

NAVAIR 00-110AF1-4

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Standard Aircraft Characteristics

NAVY MODEL AF-1E AIRCRAFT

(TITLE UNCLASSIFIED)

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**PUBLISHED BY DIRECTION OF THE
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1 JULY 1967

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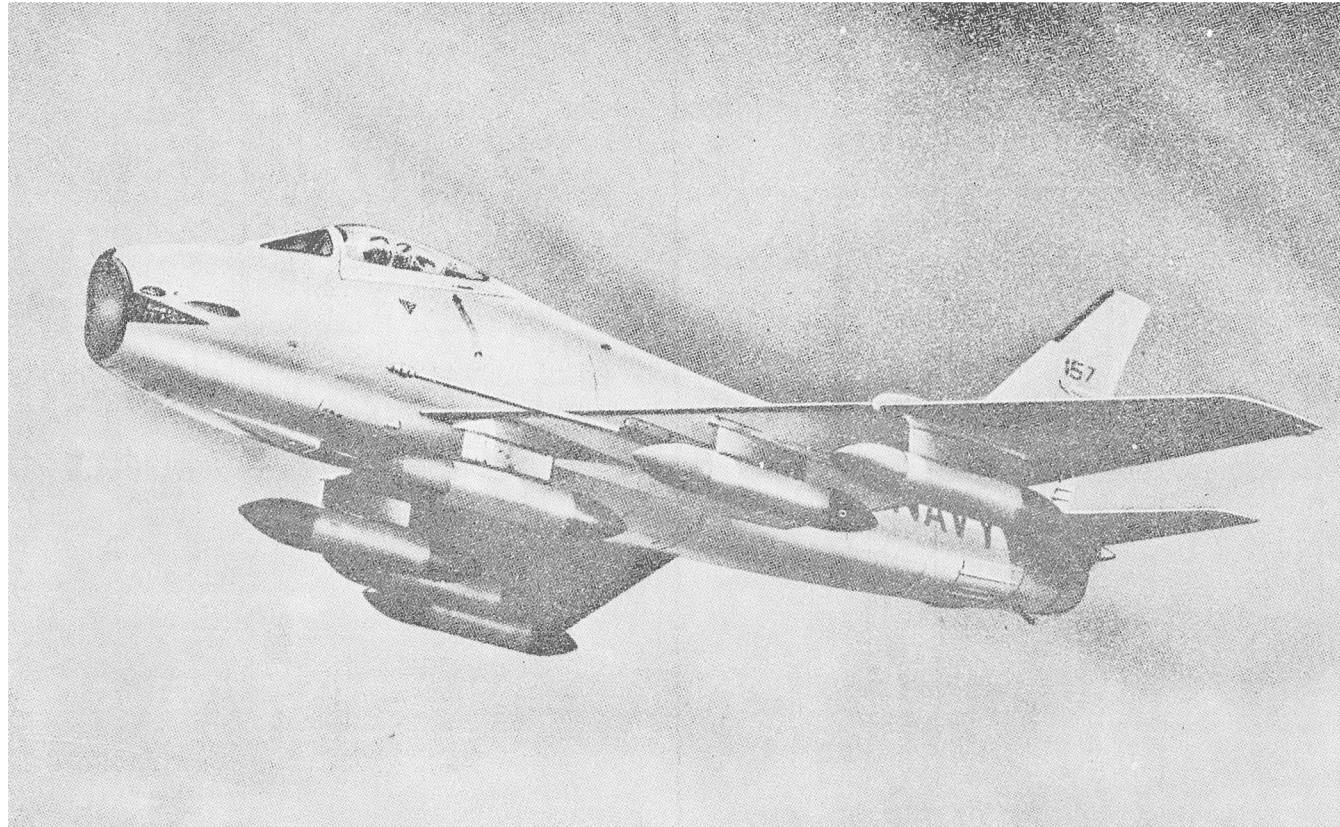
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SERVICE



