

AIRPLANE CHARACTERISTICS & PERFORMANCE

BUREAU OF AERONAUTICS, NAVY DEPT.

COLUMN NUMBER		1	2	3	4
LOADING CONDITION		COMBAT	COMBAT	FIGHTER 1-300 GAL. EXT. FUS. TANK	BOMBER 1-2000# (FUS.) 2-1000# (WING)
GROSS WEIGHT	LBS.	21720	21720	23766	25720
EMPTY WEIGHT (ACTUAL)	LBS.	16270			
FUEL/OIL	GALS.	455/26	455/26	755/42	455/26
FIXED GUNS/AMMUNITION		4-20MM./800 Rds. & 4-.50 Cal./1200 Rds.			
FLEXIBLE GUNS/AMMUNITION		NONE			
ENGINE POWER USED FOR PERFORMANCE		COMBAT	MILITARY	NORMAL	NORMAL
WING LOADING	LBS./SQ.FT.	47.7	47.7	52.2	56.5
POWER LOADING ①	LBS./BHP.	5.9	6.4	7.9	8.6
V-MAX. SEA LEVEL	KN.	318	312	283	261
V-MAX.	KN./FT.	378/22200	372/23100	346/23100	318/22800
V-STALL GROSS WEIGHT ②	KN.	79.2	79.2	82.9	86.3
V-STALL WITHOUT FUEL ②	KN.	74.2	74.2	74.6	81.6
TIME-TO-CLIMB -10000FT-	MIN.	2.3	2.5	3.7	4.2
TIME-TO-CLIMB -20000FT-	MIN.	5.4	5.8	8.1	9.6
SERVICE CEILING	FT.	40700	40100	37600	35900
TAKE-OFF DISTANCE -CALM-	FT.		701	867	1093
TAKE-OFF DISTANCE -15 KN-	FT.		495	624	798
TAKE-OFF DISTANCE -25 KN-	FT.		377	433	623
TAKE-OFF DISTANCE -50 FT. OBST.	FT.				
TAKE-OFF TIME	SECONDS				
RATE OF CLIMB -SL-	FT./MIN.	4530	4160	2820	2450
MAX RANGE /V-AV. ③	N MI./KN.			1365/193	695/170
RANGE /V-AV. -60% NSP-③-	N MI./KN.				
SEARCH RADIUS /V-AV. -20% R-	N MI./KN.				
A.S.W. RADIUS/V-AV. -20% R-	N MI./KN.				
SCOUT RADIUS	N MI.				
COMBAT RADIUS (F-1)	N MI.			360	74

ENGINE / PROR GEAR RATIO (2) P. & W. R-2800-34W. (.45)

ENGINE RATING BHP/RPM/ALT.	COMBAT	MILITARY	NORMAL	TAKE-OFF
	2380/2800/SL	2100/2800/SL-3400'	1700/2600/SL - 8500'	2100/2800/S.L.
	2400/2800/1000'	1700/2800/9500'-16600'	1500/2600/11700-18300	
	1790/2800/9500'			
	1850/2800/15500'			

TANKAGE IN GALLONS		OIL	FUEL	OFFENSIVE ARMAMENT
AUX. FIXED	PROTECTED	42	455	Fuselage - External
	UNPROTECTED			Bombs: 1-2000# or 1-1600#
	TOTAL-FIXED INTERNAL	42	455	Torpedoes: 1-MK. 13-3
	DROPPABLE Wings @ 150		300	Mines: 1-1860# or 1-1600#
	DROPPABLE Fuse. @ 300 (Alternate 1 x 150)		301	Rockets: 1-11.75" A.R.
	TOTAL	42	1055	Wings - External
NOTE	① BHP AT MAX. CRIT. ALT.			Bombs: 2-1000#, 2-500#, 2-250#, or 2-100#
	② STALL-WITH POWER			Depth Bombs: 2-650# or 2-325#
	③ AT 1500' ALTITUDE - Auto. Lean			Mines: 2-1000#
				Rockets: 2-11.75" A.R.
				Wings-Outer Panel-MK.9 Rocket Launcher
				Rockets: 8-5" HVAR or A.R.

Supersedes 1 March 1946

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Performance is based on flight tests of F7F-1 and F7F-3N airplanes. Range and radius are based on A.E.L. engine tests, and flight test of F7F-1 airplanes. These fuel consumption are increased by 15% and 5% respectively, to conform with past experience.

