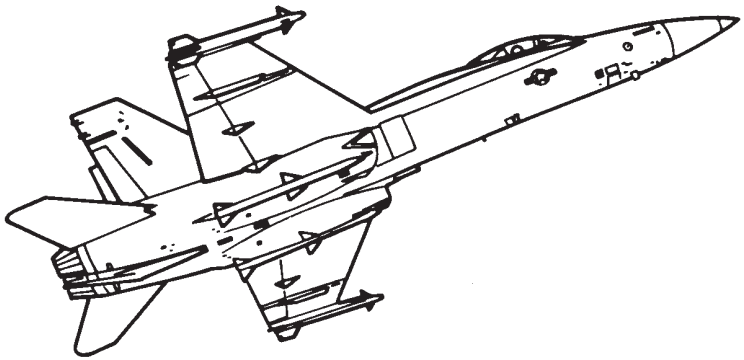
Pocket Checklist

F/A-18C AIRCRAFT

REV: 20220529



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**
2.	**CHOCKS**	**REMOVED**
2.	**LAUNCH BAR**	**RETRACTED**
2.	**HOOK BYPASS**	As required
2.	**PARKING BRAKE**	**DISENGAGED**

1.2.2 TAKEOFF - SHORE

		After Lining Up On Runway
2.	**ANTI SKID** **SPOILER BK**	**BOTH (UP)**
3.	**FLAPS**	**UP**
4.	**TRIM**	**T/O**
5.	**NWS**	**LOW GAIN**
6.	**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**	2-3 deg nose up

