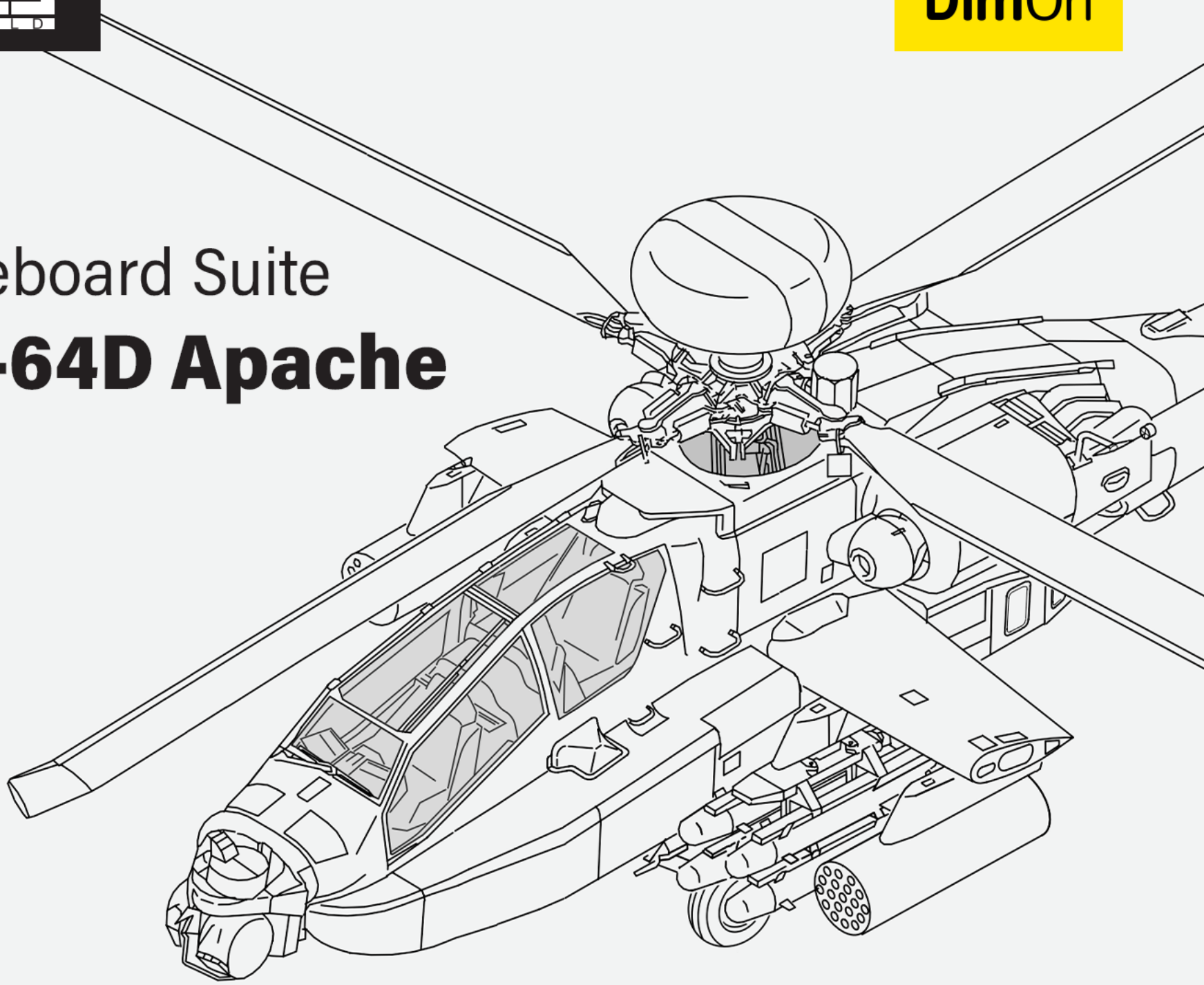
DimOn

Kneeboard Suite

AH-64D Apache



Created by Dima Kozyrev, dimkzr@gmail.com

25 MAY 2023

CHECKLISTS, Pt. 1

CPG ITEMS MAY BE SKIPPED IF CPG IS CREWED BY AI

PLT — INTERIOR CHECK

1 EXT / INTR lights, COMM panel, KU, MPD, and EUFD knobs ..... As desired
2 PARK BRAKE ..... *handle out* Set
3 POWER levers, RTR BRK switch, NVS MODE switch ..... OFF

CPG — INTERIOR CHECK

1 INTR lights, COMM panel, TEDAC, KU, MPD, and EUFD knobs ..... As desired
2 POWER levers, NVS MODE switch ..... OFF

ONCE BATTERY POWER IS AVAILABLE:
SIGNAL LIGHTS TEST. FIRE TESTS 1 & 2.

PLT — STARTING APU

BATTERY TIME UNDER LOAD IS LIMITED BY FAT TO:
>43°C = 1 MIN 32–43°C = 3 MIN <32°C = 20 MIN

1 MSTR IGN switch ..... *rmb* BATT
2 TAIL WHEEL ..... Verify locked

SIGNAL LIGHTS TEST. FIRE TESTS 1 & 2.

3 APU push button ..... Press
'APU ON' EUFD advisory will appear within 20 sec

PLT — AFTER STARTING APU

1 Canopy door ..... Closed
2 RLWR volume ..... As desired
3 SQL momentary switches .... *rmb* Flip forward
4 DMS > DTU page ... Select MASTER LOAD
5 DMS sweep ..... Perform
6 CMWS Control Panel ..... As desired
7 NVS MODE switch ..... As desired
8 SAI ..... *scroll down* Uncaged

CPG — AFTER STARTING APU

1 Canopy door ..... Closed
2 DMS sweep ..... Perform

IHADSS BORESIGHTING

1 [SIGHT SELECT SWITCH] — to HMD
2 WPN > BORESIGHT page > IHADSS
3 INTR LT > Adjust PRIMARY knob so that the symbol on **BRU** is visible
4 Align HMD reticle with BRU
5 Press B/S NOW to confirm position
6 Adjust PRIMARY knob as desired

DMS SWEEP

MISSION SUBSYSTEM

ASE > UTIL
- RLWR — ON
- Choose CHAFF MODE and adjust PROGRAM
- Adjust flare program (via the kneeboard)

TSD > SHOW
- Configure **SHOW**, **THRT SHOW**, and **COORD SHOW** for NAV and ATK phases

TSD > UTIL
- **TIME** — ZULU or LOCAL
- Verify **SYSTEM TIME**
- **DOPPLER** — verify ON

TSD > POINT
- Check/add **points** and **targets**

TSD > RTE
- Check/adjust **route**, set **DIR** as needed

TSD > BAM
- Set up **Priority Fire** and **No-Fire** zones

TSD > INST > UTIL
- ADF — ON

WPN > CODE > FREQ
- **Modify laser codes** as needed. For example: A — freq for self-lasing, B — wingman's freq, C — JTAC's freq.

WPN > CODE
- **Assign laser codes** as needed. For example: **LRFD** — A, **LST** — B or C.

WPN > CHAN
- **Assign laser codes to the missile channels** as needed, or leave as is: 1 — A, 2 — B, 3 — C.

WPN > UTIL PILOT
- IHADSS, PNVS — ON

WPN > UTIL CPG
- IHADSS, TADS, FLIR, and LASER — ON

WPN > MANRNG
- '800', 'A', or as desired

WPN > GUN
- Select BURST LIMIT

WPN > MSL
- If self-lasing is desired: **PRI code = LRFD code**

WPN > RKT
- Select INVENTORY type and QTY

WPN > BORESIGHT
- IHADSS PILOT CPG

AIRCRAFT SUBSYSTEM

FLT > SET
- RDR ALT — verify ON
- Set HI/LO alt alerts
- Set ALT to field elevation or set PRESS to QNH
- Set standby altimeter
- **UNITs** — as desired
- Horizon line — as desired

FUEL
- **AUX GALLONS EXT:** enter the **total** amount of fuel in **all external** fuel tanks (230 gal/tank)

UTIL
- After closing both doors (advisory extinguished): **ECS** — verify ON, temp set as desired (50—90°F)

COMMS SUBSYSTEM

COMM > MAN
- Set radio frequencies

THE SWEEP ITEMS ARE SPLIT AS BRIEFED. TYPICALLY, **THE PILOT** TAKES **COMMS AND NAVIGATION**, AND **THE CPG** TAKES **WEAPONS AND SENSORS**. THE SWEEP MAY BE FINISHED AFTER TAKEOFF.

