - (a) **SLAM OSB** ..... **Boxed**
     - Select desired station with **STEP OSB**
     - Alignment – approx. 3 min
   - (b) **ALN QUAL** ..... **01 GOOD**
3. **Datalink**
   - (a) **DL13** ..... **Boxed**
   - (b) **WEP OSB** ..... **Press**
     - Select desired SLAM for datalink
   - (c) Verify **SLAM** indication under boxed DL13
4. **Weapon Parameters**
   - (a) **FLT** ..... **As Desired**
     - HIGH – 35000 ft
     - MED – 15000 ft
     - LOW – 5000 ft
   - (b) **EFUZ** ..... **INST**
5. **SLAM DSPLAY Page**
   - (a) **REL TYPE** ..... **MAN**
   - (b) **UFC OSB** ..... **Boxed**
   - (c) **DIST** ..... **As Required**
     - **DIST** – Distance from target in NM when seeker head goes active
     - **Typical Value** – 15
   - (d) **UFC OSB** ..... **Unbox**
6. **Target Designation** – **Refer to Designation Sections**
   - **TOO WYPT** / **TOO TPOD** / **TOO A/G RDR**
   - **PP**

5.11.2 SLAM - TOO WYPT

1. **Generic Setup** – **Refer to Setup Section**
2. **SLAM DSPLY – TOO Setup**
   (a) **MODE** ..... **TOO**
   (b) **MSN Page** ..... **Enter**
   - Select between TOO1 & TOO2
   - Verify **ORP** (**O**ffset **R**elease **P**oint) blank

   (c) **TERM (Optional)** ..... **As Desired**
   - Can enter terminal heading, angle and velocity via UFC

   (d) **O/S (Optional)** ..... **As Desired**
   - Can input Offset parameters via UFC
3. **HSI Waypoint Designation**
   (a) **WYPT** ..... **Boxed**
   (b) **Target Waypoint** ..... **Selected**
   (c) **WPDSG** ..... **Press**
   - **TGT** will replace **WYPT** as boxed
   - Min/Max Launch Range circles appear on HSI
4. **Cueing**
   - **MSN Page** – **ORP** shows coords of designated waypoint
   - **HUD** – designation diamond, steering cues, range to target, SLAM, TMR, and TOO indications appear
5. **Weapon Launch** – **Refer to Launch Section**

5.11.3 SLAM - TOO TPOD

1. **Generic Setup** – **Refer to Setup Section**
2. **SLAM DSPLY TOO Setup**
   (a) **MODE** ..... **TOO**
   (b) **MSN Page** ..... **Enter**
   - Select between TOO1 & TOO2
   - Verify **ORP** (**O**ffset **R**elease **P**oint) blank

   (c) **TERM (Optional)** ..... **As Desired**
   - Can enter terminal heading, angle and velocity via UFC

   (d) **O/S (Optional)** ..... **As Desired**
   - Can input Offset parameters via UFC
3. **TPOD Designation**
   (a) **TPOD** ..... **Slewed to Target**
   (b) **TDC** ..... **Depress**
4. **Cueing**
   - **MSN Page** – **ORP** shows coords of designated waypoint
   - **HSI Page** – Min/Max launch circles
   - **HUD** – designation diamond, steering cues, range to target, SLAM, TMR, and TOO indications appear
5. **Weapon Launch** – **Refer to Launch Section**

NOTE

- **TPOD range < SLAM range** – **IN RNG** cue on designation likely

5.11.4 SLAM - TOO A/G RDR

1. **Generic Setup** – **Refer to Setup Section**
2. **SLAM DSPLY**
   TOO Setup
   (a) **MODE** ..... **TOO**
   (b) **MSN Page** ..... **Enter**
   - Select between TOO1 & TOO2
   - Verify **ORP** (**O**ffset **R**elease **P**oint) blank

   (c) **TERM (Optional)** ..... **As Desired**
   - Can enter terminal heading, angle and velocity via UFC

   (d) **O/S (Optional)** ..... **As Desired**
   - Can input Offset parameters via UFC
3. **RDR Designation**
   (a) **EXP Mode** ..... **As Required**
   (b) **TDC** ..... **Depress & Hold**
   slew, release to designate target
4. **Cueing**
   - **MSN Page** – **ORP** shows coordinates of designated waypoint
   - **HSI Page** – Min/Max launch circles
   - **HUD** – designation diamond, steering cues, range to target, SLAM, TMR, and TOO indications appear
5. **Weapon Launch** – **Refer to Launch Section**

NOTE

- **A/G RDR range < SLAM range** – **IN RNG** cue on designation likely
- **Radar significantly less precise** – if visibility allows FLIR is preferred TOO designation method

5.11.5 SLAM - PP

1. **Generic Setup** – **Refer to Setup Section**
2. **SLAM DSPLY TOO Setup**
   (a) **MODE** ..... **PP**
   (b) **MSN Page** ..... **Enter**
   - Select between PP1-PP5
   - Verify **TGT** blank