NOTE

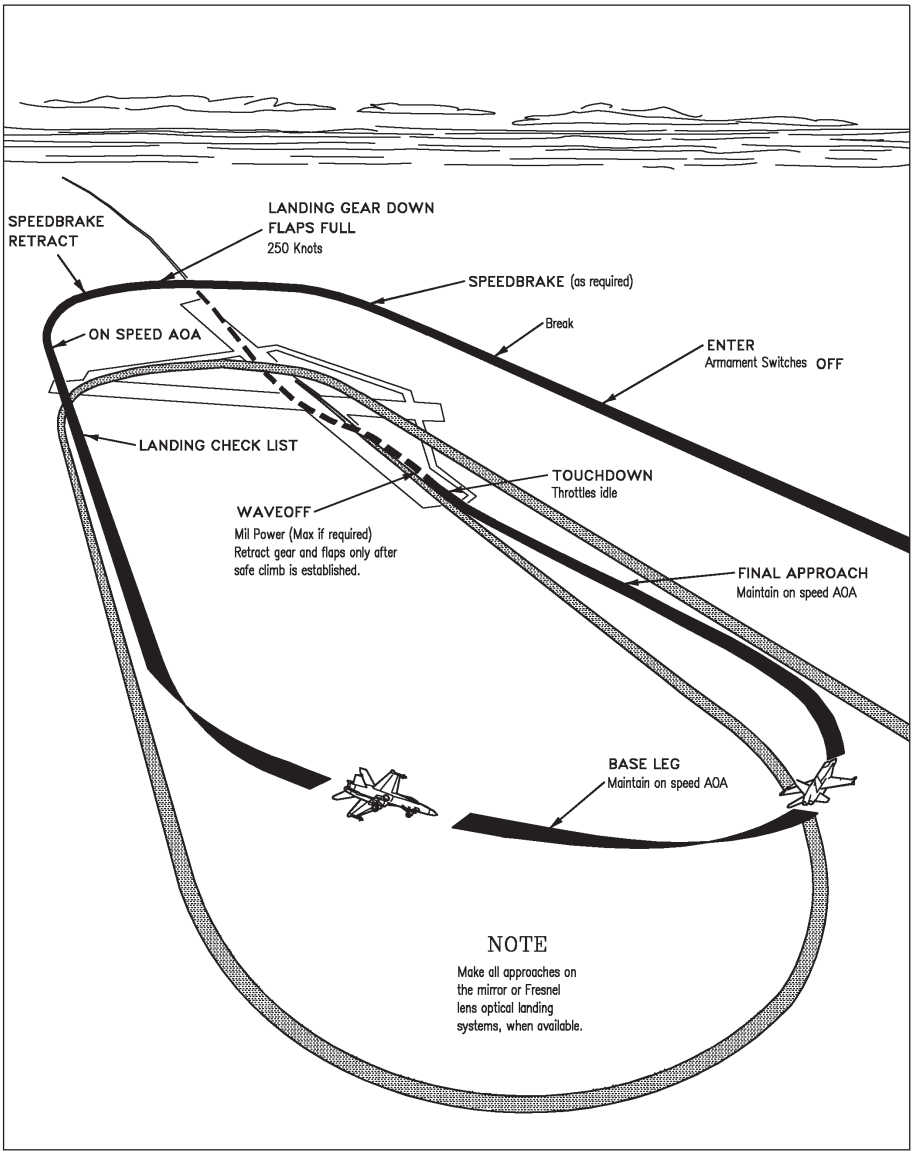
- Refer to **CHKLST** page for weight

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

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**

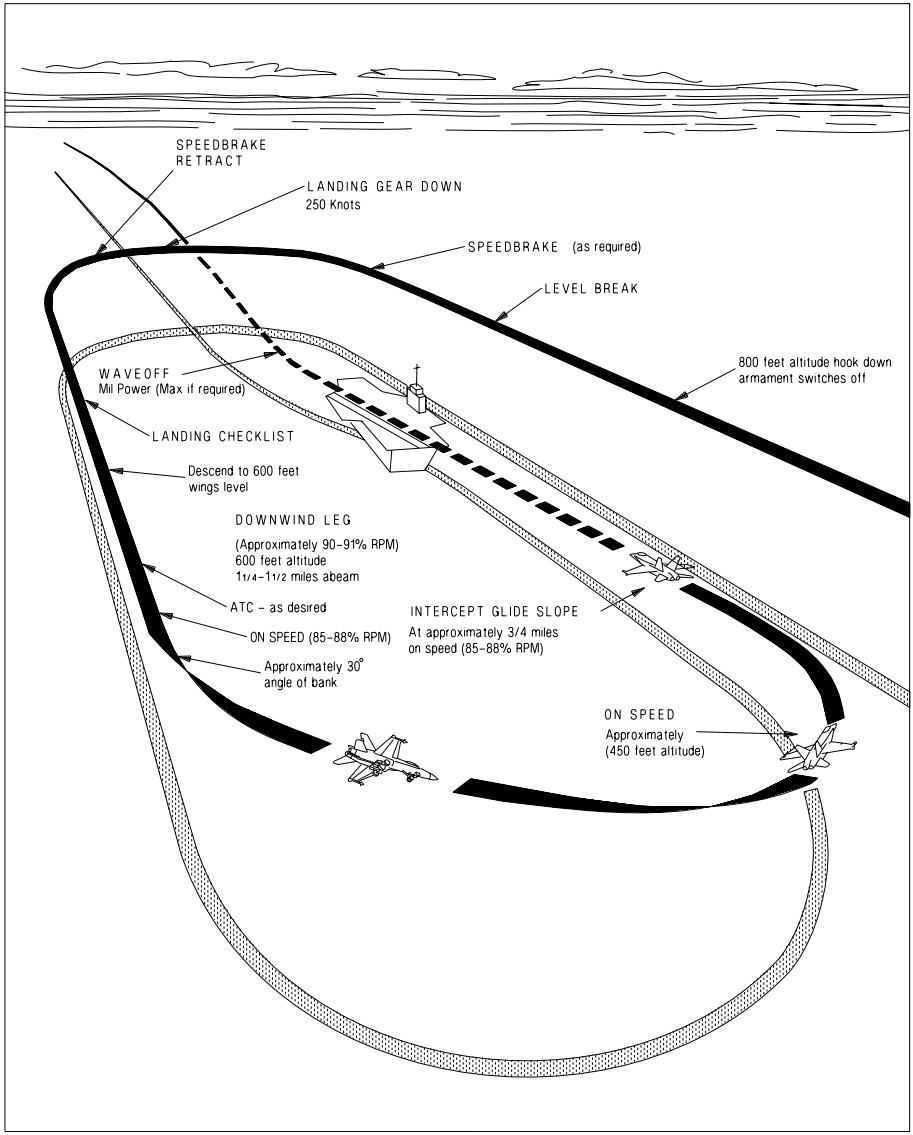
7.	**Catapult Shot**	(a) **Salute** ..... **CAT SHOT** (b) **Gear** ..... **UP** < 240 KIAS (c) **Flaps** ..... **AUTO** (d) **ALT** ..... **BARO** at 3000 agl
8.	**Clearing Turn**	

1.2.4 LANDING - SHORE



1.	**Initial Approach**	• **HOOK** ..... **UP** • **ANTI-SKID** ..... **ON** • **ALT** ..... **RDR** • **Airspeed** ..... **300-350 KIAS** • **Altitude** ..... **800 ft** • **ARM** ..... **OFF**
2.	**Initial Break**	• **Break Interval** ..... **15-17 s** • **SPEED BRAKE** ..... **EXTEND** • **Throttle** ..... **IDLE** • **G** ..... 1% of Airspeed • **Altitude** ..... **800 ft**
3.	**Break Turn**	• **Landing Gear** ..... **DOWN** at 250 KIAS • **FLAPS** ..... **FULL** at 250 KIAS • **SPEED BRAKE** ..... **RETRACT** at 250 KIAS
4.	**Downwind**	• **Altitude** ..... descend to **600 ft** • **AOA** ..... **ON-SPEED** • **LANDING CHECKLIST**
5.	**Final Turn**	**180 Deg Position** • **Abeam Pos.** ..... **1-1.2 nmi** **90 Deg Position** • **AOA** ..... **ON-SPEED** • **Altitude** ..... **400-500 ft**
6.	**Intercept Glides-lope**	• **Distance** ..... **3/4 Mile** • **Altitude** ..... **360 ft** • **AOA** ..... **ON-SPEED**
7.	**Touchdown**	• No more than 750 ft/min • **DO NOT FLARE**

