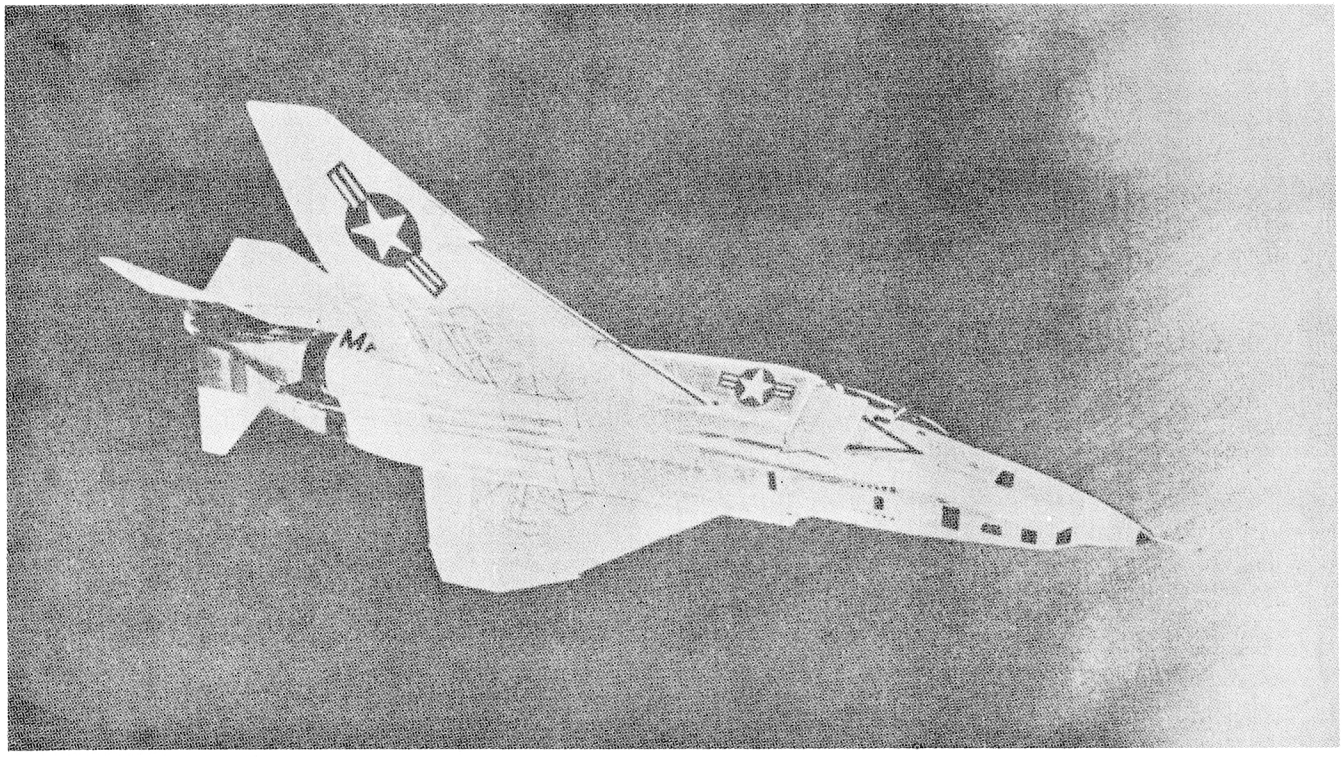

STANDARD AIRCRAFT CHARACTERISTICS

RF-4B PHANTOM II

McDONNELL

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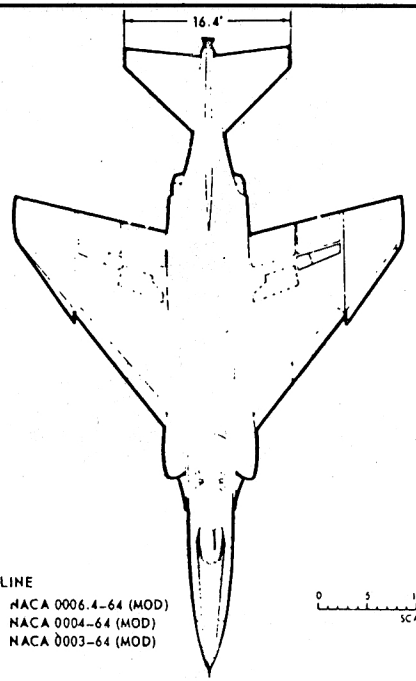
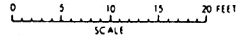
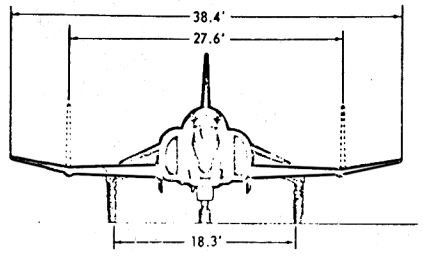
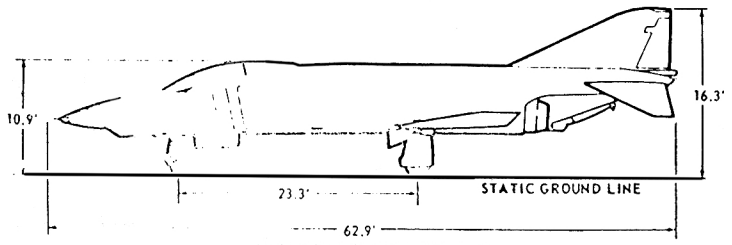


AIRFOIL DESIGNATION
PARALLEL TO CENTERLINE

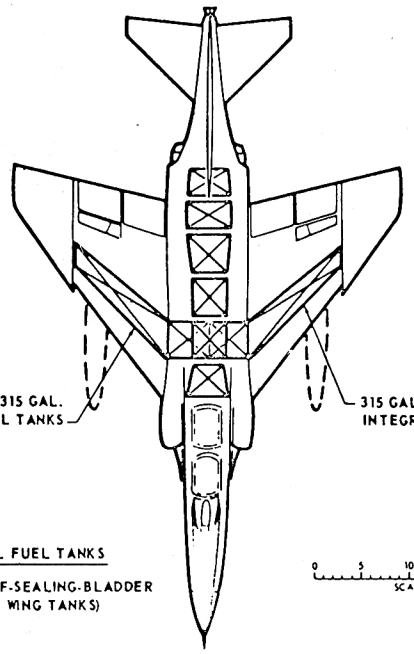
WING ROOT	NACA 0006.4-64 (MOD)
B.L. 160 (WING FOLD)	NACA 0004-64 (MOD)
WING TIP	NACA 0003-64 (MOD)





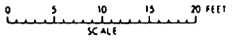