CHECKLISTS, Pt. 2

CPG ITEMS MAY BE SKIPPED
IF CPG IS CREWED BY AI

PLT — STARTING ENGINES

1 Control sweep, trim check ..... Perform
2 ANTI-COL lights ..... WHT *(day)*, RED *(night)* or OFF *(when required)*
3 First Engine START switch ..... *rmb* START
4 At first indication of N_G increase:
POWER lever ..... IDLE
5 Once first engine is stabilized at 66–67% N_G:
Second Engine START switch ..... *rmb* START
6 At first indication of N_G increase:
POWER lever ..... IDLE
7 Once both engines are stablilized:
POWER levers ..... Advance smootly to FLY
8 Once N_P and N_R are stabilized at 101%:
APU ..... Off

BEFORE TAXI CHECK

1 TSD page ..... ENSURE THE MAP IS DISPLAYED
(EGI "ALIGNMENT" TAKES 4 MIN WITH OR WITHOUT GPS)
2 Chocks ..... Removed
3 [illegible] ON / As required
4 PARK BRAKE ..... Release
5 TAIL WHEEL ..... Unlock
6 Wheel brakes *(both seats)* ..... Check during taxi

BEFORE TAKEOFF CHECK

1 Weapons ..... Not actioned, SAFED, ORIDE off
2 TAIL WHEEL button ..... Locked, no light
3 PARK BRAKE ..... As desired
4 POWER levers ..... To FLY
5 XPNDR [illegible] As required
6 BINGO or ADF timer ..... As desired
7 Power check ..... Perform *(validate PERF page)*

LEVEL OFF CHECK

1 WAILRM-NCA ..... Perform
2 FUEL page > AUX transfer ..... As desired
3 DMS sweep *(if not already done)* ..... Finish

BEFORE LANDING CHECK

1 Weapons ..... Not actioned, SAFED, ORIDE off
2 ASE & CMWS Control Panel ..... As required
3 TAIL WHEEL ..... Locked
4 PARK BRAKE ..... Released

PLT — ENGINE SHUTDOWN (APU)

IF ENGINES ARE NOT IDLED FOR 2 MINUTES PRIOR TO SHUTDOWN, A RESTART SHOULD BE AVOIDED BETWEEN 5 MINUTES AND 4 HOURS.

1 APU button ..... Press ON
2 TAIL WHEEL / PARK BRAKE ..... Lock / Set
3 After 'APU ON' EUFD advisory is displayed:
POWER levers ..... IDLE
4 SAI ..... *lmb + scroll up* Cage
5 NVS MODE switch ..... OFF
6 ACM switch ..... *VIDEO panel* OFF
7 WPN > UTIL page > PNVS ..... OFF
8 After idling for 2 minutes:
POWER levers ..... OFF
9 Once below 50% N_R:
RTR BRK switch ..... BRK
10 Stabilator ..... *(ENG > SYS > STAB)* Set to ZERO
11 When rotor stops:
RTR BRK switch ..... OFF
12 EXT / INTR lights, Searchlight ..... OFF
13 APU button ..... OFF
14 MSTR IGN switch ..... OFF
15 Before leaving the helicopter ..... Set chocks

CPG — ENGINE SHUTDOWN (APU)

1 NVS MODE switch ..... OFF
2 TEDAC display knob ..... OFF
3 DMS > SHUTDOWN page > MASTER ..... OFF
4 INTR lights ..... OFF

(W) WEAPONS
(A) ASE
- *CMWS*
- *CHAFF*
- *RLWR*

(I) IFF
(L) LIGHTS
(R) RECORDER
(M) MPDs, ACQ

(N) NAV
(C) COMMS
(A) AIR SURV
- *C-SCOPE*

UTM 4+4 MGRS

TSD DISPLAY FORMAT:
47 00A BC 1234 5678
FOUR-DIGIT EASTING & NORTHING

KU ENTRY FORMAT:
00ABC12345678
TO CHANGE DATUM (47): TSD > UTIL

LAT/LONG DD°MM.mm

DCS F10 MAP FORMAT:
N12°34.567 E12°34.567
LLDM (LAT LONG DECIMAL MINUTES)

TSD DISPLAY FORMAT:
N12 34.56 E012 34.56
DEGREES OF LONGITUDE IS ALWAYS THREE-DIGIT (ADD LEADING ZERO). DECIMALS ARE ALWAYS TWO-DIGIT.

KU ENTRY FORMAT:
N123456E0123456

SURFACE | NAVAL | MISSILES

				nm / km
2	SA-2 Guideline (S-75)	Fan Song TR	C	18/34
3	SA-3 Goa (S-125)	Low Blow TR	C	8/15
5	SA-5 Gammon (S-200)	Square Pair TR	C	38/71
6	SA-6 Gainful (Kub)	Straight Flush STR	C	16/30
7	HQ-7	SP LN	E	8/15
	HQ-7	SP STR		
8	SA-8 Gecko (Osa)	TELAR	C	6/12
10	SA-10 Grumble (S-300)	Flap Lid TR	C	27/50
	SA-10 Big Bird (64H6E)	SR		
	SA-10 Clam Shell (5N66M)	low altitude SR		
11	SA-11 Gadfly (Buk)	TELAR	C	18/34
	SA-11 Snow Drift (9S18M1)	SR		
13	SA-13 Gopher (Strela-10M)	TELAR	F	2/ 4
15	SA-15 Gauntlet (Tor)	TELAR	C	8/15
AA	SON-9 (Fire Can)	AAA fire support TR		
GS	Gepard	SPAAA	E	3/ 6
GS	LPWS Centurion	C-RAM	E	2/ 4
GS	M163 Vulcan	SPAAA	E	2/ 4
HK	Hawk	TR	C	16/30
	Hawk	SR		
	Hawk	CWAR		
MM	Missile			
NV	Naval air defence unit			
PT	Patriot	STR	C	23/43
RA	Rapier (with or w/o optical tracker)	LN	E	6/12
	Rapier Blindfire	TR		
RO	Roland	ADS	C	6/12
	Roland	EWR		
S6	SA-19 Grison (Tunguska)	SPAAW	E	5/10
SA	NASAMS	SR	C	7/13
SR	1L13 Nebo, 55G6 Nebo, AN/FPS-117	EWR		
TR	Dog Ear (Sborka) [13-15-S6]	MCC-SR		
TR	Flat Face B (P-19) [2-3-5]	SR		
TR	Tin Shield (ST-68U) [5]	SR		
ZU	ZSU-23-4 Shilka	SPAAA	E	2/ 4
U	Würzburg-Reise (WWII Assets Pack)	EWR		

AIRBORNE

14	F-14A/B		123
15	F-15C		123
	F-15E		23
16	F-16A		123
	F-16C		23
18	F/A-18A		12
	F/A-18C		123
19	MiG-19P		2
21	MiG-21Bis		12
23	MiG-23MLD		12
~~24~~	Su-24M/MR	B	2
25	MiG-25PD		12
29	MiG-29A/G		12
	MiG-29S		123
	Su-27/33		12
	J-11A		123
30	Su-30		123
31	MiG-31		12
34	Su-34		123
~~39~~	Su-25TM	B	2
50	A-50	A	
	KJ-2000	A	
~~AV~~	AV-8B	B	2
E2	E-2D	A	
E3	E-3A	A	
F1	Mirage F-1		12
F2	Tornado GR4		2
F4	F-4E		12
F5	F-5E		2
JF	JF-17		23
M2	Mirage 2000-5		123
	Mirage 2000C		12
U	AH-64D with MMA	H	3
	Viggen		2
	H-6J	B	
	Tornado IDS		2
~~U~~	C-101CC		2