1.2.5 LANDING - CARRIER CASE I

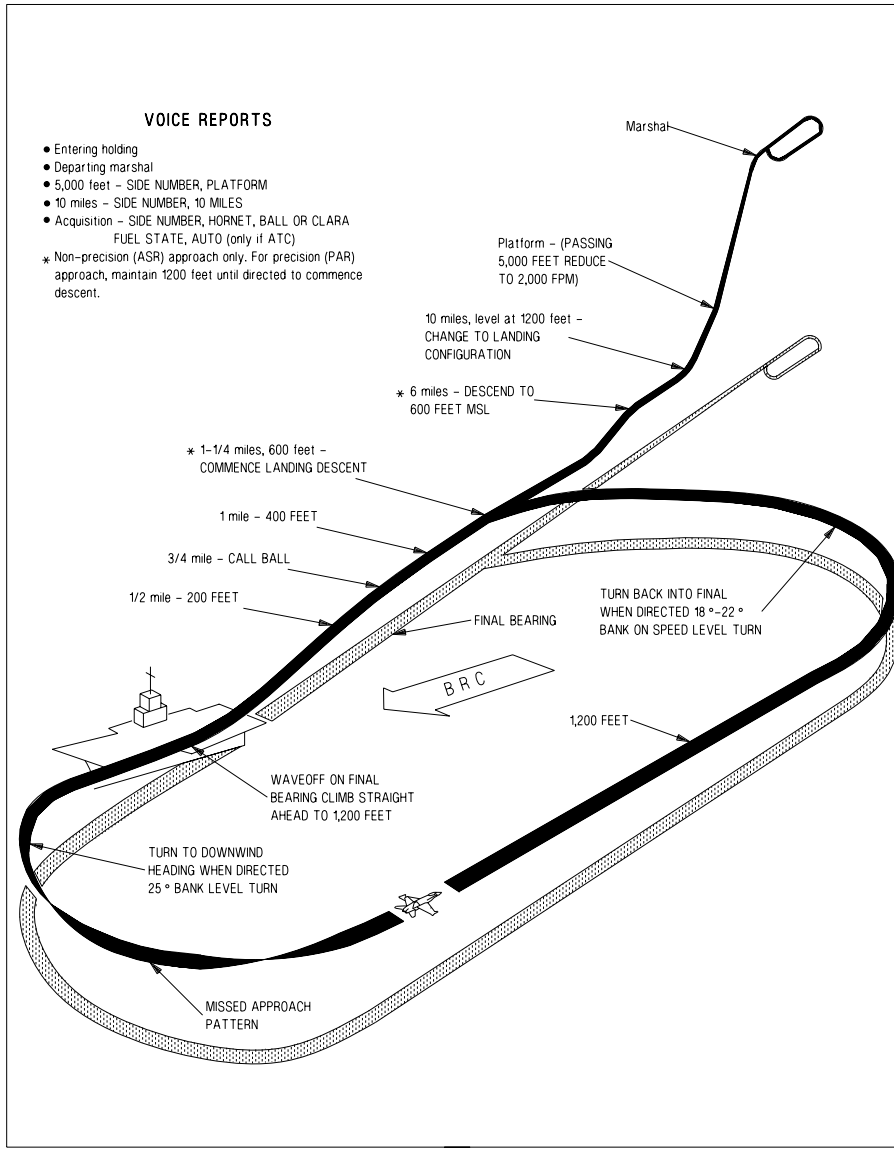


1.	**Navigation**	• **TACAN** ..... **ON** and tuned • **HSI** – **TCN – BOXED** – **CRS – BRC**
2.	**Pattern Entry**	• **Distance** – approx **5 nm** • **Heading – BRC** • **Line Up – Right of CV** • **Airspeed – 300-350 KIAS** • **Altitude – 800 ft**
3.	**Pre-Break**	• **HOOK** ..... **DOWN** • **ALT** ..... **RDR** • **RADALT** ..... 370 ft • **ANTI-SKID** ..... **OFF** • **HOOK BYPASS** ..... **CARRIER** • **ARM** ..... **OFF** • **HSI Zoom** ..... 10 nm • **Airspeed** ..... **300-350 KIAS** • **Altitude** ..... **800 ft**
5.	**Initial Break**	• **Break Interval** ..... **15-17 s** • **SPEED BRAKE** ..... **EXTEND** • **Throttle** ..... **IDLE** • **G** ..... 1% of Airspeed • **Altitude** ..... **800 ft**
6.	**Break Turn**	• **Landing Gear** ..... **DOWN** at 250 KIAS • **FLAPS** ..... **FULL** at 250 KIAS • **SPEED BRAKE** ..... **RETRACT** at 250 KIAS
7.	**Downwind**	• **Altitude** ..... descend to **600 ft** • **AOA** ..... **ON-SPEED** • **LANDING CHECKLIST**
8.	**Final Turn**	**180 Deg Position** • **Abeam Pos.** ..... **1-1.2 nmi** **90 Deg Position** • **AOA** ..... **ON-SPEED** • **Altitude** ..... **400-500 ft**
9.	**Intercept Glides-lope**	• **Distance** ..... **3/4 Mile** • **Altitude** ..... **360 ft** • **AOA** ..... **ON-SPEED**
10.	**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**	1. Set desired channel with channel knob 2. Enter desired Frequency on UFC, ENT 3. 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**	1. Press A/P OSB 2. 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**	• ATC button • Flaps: AUTO • WOW • 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 reerence 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
1)	**Frequency**	Determine TACAN frequency required
2)	**UFC**	a) Press TCN OSB and cycle to ON b) Verify T/R mode active c) Input channel ## , ENT d) Set X/Y as required e) Set A/A mode if required
3)	**HSI**	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**	SCS: FWD (enters BST) 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**	SCS: FWD (enters BST) 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 screen
• **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**	1. EXP1 OSB 2. Press & hold TDC DEPRESS 3. Slew to desired region 4. 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**	1. EXP2 OSB 2. Press & hold TDC DEPRESS 3. Slew to desired region 4. 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**	1. EXP3 OSB 2. Press & hold TDC DEPRESS 3. Slew to desired region 4. 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**	1. Press & hold TDC DEPRESS 2. Slew to desired spot 3. 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 page
• **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 page
• **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**	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
• **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 OSB
• **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

(a) **TPOD** ..... on and ready
(b) **LTD/R** ..... ARM
(c) **SCS** ..... press in direction of FLIR to focus
(d) **VVSLV** .... press UNDESIGNATE twice rapidly to select vel vector slave mode (or press VVSLV OSB)
(e) **Snowplow** ..... press UNDESIGNATE twice rapidly to select snowplow mode(or press VVSLV OSB to deselect)
(f) **TDC** ..... slew to target
(g) **TDC** ..... depress to designate target
(h) **TRIG** ..... boxed
(i) **MARK** ..... boxed, activates M-Arm
(j) **Laser** ..... press TRIGGER to mark again to cease marking

4.1.13 A/A POINT TRACK

(a) **TPOD** ..... on & ready
(b) **Master Mode** ..... A/A
(c) **SCS** ..... in direction of FLIR display
(d) **VVSLV** .... press UNDESIGNATE twice rapidly to select vel vector slave mode (or press VVSLV OSB)
(e) **RTCL OSB** ..... press to display reticle
(f) **Maneuver** ..... to place vel. vector near target aircraft
(g) **Zoom** ..... as desired
(h) **FLIR/CCD Mode** ..... as desired
(i) **SCS** ..... towards FLIR display to attempt Point Track
(j) **Designation Box** ..... good track
(k) **Dump Target** ..... SCS towards FLIR display

To slave radar to TPOD

(l) **Radar** ..... OPR
(m) **Point Track** ..... acquired
(n) **FLIR Page** ..... press SLAVE OSB