COMBAT CONDITION: Two faired MK. 51-7 Wing Bomb Rack & Sway Bracing † Fus. Shackles & Sway Bracing aboard. At Combat Power -- Combat Condition † 8 MK. 9 Launchers: $V_m/Alt.$ - 371/22000'

Fighter Combat Radius

Formula No. F-1: Conditions Nos. (3) & (4)

Radius - Climb † Cruise-Out = Cruise-Back

<u>WARM-UP</u>	<u>RENDEZVOUS</u>	<u>CLIMB</u>	<u>CRUISE-OUT</u>	<u>DROP TANKS</u>	<u>COMBAT</u>	<u>CRUISE BACK</u>	<u>RESERVE</u>
20 Min.	20 Min. @ S.L. @	to 15000 ft.	@ 15,000' @ Vel. for Max. Range	& Bombs	20 Min. @ 15000':	@ 1500' 170 knts.TAS	60 Min. @ 1500' @ Vel. for
<u>TAKE-OFF</u>	60% N.S.L.P.	@ 60% N.S.P.	Auto. Lean	<u>FIRE</u>	10 Min. W.E.P.		Max. Range
1 Min.	Auto. Lean	Auto. Lean		<u>ROCKETS</u>	10 Min. Mil.Power	Auto. Lean	Auto. Lean

NOTE: Rocket launchers carried in rocket condition only. Two faired wing bomb racks and sway bracing aboard in all conditions except clean.

Ranges and radius are for auto-lean mixtures. By careful manual leaning at low powers, ranges can be increased about 15%, radius about 10%. Use of manual leaning is not recommended.

In fighter condition (25350#) with 1 x 300 and 2 x 150 external tanks, range at 1500' is 1730 N.Mi. in auto-lean, 2150 N.Mi. in manual lean.

Flight test engine critical altitudes differ from those given in engine specification. The following ratings were used on this chart:

<u>COMBAT</u>	<u>MILITARY</u>	<u>NORMAL</u>
2380/2800/SL	2100/2800/SL-7200'	1700/2600/SL-10600'
2400/2800/5600'	1700/2800/12500'-20600'	1500/2600/14,300'-21000'
1790/2800/13000'		
1850/2800/19600'		

Clean Condition: Combat condition with all bomb racks and sway bracing removed. At combat power - $V_m/S.L.$ - 327 Kn., $V_m/Alt.$ - 388/22300'