COUNTERMEASURES: C — CHAFF F — FLARES E — EVASIVE MANEUVERING

18 / 34 — SAM'S MAXIMUM ENGAGEMENT RANGE, nm / km
MEASURED WITH "EXCELLENT" AI VS. AH-64D AT 3000 ft

[THE SAM] TO WHICH THIS RADAR IS USUALLY LINKED

IN GREEN — SUPPORTING UNIT: DESTROYING IT MIGHT NOT DISABLE THE SITE

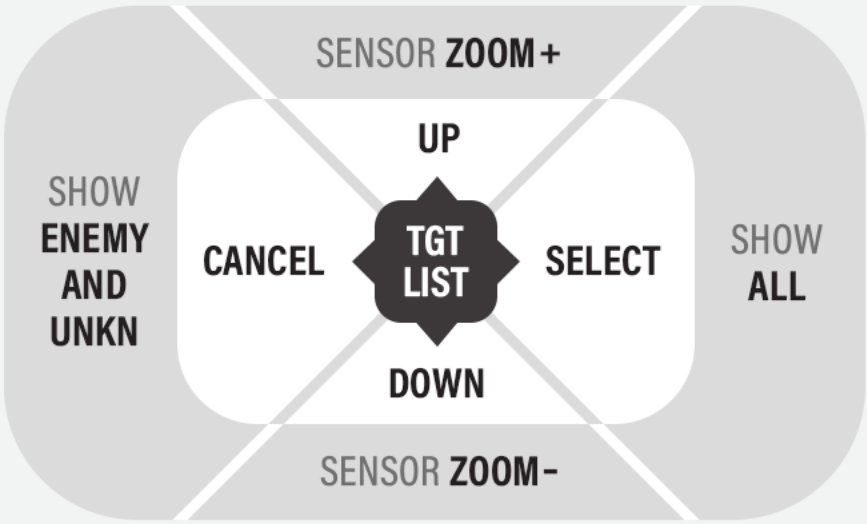
NO LETTER — FIGHTER / MULTIROLE
B — BOMBER/EW A — AWACS
IN STRIKETHROUGH — DOESN'T EMIT

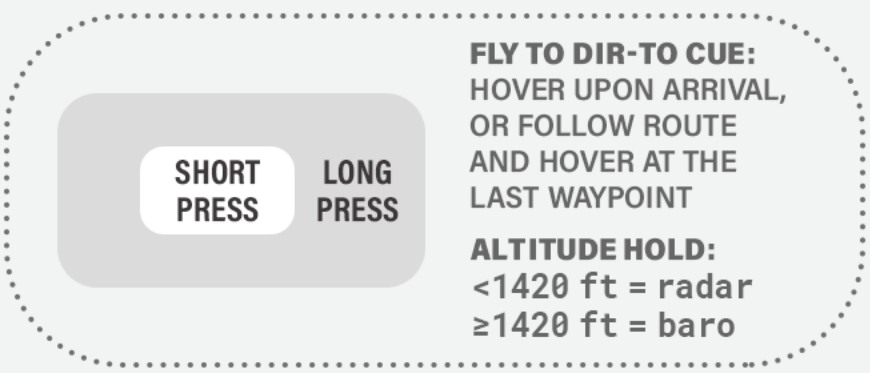
ABLE TO CARRY THESE MISSILES:
1 — SARH 2 — IR 3 — ARH

SURFACE THREAT | AIRBORNE THREAT | ACQUISITION: BOXED ICON | TRACKING: BOXED + DASHED LINE | LAUNCH: FLASHING BOX

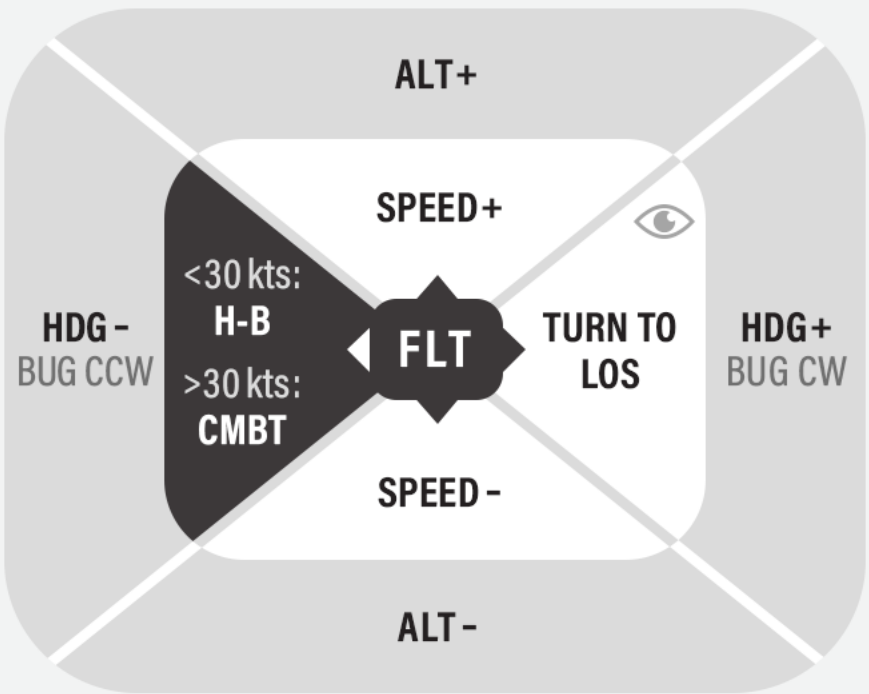
LWR THREAT | RANGING: BOXED ICON | DESIGNATING: BOXED + DASHED LINE | BEAMING: FLASHING BOX