4.1.14 A/A RADAR SLAVING

(a) **TPOD** ..... on & ready
(b) **Radar** ..... OPR
(c) **Master Mode** ..... A/A
(d) **R DDI** ..... RDR ATTK page
(e) **L DDI** ..... FLIR page
(f) **SCS** ..... towards RDR ATTK page
(g) **Radar Lock** ..... acquired
(h) **RRSLV OSB** ..... press, slaves TPOD to radar
(i) **SCS** ..... towards FLIR page
(j) **Zoom** ..... as desired
(k) **FLIR/CCD Mode** ..... as desired
(l) **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
• **Toggle WFOV/MFOV/NAR**	• RAID/FLIR Button short • FOV OSB
• **Toggle CCD/FLIR**	• RAID/FLIR Button long • FLIR/CCD OSB
• **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** • **Designation**	• FLIR image blank • LST flashes on FLIR page 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 SELECTIVE ORDNANCE JETTISON

(a) **Master Arm** ..... ARM
(b) **SMS** ..... check stores
(c) **Jettison Stores** ..... select desired jettison stations on pushbuttons
(d) **Selective Jett. Knob** ..... rotate to desired stations
(e) **Jett. Button** ..... press & hold
(f) **Selective Jett. Knob** ..... SAFE

5.2 FORWARD FIRING

5.2.1 M61A2 GUN - A/G

(a) **Master Arm** ..... ARM
(b) **Master Mode** ..... A/G
(c) **SMS** ..... select GUN

- **Rounds** MK-50 or PGU-28
- **Firing Rate** HI or LO
- **Mode** CCIP

(d) **Reticle** ..... on target
(e) **Fire** ..... once IN RNG cue
(f) **Break Away** ..... before X cue

5.2.2 ROCKETS

(a) **Master Arm** ..... ARM
(b) **Master Mode** ..... A/G
(c) **SMS** ..... select pod (68R)

- **Firing Mode** SGL or SAL
- **MTR** M4 or M66
- **Mode** CCIP

(d) **Reticle** ..... on target
(e) **Fire** ..... once IN RNG cue appears
(f) **Break Away** ..... before X cue

5.3 UNGUIDED FREE-FALL MUNITIONS

5.3.1 UNGUIDED BOMB - CCIP

(a) **Master Arm** ..... ARM
(b) **Master Mode** ..... A/G
(c) **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

(d) **UFC** ..... press UFC OSB on SMS page

- **QTY** bombs per release
- **MULT** bombs per salvo in release
- **INT** interval between salvo in feet

(e) **Dive** ..... 30-45 deg
(f) **DIL** ..... Displayed Impact Line over target
(g) **CCIP Cross** ..... appears once computed
(h) **Maneuver** ..... keep CCIP CROSS & DIL on target
(i) **Release** ..... when CCIP CROSS on target
(j) **Pull Up** ..... before vel vector reaches PULL UP cue

5.3.2 UNGUIDED BOMB - CCRP

(a) **Master Arm** ..... ARM
(b) **Master Mode** ..... A/G
(c) **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

(d) **UFC** ..... press OSB for UFC on SMS page

- **QTY** bombs per release
- **MULT** bombs per salvo in release
- **INT** interval between salvo in feet

(e) **SCS** ..... FWD to slave TDC to HUD
(f) **Symbology** ..... "Ball & Chain"
(g) **Dive** ..... 25 deg to place vel vector on target
(h) **TDC** ..... DEPRESS to designate target
(i) **TDC** ..... SLEW target designator
(j) **Level Flight** .... keep vel vector aligned with ASL (azimuth steering line)
(k) **Release** .... when weapon cue appears, hold until all ordnance released
(l) **Pull Up** ..... before vel vector reaches PULL UP cue

5.3.3 MK-20 CLUSTER BOMB - CCIP

(a) **Master Arm** ..... ARM
(b) **Master Mode** ..... A/G

(c) **SMS** ..... select desired bomb (RE)

(a) Create delivery PROG 1
(b) **Mode** ..... CCIP
(c) **MFUZ** ..... VT
(d) **HT OSB** ..... press to cycle

(d) **UFC** ..... press UFC OSB on SMS page

- **QTY** bombs per release
- **MULT** bombs per salvo in release
- **INT** interval between salvo in feet

(e) **Dive** ..... 30-45 deg
(f) **DIL** ..... Displayed Impact Line over target
(g) **CCIP Cross** ..... appears once computed
(h) **Maneuver** ..... keep CCIP CROSS & DIL on target
(i) **Release** ..... when CCIP CROSS on target
(j) **Pull Up** ..... before vel vector reaches PULL UP cue

5.4 GPS GUIDED MUNITIONS

5.4.1 JDAM/JSOW - PP

Weapon Setup

(a) **Coord.** ..... prepare in format DEG MIN SEC : DEC-SEC
(b) **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

(c) **JDAM Display** ..... press JDAM DSPLY OSB
(d) **Release Type** ..... MANUAL
(e) **QTY** .... press QTY OSB select desired stations (recommend: all) press RTN OSB, now STEP OSB cycles between stations
(f) **MSN Page** ..... crossed out PP mean no coordinates
(g) **Select PP1** ..... press PP1 OSB
(h) **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
(i) **Verify** ..... PP1 no longer crossed
(j) **Repeat** ..... for remaining stations

Weapon Launch

(a) **Master Arm** ..... ARM
(b) **Master Mode** ..... A/G
(c) **SMS** ..... verify J-82 boxed
(d) **R DDI** ..... HSI page
(e) **L DDI** ..... JDAM page
(f) **Verify** ..... MANUAL release, PP, desired station
(g) **Maneuver** ..... with steering cues
(h) **TMR** ..... Time to Minimum Range
(i) **IN RNG** ..... In Range
(j) **Fire** ..... hold weapon release
(k) **Next** ..... system will auto cycle to next JDAM
(l) **Verify** ..... MANUAL release, PP, desired station
(m) **Repeat** ..... for remaining bombs