   (c) **TERM (Optional)** ..... **As Desired**
   - Can enter terminal heading, angle and velocity via UFC

   (d) **O/S (Optional)** ..... **As Desired**
   - Can input Offset parameters via UFC

3. **Target Designation**
   (a) **Prepare Coordinates**
   - **LAT/LONG** – DEG MIN SEC : DEC-SEC
   - **ELEV** – FT

   (b) **Desired PP** ..... **Boxed**
   (c) **TGT UFC** ..... **Boxed**
   (d) **UFC** ..... **Select POSN**
   - Input LAT, LONG respectively
   - DEG MIN SEC, **ENTER**, then DEC-SEC

   (e) **TGT UFC** ..... **Press 2x**
   (returns to main UFC Menu)
   (f) **UFC** ..... **Select ELEV**
   - Select desired unit (FEET / MTRS)
   - Enter elevation data

   (g) **TGT UFC** ..... **Press 2x**
   (returns to main UFC Menu)
   (h) **MSN Page**
   - **PP** – Selected PP no longer crossed out
   - **TGT** – Shows desired coords / elev data

4. **Cueing**
   - **HSI Page** – Min/Max launch circles
   - **HUD** – designation diamond, steering cues, range to target, SLAM, TMR, and TOO indications appear

5. **Weapon Launch** – **Refer to Launch Section**

5.11.6 SLAM-ER - STEERPOINTS

1. **Generic Setup** – **Refer to Setup Section**
2. **Target Designation** – **Refer to Designation Sections**
   - **TOO WYPT / TOO TPOD / TOO A/G RDR**
   - **PP**
3. **SMS Page – Steerpoint Designation** – **(Optional)**
   (a) **STP OSB** ..... **Boxed**
   (b) **UFC** **STP1**
      - Input desired waypoint number, **ENTER**

   (c) **Repeat** up to **STP5**
4. **Weapon Launch** – **Refer to Launch Section**

NOTE

- SLAM-ER is labeled as **SLMR** on **SMS** / **MSN Page**, adjust procedures accordingly
- SLAM-ER has significantly higher range as compared to SLAM

5.11.7 SLAM - LAUNCH

1. **Generic Setup** – **Refer to Setup Section**
2. **Target Designation** – **Refer to Designation Sections**
   - **TOO WYPT / TOO TPOD / TOO A/G RDR**
   - **PP**
3. **Cockpit Setup**
   - **R DDI – HSI Page**
   - **L DDI – SMS Page**
4. **SMS Page Datalink Setup**
   (a) **SLAM OSB** ..... **Unboxed**
   (b) **DL13 OSB** ..... **Boxed**
   (c) **Datalink Channel** ..... **Set**
   - Must set to match weapon station
   - Set via UFC OSB & UFC input
5. **Launch Conditions**
   - **Weapon Station** ..... **RDY**
   - **Range Cue** ..... **IN RNG**
   - **Release Profile** ..... **Set**
   - **Master Mode** ..... **A/G**
   - **Master Arm** ..... **ARM**
6. **Weapon Launch** – Hold **WEAPON RELEASE** until separation
7. **TTS = 0**
   - Datalink feed activates
   - Seeker becomes uncaged
   - **FOV OSB** toggles field-of-view
8. **Manual Correction**
   - Press & Hold TDC while slewing
   - Not recommended unless necessary
9. **Impact** – Datalink feed cuts out

NOTE

- **Cueing**
  - **TTS** – (**T**ime-**T**o-**S**eeker) time until seeker goes active and pilot can take control
  - **TMR** – Time until maximum launch range
  - **IN RNG** – Within maximum launch range
  - **Diamond** – Shows Target location on HUD/HMD

5.12 AGM-62 WALLEYE II

5.12.1 AGM-62 WALLEYE II

1. **Master Arm** ARM
2. **Master Mode** A/G
3. **SMS** select WEDL
   (a) **TV Feed** ..... select WEDL OSB again
   (b) **Fuzing** ..... as desired
4. **SCS** towards walleye feed DDI
5. **Cage/Uncage** when uncaged the bomb will attempt to lock on to contrast
6. **TDC** DEPRESS & **hold** while slewing
7. **LOCK ON** RDY indication next to station, WE no longer crossed out in HUD, WEDL no longer crossed out in SMS
8. **Fire** hold weapon release

5.12.2 AGM-62 WALLEYE II - D/L

1. **Master Arm** ARM
2. **Master Mode** A/G
3. **SMS** select WEDL
   (a) **D/L** ..... select DL13 OSB (turns on D/L & TV feed)
   (b) **CHNL** press UFC OSB and set channel equal to selected station of walleye, then deselect UFC OSB
   (c) **Fuzing** ..... as desired
4. **SCS** towards DL feed
5. **Cage/Uncage** when uncaged the bomb will attempt to lock on to contrast
6. **TDC** DEPRESS & **hold** while slewing
7. **LOCK ON** RDY indication next to station, WE no longer crossed out in HUD, WEDL no longer crossed out in SMS
8. **Fire** hold weapon release
9. **Steer** DEPRESS & **hold** TDC
10. **Impact** D/L Feed will cut out