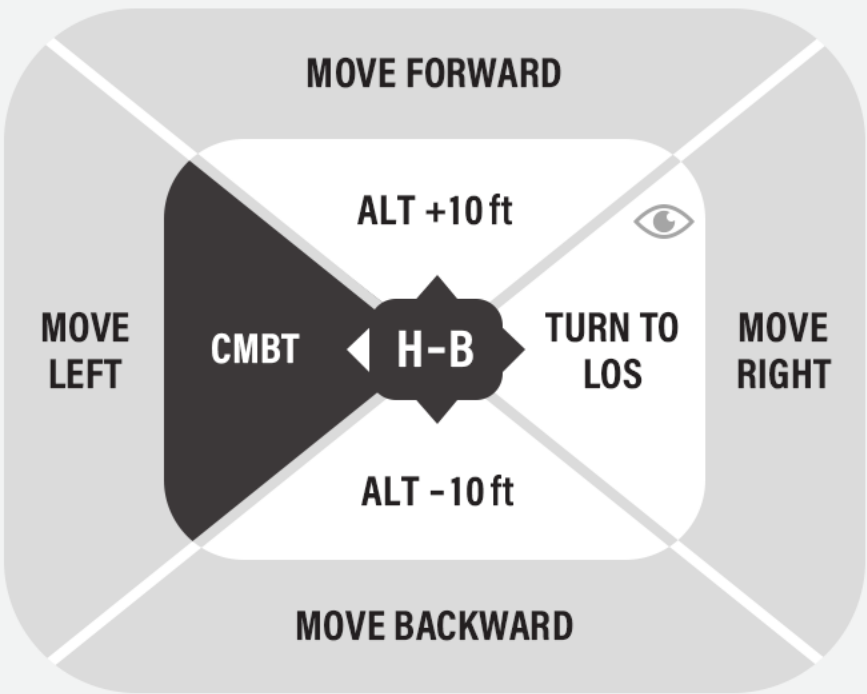
GEORGE CPG + PLAYER PILOT

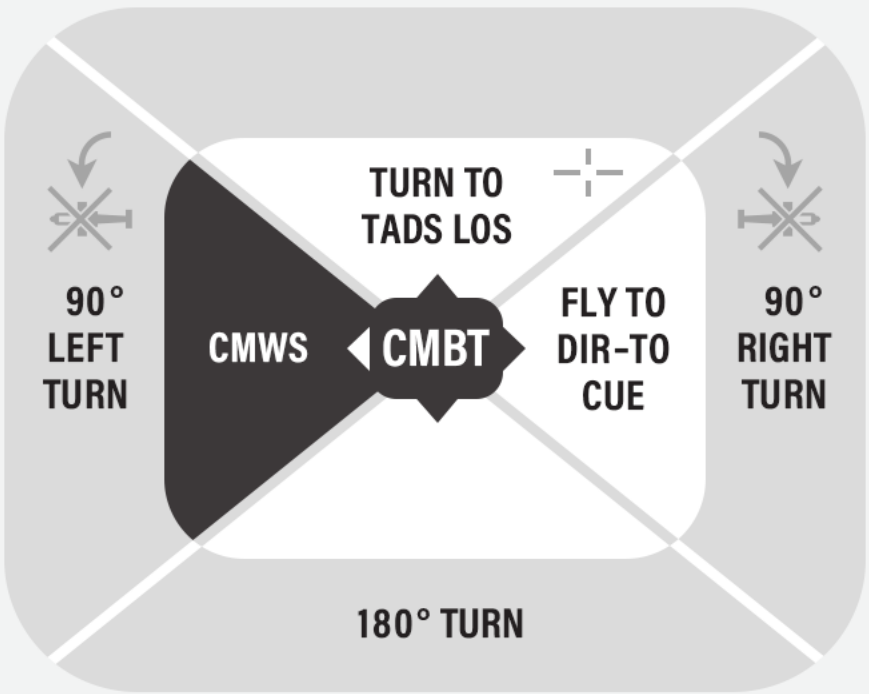


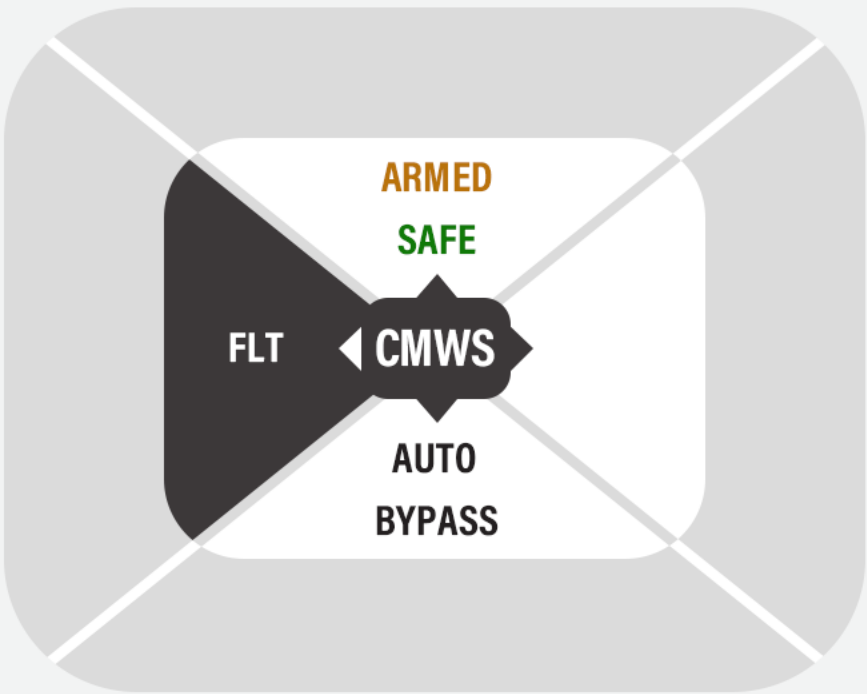


GEORGE PILOT + PLAYER CPG









RAPID REARMING

1 Prior to entering the FARP:
Weapons ..... SAFED, ORIDE OFF

2 WPN > UTIL page:
MSL, RKT, GUN ..... OFF

3 **TAIL WHEEL ..... Locked**

4 **PARK BRAKE ..... Set**

5 IDM and HF:
~~**Auto transmit ..... Disable**~~

Rearming completed:

6 WPN > UTIL page:
MSL, RKT, GUN ..... ON

7 FUEL page: *230 gal/tank*
AUX GALLONS EXT ..... Update

NM = KM ÷ 1.85 M = FT ÷ 3.28
KM = NM × 1.85 FT = M × 3.28
1 KM = 0.54 NM LBS = GAL × 6.66

GROUND SPEED REQUIRED (KTS) =
(DISTANCE ÷ MINUTES) × 60

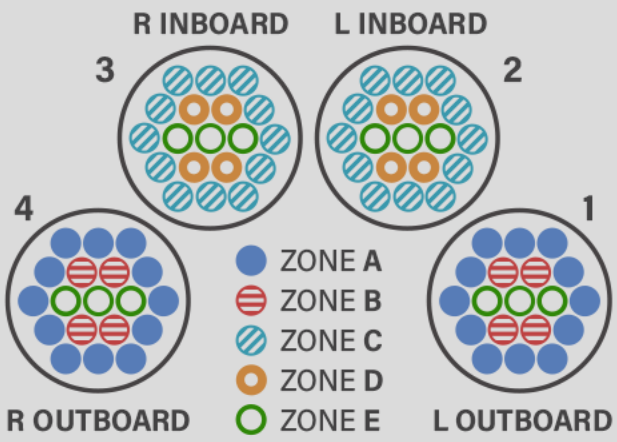
TIME OF FLIGHT (MINS) =
(DISTANCE ÷ GROUND SPEED) × 60

BINGO FUEL (LBS) =
(TIME OF FLIGHT ÷ 60) × FUEL LB/HR

OBJECTIVE TIME (MINS) =
([TOTAL FUEL - BINGO FUEL]
÷ FUEL LB/HR) × 60

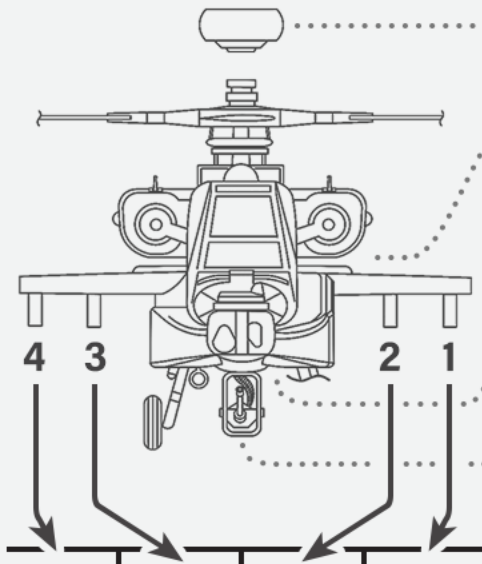
SFR (SPECIFIC FUEL RANGE) FACTOR =
GROUND SPEED ÷ FUEL LB/HR

FLIGHT RANGE (NM) =
SFR × TOTAL FUEL



EMPTY WEIGHT (NO MMA)		13074
MAX WEIGHT		23000
MAX FUEL CARRIED: 9250	FWD INTERNAL TANK	1040
	AFT INTERNAL TANK	1460
	IAFS (ROBBIE TANK)	650
	EXTERNAL TANKS	4x1525

U.S. Army **AH-64D Block 2** (2005–2010)
Lot 9.1 avionics, **T-700-GE-701C** engines



524 **Mast Mounted Assembly**
FCR/RFI

0 **30 chaff + 60 flares**
non-editable

980 **98 GAL IAFS (ROBBIE)** C AUX
Limits gun ammo to 300 rounds

M230E1 30mm gun
- **M789 HEDP** high explosive
- **M788 TP** target practice

227 **Up to 300 rounds** (with IAFS)
908 **Up to 1200 rounds** (w/o IAFS)

