

## AIRPLANE CHARACTERISTICS &amp; PERFORMANCE

BUREAU OF AERONAUTICS, NAVY DEPT.

COLUMN NUMBER		1	2	3	4
LOADING CONDITION		COMBAT *	COMBAT *	COMBAT *	FIGHTER One 150 Gal. Fuselage Tank External
GROSS WEIGHT	LBS.	21857	21857	21857	22920
EMPTY WEIGHT	-Actual- LBS.	16321			
FUEL / OIL	GALS.	375/25	375/25	375/25	525/30
FIXED GUNS/AMMUNITION		4-.50 cal./1200 rds & 4-20mm/800 rds			
FLEXIBLE GUNS/AMMUNITION		None			
ENGINE POWER USED FOR PERFORMANCE		COMBAT	MILITARY	NORMAL	NORMAL
WING LOADING	LBS./SQ.FT.	48.0	48.0	48.0	50.4
POWER LOADING ①	LBS./BHP.	5.9	6.8	7.5	7.9
V-MAX. SEA LEVEL	MPH.	362	353	329	321
V-MAX./CRITICAL ALT.	MPH./FT.	421/20600	411/22700	400/23200	388/23000
V-STALL GROSS WEIGHT ②	MPH.	84.2	84.2	84.2	88.2
V-STALL WITHOUT FUEL ②	MPH.	81.6	81.6	81.6	81.9
TIME-TO-CLIMB -10000FT-	MIN.	2.3	2.5	3.2	3.4
TIME-TO-CLIMB -20000FT-	MIN.	5.3	5.9	7.1	7.7
SERVICE CEILING	FT.	39800	39400	38800	38000
TAKE-OFF DISTANCE -CALM-	FT.	591	591	591	671
TAKE-OFF DISTANCE -15 KN-	FT.	384	384	384	440
TAKE-OFF DISTANCE -25 KN-	FT.	268	268	268	311
TAKE-OFF DISTANCE -50 FT. OBST.	FT.				
TAKE-OFF TIME	SECONDS				
RATE OF CLIMB -SL-	FT./MIN.	4540	4160	3230	3000
MAX. RANGE / V-AV. ③	ST. MI. / MPH.			960/183	1250/181
RANGE / V-AV. -60%NSP-③-	ST. MI. / MPH.				
SEARCH RADIUS / V-AV. -20%R-	NMI. / KN.				
A.S.W. RADIUS / V-AV. -20%R-	NMI. / KN.				
SCOUT RADIUS	N MI.				
COMBAT RADIUS (F-1)	N MI.			30	185
ENGINE / PROP. GEAR RATIO		2 P&W R-2800-22W (.45:1)			
ENGINE RATING BHP/RPM/ALT.	COMBAT	MILITARY	NORMAL	TAKE-OFF	
	2380/2800/S.L.	2100/2800/S.L.-3400'	1700/2600/S.L.-8500'	2100/2800/S.L.	
	2400/2800/1000'	1600/2800/11200-16300'	1450/2600/12600'-18300'		
	1790/2800/9500'				
	1850/2800/14000'				
TANKAGE IN GALLONS		OIL	FUEL	OFFENSIVE ARMAMENT	
AUX. FIXED	PROTECTED	42	375	Wings (External on faired MK51-7 bomb-racks)	
	UNPROTECTED			Bombs - (alternate with wing droppable tanks)	
	TOTAL - FIXED INTERNAL	42	375	2-1000#, 2-500#, 2-250#, 6-100#, 2-650#, 2-325#	
	DROPPABLE Wings - 2 @ 150		300		
	DROPPABLE Fuselage 1 @ 150 or 1 @ 300		(150) 300	Fuselage (External on flush D-7 shackle)	
TOTAL	42	975	Bombs (alternate with fuselage droppable tank)		
NOTE	STATUTE MILES USED-EXCEPT-RADIUS IS GIVEN IN NAUTICAL MILES & KNOTS		1-2000#		
	① BHP AT MAX. CRIT. ALT.		Torpedo - (alternate with fuselage droppable tank)		
	② STALL-WITH POWER		1 MK13-3		
	③ AT 1500' ALTITUDE (Manual Lean)		NOTE: 8-100# or 8-250# bombs may be carried on the 8 MK9-1 rocket launchers		
*See Page 2					

SUPERSEDES 1 JUNE 1944

DATE 1 MARCH 1946

American Aviation Historical Society Archives - www.aaahs-online.org

MODEL F7F-2N

NAVAER-15198 (Rev. 9-44)

## AIRPLANE CHARACTERISTICS &amp; PERFORMANCE

BUREAU OF AERONAUTICS, NAVY DEPT.