Note each JDAM can have 4 PP targets

5.4.2 JDAM/JSOW - TOO WYPT

Weapon Setup

(a) **Waypoints** ..... verify
  (a) **SUPT HSI**
  (b) **DATA** ..... cycle through waypoints
  (c) **Precise** ..... push PRECISE OSB to add DEC-SEC
(b) **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

(c) **JDAM Display** ..... press JDAM DSPLY OSB
(d) **Release Type** ..... MANUAL
(e) **QTY** ....press QTY OSB select desired stations (recommend: all), press RTN OSB, now STEP OSB cycles between stations
(f) **MSN Page** ..... press TOO1
(g) **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
(h) **Repeat** .....for remaining stations

Weapon Launch

(a) **Master Arm** ..... ARM
(b) **Master Mode** ..... A/G
(c) **SMS** ..... verify J-82 boxed
(d) **R DDI** ..... HSI page
(e) **L DDI** ..... JDAM page
(f) **Verify** .....MANUAL release, TOO, desired station
(g) **HSI** .....select waypoint 1
(h) **Designate** .....press WPDSG
(i) **Maneuver** ..... with steering cues
(j) **TMR** ..... Time to Minimum Range
(k) **IN RNG** ..... In Range
(l) **Fire** .....hold weapon release
(m) **Next** ..... system will auto cycle to next JDAM
(n) **Verify** .....MANUAL release, TOO, desired station
(o) **Repeat** ..... for remaining bombs & waypoints

5.4.3 JDAM/JSOW - TOO TPOD

Weapon Setup

(a) **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
(b) **JDAM Display** .....press JDAM DSPLY OSB
(c) **Release Type** ..... MANUAL
(d) **QTY** ....press QTY OSB select desired stations (recommend: all), press RTN OSB, now STEP OSB cycles between stations
(e) **MSN Page** ..... press TOO1

(f) **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

(g) **FLIR** ..... STBY

(h) **DDI/AMPCD** ..... select FLIR, monitor warm up

(i) **FLIR** ..... ON, once ready

(j) **Master Mode** ..... A/G

(k) **LTD/R** ..... ARM

(l) **SCS** ..... in direction of FLIR DDI/AMPCD

(m) **TDC** ..... slew TPOD reticle over target

(n) **SCS** towards FLIR display to toggle

- **PTRK** tracks moving target (vehicle)
- **ATRK** track static target

(o) **Designate** ..... depress TDC to designate target, coordinates will auto transfer to JDAM/JSOW

(p) **Verify** ..... updated coordinates in JDAM MSN page

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

WEAPON LAUNCH

(a) **Master Arm** ..... ARM

(b) **Master Mode** ..... A/G

(c) **SMS** ..... verify J-82 boxed

(d) **AMPCD** ..... HSI

(e) **R DDI** ..... FLIR page

(f) **L DDI** ..... JDAM page

(g) **Verify** ..... MANUAL release, TOO, desired station

(h) **Maneuver** ..... with steering cues

(i) **TMR** ..... Time to Minimum Range

(j) **IN RNG** ..... In Range

(k) **Fire** ..... hold weapon release

5.5 LASER GUIDED MUNITIONS

5.5.1 GBU-12 PAVEWAY II

(a) **Master Arm** ..... ARM

(b) **Master Mode** ..... A/G

(c) **SMS** ..... select desired bomb (82LG)
  (a) Create delivery PROG 1
  (b) **Mode** ..... CCRP (preferred) / CCIP
  (c) **MFUZ** ..... OFF
  (d) **EFUZ** ..... DLY1 or INST
(d) **FLIR** ..... STBY
(e) **DDI/AMPCD** ..... select FLIR, monitor warm up
(f) **FLIR** ..... ON, once ready
(g) **LTD/R** ..... ARM
(h) **SCS** ..... in direction of FLIR DDI/AMPCD
(i) **TDC** ..... slew TPOD reticle over target
(j) **SCS** ..... towards FLIR display to toggle
  - **PTRK** tracks moving target (vehicle)
  - **ATRK** track static target

(k) **UFC OSB** ..... press to set code on UFC
(l) **LTDC** ..... select on UFC, set code , press ENT
(m) **SMS** ..... select 82LG
(n) **CODE OSB**
(o) **UFC** ..... enter CODE
(p) **82LG** ..... should display RDY
(q) **FLIR** ..... press TRIG OSB
(r) **Laser** ..... press gun trigger to fire
(s) **TDC** .... depress to designate laser as target (will slave A/G weapons to laser)
(t) **Level Flight** .... keep vel vector aligned with ASL (azimuth steering line)
(u) **Release** ..... when weapon cue appears, hold until ordnance released

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

5.5.2 GBU-24 PAVEWAY III

5.6 AGM-65 MAVERICK

5.6.1 AGM-65F/G IR-MAV

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

(a) **Master Mode** ..... A/G
(b) **SMS** ..... select MAVF
(c) **Wait** ..... for cooldown
(d) **Master Arm** ..... ARM
(e) **TAC Page** ..... select IMAV DSPLY
OR

SMS ..... select MAVF twice
(f) **Fuzing** ..... as desired
(g) **SCS** ..... towards MAV feed (usually L DDI)
(h) **FOV** ..... as desired
(i) **Cage/Uncaged**

- **Caged** seeker points at boresight
- **Uncaged** missile attempts to lock on to contrast

(j) **TDC** ..... slew WHILE depressing
(k) **Release TDC** ..... MAV will attempt to lock on, good range 7.5 miles
(l) **LOCK ON** ..... cross will disappear
(m) **Fire** ..... hold weapon release

5.6.2 AGM-65E LASER-MAV

(a) **Master Mode** ..... A/G
(b) **Master Arm** ..... ARM
(c) **SMS** ..... select MAV
  (a) **Self Test** ..... 30s, monitor in MAV DSPLY
  (b) **Fuzing** ..... INST
(d) **MAV DSPLY** ..... press UFC OSB (edits ALL laser codes at once)
(e) **CODE** ..... enter on UFC
(f) **FLIR** ..... STBY
(g) **DDI/AMPCD** ..... select FLIR, monitor warm up
(h) **FLIR** ..... ON, once ready
(i) **LTD/R** ..... ARM
(j) **SCS** ..... in direction of FLIR DDI/AMPCD
(k) **TDC** ..... slew TPOD reticle over target
(l) **SCS** ..... towards FLIR display to toggle