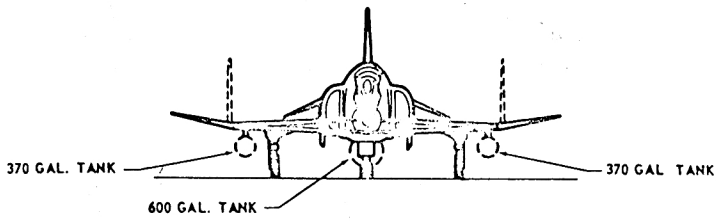
DESCRIPTIVE ARRANGEMENT

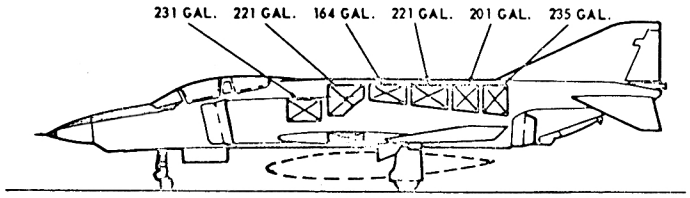


INTERNAL FUEL TANKS

NON SELF-SEALING-BLADDER
(EXCEPT WING TANKS)







TANKAGE ARRANGEMENT

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SERVICE

POWER PLANT

No. and Model	(2) J79-GE-8
Manufacturer	General Electric
Specification	G.E. E-763A
Type	Axial Flow Turbojet
Augmentation	Afterburner
Length with A/B	208.45 Inches (Cold)
Diameter	38.3 Inches Max. (Cold)
Dry Weight	3,635 lb.
Tail Pipe	Variable Position