COLUMN NUMBER	5	6	7	8
LOADING CONDITION	FIGHTER One 300 Gal. Fuselage Tank External	TORPEDO 1 MK13-3 Two 150 Gal. Tanks External	BOMBER 1-2000# (Fuse.) 2-1000# (Wings)	ROCKET 8- 5" HVAR 300 Gal Fuse. Tank External
GROSS WEIGHT LBS.	23885	26194	25857	25037
EMPTY WEIGHT -Actual- LBS.	16321			
FUEL/OIL GALS.	675/38	675/38	375/25	675/38
FIXED GUNS/AMMUNITION	4-.50 cal./1200 rds & 4-20mm/800 rds			
FLEXIBLE GUNS/AMMUNITION	None			
ENGINE POWER USED FOR PERFORMANCE	NORMAL	NORMAL	NORMAL	NORMAL
WING LOADING LBS./SQ.FT.	52.4	57.6	56.8	55.0
POWER LOADING ① LBS./BHP	8.2	9.0	8.9	8.6
V-MAX. SEA LEVEL MPH.	321	293	295	306
V-MAX./ CRITICAL ALT. MPH./ FT.	387/23000	350/22700	353/22700	368/22800
V-STALL GROSS WEIGHT ② MPH.	90.0	94.2	93.7	92.3
V-STALL WITHOUT FUEL ② MPH.	82.0	86.6	89.5	84.3
TIME-TO-CLIMB -10000FT.- MIN.	3.7	4.3	4.2	4.0
TIME-TO-CLIMB -20000FT.- MIN.	8.2	9.9	9.7	9.0
SERVICE CEILING FT.	37400	35200	35600	36200
TAKE-OFF DISTANCE -CALM- FT.	745	995	955	892
TAKE-OFF DISTANCE -15 KN.- FT.	493	672	646	602
TAKE-OFF DISTANCE -25KN.- FT.	352	488	469	437
TAKE-OFF DISTANCE -50 FT. OBST. FT.				
TAKE-OFF DISTANCE SECONDS				
RATE OF CLIMB -SL- FT./ MIN.	2830	2400	2460	2610
MAX. RANGE / V-AV. ③ ST. MI./ MPH.	1580/182	1260/181	690/182	1410/179
RANGE / V-AV. -60%NSP-③- ST. MI./ MPH.				
SEARCH RADIUS/V-AV. -20%R- NMI./ KN.				
A. S. W. RADIUS/V-AV. -20%R- NMI./ KN.				
SCOUT RADIUS NMI.				
COMBAT RADIUS (F-1) NMI.	340	315	0	320

PERFORMANCE IS BASED ON- Flight Test of F7F-1 Airplane

RANGE &amp; RADIUS ARE BASED ON PRELIMINARY A.E.L.

FUEL CONSUMPTION DATA INCREASED

BY 15 PERCENT TO CONFORM WITH PAST EXPERIENCE.

\*COMBAT CONDITION: Two MK51-7 Faired wing bomb racks and sway bracing and one D-7 flush fuselage bomb shackle and sway bracing aboard; rocket launchers not aboard. Addition of 8 MK9-1 rocket launchers to condition 1 results in the following (at combat power)

Vmax/S.L. 358 mph , decreased 4 mph

Vmax/A.C.A. 416/20600, decreased 5 mph

CLEAN CONDITION: COMBAT Condition with all bomb-racks and sway bracing removed.

Vmax/S.L. 369 mph Vmax/ACA 429/20700 (Combat Power)

ROCKET CONDITION: 8-5" HVAR rockets suspended from MK9-1 launchers

FERRY CONDITION: Armor, Armament, Radar removed; Gross Weight - 23447, Fuel/Oil - 975/42, Max. Range - 1500 ft - 2290 St.Mi./173 mph

CONDITION 6 : Two 150 gal. wing tanks

# AIRPLANE CHARACTERISTICS & PERFORMANCE

BUREAU OF AERONAUTICS, NAVY DEPT.

- NOTE: 1. Provisions incorporated for fuel pump-back from droppable to main tanks after take-off.  
 2. Rocket Launchers in rocket condition only.  
 3. AN/APS-6 radar in fuselage nose radome in all conditions except FERRY.  
 4. Water available for approximately 12 minutes at COMBAT Power.  
 5. Wing and fuselage bomb-racks and sway bracing aboard in all conditions except CLEAN.