- **PTRK** tracks moving target (vehicle)
- **ATRK** track static target

(m) **UFC OSB** ..... press to set code on UFC
(n) **LTDC** ..... select on UFC, set code , press ENT
(o) **FLIR** ..... press TRIG OSB
(p) **Laser** ..... press gun trigger to fire
(q) **SCS** ..... to MAV DSPLY DDI
(r) **MAV DSPLY** ..... select desired station using STEP OSB
(s) **Uncage** ..... missile

NOTE MAV DSPLY must be selected, else will boresight TPOD

(t) **RDY** ..... indication & MAV LKD in HUD indicates ready to fire
(u) **Fire** ..... hold weapon release

5.7 AGM-88C HARM

5.7.1 HARM - TOO

(a) **Master Arm** ..... ARM
(b) **Master Mode** ..... A/G
(c) **R DDI** ..... TAC EW page
(d) **L DDI** ..... SMS page, select HARM
(e) **Mode** ..... TOO (Target Of Opportunity)
(f) **SCS** ..... towards HARM DDI
(g) **Cycle Emitter** .... depress RAID/FLIR to cycle, consult HUD, RWR or EW page
(h) **Maneuver** ..... align target icon with cross of seeker
(i) **Handoff** ..... press CAGE/UNCAGE to lock seeker to target
(j) **Fire** ..... hold weapon release

5.7.2 HARM - SP

(a) **Master Arm** ..... ARM
(b) **Master Mode** ..... A/G
(c) **R DDI** ..... TAC EW page
(d) **L DDI** ..... SMS page, select HARM
(e) **Mode** ..... SP (Self Protect)
(f) **Cycle Emitter** .... depress RAID/FLIR to cycle, consult HUD, RWR or EW page
(g) **Fire** ..... hold weapon release

5.7.3 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

(a) **Master Arm** ..... ARM
(b) **Master Mode** ..... A/G
(c) **HRM OVRD** ..... unboxed
(d) **RWR** ..... Critical threat
(e) **HUD** ..... HARM displayed
(f) **Fire** ..... hold weapon release

5.7.4 HARM - PB Intro

5.7.5 HARM - PB Setup

5.7.6 HARM - A/C LOFT

5.7.7 HARM - HRM LOFT

5.8 AGM-84D HARPOON

5.8.1 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

(a) **Master Arm** ..... ARM
(b) **Master Mode** ..... A/G
(c) **SMS** ..... select HPD OSB
(d) **Align** ..... monitor from SMS (25 s)
(e) **Program Parameters**
  (a) **UFC** ..... press UFC OSB
  (b) **SRCH** ..... input Search Point, ENT
  (c) **DSTR** ..... input Self Destruct, ENT
  (d) **BRG** ..... input Bearing, ENT
(f) **SMS**
  (a) **Mode** ..... BOL
  (b) **FLT** ..... LO/MED/HI
  (c) **Term.** ..... SKIM/POP
(g) **R DDI** ..... HSI
(h) **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
(i) **IN ZONE** ..... follow steering cues until IN ZONE cue appears
(j) **Alt** ..... 2500 ft or higher
(k) **g** ..... positive
(l) **Fire** ..... hold weapon release
(m) **RADALT** ..... warning normal

5.8.2 HARPOON - R/BL

Launch Parameters

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

(a) **Master Arm** ..... ARM
(b) **Master Mode** ..... A/G
(c) **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)
(d) **R DDI** ..... HSI
(e) **IN ZONE** ..... follow steering cues until IN ZONE cue appears
(f) **Alt** ..... 2500 ft or higher
(g) **g** ..... positive
(h) **Fire** ..... hold weapon release
(i) **RADALT** ..... warning normal

5.9 AGM-84E SLAM & SLAM/ER

5.9.1 SLAM - SETUP

(a) **Master Arm** ..... ARM
(b) **Master Mode** ..... A/G
(c) **SMS Page**
  (a) **SLAM OSB** ..... press to power on
  (b) **Wait** ..... for GOOD align
  (c) **DL13 OSB** ..... press
  (d) **STEP** ..... to select missile station
  (e) **WEP OSB** ..... select SLAM which communicates with DL
  (f) **SLAM Indication** ..... under DL13
  (g) **FLT OSB** ..... select HIGH (35000)
  MED (15000) or LOW (5000)

(d) **Slam Display** ..... press SLAM DSPLY OSB

(a) **REL TYPE** ..... MAN
(b) **UFC OSB** ..... press
(c) **DIST** ..... input (15nm), ENT
(distance for seeker activation)
(d) **UFC OSB** ..... press to unbox

(e) **Target Designation** ..... as desired

Refer to Designation Sections

5.9.2 SLAM - TOO WYPT

(a) **Weapon Setup** ..... complete

Refer to Setup Section

(b) **SLAM DSPLY**

(a) **MODE** ..... TOO
(b) **MSN OSB** ..... enter mission page
(c) **TOO1/2 OSB** ..... select
(d) **ORP** ..... blank (no target selected)

(c) **TERM (Optional)** ..... press TERM OSB

(a) **TOO UFC OSB** ..... press
(b) **HDG/ANG/VEL** ..... input, ENT

(d) **O/S UFC (Optional)** ..... press
input offset to target

(e) **HSI Page**

(a) **WYPT OSB** ..... press
(b) **WYPT** ..... select desired
(c) **WPDSG OSB** ..... press
designates targetpoint

