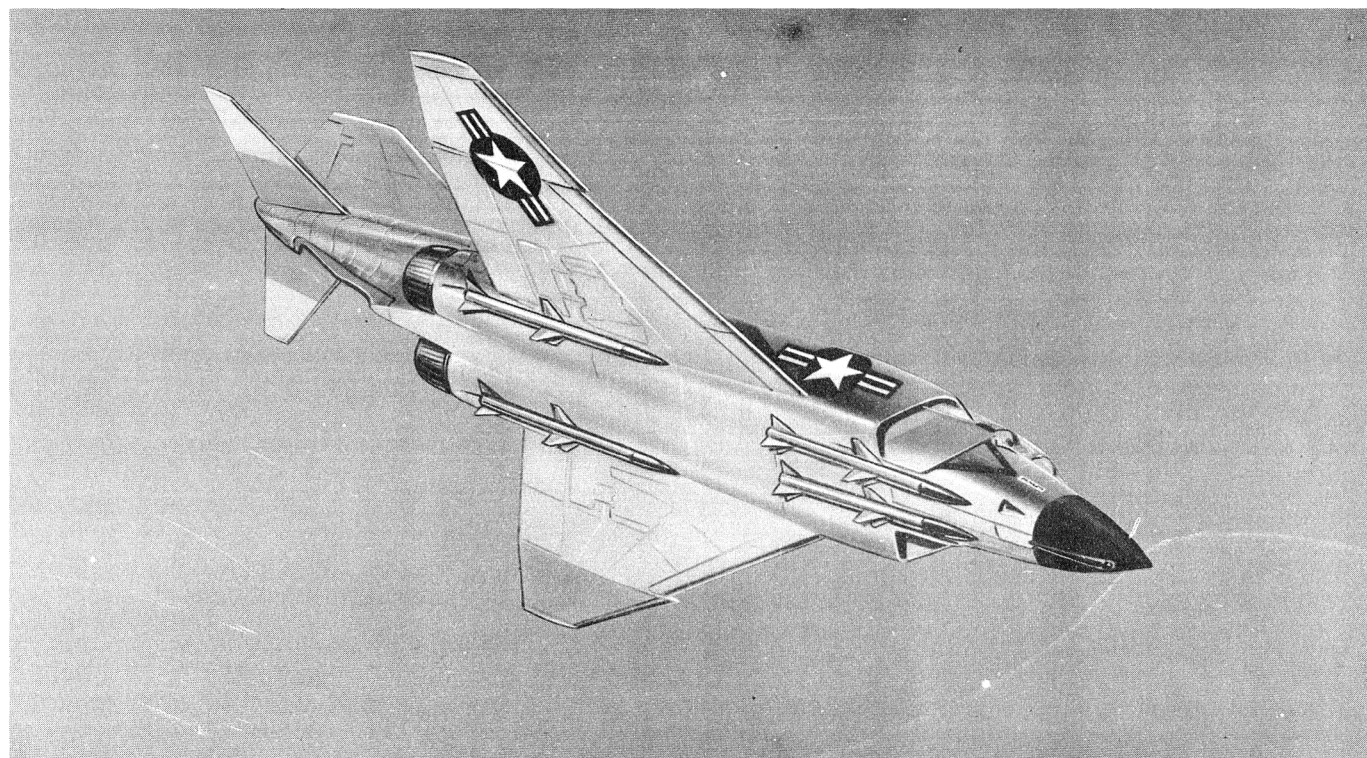


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SERVICE



STANDARD AIRCRAFT CHARACTERISTICS

F4H-1

McDONNELL

Standard Aircraft Characteristics NAVAER 1335A (REV. 1-55)

