

THE BACKSEATERS MAGAZINE

A CHECKLIST FOR THE F-14 RADAR INTERCEPT OFFICER



F-14 RIO START UP CHECKLIST

L: Left, R: Right, C: Center, E: Elbow, H: Hand, U: Up, D: Down M: Mid

LE	ICS: ON	
ICS	COMMS CHECK	
TO PILOT	REQUEST GRND PWR & AIR	
TO PILOT	CALLOUT CLOSE CANOPY	
CANOPY	CLOSE	
LE-D	OXYGEN: ON	
C-D	IR/TV: STBY + (RDR) WCS: STBY	
SEAT	EJECTION SEAT: ARM	
LE-M	LIQ COOLING: ON	
LH-U	STBY ALT IND: UNCAGE	
LH-U	ALTIMETER: RESET	
RE-M	DATALINK: ON + SET FREQ	
.....	START ALIGNMENT	SEE: 2
LE-D	U/VHF MODE selector: T/R G	
LE-D	UHF: SET FREQ TOWER/GAURD	
RE-U	RWR: ON	
RE-U	DECM: STBY	
RE-D	COUNTERMEASURS PWR/MODE: ON	
RE-D	PROGRAM CHAFF/FLARE	FOR PGRM SEE: 3
.....	WAIT FOR FINE ALIGN	
TO PILOT	CALLOUT: FINE ALIGNMENT RDY FOR TAXI	
C-M	NAV: INS	
C-D	TID MODE: A/C STAB	
LE-U	SET HOMEPLATE + WAYPOINTS	SEE: 3A
RH-U	RDR MODE: PD SEARCH	
.....	FINAL TAKEOFF CHECK	
IF CARRIER	SET DATALINK: TAC	
RH	CHECK FUEL	
TO PILOT	CALLOUT: CHECK WINGS CHECK FLAPS	
TO PILOT	CALLOUT: RDY FOR TAKEOFF	
.....	POST TAKEOFF	
C-D	(RDR) – WCS: XMT (ON)	
C-D	(RDR) – RANGE: AS REQUIRED	
C-D	IR/TV: STBY	
C-M	WAYPOINT: AS REQUIRED	
LE-M	IR/TV: ON	

F-14 ALIGNMENT

A. ENTERING DATA ON THE COMPUTER PANEL

Example: LAT: N 42°14'6 LONG: E 42°02'2 / ELEV: 49FT / MAG VAR +6.1

NAV: OWN A/C

(1) LAT / N+E / 4 2 1 4 6 / ENTER / CLEAR

(6) LONG / N+E / 4 2 0 2 2 / ENTER / CLEAR

(4) ALT / N+E / 4 9 / ENTER / CLEAR

----- GROUND -----

ALIGNMENT

LE-U COMPUTER SELECT: NAV
 LE-U COMPUTER PANEL: OWN A/C
 LE-U KEYBOARD: ENTER LAT LONG SEE: 2-A
 LE-U KEYBOARD: ENTER ALT SEE: 2-A
 C-M NAV MODE: SET GND
CONTINUE CHECKLIST PAGE 1

----- CARRIER-----

ALIGNMENT

LE-U COMPUTER SELECT: NAV
 LE-M DATALINK MODE: CAINS: WAYPT
 C-M NAV MODE: SET CVA
CONTINUE CHECKLIST PAGE 1

----- REINITIATION OF -----

ALIGNMENT

F-14 RIO ATTACK CHECKLIST

.....FENCE IN

TO PILOT CALLOUT: FENCING IN
 C-D TID MODE: A/C ATTK
 TO PILOT REQUEST MASTER ARM
 RE-U DECM: REC
 C-D CHECK (RDR) – WCS: XMT (ON)
 TO PILOT CALLOUT: FENCED IN
 RH CHECK FUEL