(f) **Verify** ..... ORP coordinates
in MSN page

(g) **Range** ..... Min/Max launch circles
in HSI page

(h) **Cues** ..... steering, range
target diamond, SLAM

(i) **MSN Page** ..... press RETURN OSB
to return to SMS

(j) **Weapon Launch & Control**

Refer to Launch Section

5.9.3 SLAM - TOO TPOD

(a) **Weapon Setup** ..... complete

Refer to Setup Section

(b) **SLAM DSPLY**

(a) **MODE** ..... TOO
(b) **MSN OSB** ..... enter mission page
(c) **TOO1/2 OSB** ..... select
(d) **ORP** ..... blank (no target selected)

(c) **TERM** **(Optional)** ..... press TERM OSB

(a) **TOO UFC OSB** ..... press
(b) **HDG/ANG/VEL** ..... input, ENT

(d) **O/S UFC** **(Optional)** ..... press
input offset to target
(e) **FLIR** ..... STBY
(f) **DDI/AMPCD** ..... select FLIR, monitor warm up
(g) **FLIR** ..... ON, once ready
(h) **SCS** ..... in direction of FLIR DDI/AMPCD
(i) **VVSLV** ..... press UNDESIGNATE twice to enter VVSLV
(j) **Snowplow** ..... press UNDESIGNATE twice again to unselect VVSLV
(k) **TDC** ..... slew TPOD reticle over target
(l) **Designate** ..... TDC DEPRESS
(m) **Verify** ..... ORP coordinates
in MSN page
(n) **Range** ..... Min/Max launch circles
in HSI page
(o) **Cues** ..... steering, range
target diamond, SLAM

Note TPOD range less than SLAM range, IN RNG cue already possible

(p) **MSN Page** ..... press RETURN OSB
to return to SMS

(q) **Weapon Launch & Control**

Refer to Launch Section

5.9.4 SLAM - TOO A/G RDR

(a) **Weapon Setup** ..... complete
Refer to Setup Section

(b) **SLAM DSPLY**

(a) **MODE** ..... TOO
(b) **MSN OSB** ..... enter mission page
(c) **TOO1/2 OSB** ..... select
(d) **ORP** ..... blank (no target selected)

(c) **TERM** **(Optional)** ..... press TERM OSB

(a) **TOO UFC OSB** ..... press
(b) **HDG/ANG/VEL** ..... input, ENT
(d) **O/S UFC** **(Optional)** ..... press
input offset to target
(e) **RDR ATTK Page** ..... select
(f) **SCS** ..... towards RDR ATTK
(g) **EXP**
(a) **EXP1 OSB** ..... press
(b) **TDC** ..... DEPRESS & hold
while slewing to target
(c) **Enter EXP1** ..... release TDC
(d) **Repeat** ..... for EXP2/3
(h) **TDC** ..... DEPRESS & hold
while slewing to target
(i) **Designate** ..... release TDC
to designate target

Note A-G Radar not very precise
if visibility allows use FLIR

(j) **Verify** ..... ORP coordinates
in MSN page
(k) **Range** ..... Min/Max launch circles
in HSI page
(l) **Cues** ..... steering, range
target diamond, SLAM

Note A-G Radar range (30-40nm) less than SLAM range, IN RNG cue already possible

(m) **MSN Page** ..... press RETURN OSB
to return to SMS
(n) **Weapon Launch & Control**
Refer to Launch Section

5.9.5 SLAM - PP

(a) **Weapon Setup** ..... complete
Refer to Setup Section
(b) **SLAM DSPLY**
(a) **MODE** ..... PP
(b) **MSN OSB** ..... enter mission page
(c) **TOO1/2 OSB** ..... select
(d) **ORP** ..... blank (no target selected)

(c) **TERM (Optional)** ..... press TERM OSB
  (a) **TOO UFC OSB** ..... press
  (b) **HDG/ANG/VEL** ..... input, ENT
(d) **O/S UFC (Optional)** ..... press
input offset to target
(e) **Coord.** ..... prepare in format
DEG MIN SEC : DEC-SEC
(f) **MSN Page** ..... crossed out PP mean no coordinates
(g) **Select PP1** ..... press PP1 OSB
(h) **Data Entry** ..... press TGT UFC OSB
  (a) **ELEV** ..... select ELEV on UFC
  (b) **Return** ..... press TGT UFC twice
to return to main UFC page
  (c) **POSN** ..... select POSN on UFC
  (d) **LAT** ..... input DEG MIN SEC,
ENT, input DEC-SEC, ENT
  (e) **LON** ..... input DEG MIN SEC,
ENT, input DEC-SEC, ENT
  (f) **Return** ..... press TGT UFC twice
to return to main UFC page
(i) **Verify**
  (a) **PPI** ..... no longer crossed
  (b) **TGT** ..... coordinates
(j) **Range** ..... Min/Max launch circles
in HSI page
(k) **Cues** ..... steering, range
target diamond, SLAM
(l) **MSN Page** ..... press RETURN OSB
to return to SMS
(m) **Weapon Launch & Control**
Refer to Launch Section

5.9.6 SLAM - LAUNCH

(a) **Weapon Setup** ..... complete
Refer to Setup Section
(b) **Target Designation** ..... complete
Refer to Designation Sections
(c) **R DDI** ..... HSI page
(d) **L DDI** ..... SMS page
(e) **Verify**
  (a) **Misile** ..... RDY

(b) **Master Arm** ..... ARM
(c) **Release Profile** ..... set

Cues

- **TTS** (Time-To-Seeker) time until seeker active and controllable by pilot
- **TMR** time until max launch range
- **Target Diamond** shows target in HUD
- **IN RNG** within max launch range

(f) **Datalink**

(a) **SLAM** ..... unboxed
(b) **DL13** ..... boxed
(c) **UFC OSB** ..... press
(d) **UFC** ..... input missile station, ENT (sets DL channel)
(e) **UFC OSB** ..... press to deselect
(f) **Sensor Select Switch** ..... towards DL Feed

(g) **Verify** ..... IN RNG
(h) **Fire** ..... hold WEAPON RELEASE
(i) **Clearing Turn** ..... recommended
(j) **TTS** 0