A/G MISSILES

144 **M299 Hellfire Launcher**

100 **AGM-114K** Hellfire SAL

108 **AGM-114L** Longbow Hellfire RF

M261 ROCKET PODS

SINGLE TYPE ····· HYDRA 70/Mk 66

523 **19x M151 HE** 6PD
10 lb warhead, soft targets

523 **19x M151 HE, M433 RC** 6RC
custom delay, soft targets

668 **19x M229 HE** 6PD
17 lb warhead, soft targets

556 **19x M257 IL** 6IL
illumination flare (3 min), deployed 3500 m from the launch point

523 **19x M274 TP-SM** 6SK
target practice

607 **19x M282 MPP** 6RC
penetrator, light armor

MIXED LOAD, INBOARD

527 **C:** 12x M257 IL 6IL
D/E: 7x M151 6PD

522 **C:** 12x M274 TP-SM 6SK
D/E: 7x M151 6PD

MIXED LOAD, OUTBOARD

527 **A/B:** 16x M151 6PD
E: 3x M257 IL 6IL

522 **A/B:** 16x M151 6PD
E: 3x M274 TP-SM 6SK

FUEL TANKS

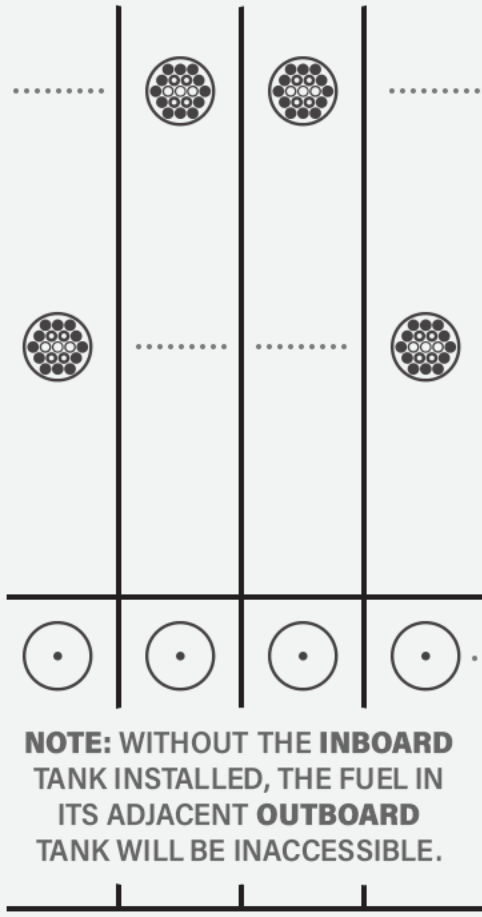
1690 **230 GAL EXT TANK** L AUX R AUX
165 lbs empty tank, 1525 lbs of fuel, no ballistic protection, no quantity probes

DCS PODS PAIRING LOGIC:

WHEN INSTALLING **OUTBOARD PODS ONLY**, THEY MUST BE THE SAME.

WHEN INSTALLING **INBOARD PODS ONLY**, THEY MUST BE THE SAME.

WHEN INSTALLING **OUTBOARD AND INBOARD PODS TOGETHER**, THEY MUST EITHER BE THE SAME, OR ALL HAVE THE EXACT SAME ROCKET (INCLUDING THE FUZE) IN THEIR **ZONE E**.



NOTE: WITHOUT THE **INBOARD** TANK INSTALLED, THE FUEL IN ITS ADJACENT **OUTBOARD** TANK WILL BE INACCESSIBLE.

RAPID (HOT) REFUELING

ENGINE 2 SHUT DOWN, OR BOTH OPERATING

1 Prior to entering the FARP:
Weapons ..... **SAFED, GND ORIDE off**

2 **TAIL WHEEL / PARK BRAKE** ..... **Locked / Set**

3 POWER levers:

A **Both engines running:**

1) **POWER lever NO 2** ..... **IDLE**

2) **FUEL page > XFER** ..... **OFF**

B **Single engine running:**

1) **POWER lever NO 2** ..... **IDLE for 2 minutes, then OFF**

4 [illegible]

5 **ANTI-COL switch** ..... **OFF**

Refueling completed:

6 [illegible]

7 **ANTI-COL switch** ..... **As desired**

8 **FUEL page > AUX GALLONS EXT** ..... **Update**

NON-SANDY ENVIRONMENT

9 (Bubble Burn) **Apply collective until 60% torque is reached or aircraft is light on wheels. Maintain power settings for 60 sec.**

10 **Collective** ..... **Reduce to minimum torque**

11 POWER levers:

A **Both engines running:**

1) **POWER lever NO 2** ..... **To FLY**

2) **FUEL page > XFER** ..... **AUTO**

B **Single engine running** (cross-bleed start):

1) **Collective** ..... **Increase to attain 95% N_G 2**

2) **Engine 2** ..... **Start**

3) **Collective** ..... **Reduce to flat pitch after starter dropout**

4) **POWER lever NO 2** ..... **To FLY**

RAPID (WARM) REFUELING

BOTH ENGINES SHUT DOWN AND APU ON

1 Prior to entering the FARP:
Weapons ..... **SAFED, GND ORIDE off**

2 **TAIL WHEEL / PARK BRAKE** ..... **Locked / Set**

3 **APU** ..... **Start** *(wait for 'APU ON' on EUFD)*

4 **POWER levers** ..... **IDLE for 2 minutes, then OFF**

5 [illegible]

6 Once below 50% N_R:
RTR BRK switch ..... **BRK until rotor stops, then OFF**

7 **ANTI-COL switch** ..... **OFF**

Refueling completed:

8 [illegible]

9 **FUEL page > AUX GALLONS EXT** ..... **Update**

10 **Perform STARTING ENGINES procedure** Pt.2

SANDY ENVIRONMENT

9 POWER levers:

A **Both engines running:**

1) **POWER lever NO 2** ..... **To FLY**

2) **FUEL page > XFER** ..... **AUTO**

B **Single engine running:**

1) **APU** ..... **Start**

2) **Engine 2** ..... **Start**

3) **POWER lever NO 2** ..... **To FLY**

10 **FUEL page > CROSSFEED** ..... **Switch:**

1) To **FWD**, wait 60 sec.

2) To **NORM**, wait 30 sec.

3) To **AFT**, wait 60 sec

4) To **NORM**, wait 30 sec.

FUEL TRANSFER

WHEN TO BEGIN FUEL TRANSFER

FROM C AUX:
Typically, after the second 30-minutes BINGO alert (FUEL > CHECK), or after the TOT drops below 2500 lbs.

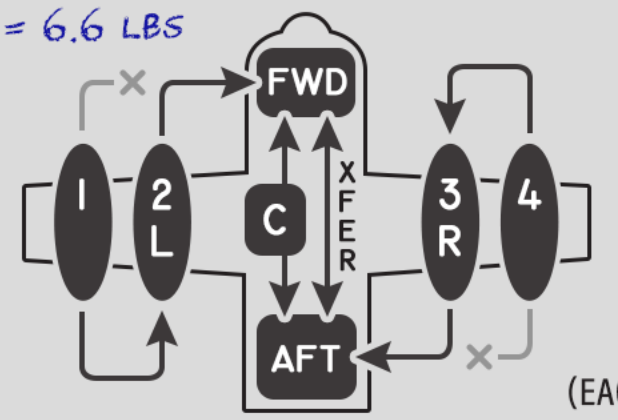
FROM EXT AUX:
Typically, after takeoff.

FUEL TRANSFER PRIORITY:

1. FWD/AFT (XFER)
2. EXT > FWD/AFT
3. C AUX > FWD/AFT

Meaning, transfer from the C AUX will not start until the FWD/AFT/EXT transfer is completed or suspended.

1 GAL = 6.6 LBS



FWD **1040** lbs 156 gal

AFT **1460** lbs 220 gal

C AUX (ROBBIE) **650** lbs 98 gal

EXT AUX (EACH TANK) **1525** lbs 230 gal

NOTE: THE **OUTBOARD** EXT TANKS **1** AND **4** CAN TRANSFER FUEL **ONLY** INTO THEIR RESPECTIVE **INBOARD** EXT TANKS, WHICH THEN FEED THE INTERNAL FUEL TANKS. MEANING, **1** WITHOUT **2** AND **4** WITHOUT **3** ARE DEAD WEIGHT.