RATINGS*

	Static Thrust at Sea Level-lb	RPM
Maximum(A/B)	17000	100% 7685
Military	10900	100% 7685
Normal	10300	96% 7385
90% Normal	9270	94% 7220
75% Normal	7720	91.5% 7025
Idle	410	65.1% 5000

*As defined in G.E. Spec. E-763A Para. 3.6.3 Table I and subject to conditions therein. Max. time with A/B & Mil. is 30 min. below 35,000 ft. and 2 hrs. above 35,000 ft. Time at normal power & below is continuous.

ELECTRONICS

ONI Set	AN/ASQ-88
Radio Set	AN/ARC-105
Sound Recorder	RO-254/ASQ
CADC	*32-87106
Navigational Computer	AN/ASN-46
AFCS	AN/ASA-32D
IR Detecting Set	AN/AAS-18
Backup Attitude Ref. Set	*53-87555
Inertial Navigation Set	AN/ASN-56
Radar Mapping Set	AN/APQ-102
Radar Set	AN/APQ-99
Electronic Altimeter Set	AN/APN-159
Auxiliary Data Annotation Set (BCD)	*32-87805
Data Recording Camera Set	KS-74A
Aircraft Camera Mount Set	LS-58A
Aircraft Camera Parameter Control	LA-311A
Photoflash Camera Control Detector	LA-285A

*SCD No.; "AN" No. not yet assigned

MISSION AND DESCRIPTION

The RF-4B is a two-place, twin-jet, carrier-based tactical reconnaissance aircraft. The primary mission of this aircraft is all-weather, high-low, day-night selective reconnaissance operations for both prebriefed and post-strike mission. For extended range missions, both centerline and external wing tanks can be carried. The airplane can be refueled in flight.

Optical sensors, including framing and panoramic cameras, are located in three camera stations in the nose of the aircraft. Electronic sensors include forward looking radar, side looking radar, and an infrared reconnaissance set. Associated reconnaissance capabilities include in-flight processing of film, photoflash ejection for night photography, ejection of the low altitude film cassette, a photographic control set, a data annotation set for recording on reconnaissance film certain aircraft data parameters, a HF communications set for extended communications range, a voice recorder set for recording pilot or radar observer comments, an optical viewfinder installed in the front cockpit, a photoflash detector , and vertical stabilized camera mounts.

The RF-4B features high-lift flaps with boundary layer control and automatically controlled compression-ramp air inlets. Electronic gear retained includes the CNI installation, the Central Air Data Computer (CADC), the Navigational Computer, the Automatic Flight Control Subsystem(AFCS) and the Electronic Altimeter.

Equipment includes a pressurized cabin with ejection seats, a liquid oxygen system, and anti-G non-pressure suit and full pressure suit provisions.

DEVELOPMENT

Letter Contract	September 1963
Mock Up	July 1963
First Flight	Scheduled for February 1965

CAMERAS

See Notes page

WEIGHTS

Loading	Lb.	Subsonic L.F.	Supersonic L.F.
Empty	28002		
Basic	29217		
Design	37500	8.5	6.5
Combat	37994	8.4	6.4
Max. T.O.			
Field	54800		
Cat	54800		
Max Landing			
Field	38000		
Arrest	34000		

FUEL AND OIL

No. Tanks	Gal.	Location
6	1273	Fuselage, Bladder
2	630	Wings, Integral
1	600	Fuselage, Ext. Drop
2	740	Wing, Ext., Drop

Grade	JP4 or JP5
Specification	MIL-F-5624B-1

OIL

Integral with Engines (Useable tank capacity per engine)	5.15Gal
Specification	MIL-L-7808D

DIMENSIONS

Wing	
Area	530 sq. ft.
Span	38.4 ft.
M.A.C.	16.04 ft
Sweepback (25% Chord)	45°
Incidence	1°
Dihedral - Inner panel	0°
Outer panel	12°
Length	62.9 ft.
Height	16.3 ft.
Wheelbase	23.2 ft.
Tread	18.3 ft.