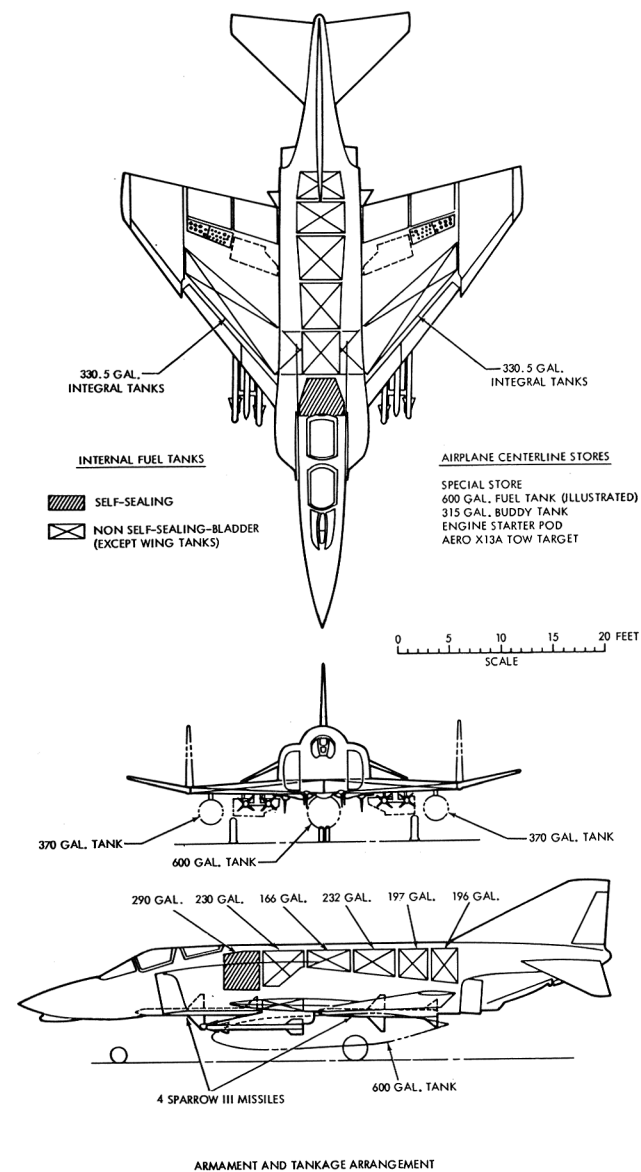
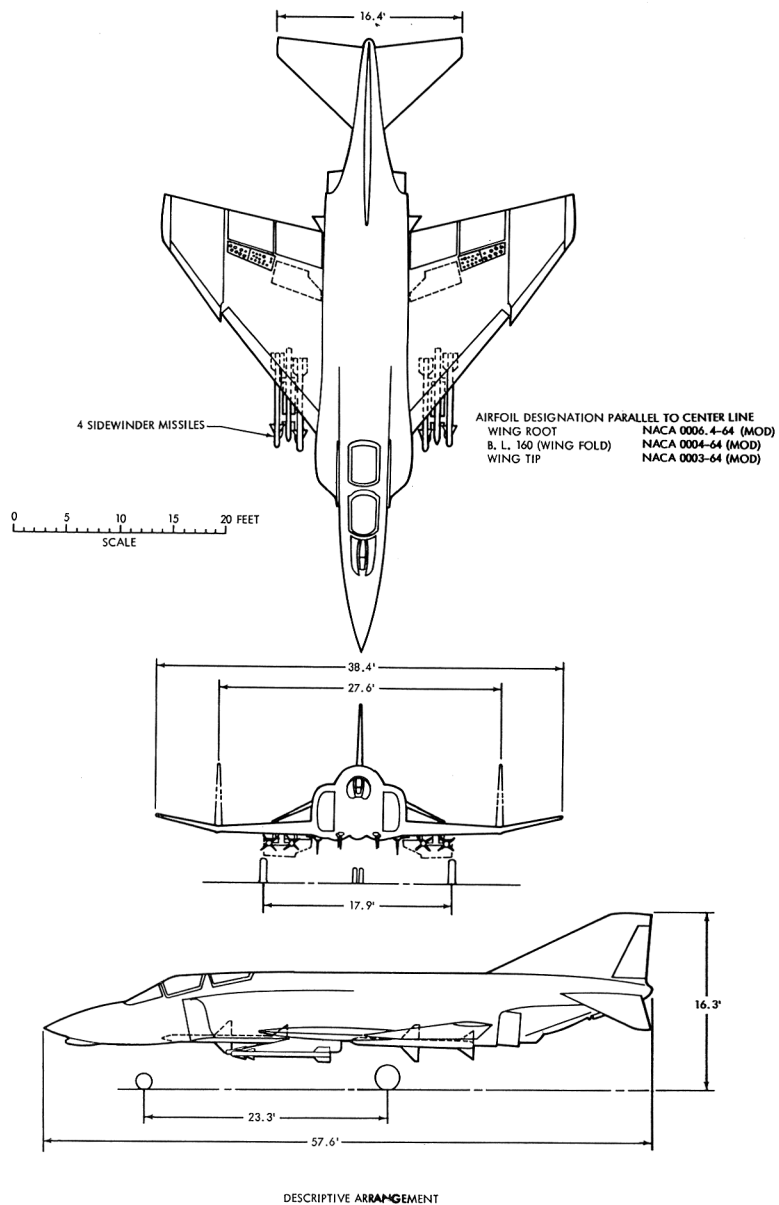
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F4H-1