F-14 RIO COUNTERMEASURE PROGRAMMING

B. ENTERING DATA ON THE COUNTERMEASURE PANEL

Example: to be added

F-14 RIO RADAR REFERENCE

Mode		Function	Weapons capability	Detection-range
Pulse	Pulse Search	Medium range search and detection, secondary air-to-ground.	Boresight missiles.	60nm
	Pulse STT	Short to medium range single target track and missile launch.	Gun and missiles, AIM-7 in CW and AIM-54 in active launch.	50nm
Pulse doppler	Pulse Doppler Search	Long range search and detection.	Boresight missiles.	110nm
	Range While Search	Long range search, detection and ranging.		90nm
	Track While Search	Long range search, detection, multiple target track and missile guidance.	AIM-54, multiple target capability.	90nm
	Pulse Doppler STT	Long range single target track and missile guidance.	Gun and all missiles. AIM-7 in PD and CW and AIM-54 in PD and active.	90nm

RADAR CONE LIMITS

RANGE

	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
1BAR	0.6	1.2	1.8	2.4	3.0	3.7	4.3	4.9	5.5	6.1	6.7	7.3	7.9	8.5	9.1	9.8	10.4	11.0	11.6	12.2
2BAR	1.0	1.9	2.9	3.8	4.8	5.7	6.7	7.6	8.6	9.5	10.5	11.4	12.4	13.4	14.3	15.3	16.2	17.2	18.1	19.1
4BAR	1.7	3.3	5.0	6.7	8.3	10.0	11.7	13.3	15.0	16.7	18.4	20.0	21.7	23.4	25.0	26.7	28.4	30.0	31.7	33.4
8BAR	3.0	6.1	9.1	12.2	15.2	18.2	21.3	24.3	27.3	30.4	33.4	36.5	39.5	42.5	45.6	48.6	51.7	54.7	57.7	60.8

± ELEVATION x1000 ft

ANTENNA ELEVATION

Δ EL	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
1000	1.9°	0.9°	0.6°	0.5°	0.4°	0.3°	0.3°	0.2°	0.2°	0.2°	0.2°	0.2°	0.1°	0.1°	0.1°	0.1°	0.1°	0.1°	0.1°	0.1°
2000	3.8°	1.9°	1.3°	0.9°	0.8°	0.6°	0.5°	0.5°	0.4°	0.4°	0.3°	0.3°	0.3°	0.3°	0.3°	0.2°	0.2°	0.2°	0.2°	0.2°
3000	5.6°	2.8°	1.9°	1.4°	1.1°	0.9°	0.8°	0.7°	0.6°	0.6°	0.5°	0.5°	0.4°	0.4°	0.4°	0.4°	0.3°	0.3°	0.3°	0.3°
4000	7.5°	3.8°	2.5°	1.9°	1.5°	1.3°	1.1°	0.9°	0.8°	0.8°	0.7°	0.6°	0.6°	0.5°	0.5°	0.5°	0.4°	0.4°	0.4°	0.4°
5000	9.3°	4.7°	3.1°	2.4°	1.9°	1.6°	1.3°	1.2°	1.0°	0.9°	0.9°	0.8°	0.7°	0.7°	0.6°	0.6°	0.6°	0.5°	0.5°	0.5°
6000	11.2°	5.6°	3.8°	2.8°	2.3°	1.9°	1.6°	1.4°	1.3°	1.1°	1.0°	0.9°	0.9°	0.8°	0.8°	0.7°	0.7°	0.6°	0.6°	0.6°
7500	13.9°	7.0°	4.7°	3.5°	2.8°	2.4°	2.0°	1.8°	1.6°	1.4°	1.3°	1.2°	1.1°	1.0°	0.9°	0.9°	0.8°	0.8°	0.7°	0.7°
10000	18.2°	9.3°	6.3°	4.7°	3.8°	3.1°	2.7°	2.4°	2.1°	1.9°	1.7°	1.6°	1.5°	1.3°	1.3°	1.2°	1.1°	1.0°	1.0°	0.9°
12500	22.4°	11.6°	7.8°	5.9°	4.7°	3.9°	3.4°	2.9°	2.6°	2.4°	2.1°	2.0°	1.8°	1.7°	1.6°	1.5°	1.4°	1.3°	1.2°	1.2°
15000	26.3°	13.9°	9.3°	7.0°	5.6°	4.7°	4.0°	3.5°	3.1°	2.8°	2.6°	2.4°	2.2°	2.0°	1.9°	1.8°	1.7°	1.6°	1.5°	1.4°
17500	29.9°	16.1°	10.9°	8.2°	6.6°	5.5°	4.7°	4.1°	3.7°	3.3°	3.0°	2.7°	2.5°	2.4°	2.2°	2.1°	1.9°	1.8°	1.7°	1.6°
20000	33.4°	18.2°	12.4°	9.3°	7.5°	6.3°	5.4°	4.7°	4.2°	3.8°	3.4°	3.1°	2.9°	2.7°	2.5°	2.4°	2.2°	2.1°	2.0°	1.9°
25000	39.5°	22.4°	15.3°	11.6°	9.3°	7.8°	6.7°	5.9°	5.2°	4.7°	4.3°	3.9°	3.6°	3.4°	3.1°	2.9°	2.8°	2.6°	2.5°	2.4°
30000	44.6°	26.3°	18.2°	13.9°	11.2°	9.3°	8.0°	7.0°	6.3°	5.6°	5.1°	4.7°	4.3°	4.0°	3.8°	3.5°	3.3°	3.1°	3.0°	2.8°
35000	49.0°	29.9°	21.0°	16.1°	13.0°	10.9°	9.3°	8.2°	7.3°	6.6°	6.0°	5.5°	5.1°	4.7°	4.4°	4.1°	3.9°	3.7°	3.5°	3.3°