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PERFORMANCE SUMMARY

TAKE-OFF LOADING CONDITION		(1) HIGH ALTITUDE RECONNAISSANCE		(4) LOW ALTITUDE RECONNAISSANCE		
TAKE-OFF WEIGHT	LB.	53,261		53,365		
FUEL INTERNAL/EXTERNAL (JP-5)	LB./LB.	12,941/9,112		12,941/9,112		
PAYLOAD	LB.	1,329		1,433		
WING LOADING	LB./SQ.LB.	100.5		100.7		
STALL SPEED - POWER-OFF/APPR. POWER	KN.	167.5/146		167.6/146		
TAKE-OFF RUN AT S.L. - CALM A B	FT.	6,500/3,290		6,530/3,300		
TAKE-OFF RUN AT S.L. - KN. WIND A B	FT.	4,890/2,500		4,900/2,510		
TAKE-OFF TO CLEAR 50 FT. - CALM A B	FT.	8,250/3,990		8,280/4,000		
MAX. M/ALTITUDE/SPEED A	M./FT/KN.	.99/25,000/595		.99/25,000/595		
RATE OF CLIMB AT S.L. A	FPM.	8,420		8,400		
TIME: S.L. TO 30,000 FT. A B	MIN.	6.38/1.68		6.40/1.69		
TIME: S.L. TO 40,000 FT. A B	MIN.	-/3.39		-/3.40		
SERVICE CEILING (100 FPM.) A	FT.	35,670		35,630		
COMBAT RANGE	N.MI.	1,743		1,737		
AVERAGE CRUISING SPEED	KN.	504		504		
CRUISING ALTITUDE(S)	FT.	33,250/41,850		32,200/41,850		
COMBAT RADIUS/MISSION TIME C,D	N.MI./HR.	835/3.33;590/2.57		652/2.55;294/1.29		
AVERAGE CRUISING SPEED D	KN.	504/504		504/504		
IFR RADIUS/MISSION TIME C,D	N.MI./HR.	1330/5.57;1148/5.06		1175/4.90;875/3.87		
FUEL TRANS/DIST. FROM BASE	LB./N.MI.	12,350/745		12,365/745		
COMBAT LOADING CONDITION		**(2) CLEAN**	**(3) CLEAN**	**(5) CLEAN**	**(6) CLEAN**	
COMBAT WEIGHT	LB.	43,220	43,220	43,324	43,324	
ENGINE POWER		MAXIMUM	MILITARY	MAXIMUM	MILITARY	
FUEL	LB.	12,941	12,941	12,941	12,941	
COMBAT SPEED/COMBAT ALTITUDE	KN./FT.	1,296/35,000	564/35,000	740/S.L.	641/S.L.	
RATE OF CLIMB/COMBAT ALTITUDE E,F	FPM./FT.	18,800/35,000; 9,100/35,000	- ; 2400/35,000	- ; 36,000/S.L.	-; 12,200/S.L.	
COMBAT CEILING (500 FPM.)	FT.	55,500/47,000	-/40,200	55,450/47,400	-/40,150	
RATE OF CLIMB AT S.L.	FPM.	36,100	12,230	36,000	12,200	
MAX. SPEED AT S.L.	KN.	740	641	740	641	
MAX. SPEED/ALTITUDE	KN./FT.	1,290/45,000	583/25,000	1,290/45,000	601/25,000	
LANDING WEIGHT	LB.	32,945		33,051		
FUEL	LB.	2,668		2,668		
STALL SPEED - POWER-OFF/APPR. POWER	KN./KN.	132/115		132/115		
DIST.-GRD ROLL/OVER 50 FT. OBS.	FT./FT.	2340/3385		2350/3395		

NOTES:
A. MILITARY RATED THRUST
B. MAXIMUM RATED THRUST
C. MIL-C-5011A MISSION DEFINITION/MIL-P-22203 MISSION DEFINITION
D. MISSION TIME EXCLUDES WARM-UP, TAKE-OFF AND RESERVE TIME
E. SUPERSONIC CLIMB SPEED SCHEDULE
F. SUBSONIC CLIMB SPEED SCHEDULE
G. WITH DRAG CHUTE