Standard Aircraft Characteristics NAVAER 1335B (Rev. 1-55)



POWER PLANT

No. and Model.....(2) J79-GE-8
MFR.....General Electric
TypeAxial Flow
Length.....208"
Diameter.....38"
Augmentation.....Afterburner

RATINGS

	LBS	@	RPM	@	ALT
Mil. + A.B.	17,000		7460		S.S.L.
Mil.	10,700		7460		S.S.L.
Normal	10,000		7385		S.S.L.

Spec No. G.E. E-733
G.E. No. R57-AGT695

ORDNANCE

Four Sparrow III Missiles
AAM-N-6a (R)
Four Sidewinder 1C Missiles
Special Store
Fire Control System AMCS Aero 1A

Includes Radar Set.....AN/APQ-72
Radar Set Group.....AN/APA-128
Infra-Red Detectings.....AN/AAA-4

All Attitude Bombing Sys....AN/AJB-3

MISSION AND DESCRIPTION

The F4H-1 is a twin-jet, two-place general purpose fighter whose primary mission is the destruction of enemy aircraft. It carries four air-to-air missiles semi-submerged in the fuselage plus four wing pylon-mounted air-to-air missiles. An alternate mission includes delivery of a special store. For extended range missions, both center-line and wing tanks can be carried. The airplane can be refueled in flight and also can act as a "buddy" tanker.

Special features of the F4H-1 are the swept wing and tails, automatically controlled compression-ramp air inlets, leading and trailing-edge high-lift flaps with boundary layer control. Lateral control is achieved by means of spoilers in combination with ailerons. An all-movable stabilator provides longitudinal control.

The Aero-X-1A fire control system include the AN/APQ-72 Radar Ranging System in conjunction with the MK 16 (Mod.0) Sight and the AN/APA-128 missile auxiliaries. In addition, passive search and track capabilities are provided by the auxiliary IR system. The all-attitude bomb control system (AN/AJB-3) is employed in special store deliveries.

Other electronics include the specially-designed CNI installation which combines all of the various communications, navigation, and identification functions into one integrated system; a Central Air Data Computer (CADC) which senses aircraft air data parameters and supplies appropriate signals to various subsystems; and the AN/APN-22 Radar Altimeter.

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

DEVELOPMENT

First FlightMay 1958
Service Use.....(Estimated).....November 1960

DIMENSIONS

Wing
Area.....530 Sq. Ft.
Span38' - 8"
MAC.....192"
Sweepback $\frac{1}{4}$ Cord.....45°
Length.....57' - 7"
Height.....16' - 4"
Tread17' - 11"

WEIGHTS

Loadings	Lbs.	L.F.
Empty.....	27,538	
Basic.....	27,643	
Design.....	34,500	6.5
Combat.....	37,802	
Max. T.O. (Field)	49,311	
(Cat)	49,311	4.9
Max. Ldg. (Field)		
(Arrest)	31,600	3.75

All weights are estimated

FUEL AND OIL

No Tanks	Total Gal.	Location
6	1311	Fuselage
2	661	Wings
1	600	Fuselage-external
or		(drop)
2	740	Wings-external
		(drop)