STANDARD AIRCRAFT CHARACTERISTICS AF-1E FURY

NORTH AMERICAN

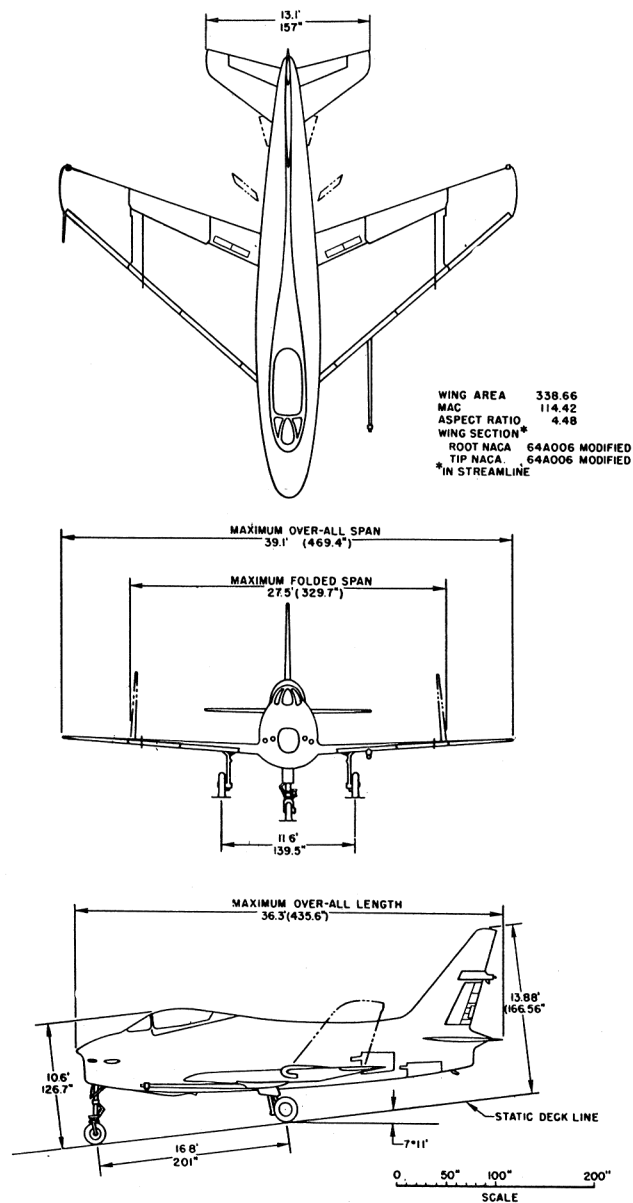
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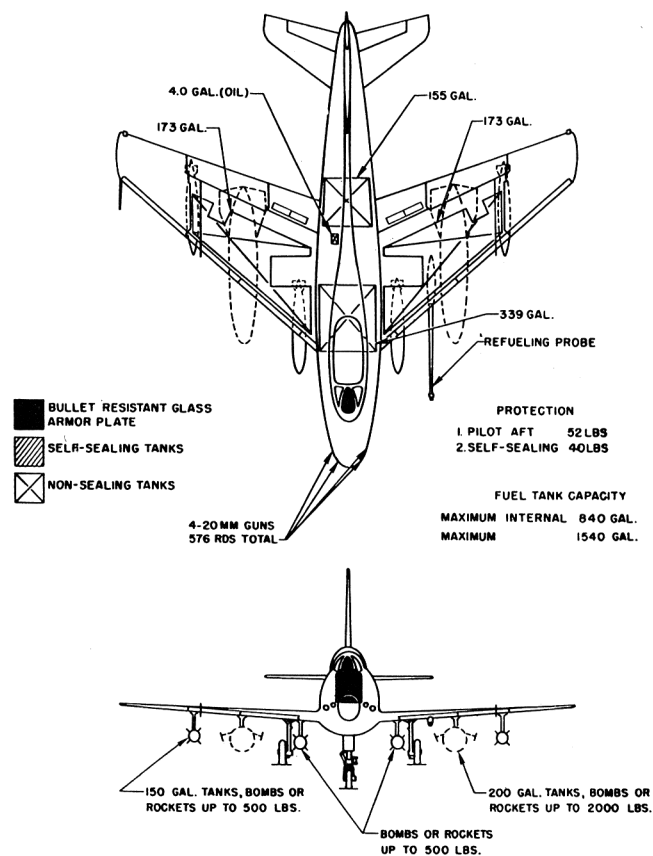
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SERVICE



DESCRIPTIVE ARRANGEMENT



ARMAMENT & TANKAGE

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SERVICE

POWER PLANT

NO. & MODEL (1) J65-W-16A
 MFR Wright Aero. Corp.
 TYPE Axial Flow
 LENGTH 128.0"
 DIAMETER 37.5"
 AUGMENTATION None