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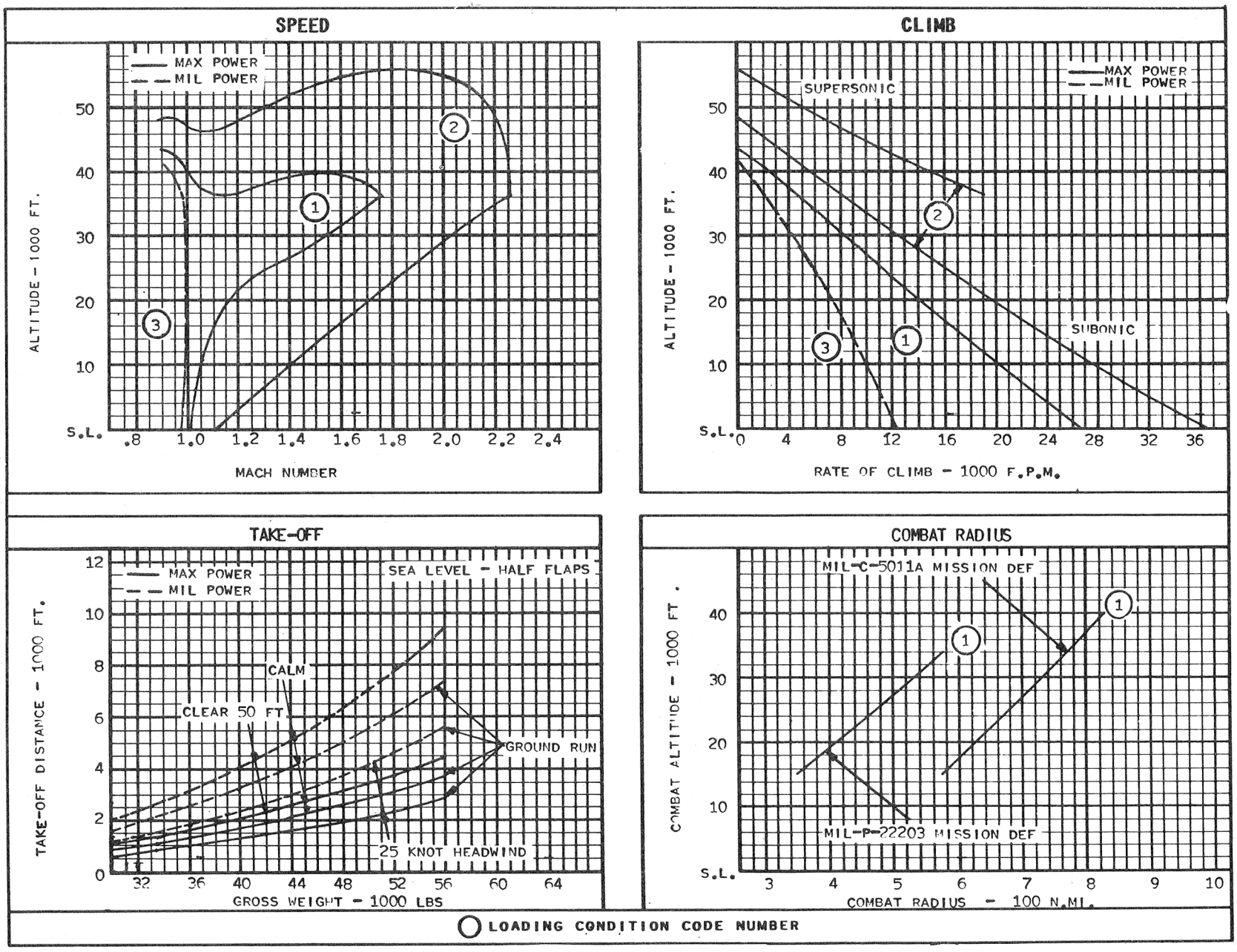