FUEL GRADE -- JP-5
FUEL SPEC -(Applicable) MIL-F-5624

OIL

Capacity (gals).....4
Spec (Applicable).....MIL-C-7808

ELECTRONICS

CADC.....*32-87275
CNI.....AN/ASQ-19
Autopilot.....FC8-H2(GE)
Navigational Computer*32-87120
Altimeter.....AN/APN-22
IR SystemAN/AAA-4.(XN-1)

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

Standard Aircraft Characteristics NAVAER-1335C (Rev. 1-55)

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PERFORMANCE SUMMARY						
TAKE-OFF LOADING CONDITION	(1) FIGHTER 4 SPARROW III	(3) FIGHTER 4 SPARROW III 4 SIDEWINDER	(5) FIGHTER 4 SPARROW III 4 SIDEWINDER 1-600 GAL. TANK	(7) FIGHTER 4 SPARROW III 1-600 GAL. TANK	(9) 15,000 FT. DEL. 1 MK 28 2-370 GAL. TANKS	
TAKE-OFF WEIGHT lb.	43,072	44,384	48,783	47,451	49,311	
Fuel internal/external (JP-5) lb./lb.	13178/	13178/	13178/4080	13178/4080	13178/5032	
Payload lb.	1,500	2,260	2,260	1,500	2,025	
Wing loading lb./sq.ft.	81.2	83.7	92.0	89.5	93.0	
Stall speed - power-off (BLC Off) kn.	148.2	150.5	158.0	155.5	158.8	
Take-off run at S.L. - calm (A) ft.	3520	3800	4975	4575	5150	
Take-off run at S.L. 25 kn. wind (A) ft.	2425	2660	3560	3250	3700	
Take-off to clear 50 ft. - calm (A) ft.	4850	5300	7300	6600	7650	
Max. speed/altitude (A) kn./ft.	590/30,000	582/30,000	572/30,000	580/30,000	576/30,000	
Rate of climb at S.L. (A) fpm.	15,780	13,450	11,150	13,200	12,650	
Time: S.L. to 30,000 ft. (A)/(B) min.	2.8/1.96	3.5/1.1	4.42/1.27	3.55/1.13	3.74/1.2	
Time: S.L. to 40,000 ft. (A)/(B) min.	5.2/1.71	6.65/1.94	10.5/2.28	7.2/2.03	8.1/2.30	
Service ceiling (100 fpm) (A) ft.	43,200	40,800	38,300	40,000	39,000	
Combat range n.mi.	1080	910	1165	1440	1450	
Average cruising speed kn.	524	522	522	524	523	
Cruising altitude(s) ft.	39,250	38,400	37,500	37,800	37,300	
Combat radius/Mission time n.mi./hr.	410/1.6	310/1.3	485/1.9	600/2.3	570/2.2	
Average cruising speed kn.	524	524	524	524	524	
Cap Loiter at 35,000/Mission Time (C) hrs./hrs.	1.0/1.6	.6/1.2	1.3/1.9	1.8/2.4		
IFR Radius/Mission Time n.mi./hrs.	760/3.5 (D)	630/2.7	860/3.6	1020/4.2		
COMBAT LOADING CONDITION	(2) SPARROWS RETAINED	(4) SPARROWS AND SIDEWINDERS RETAINED	(6) SPARROWS AND SIDEWINDERS RETAINED	(8) SPARROWS RETAINED	(10) STORE RETAINED	
COMBAT WEIGHT lb.	37,802	39,114	41,593	40,261	41,741	
Engine power	MAXIMUM	MAXIMUM	MILITARY	MILITARY	MAXIMUM	
Fuel lb.	7908	7908	10,358	10,358	10,930	
Combat speed/combat altitude kn./ft.	1200/35,000	1130/35,000	567/35,000	581/35,000	1195/35,000	
Rate of climb/combat altitude fpm/ft.	15000/35,000	13500/35,000	3900/35,000	4800/35,000	13200/35,000	
Combat ceiling (500 fpm) ft.	52600(E)/59500(F)	51,400	42,650	44,550	51,800	
Rate of climb at S.L. fpm.	49,800	43,500	14,450	17,000	44,350	
Max. speed at S.L. kn.	728	695	635	649	725	
Max. speed/altitude kn./ft.	1220/36,000	1145/36,000	580/35,000	595/30,000	1208/36,000	
LANDING WEIGHT lb.	30,674	31,328	31,603	30,857	31,127	
Fuel lb.	2280	2380	2628	2554	2611	
Stall speed - power-off /appr. power kn./kn.	122/100	122.8/100.5	123.8/101.3	122.5/100.1	122.5/100.1	
Distance - ground roll over 50 ft. obst. ft./ft.	2990/4005	3020/4030	3070/4070	3010/4020	3010/4020	