TSD SYMBOLS: WPTHZ, CTRLM

WP | HZ

WAYPOINTS AND HAZARDS 01-50

CC	COMMS CHECK POINT	CC
LZ	LANDING ZONE	LZ
PP	PASSAGE POINT	PP
RP	RELEASE POINT	RP
SP	START POINT	SP
	WAYPOINT	*WP
	TOWER OVER 1000' AGL	TO
	TOWER UNDER 1000' AGL	*TU
	WIRES: POWER TRANSM. LINES	WL
	WIRES: PHONE AND ELECTRIC	WS

*CURSOR DROP DEFAULTS TO THIS SYMBOL

UNDERLINED ITEMS ARE ABLE TO DISPLAY ICON TOGETHER WITH FREE TEXT

CM

CONTROL MEASURES 51-99 POS 93-99

ACP	AIR CONTROL POINT	AP
	AIRFIELD GENERAL	AG
	AIRFIELD INSTRUMENT	AI
	LIGHTED AIRPORT	AL
	ARTILLERY FIRING POINT 1	F1
	ARTILLERY FIRING POINT 2	F2
AA	ASSEMBLY AREA	AA
II	BATTALION	BN
BP	BATTLE POSITION	BP
	BRIDGE OR GAP	BR
X	BRIGADE	BD
CP	CHECKPOINT	*CP
I	COMPANY	CO
XXX	CORPS	CR
XX	DIVISION	DI
	FARP: FUEL ONLY	FF
	FARP: AMMO ONLY	FM
	FARP: FUEL AND AMMO	FC
FAA	FORWARD ASSEMBLY AREA	FA
	GRND LIGHTS/ SMALL TOWN	GL
HA	HOLDING AREA	HA
	IDM SUBSCRIBER	ID
	NDB	BE
	NUC/BIO/CHEM CONTAM. AREA	NB
	RAILHEAD: POINT	RH
III	REGIMENT OR GROUP	GP
XXXX	US ARMY	US
	FRIENDLY AIR DEFENSE	AD
	FRIENDLY AIR ASSAULT	AS
	FRIENDLY AIR CAVALRY	AV
	FRIENDLY AIRBORNE	AB
	FRIENDLY ARMOR	AM
	FRIENDLY AR-MORED CAVALRY	CA
	FRIENDLY AVIATION MAINT.	MA
	FRIENDLY CHEMICAL	CF
DXC	FRIENDLY DE-CONTAMINATION	DF
E	FRIENDLY ENGINEERS	EN
EW	FRIENDLY ELECT-RONIC WARFARE	FW
	FRIENDLY FIELD ARTILLERY	FL
	FRIENDLY FIXED WING	WF
	FRIENDLY ATTACK HELI	AH
	FRIENDLY GEN. ARMY HELI	FG
	FRIENDLY HOSPITAL	HO
	FRIENDLY INFANTRY	FI
	FRIENDLY MECH. INFANTRY	MI
	FRIENDLY MEDICAL	MD
TOC	FRIENDLY TAC OPS CENTER	TF
	FRIENDLY UNIT	FU
	ENEMY AIR DEFENSE	ED
	ENEMY AIR ASSAULT	ES
	ENEMY AIR CAVALRY	EV
	ENEMY AIRBORNE	EB
	ENEMY ARMOR	AE
	ENEMY AR-MORED CAVALRY	EC
	ENEMY AVIATION MAINT.	ME
	ENEMY CHEMICAL	CE
DXC	ENEMY DE-CONTAMINATION	DE
E	ENEMY ENGINEERS	EE
EW	ENEMY ELECT-RONIC WARFARE	WR
	ENEMY FIELD ARTILLERY	EF
	ENEMY FIXED WING	WE
	ENEMY ATTACK HELI	EK
	ENEMY GEN. ARMY HELI	HG
	ENEMY HOSPITAL	EH
	ENEMY INFANTRY	EI
	ENEMY MECH. INFANTRY	EM
	ENEMY MEDICAL	EX
TOC	ENEMY TAC OPS CENTER	ET
	ENEMY UNIT	EU

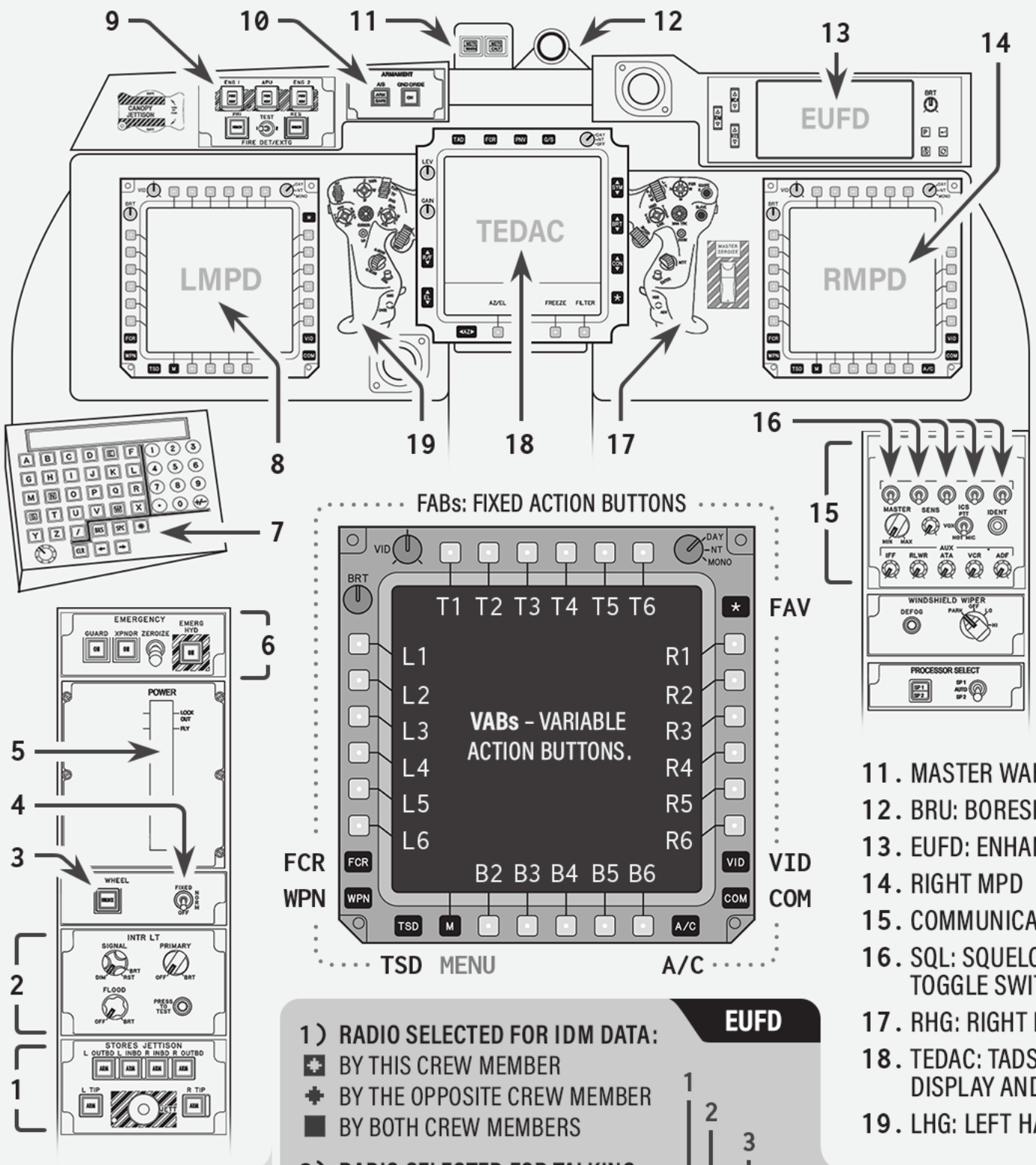
TSD SYMBOLS: TGT / THRT

TG

TARGETS AND THREATS T01–T50

NOT TO BE CONFUSED WITH 'LIVE' ASE THREATS:

T	**TARGET POINT** CURSOR DROP DEFAULTS TO THIS SYMBOL	TG
AD	**FRIENDLY AIR DEFENSE UNIT**	AD
	GENERIC AIR DEFENSE UNIT	GU
U	**UNKNOWN AIR DEFENSE UNIT**	U
S6	2S6 / SA-19 AIR DEFENSE UNIT	S6
AX	AMX-13 AIR DEFENSE GUN	AX
AA	AIR DEFENSE GUN	AA
AS	ASPIDE SAM SYSTEM	AS
	BATTLEFIELD SURVEILLANCE RADAR	SR
BH	BLOODHOUND SAM SYSTEM	BH
BP	BLOWPIPE SAM SYSTEM	BP
C2	CSA-2/1/X SAM SYSTEM	C2
CH	CHAPPARAL SAM SYSTEM	CH
CT	CROTALE SAM SYSTEM	CT
GP	GEPARD AIR DEFENSE GUN	GP
G1	GROWTH 1	G1
G2	GROWTH 2	G2
G3	GROWTH 3	G3
G4	GROWTH 4	G4
HK	HAWK SAM SYSTEM	HK
JA	JAVELIN SAM SYSTEM	JA
83	M1983 AIR DEFENSE GUN	83
MK	MARKSMAN AIR DEFENSE GUN	MK
NV	NAVAL AIR DEFENSE SYSTEM	NV
PT	PATRIOT SAM SYSTEM	PT
70	RBS-70 SAM SYSTEM	70
RA	RAPIER SAM SYSTEM	RA
RE	REDEYE SAM SYSTEM	RE
RO	ROLAND SAM SYSTEM	RO
1	SA-1 SAM SYSTEM	1
2	SA-2 SAM SYSTEM	2
3	SA-3 SAM SYSTEM	3
4	SA-4 SAM SYSTEM	4
5	SA-5 SAM SYSTEM	5
6	SA-6 SAM SYSTEM	6
7	SA-7 SAM SYSTEM	7
8	SA-8 SAM SYSTEM	8
9	SA-9 SAM SYSTEM	9
10	SA-10 SAM SYSTEM	10
11	SA-11 SAM SYSTEM	11
12	SA-12 SAM SYSTEM	12
13	SA-13 SAM SYSTEM	13
14	SA-14 SAM SYSTEM	14
15	SA-15 SAM SYSTEM	15
16	SA-16 SAM SYSTEM	16
17	SA-17 SAM SYSTEM	17
SM	SAMP SAM SYSTEM	SM
SC	SATCP SAM SYSTEM	SC
SB	SABRE AIR DEFENSE GUN	SB
GS	SELF-PROPELLED AIR DEFENSE GUN	GS
SP	SELF-PROPELLED SAM SYSTEM	SP
SH	SHAHINE / R440 SAM SYSTEM	SH
SD	SPADA SAM SYSTEM	SD
SS	STARSTREAK SAM SYSTEM	SS
ST	STINGER SAM SYSTEM	ST
TR	TARGET ACQUISITION RADAR	TR
TC	TIGERCAT SAM SYSTEM	TC
GT	TOWED AIR DEFENSE GUN	GT
SA	TOWED SAM SYSTEM	SA
VU	VULCAN AIR DEFENSE GUN	VU
ZU	ZSU-23-4 AIR DEFENSE GUN	ZU



LEFT CONSOLE

1. STORES JETTISON PANEL
2. INTERIOR LIGHTING PANEL (PRIMARY, SIGNAL LIGHTS TEST)
3. TAIL WHEEL LOCK
4. NVS MODE SWITCH
5. POWER LEVERS
6. EMERGENCY PANEL
7. KU: KEYBOARD UNIT

FRONT PANEL AND RIGHT CONSOLE

8. LEFT MPD (MULTI-PURPOSE DISPLAY)
9. FIRE DETECTION / EXTINGUISHING PANEL (FIRE TESTS)
10. ARMAMENT PANEL (A/S, GND ORIDE)
11. MASTER WARNING / MASTER CAUTION
12. BRU: BORESIGHT RETICLE UNIT
13. EUFD: ENHANCED UP-FRONT DISPLAY
14. RIGHT MPD
15. COMMUNICATIONS PANEL
16. SQL: SQUELCH MOMENTARY TOGGLE SWITCHES
17. RHG: RIGHT HANDGRIP
18. TEDAC: TADS ELECTRONIC DISPLAY AND CONTROL
19. LHG: LEFT HANDGRIP

EUFD

1) **RADIO SELECTED FOR IDM DATA:**
- BY THIS CREW MEMBER
- BY THE OPPOSITE CREW MEMBER
- BY BOTH CREW MEMBERS

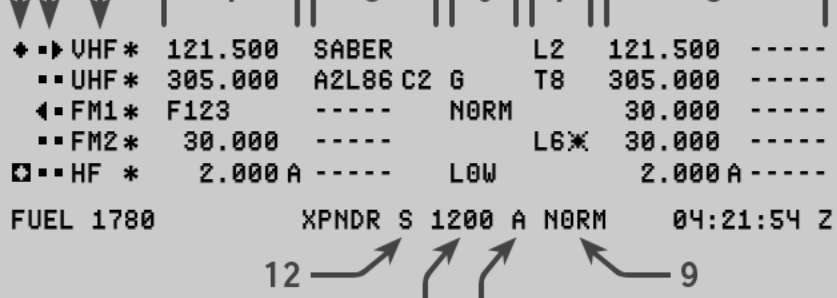
2) **RADIO SELECTED FOR TALKING:**
- BY THIS CREW MEMBER
- BY THE OPPOSITE CREW MEMBER
- BY NEITHER (LISTENING-ONLY)

3) RADIO & ITS ✱SQUELCH STATUS

4) **ACTIVE FREQUENCY AND MODE:**
- F FREQUENCY HOPPING
- U UPPER SIDEBAND
- L LOWER SIDEBAND
- C CONTINUOUS WAVE
- A AMPLITUDE MODULATION EQUIVALENT

5) CALLSIGN AND CIPHER STATUS

6) GUARD AND IFM POWER STATUSES



7) **IDM NET STATUS:**
- I INTERNET
- F FIRE SUPPORT
- L LONGBOW
- T TACFIRE
- ✱ CONNECTED TO TAC INTERNET

8) STANDBY FREQ
9) XPNDR STATUS
10) MODE 4 CODE
11) MODE 3/A CODE
12) MODE S ENABLED

RADIOS

ADF AN/ARN-149

100 - 2199 kHz
0.1 - 2.199 MHz

CAN DISPLAY BEARING TO ANY DCS 'RADIO TRANSMISSION' TRIGGER THAT IS BROADCASTING WITHIN THE ABOVE RANGE

IDM MD-1295/A

VHF-AM ARC-186 (IDM)

116 - 151.975 MHz
TWO-WAY, NON-SECURE
108 - 115.975 MHz
RECEIVE-ONLY RANGE

UHF-AM ARC-164 (IDM)

225 - 399.975 MHz
DEDICATED GUARD RECEIVER (243 MHz), HAVEQUICK 2, KY-58 CIPHER

VHF-FM 2x ARC-201D (IDM)