F-14 RIO RWR THREAT REFERENCE 1/2

Threat symbol	Platform/Sensor	Special Tone	Threat symbol	Platform/Sensor	Special Tone
AB	Arleigh Burke		39	Su-25TM (Su-39)	Yes
AK	Admiral Kuznetsov		AN	AN-26B AN-30M	
GR	Grisha 5 (Albatros)		AP	AH-64D	
GZ	DDG-168 Guangzhou		B1	B-1B	
HP	Oliver Hazard Perry		BE	Tu-95 and Tu-142M	
HU	DDG-171 Haikou		BF	Tu-22M3	
KK	Krivak 3 (Rezky)		BJ	Tu-160	
KV	Kirov (Pyotr Velikiy)		E2	E-2D	
N	Ships navigational radar (civilian ships, submarines)		E3	E-3C	
			F4	F-4E	
NE	Neustrashimy		F5	F-5E	
NZ	Nimitz (Vinson, Stennis)		HX	Ka-27	
SV	Slava (Moscow)		IL	IL-76MD IL-78M	
TC	Ticonderoga		KC	KC-135	
TT	Tarantul 3 (Molniya)		KJ	KJ-2000	

F-14 RIO RWR THREAT REFERENCE 2/2

Threat symbol	Platform/Sensor	Special Tone	Threat symbol	Platform/Sensor	Special Tone
Ships (Symbology enhanced by being enclosed by an enlarged U symbol.)			Ships (Symbology enhanced by being enclosed by an enlarged U symbol.)		
TW	Tarawa		M2	Mirage 2000-C and 2000-5	Yes
YI	FFG-538 Yantai		S3	S-3B	
Aircraft			SH	SH-60B	
13	C-130		Air Defense		
17	C-17A		2	S-75 TR SNR (Fan Song)	
37	AJS-37		3	S-125 TR SNR-125 (SA-3/Low Blow)	
50	A-50		6	Kub SA-6	
52	B-52		8	OSA (SA-8)	
14	F-14A/B	Yes	10	S-300PS 30N6 TR (SA-10)	
15	F-15C/E	Yes	11	Buk (SA-11)	
16	F-16C	Yes	12	S-300V	
18	F/A-18C	Yes	15	Tor 9A331 (SA-15)	
19	Mig-19		19	Tunguska 2C6M (SA-19)	Yes
21	Mig-21bis		A	Gepard, M-163 Vulcan and ZSU-23-4 Shilka	
23	Mig-23MLD		BB	S-300PS 64H6E SR (SA-10/Big Bird)	
24	Su-24M/MR		CS	S-300PS 5N66M SR (SA-10/Clam Shell)	
25	Mig-25PD		DE	Sborka (Dog Ear)	
29	Su-27, Su-33, Mig-29A/G/S and J-11A	Yes	FF	S-125 P-19 SR (SA-3/Flat Face)	
30	Su-30	Yes	GR	Roland SR	
31	Mig-31		HA	Hawk SR	
34	Su-34	Yes	HK	Hawk TR	