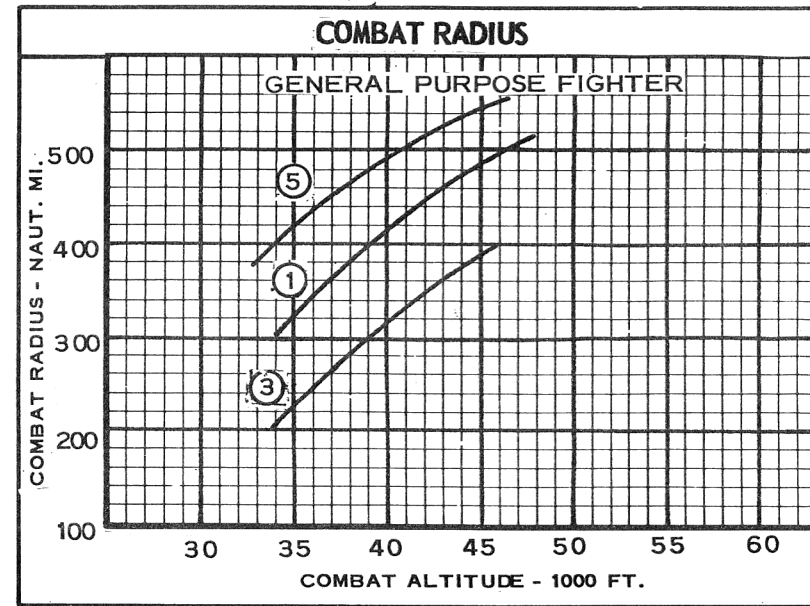
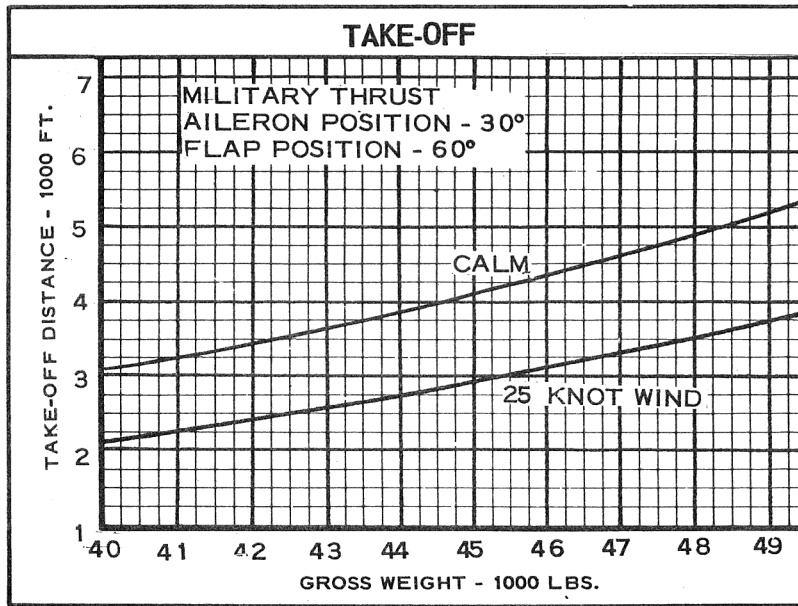