Range theoretical max 20 nm, practical max 10 nm, altitude of 20k and high airspeed recommended
Lock On not required for D/L launch but recommended

Oversteering significantly reduces range

Chapter 6

A/A WEAPONS

Contents

6.1 M61A2 GUN

6.1.1 M61 - NO RADAR

1. **Master Arm** ..... ARM
2. **Radar** ..... OFF
3. **Weapon Select** ..... A/A GUNS (aft)
4. **SMS**
   - **Rounds** MK-50 or PGU-28
   - **Firing Rate** HI or LO
5. **Fire** ..... TRIGGER

6.1.2 M61 - RADAR

1. **Master Arm** ..... ARM
2. **Radar** ..... OPERATE
3. **Weapon Select** ..... A/A GUNS (aft)
4. **SMS**
   - **Rounds** MK-50 or PGU-28
   - **Firing Rage** HI or LO
5. **Radar ACM** ..... GACQ (occurs automatically)
6. **Maneuver** ..... place pipper over target
7. **Fire** ..... TRIGGER

6.2 AIM-9 SIDEWINDER

6.2.1 AIM-9 - NO RADAR

1. **IR Cool** ..... NORM
2. **Master Arm** ..... ARM
3. **Radar** ..... OFF
4. **Weapon Select** ..... SIDEWINDER (fwd)
5. **Cage/Uncage** ..... DEPRESS
6. **Maneuver** ..... place target in seeker (good tone)
7. **Fire** ..... TRIGGER

6.2.2 AIM-9 - RADAR

1. **IR Cool** ..... NORM
2. **Master Arm** ..... ARM
3. **Radar** ..... OPERATE
4. **Weapon Select** ..... SIDEWINDER (fwd)
5. **SCS** ..... ACM (forward)
6. **Select Sub Mode** ..... with further depresses

    - **BST** Boresight
    - **VACQ** Vertical Acquisition
    - **WACQ** Wide Acquisition

7. **Maneuver** ..... place target in lock on zone
8. **Cage/Uncage** ..... depress
9. **Maneuver** ..... place steering dot inside ASE/NIRD circle
10. **Fire** ..... TRIGGER

6.2.3 AIM-9X - JHMCS

1. **IR Cool** ..... NORM
2. **HMD** ..... BRT
3. **Master Arm** ..... ARM
4. **Weapon Select** ..... SIDEWINDER (fwd)
5. **Move Head** ..... place DAC on target
6. **Cage/Uncage** ..... DEPRESS
7. **Fire** ..... on good tone

NOTE

- **AIM-9X TONES**
  - **Static** – Searching
  - **Double Beep** – Past 27.5 deg off boresight
  - **Repeating beep** – Sees I/R contrast (not enough for track)
  - **Steady Tone** – Sees I/R contrasting target
  - **High Pitched Tone** – Uncaged
  - **Higher Pitch Tone** – Uncaged and past 27.5 deg off bore-sight

6.3 AIM-7 SPARROW

6.3.1 AIM-7F - RADAR

1. **Radar** ..... OPERATE
2. **R DDI** ..... RDR ATTK page
3. **Master Arm** ..... ARM
4. **Weapon Select** ..... SPARROW (left)
5. **SMS**
   - **Size** SML/MED/LRG
   - **HELO** as desired
   - Desired sparrow type
6. **Sensor Select Switch** ..RIGHT to select BVR/RWR mode and slave TDC to R DDI
7. **Radar Range Scale** ..... as desired
8. **Radar Azimuth Range** ..... as desired
9. **Radar Bar Mode** ..... as desired
10. **Aantenna Elev.** ..... choose optimum
11. **Lock Target** ..... TDC DEPRESS over target
12. **Maneuver** ....place target in ASE circle (will cause STT lock)
13. **Maneuver** ..... place steering dot inside ASE/NIRD circle
14. **Fire** once in range and SHOOT cue appears

Undesignate by pressing UNDESIGNATE button
ACM modes can also be used with sparrow (see SIDEWINDER - RADAR)

6.4 AIM-120 AMRAAM

6.4.1 AIM-120 - STT

1. **Radar** ..... OPERATE
2. **R DDI** ..... RDR ATTK page
3. **Master Arm** ..... ARM
4. **Weapon Select** ..... AMRAAM (right)
5. **SMS**
   - **Size** SML / MED / LRG
   - Select desired AMRAAM station
6. **Sensor Select Switch** .. RIGHT to select BVR/RWR mode and slave TDC to R DDI
7. **Radar Range Scale** ..... as desired
8. **Radar Azimuth Range** ..... as desired
9. **Radar Bar Mode** ..... as desired
10. **Antenna Elev.** ..... choose optimum
11. **Lock Target** ..... place TDC over target and depress
12. **Maneuver** .... place target in ASE circle (will cause STT lock)
13. **Maneuver** ..... place steering dot inside ASE/NIRD circle
14. **Fire** ..... once SHOOT cue appears

6.4.2 AIM-120 - TWS