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SERVICE

NOTES

PERFORMANCE BASIS: CALCULATED DATA BASED ON FLIGHT TEST OF F-4A AIRCRAFT

(1) HIGH ALTITUDE RECONNAISSANCE MIL-C-5011A MISSION DEFINITION

1) WARM-UP, TAKE-OFF, ACCELERATE: 5 MIN. WITH NORMAL THRUST PLUS (1) MINUTE WITH AFTERBURNER.
2) CLIMB: ON COURSE TO CRUISE ALTITUDE WITH MILITARY THRUST.
3) CRUISE OUT: AT ALTITUDE AND SPEEDS FOR MAXIMUM RANGE.
4) CLIMB: ON COURSE TO COMBAT ALTITUDE USING MILITARY POWER.
5) DASH: LEVEL FLIGHT TO TARGET FOR 15 MINUTES USING NORMAL POWER.
6) EVASIVE ACTION: FUEL FOR 2 MIN AT COMBAT ALTITUDE USING NORMAL POWER.
7) ESCAPE: CREDIT IS GIVEN FOR FUEL AND DISTANCE DURING AN 8-MINUTE ESCAPE USING NORMAL POWER.
8) CRUISE-BACK: AT ALTITUDES AND SPEED FOR MAXIMUM RANGE.
9) RESERVE: 20 MIN. AT SPEED FOR MAXIMUM ENDURANCE AT SEA LEVEL (2 ENGINES OPERATING) PLUS 5% OF INITIAL FUEL LOAD.

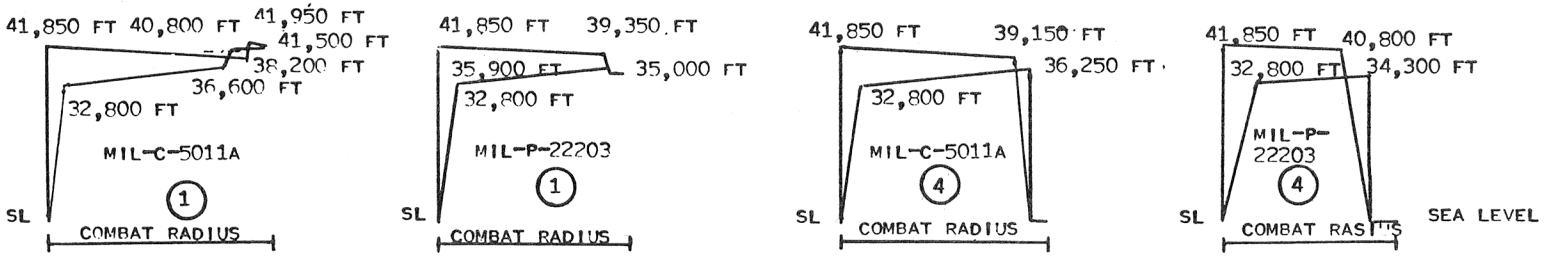
4) DESCEND: NO CREDIT GIVEN FOR FUEL OR DISTANCE USED DURING DESCENT TO 35,000 FT.
5) DASH: AT 35,000 FT. RUN-IN 50 NAUTICAL MILES AT MAXIMUM SPEED WITH MILITARY THRUST.
6) FUEL ALLOWANCE AT TARGET: 12 MIN. WITH NORMAL THRUST AT 35 ,000 FT. (ALTITUDE (NO CREDIT FOR DISTANCE GAINED).
7) EVASIVE ACTION AT 35,000 FT.: FUEL FOR 3 MIN AT SPEED MIDWAY BETWEEN MILITARY THRUST VMAX AND MAXIMUM THRUST VMAX USING MAXIMUM THRUST FUEL FLOW (NO DISTANCE GAINED).
8) DASH: AT 35,000 FT. RUN-OUT 50 NAUTICAL MILES AT MAXIMUM SPEED WITH MILITARY THRUST.
9) CLIMB: ON COURSE TO CRUISE ALTITUDE USING MILITARY THRUST.
10) CRUISE-BACK AND RESERVE: SEE STEPS 8 AND 9 FROM MIL-C-5011A ABOVE.