FM-1 30 - 87.975 MHz
IFM AMPLIFIER, SINCGARS
FM-2 30 - 87.975 MHz
SINCGARS

HF ARC-220

2 - 29.9999 MHz
EMBEDDED MODEM, KY-100 CIPHER

XPNDR APX-118

MODES 1, 2, 3/A, 4, C, and S

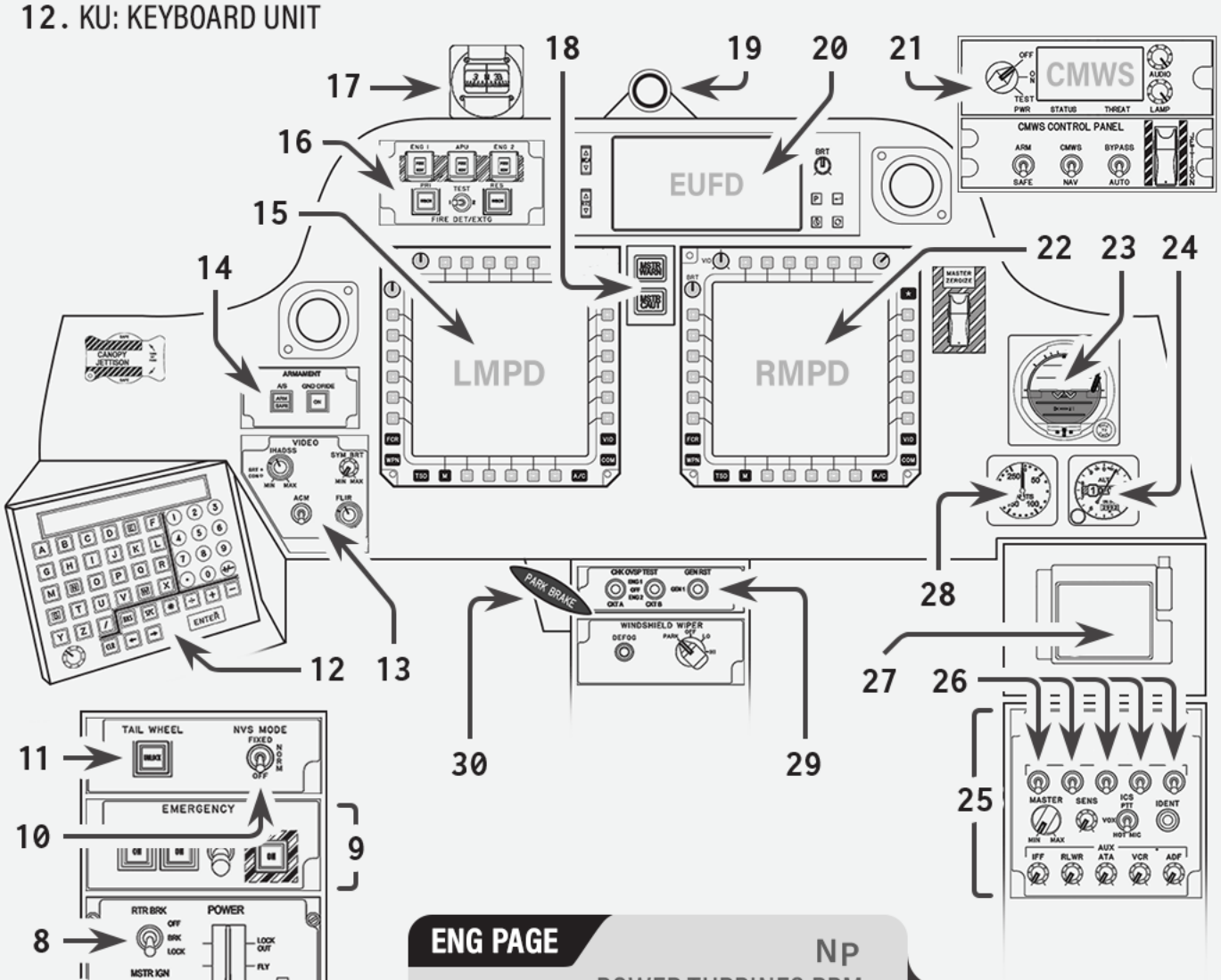
INTERCOM

LEFT CONSOLE

1. FAT: FREE AIR TEMPERATURE GAGE
2. EXTERIOR / INTERIOR LIGHTING PANEL (PRIMARY, ANTI-COL, SIGNAL LIGHTS TEST)
3. STORES JETTISON PANEL
4. ENGINE START MOMENTARY TOGGLE SWITCHES
5. APU START / STOP
6. POWER LEVERS
7. MSTR IGN SWITCH
8. RTR BRK SWITCH
9. EMERGENCY PANEL
10. NVS MODE SWITCH
11. TAIL WHEEL LOCK
12. KU: KEYBOARD UNIT

FRONT PANEL AND RIGHT CONSOLE

13. VIDEO PANEL (ACM)
14. ARMAMENT PANEL (A/S, GND ORIDE)
15. LEFT MPD (MULTI-PURPOSE DISPLAY)
16. FIRE DETECTION / EXTINGUISHING PANEL (FIRE TESTS)
17. STANDBY COMPASS
18. MASTER WARNING / MASTER CAUTION
19. BRU: BORESIGHT RETICLE UNIT
20. EUFD: ENHANCED UP-FRONT DISPLAY
21. CMWS: AN/AAR-57 COMMON MISSILE WARNING SYSTEM
22. RIGHT MPD
23. STANDBY ATTITUDE INDICATOR
24. STANDBY ALTIMETER
25. COMMUNICATIONS PANEL
26. SQL: SQUELCH MOMENTARY TOGGLE SWITCHES
27. DTU: DATA TRANSFER UNIT
28. STANDBY AIRSPEED INDICATOR
29. GEN RST SWITCH
30. PARK BRAKE HANDLE



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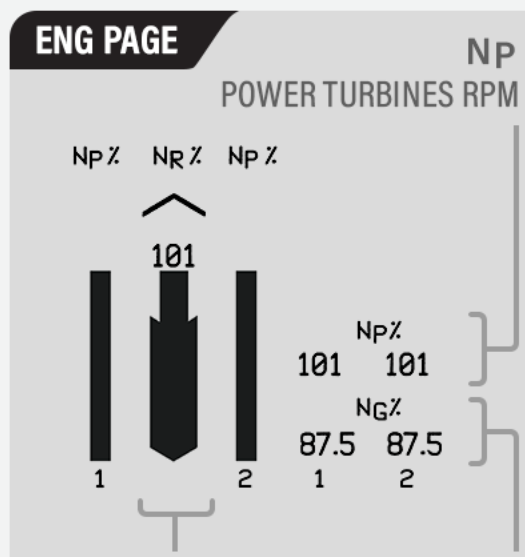

BEFORE TAKEOFF:

22 [TSD] > VERIFY THE ACTUAL MAP IS DISPLAYED

30 RELEASE

AFTER TAKEOFF:

15 [M] > [L3 ASE] > [T1 CHAFF ARM]
THEN:
[T6 UTIL] > [R4 RLWR] (SOLID DOT)

QUICKSTART

30 SET (HANDLE OUT)

7 TO **BATT**

5 APU ON

20 WAIT 20 SEC FOR 'APU ON'

CLOSE THE CANOPY (LCTRL + C)

25 **RLWR** TO MAX

26 FLIP FORWARD ALL **SQL** SWITCHES

21 PWR ON, ARM, CMWS

15 [M] > [B2 ENG] AND MONITOR **NG**

4 **NO.1** TO **START** AND WAIT 3-5 SEC

6 **NO.1** TO **IDLE** (RALT + HOME)

WAIT 60 SEC UNTIL **NG1** IS AT 66-67%

4 **NO.2** TO **START** AND WAIT 3-5 SEC

6 **NO.2** TO **IDLE** (RSHIFT + HOME)

WAIT 50 SEC UNTIL **NG2** IS AT 66-67%

6 **BOTH** *SMOOTHLY* TO **FLY** (NUMPAD +)

WAIT UNTIL **NR** AND **NP** ARE AT 101%

5 APU OFF

PERFORM IHADSS BORESIGHTING:

15 [WPN] > [L5 BORESIGHT] > [L4 IHADSS]

2 **PRIMARY** KNOB TO **BRT**

19 MOVE THE CAMERA TO ALIGN HMD RETICLE WITH BRU:

15 [L6 B/S NOW] TO CONFIRM