RATINGS

	<u>LBS</u>	<u>RPM</u>
T.O.	7700	8300
MIL.	7700	8300
NO.M.	6780	8030

Sea Level Static

Spec. No. N.A.D. M890A

ORDNANCE

GUNS:

Four 20mm guns, 576 rounds (500 rounds standard)
 Type MK 12 Mod 3
 Feeder MK 9 Mod 4 & 5
 Gun camera AN-N-6A
 Fire control system MK 16 Mod 1
 Sight unit MK 8 Mod 8

STORES:

	<u>NO.</u>
Sidewinder	6
Bullpup	5
Aero 6, 7, 9 & 10 rkt. pkg.	6
5-in. HVAR rocket	6
260 lb. Fragmentation	6
500 lb. G.P.	6
500 lb. S.L.	6
1000 lb. G.P.	2
1000 lb. S.L.	2
2000 lb. S.L.	2
MK 7	1
MK 12	1
MK 28	1

MISSION AND DESCRIPTION

The FJ-4B airplane is a single-seat, carrier-based long-range fighter-bomber with many external store capabilities. Equipped with the low altitude bombing system, it is a versatile support weapon. Equipped with both conventional speed brakes and aft-under-fuselage speed brakes, the FJ-4B is a very stable dive bombing platform. Subsequent to accomplishing an attack mission, the airplane becomes a formidable fighter with good high altitude maneuverability.

This airplane is capable of operating from H-8, C-7 or C-11 catapults and MK 5 or MK 7 arresting gear. Special features of this airplane are swept-back, six percent thick, machined skin wings with flaps including augmentation spoilers; leading edge droops; hydraulic power-operated irreversible controls with artificial feel for the ailerons and the all movable horizontal tail; a rudder boost system and a yaw damper.

The cockpit is provided with differential pressurization, adequate heating and cooling, a jettisonable canopy, an ejection seat and anti-G suit provisions.

Design maximum dive speed is 600 knots EAS.
 Design maximum Mach number is 1.345.

DEVELOPMENT

First Flight December 1956
 Service Use (Fleet Delivery) June 1957

DIMENSIONS

WING
 AREA 338.66 sq. ft.
 SPAN 39' - 1"
 M.A.C. 9' - 6"
 SWEEPBACK 35 deg.
 LENGTH 36' - 4"
 HEIGHT 13' - 11"
 TREAD 11' - 7"

WEIGHTS

<u>LOADINGS</u>	<u>LBS</u>	<u>L.F.</u>
EMPTY	13,778
BASIC	14,430
DESIGN	16,500	6.5
COMBAT	21,937
MAX. T.O. (Fld. or Carr.)	28,000
MAX. LANDING (Fld.)	18,000
MAX. LANDING		
(Carr. - normal)	17,000
(Carr. - MK 27 Store)	17,500
(Carr. - MK 28 plus Buddy Refueler)	18,100

All weights are actual.

FUEL AND OIL

<u>GAL</u>	<u>TANKS</u>	<u>LOCATION</u>
346	2	Wing
494	2	Fuselage

FUEL GRADE JP-4 or JP-5
 FUEL SPEC (applicable) MIL-F-5624

OIL

CAPACITY (gals.) 4.0
 SPEC (applicable) MIL-L-7808

ELECTRONICS

UHF TRANSCEIVER AN/ARC-27A
 UHF AUTO DIR FINDER AN/ARA-25
 IFF TRANSPONDER AN/APX-6B
 VOR SYSTEM AN/ARN-14E
 LABS CONTROL Aero 18C
 CODER GROUP AN/AF-89
 COMPLETE PROVISIONS FOR AN/AFG-30A
 and AN/ARN-21