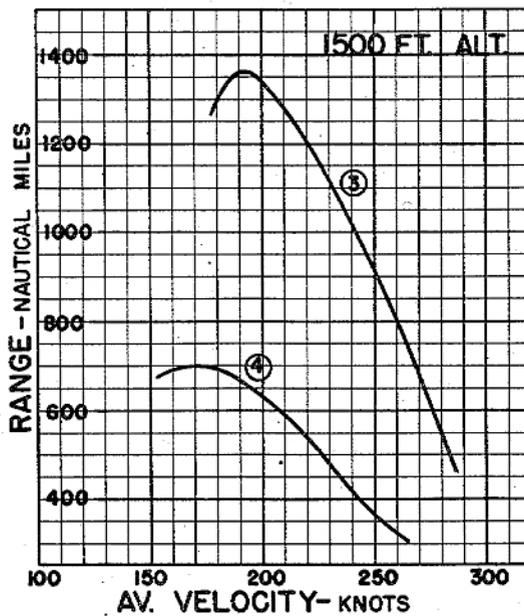
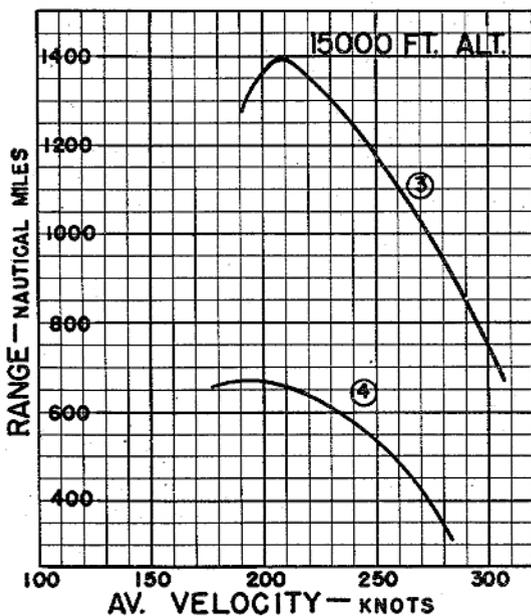
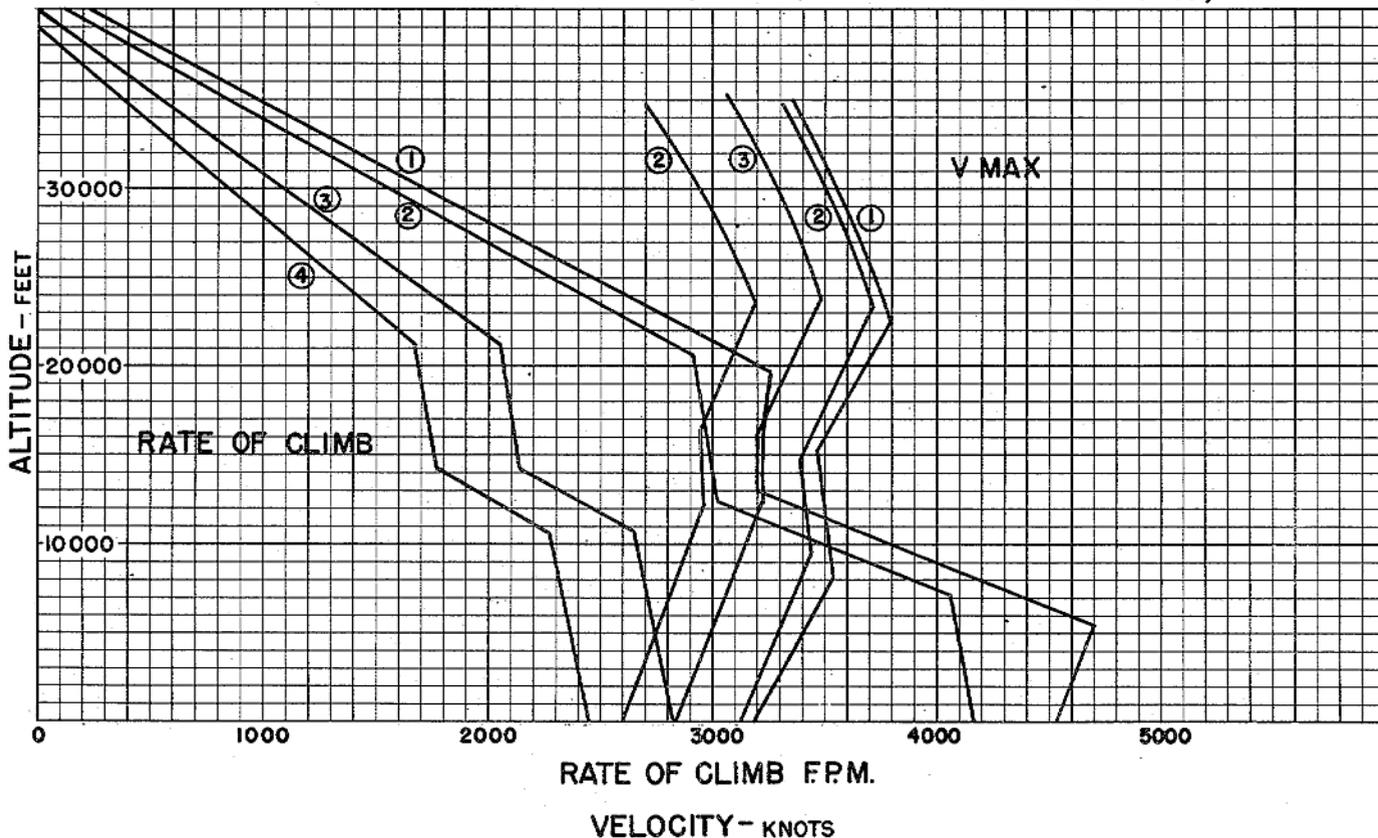
Rocket Condition: Rockets suspended from MK. 9 rocket launchers.

Ferry Condition: Armor and armament removed. G.W. = 23,560#, Fuel = 1055 Gals. Max. Range @ 1500' is 2220 Naut. Mi. @ 150 Kn.

Fuel Transfer: Provisions are incorporated for fuel transfer from droppable to main tanks after T.O.

Spotting: 210 Ft. length is required to spot 15 airplanes on the 96 ft. wide deck immediately aft of the forward ramp on CV-9 Class carriers.