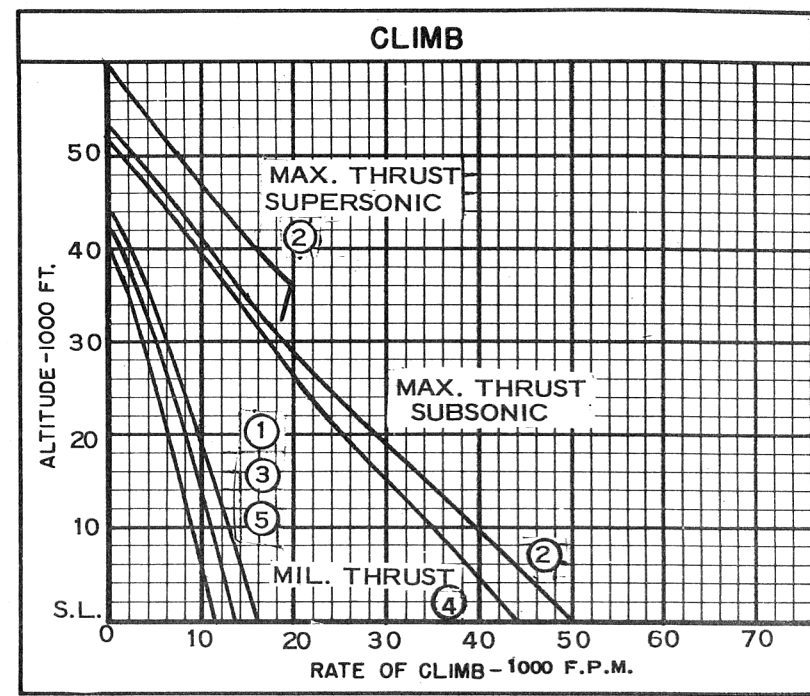
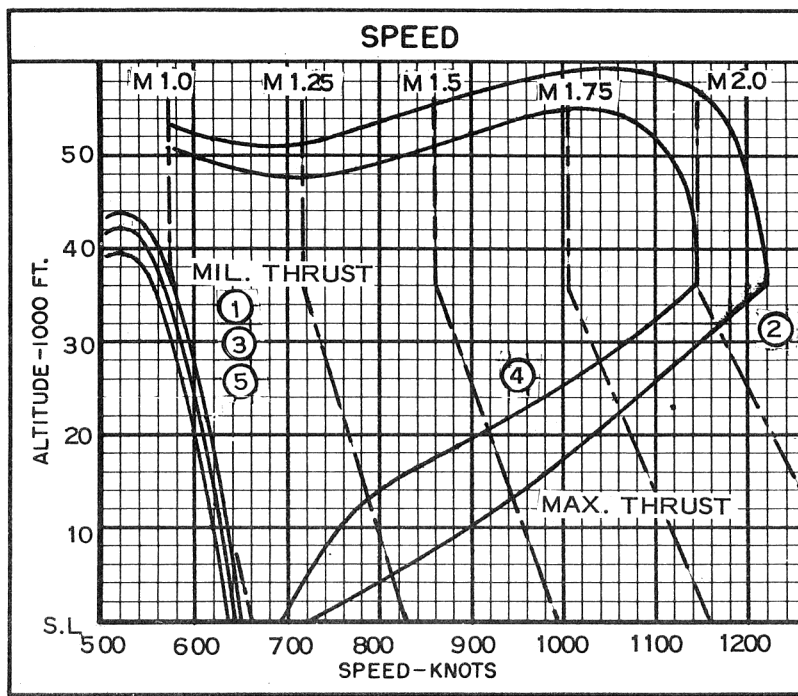
NOTES