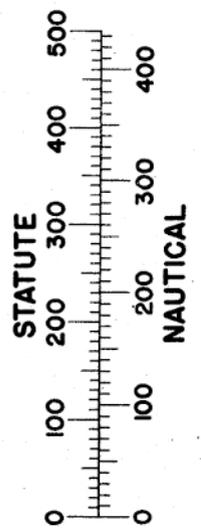
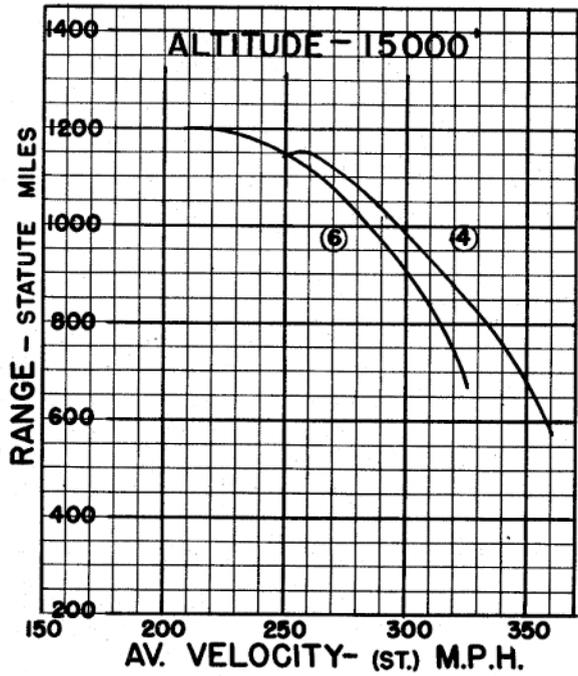
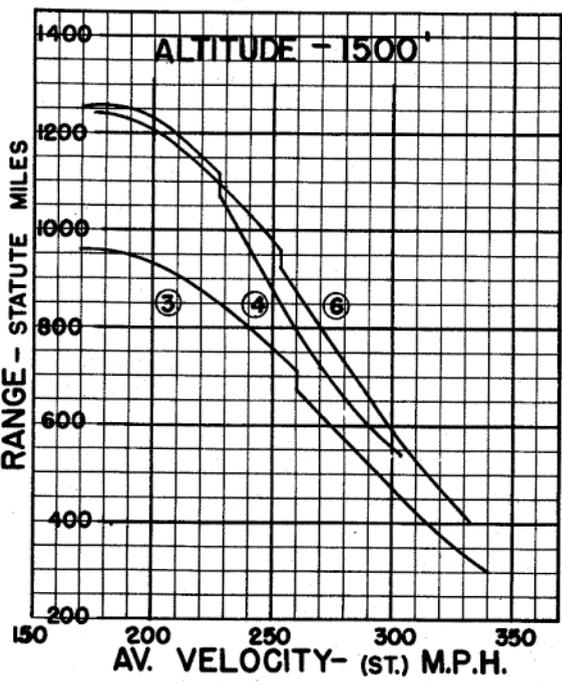
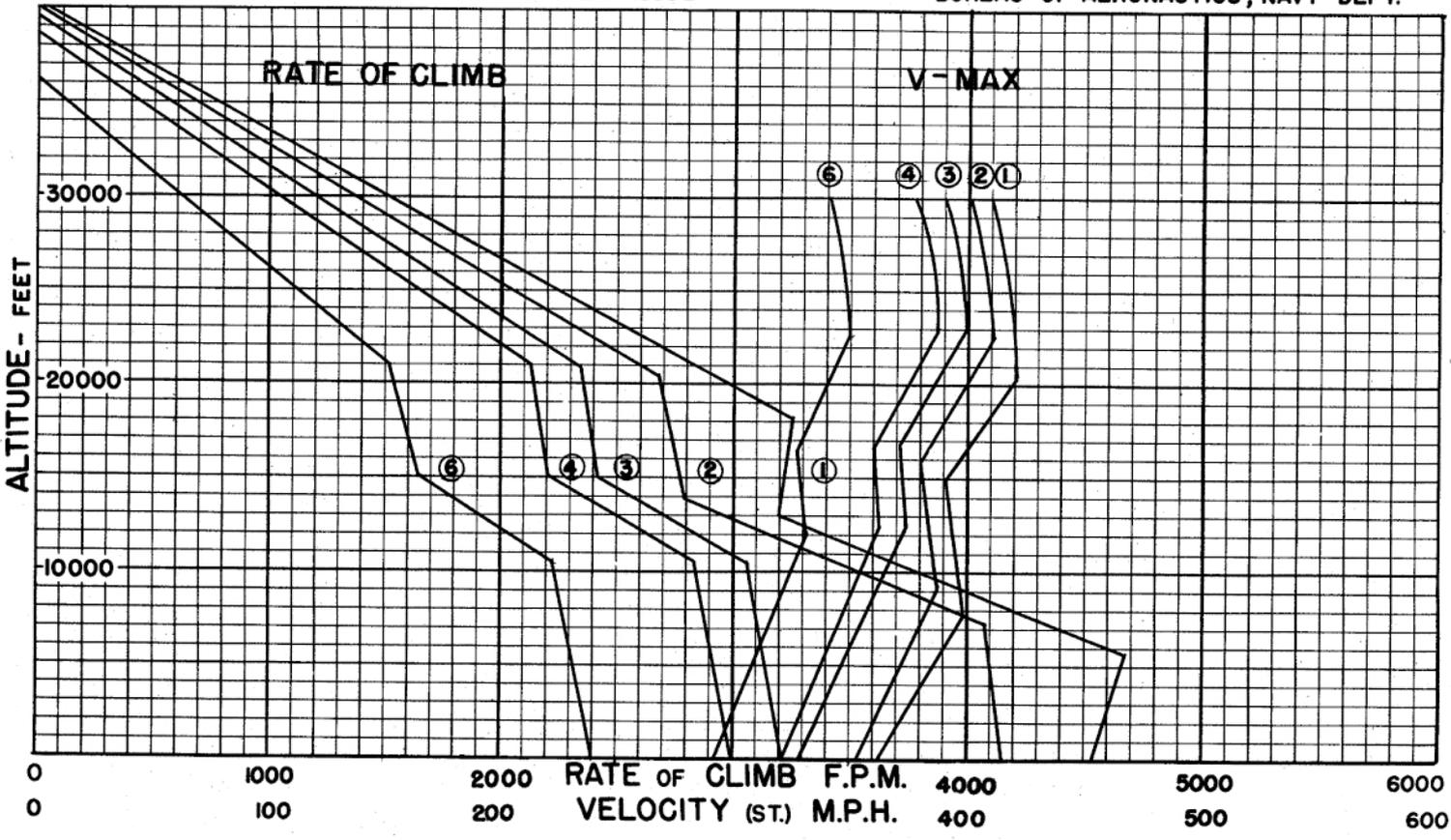
**FIGHTER COMBAT RADIUS FORMULA NO. F-1-CONDITIONS NOS. - 3, 4, 5, 6, 7, 8 RADIUS = CLIMB + CRUISE-OUT + CRUISE BACK**