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PERFORMANCE SUMMARY

TAKE-OFF LOADING CONDITION	(1) GENERAL PURPOSE FIGHTER 2-200 Gal.Ext. Tanks and 4-Sidewinders	(3) GENERAL PURPOSE FIGHTER 1 Hot Point "A" Store 1-200 Gal.Ext.Tank 2-150 Gal.Ext.Tanks	(4) SEA LEVEL DELIVERY 1-MK 28 Store 1-200 Gal. Ext. Tank 2-150 Gal. Ext. Tanks	(6) 15,000' Delivery 1-MK 28 Store 1-200 Gal.Ext.Tank 2-150 Gal.Ext.Tanks	(7) GROUND SUPPORT 4-Aero 6B Rocket Pkg 2-200 Gal.Ext.Tanks
TAKE-OFF WEIGHT	lb.	25,037	26,724	26,893	24,809
Fuel JP-5	lb.	8432	9112	9112	8432
Payload	lb.	990	2225	2395	970
Wing loading	lb./sq.ft.	73.9	78.9	79.4	71.1
Stall speed - power-off	kn.	136.2	141.6	142.3	125.5
Take-off run at S.L. - calm (A)	ft.	5350	6570	6700	4720
Take-off run at S.L. 25 kn. wind (A)	ft.	3920	4920	5050	3820
Take-off to clear 50 ft. - calm (A)	ft.	7270	8700	8870	6520
Max. speed/altitude	(A) kn./ft.	524/15,000	502/20,000	502/20,000	524/15,000
Rate of climb at S.L.	(A) fpm.	4100	3050	3000	4125
Time: S.L. to 20,000 ft.	(A) min.	6.2	8.5	8.5	6.0
Time: S.L. to 30,000 ft.	(A) min.	11.0	16.0	16.2	10.8
Service ceiling (100 fpm)	(A) ft.	40,200	37,000	36,900	40,400
Combat range	n.mi.	1660	1655	1685	1665
Average cruising speed	kn.	452	446	446	452
Cruising altitude(s)	ft.	38,100/44,200	35,700/43,400	35,600/43,300	38,300/44,400
Combat radius/Mission Time	n.mi./hr.	700/3.5	750/3.7	565/2.6	780/3.7
Average cruising speed	kn.	448	446	442	440
CAP-Loiter Altitude/Loiter Time/Mission Time	(B) FT./hr./hr.	35,000/2.6/3.7			
IFR Radius/Mission Time	n.mi./hr.	1055/5.1 (C)	1115/5.5 (D)		900/4.5 (E)
COMBAT LOADING CONDITION	(2) 4 Sidewinders		(5) 1-MK. 28		
COMBAT WEIGHT	lb.	21,937	23,187		
Engine power		Military	Military		
Fuel	lb.	5712	5712		
Combat speed/combat altitude	kn./ft.	530/35,000	547/S.L.		
Rate of climb/combat altitude	fpm/ft.	1700/35000	5100/S.L.		
Combat ceiling (500 fpm)	ft.	41,400	40,000		
Rate of climb at S.L.	fpm.	5850	5100		
Max. speed at S.L.	kn.	568	547		
Max. speed/altitude	kn./ft.	568/S.L.	552/10,000		
LANDING WEIGHT	lb.	16,671	16,419		
Fuel	lb.	1066	1085		
Stall speed - power-off /with approach power	kn.	109.5/107.0	108.5/106.2		
Distance - ground run/over 50 ft. obstacle	ft./ft.	4750/6050	4670/5970		

NOTES

PERFORMANCE BASIS: Contractor's and NATC flight test data.

All configurations include in-flight refueling probe, (4) 20 MM guns and 500 rds. of ammunition.

A. MILITARY RATED THRUST

B. COMBAT AIR PATROL - 150 n.mi. radius

C. Inflight refueling from FJ-4B buddy tanker - outbound only.
Transfer 3260 lb. at 35,000 ft. and 425 nautical miles out.