PERFORMANCE BASIS: CALCULATIONS & FLIGHT TEST

RANGE AND/OR RADIUS: Range and radius are based on engine specification
fuel consumption increased 5%SPOTTING: A total of 57 aircraft can be accommodated in a landing spot on
the flight and hangar decks of a CVA-19 class angled deck carrier
(flight 30; hangar 27 airplanes)

- (A) MILITARY POWER
 (B) MAXIMUM POWER
 (C) COMBAT AIR PATROL - 150 n.mi. RADIUS
 (D) INFLIGHT REFUELING - Outbound only, Transfer 7,250
 lbs. at 477 n.mi.
 (E) SUBSONIC
 (F) SUPERSONIC

NAVAER-1335D (Rev. 1-55)



○ LOADING CONDITION COLUMN NUMBER

Standard Aircraft Characteristics NAVAER 1335E (Rev. 1-55)

NOTES

GENERAL PURPOSE AND ESCORT FIGHTER

WARM-UP, TAKE-OFF, ACCELERATE: 5 minutes with normal thrust at sea level.

CLIMB: On course to cruise altitude with military rated thrust.

CRUISE-OUT: At altitudes and speeds for maximum range.

COMBAT FUEL ALLOWANCE: Fuel to accelerate from V_{cruise} to $MN = 1.5$ using maximum thrust at 40,000 feet plus fuel for 2 minutes at $MN = 1.5$ using maximum thrust at 40,000 feet.

CRUISE-BACK: At altitudes and speeds for maximum range

RESERVE: 20 minutes at speed for maximum endurance at sea level plus 5 per cent of initial fuel load.

COMBAT AIR PATROL

WARM-UP, TAKE-OFF, ACCELERATE: 5 minutes with normal thrust at sea level

CLIMB: On course to cruise altitude with military rated thrust.

CRUISE: To a point 150 nautical miles from base at altitudes and speed for maximum range.

LOITER: On station at speed for maximum endurance at approximate final cruise-out altitude.

COMBAT FUEL ALLOWANCE: Fuel to accelerate from V_{loiter} to $MN = 1.5$ using maximum thrust at 40,000 feet plus fuel for 2 minutes at $MN = 1.5$ using maximum thrust at 40,000 feet.

CRUISE-BACK: 150 nautical miles to base at altitude and speeds for maximum range.

RESERVE: 20 minutes at speed for maximum endurance at sea level plus 5 per cent of initial fuel load.

15,000 FT. STORE DELIVERY

WARM-UP, TAKE-OFF AND ACCELERATE: 5 minutes at normal thrust at sea level.

CLIMB: On course to cruise altitude with military thrust.

CRUISE-OUT: At altitudes and speeds for maximum range.

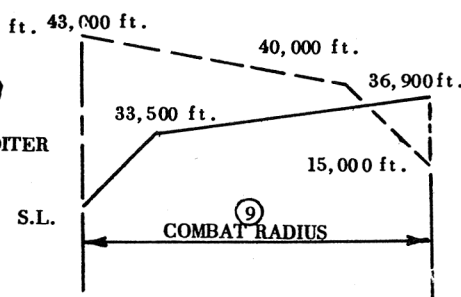
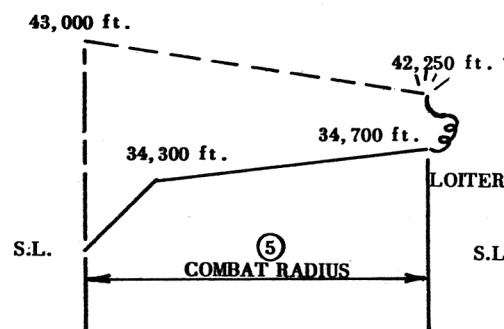
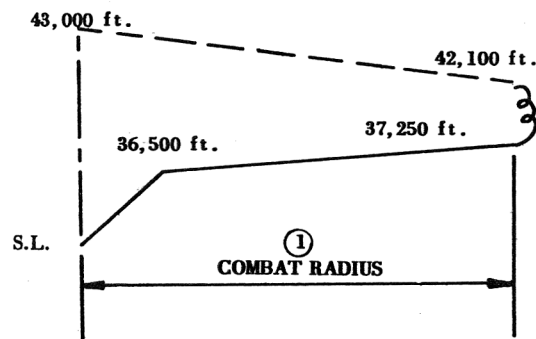
DESCEND: To 15,000 feet (no distance gained no fuel used).

STORE DELIVERY AND EVASIVE ACTION: 2 minutes at speed mid-way between V_{max} with maximum thrust and V_{max} with military thrust at 15,000 feet.

CLIMB: On course to cruise altitude with maximum thrust.

CRUISE-BACK: At altitudes and speeds for maximum range.

RESERVE: 5% of initial fuel load plus 20 minutes at speed for maximum endurance at sea level.



○ LOADING CONDITION COLUMN NUMBER