(4) LOW ALTITUDE RECONNAISSANCE

1) WARM-UP, TAKE-OFF, ACCELERATE: SAME AS HIGH ALT. RECONNAISSANCE.
2) CLIMB: SAME AS HIGH ALT. RECONNAISSANCE.
3) CRUISE-OUT: SAME AS HIGH ALT. RECONNAISSANCE.
4) DESCEND: NO CREDIT GIVEN FOR FUEL OR DISTANCE USED DURING DESCENT TO SEA LEVEL.
5) DASH: AT SEA LEVEL RUN- IN 50 NAUTICAL MILES AT MAXIMUM SPEED WITH MILITARY THRUST.
6) DASH: AT SEA LEVEL RUN-OUT 50 NAUTICAL MILES AT MAXIMUM SPEED WITH MILITARY THRUST.
7) CLIMB: ON COURSE TO CRUISE ALTITUDE USING MILITARY THRUST.
8) CRUISE-BACK: SAME AS HIGH ALT. RECONNAISSANCE.
9) RESERVE: SAME AS HIGH ALT. RECONNAISSANCE.

MIL-P-22203 MISSION DEFINITION DEVIATES FROM MIL-C-5011A AS FOLLOWS

6) FUEL ALLOWANCE AT TARGET: 8 MIN WITH NORMAL THRUST AT SEA LEVEL (NO CREDIT FOR DISTANCE GAINED).
7) EVASIVE ACTION AT SEA LEVEL: FUEL FOR 2 MIN AT SPEED BETWEEN MILITARY THRUST VMAX AND MAX THRUST VMAX USING MAXIMUM THRUST FUEL FLOW (NO DISTANCE GAINED).
8) DASH, CLIMB, CRUISE-BACK AND RESERVE: SEE STEPS 6, 7, 8, AND 9 FROM MIL-C-5011A MISSION ABOVE.



INFLIGHT REFUEL MISSIONS

1,2,3) SAME AS HIGH ALT. RECONNAISSANCE
4) DESCEND: TO 35,000 FT. FOR REDEZVOUS WITH TANKER.
5) LOITER: 15 MIN. RENDEZVOUS ALLOWANCE AT MAXIMUM ENDURANCE SPEEDS
6) REFUEL: FROM A3D-2 TANKER AT THE FOLLOWING DISTANCES FROM BASE.
HIGH ALT. RECONNAISSANCE 745 NA.MI.
LOW ALT. RECONNAISSANCE 745 NA.MI.
7) CLIMB: ON COURSE TO CRUISE ALTITUDE WITH MILITARY THRUST.

THE REMAINING STEPS ARE DEFINED FROM STEP (3) OF THE PARTICULAR MISSION.

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NOTES

CONTINUED

CAMERAS

	STATION	TYPE		LENS	CAMERA POSITION	MISSION
(1)	FORWARD	RS-72A	(2)	6"	FWD. OBLIQUE/VERT	LOW ALT.-DAY/NIGHT
	FORWARD	RS-72A		3"	VERTICAL	LOW ALT.-DAY/NIGHT
(1)	CENTER	RA-56A	(3)	3"	VERTICAL (PANORAMIC)	LOW ALT. -DAY
	CENTER	KS-72A		6",3",6"	3 CAMERA FAN	LOW ALT.-DAY/NIGHT
	CENTER	KS-72A		3",3",3"	3 CAMERA FAN	LOW ALT.-DAY/NIGHT
	CENTER	KS-72A	(2)	18"	SIDE OBLIQUE/VERT.	HI/LOW ALT.-DAY
	CENTER	KS-72A	(4)	18"	SIDE OBLIQUE	HI/LOW ALT.-DAY
(1)	AFT	KA-55A	(4)	12"	VERTICAL (PANORAMIC)	HIGH ALT.-DAY
	AFT	KS-72A	(4)	18"	VERTICAL	HIGH ALT.-DAY
	AFT	KS-72A		6"	SPLIT VERTICAL	LOW ALT.-DAY/NIGHT
	AFT	KS-72A		18"	SPLIT VERTICAL	HIGH ALT.-DAY

(1) BASIC CONFIGURATION

(2) IN-FLT. ROTATABLE MOUNT

(3) CASSETTE EJECTION

(4) STABILIZED MOUNT REQ'D.

(○) LOADING CONDITION COLUMN NUMBER

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