D. Inflight refueling from A3D tanker - outbound only. Transfer 5,310 lb. at 35,000 ft. and 740 nautical miles out.

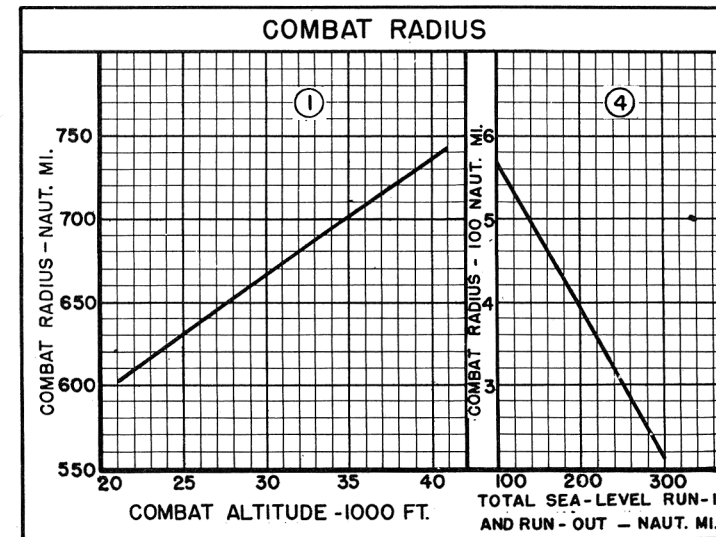
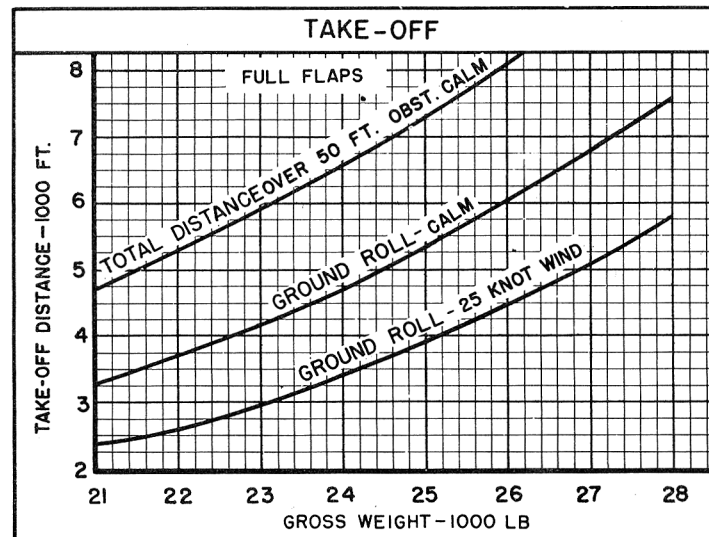
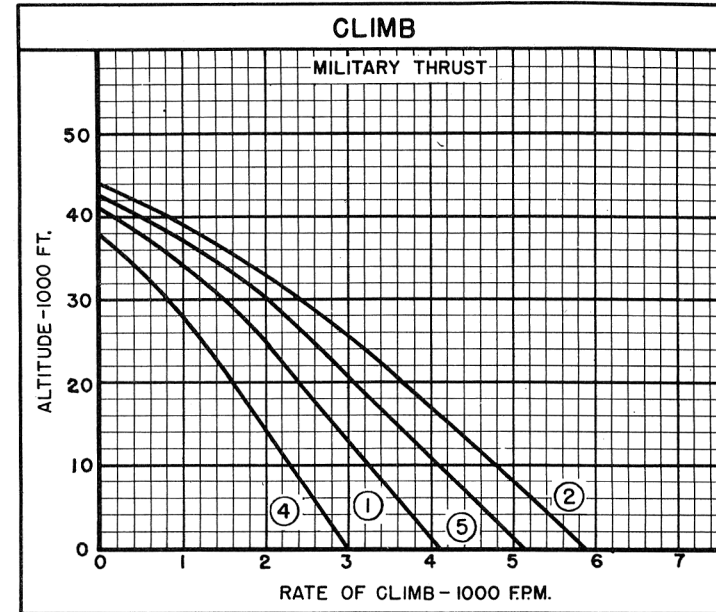
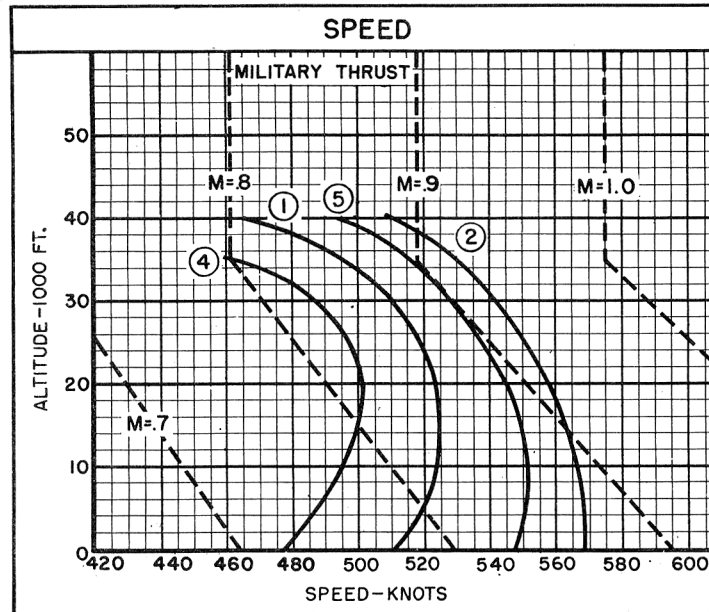
E. Inflight refueling from FJ-4B buddy tanker - outbound only. Transfer 3230 lb. at 35,000 ft. and 430 nautical miles out.