- **Seeker** uncaged
- **DL Feed** active

(k) **FOV** ..... as desired
(l) **Aft Antenna** ..... A ANT boxed if turned aircraft away from missile
(m) **Wait** ..... for TERM phase
(n) **Steer** ..... DEPRESS & **hold** while slewing
(o) **Lock On** ..... release TDC
(p) **Impact** ..... DL Feed cutout

5.10 AGM-62 WALLEYE II

5.10.1 AGM-62 WALLEYE II

(a) **Master Arm** ..... ARM
(b) **Master Mode** ..... A/G
(c) **SMS** ..... select WEDL

(a) **TV Feed** ..... select WEDL OSB again
(b) **Fuzing** ..... as desired

(d) **SCS** ..... towards walleye feed DDI
(e) **Cage/Uncage** ..... when uncaged the bomb will attempt to lock on to contrast
(f) **TDC** ..... DEPRESS & **hold** while slewing
(g) **LOCK ON** ... RDY indication next to station, WE no longer crossed out in HUD, WEDL no longer crossed out in SMS
(h) **Fire** ..... hold weapon release

5.10.2 AGM-62 WALLEYE II - D/L

(a) **Master Arm** ..... ARM
(b) **Master Mode** ..... A/G
(c) **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

(d) **SCS** ..... towards DL feed
(e) **Cage/Uncage** ..... when uncaged the bomb will attempt to lock on to contrast
(f) **TDC** ..... DEPRESS & **hold** while slewing
(g) **LOCK ON** ... RDY indication next to station, WE no longer crossed out in HUD, WEDL no longer crossed out in SMS
(h) **Fire** ..... hold weapon release
(i) **Steer** ..... DEPRESS & **hold** TDC
(j) **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

5.11 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

Chapter 6

A/A WEAPONS

Contents

6.1 M61A2 GUN

6.1.1 M61 - NO RADAR

(a) **Master Arm** ..... ARM
(b) **Radar** ..... OFF
(c) **Weapon Select** ..... A/A GUNS (aft)
(d) **SMS**

- **Rounds** MK-50 or PGU-28
- **Firing Rate** HI or LO

(e) **Fire** ..... TRIGGER

6.1.2 M61 - RADAR

(a) **Master Arm** ..... ARM
(b) **Radar** ..... OPERATE
(c) **Weapon Select** ..... A/A GUNS (aft)
(d) **SMS**

- **Rounds** MK-50 or PGU-28
- **Firing Rage** HI or LO

(e) **Radar ACM** ..... GACQ (occurs automatically)
(f) **Maneuver** ..... place pipper over target
(g) **Fire** ..... TRIGGER

6.2 AIM-9 SIDEWINDER

6.2.1 AIM-9 - NO RADAR

(a) **IR Cool** ..... NORM
(b) **Master Arm** ..... ARM
(c) **Radar** ..... OFF
(d) **Weapon Select** ..... SIDEWINDER (fwd)
(e) **Cage/Uncage** ..... DEPRESS
(f) **Maneuver** ..... place target in seeker (good tone)
(g) **Fire** ..... TRIGGER

6.2.2 AIM-9 - RADAR

(a) **IR Cool** ..... NORM
(b) **Master Arm** ..... ARM
(c) **Radar** ..... OPERATE
(d) **Weapon Select** ..... SIDEWINDER (fwd)
(e) **SCS** ..... ACM (forward)
(f) **Select Sub Mode** ..... with further depresses

- **BST** Boresight

- **VACQ** Vertical Acquisition
- **WACQ** Wide Acquisition

(g) **Maneuver** ..... place target in lock on zone
(h) **Cage/Uncage** ..... depress
(i) **Maneuver** ..... place steering dot inside ASE/NIRD circle
(j) **Fire** ..... TRIGGER

6.2.3 AIM-9X - JHMCS

(a) **IR Cool** ..... NORM
(b) **HMD** ..... BRT
(c) **Master Arm** ..... ARM
(d) **Weapon Select** ..... SIDEWINDER (fwd)
(e) **Move Head** ..... place DAC on target
(f) **Cage/Uncage** ..... DEPRESS
(g) **Fire** ..... on good tone

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 boresight

6.3 AIM-7 SPARROW

6.3.1 AIM-7F - RADAR

(a) **Radar** ..... OPERATE
(b) **R DDI** ..... RDR ATTK page
(c) **Master Arm** ..... ARM
(d) **Weapon Select** ..... SPARROW (left)
(e) **SMS**

- **Size** SML/MED/LRG
- **HELO** as desired
- Desired sparrow type

(f) **Sensor Select Switch** ..RIGHT to select BVR/RWR mode and slave TDC to R DDI
(g) **Radar Range Scale** ..... as desired
(h) **Radar Azimuth Range** ..... as desired
(i) **Radar Bar Mode** ..... as desired
(j) **Aantenna Elev.** ..... choose optimum

(k) **Lock Target** ..... TDC DEPRESS over target
(l) **Maneuver** ..... place target in ASE circle (will cause STT lock)
(m) **Maneuver** ..... place steering dot inside ASE/NIRD circle
(n) **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

(a) **Radar** ..... OPERATE
(b) **R DDI** ..... RDR ATTK page
(c) **Master Arm** ..... ARM
(d) **Weapon Select** ..... AMRAAM (right)
(e) **SMS**

- **Size** SML / MED / LRG
- Select desired AMRAAM station

(f) **Sensor Select Switch** .. RIGHT to select BVR/RWR mode and slave TDC to R DDI
(g) **Radar Range Scale** ..... as desired
(h) **Radar Azimuth Range** ..... as desired
(i) **Radar Bar Mode** ..... as desired
(j) **Antenna Elev.** ..... choose optimum
(k) **Lock Target** ..... place TDC over target and depress
(l) **Maneuver** ..... place target in ASE circle (will cause STT lock)
(m) **Maneuver** ..... place steering dot inside ASE/NIRD circle
(n) **Fire** ..... once SHOOT cue appears

6.4.2 AIM-120 - TWS