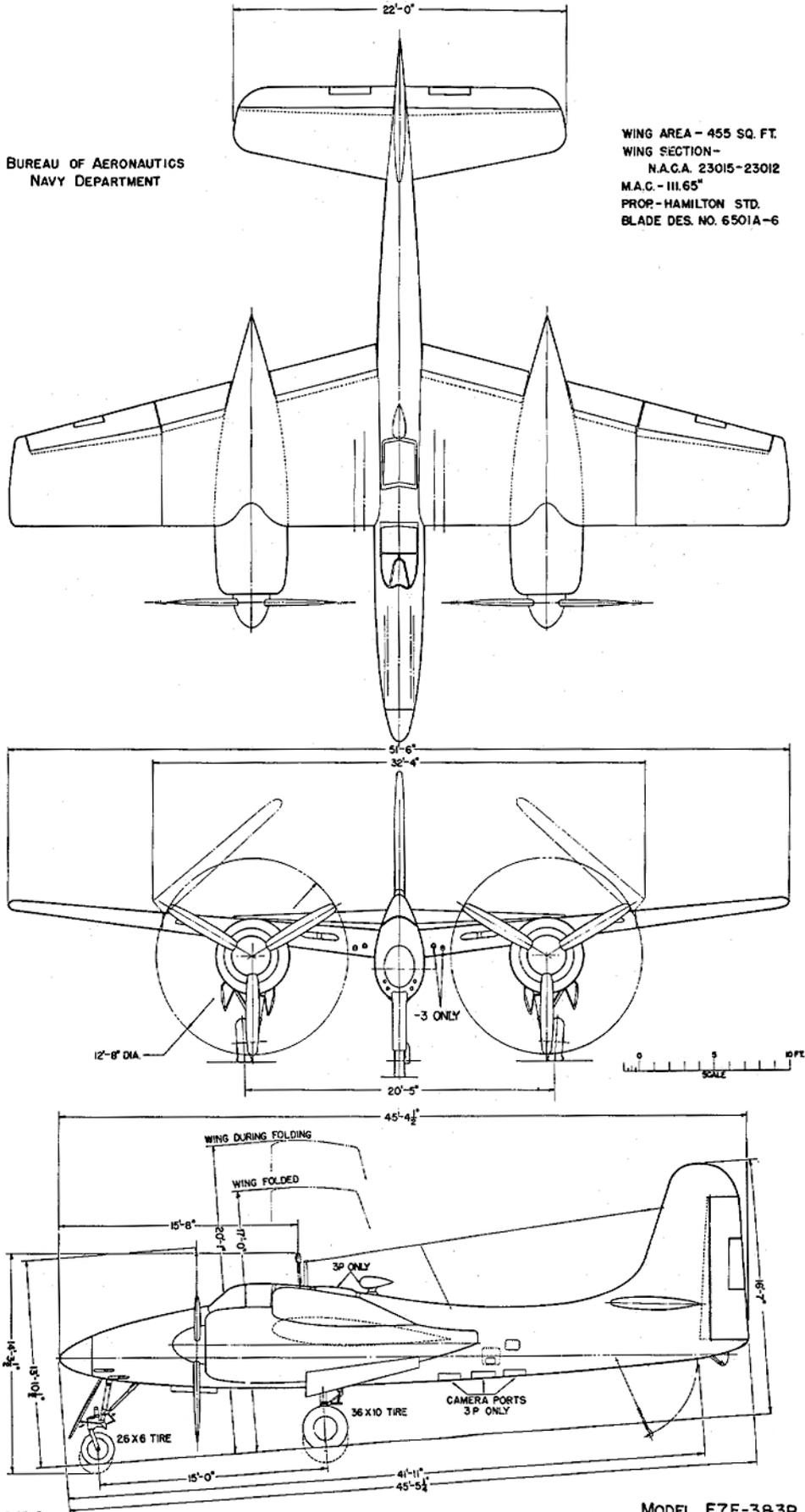
Water Capacity: Water available for approximately 12 min. @ combat power.



○ LOADING CONDITION COLUMN NUMBER

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

WING AREA - 455 SQ. FT.
WING SECTION -
N.A.C.A. 23015-23012
M.A.C. - III.65"
PROP - HAMILTON STD.
BLADE DES. NO. 6501A-6



BUREAU OF AERONAUTICS
NAVY DEPARTMENT

- BULLET RESISTANT GLASS ARMOR PLATE
- ▨ DEFLECTION PLATE
- ▧ SELF-SEALING TANKS
- ⊠ NON SELF-SEALING TANKS

PROTECTION

- | | |
|-----------------------|----------|
| 1. PILOT FORWARD | 154 LBS. |
| 2. PILOT AFT | 150 LBS. |
| 3. PILOT FLOOR | 83 LBS. |
| 4. OIL TANKS | 57 LBS. |
| 5. OIL COOLERS | 44 LBS. |
| 6. SELF-SEALING CELLS | 527 LBS. |