MISSION TIME: Any time where fuel is used and distance gained plus combat time and loiter time.

SPOTTING: A total of 78 airplanes can be accommodated in a landing spot on the flight and hangar decks of a CVA-19 class angled deck carrier.

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SERVICE

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NOTES

LOADING
(All data based on JP-4)

2-200 gal. ext. tanks, 4 Sidewinders

TAKE-OFF
WEIGHT

24,665

GENERAL PURPOSE FIGHTER
Combat Radius Mission Time

-49 n. mi.

-.22 hr.

COMBAT AIR PATROL
Loiter Time

-.22 hr.

GENERAL PURPOSE FIGHTER

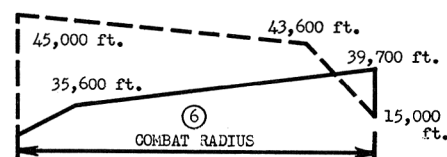
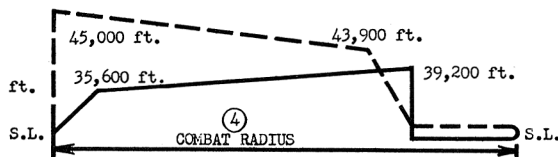
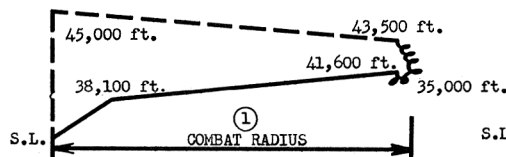
WARM-UP, TAKE-OFF AND ACCELERATE: 5 minutes at normal thrust at sea level.
CLIMB: On course to cruise altitude with military thrust.
CRUISE-OUT: At altitudes and speeds for maximum range.
COMBAT FUEL ALLOWANCE: At 35,000 feet with military thrust for 20 minutes (Assume aircraft at initial return cruise altitude at end of combat).
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.

SEA LEVEL 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 sea level (no distance gained, no fuel used).
RUN-IN: 50 n.mi. at sea level with military thrust.
STORE DELIVERY AND EVASIVE ACTION: 5 minutes at military thrust at sea level (no distance gained).
RUN-OUT: 50 n.mi. at sea level with military thrust.
CLIMB: On course to cruise altitude with military 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.

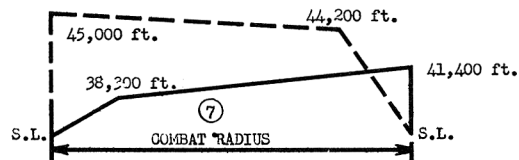
15,000 FT. DELIVERY

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: 5 minutes at military thrust at 15,000 feet.
CLIMB: On course to cruise altitude with military 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.



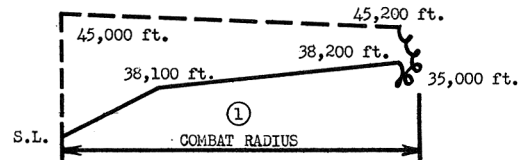
GROUND SUPPORT

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 sea level (no distance gained, no fuel used).
LOITER: At sea level for 10 minutes at speed for maximum endurance.
COMBAT FUEL ALLOWANCE: At sea level for 10 minutes at military thrust.
CLIMB: On course to cruise altitude with military thrust.
CRUISE-BACK: At altitudes and speeds for maximum range.
RESERVE: 5% of initial fuel plus 20 minutes at speed for maximum endurance at sea level.



COMBAT AIR PATROL

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: To point 150 n.mi. from base at altitudes and speeds for maximum range.
LOITER: On station at altitude and speed for maximum endurance.
COMBAT FUEL ALLOWANCE: At 35,000 feet with military thrust for 20 minutes (Assume aircraft at initial return altitude at end of combat).
CRUISE-BACK: At altitudes and speeds for maximum range.
RESERVE: 5% of initial fuel plus 20 minutes at speed for maximum endurance at sea level.



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