WARM-UP	RENDEZVOUS	CLIMB	CRUISE OUT	DROP TANKS and BOMBS	COMBAT	CRUISE BACK	RESERVE
20 min.	20 min. at sea level	to 15000 ft.	at 15000 ft.		20 min. at 15000 ft.	at 1500 ft.	60 min. at
<b>TAKE-OFF</b>	at	at	Vel. for	<b>FIRE</b>	10 min. WEP.	170 kts. TAS	Vel. for
1 min.	60% N.S.P. Auto Lean.	60% N.S.P. Auto LEAN.	Max. Range Auto Lean.	<b>ROCKETS</b>	10 min. Mil. Pr. and descend	MANUAL LEAN	Max. Range MANUAL LEAN

NOTE ON COMBAT RADIUS: The present carburetor on the R-2800-22W and -34W engines is designed to give sufficient enrichment at low power in automatic lean setting to provide satisfactory engine operation and entails a penalty in specific fuel consumption increasing rapidly below 635 H.P. Therefore, in order to obtain greater combat radii, it will be necessary to use manual lean adjustment during cruise back and rendezvous.

Installation of 4-50cal/1200rds in lieu of 4-20mm/800rds in wing decreases gross weight 385# and for the COMBAT CONDITION-

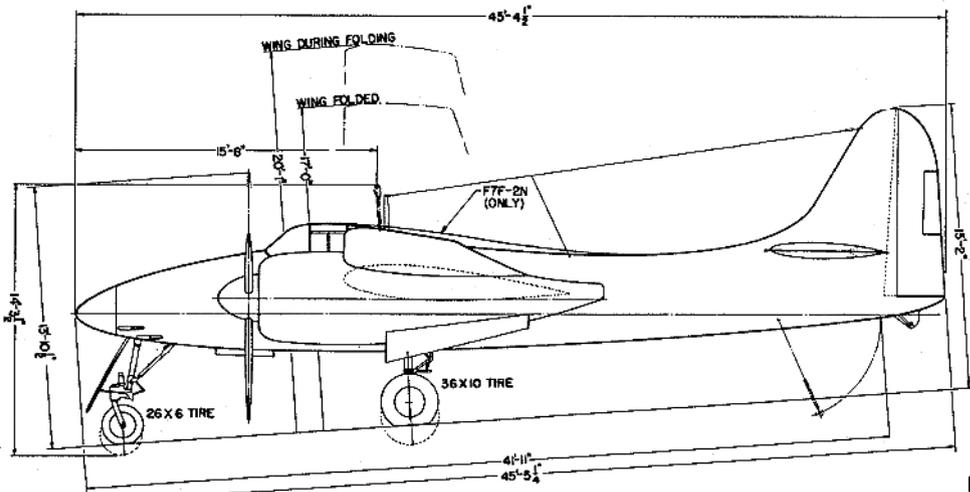
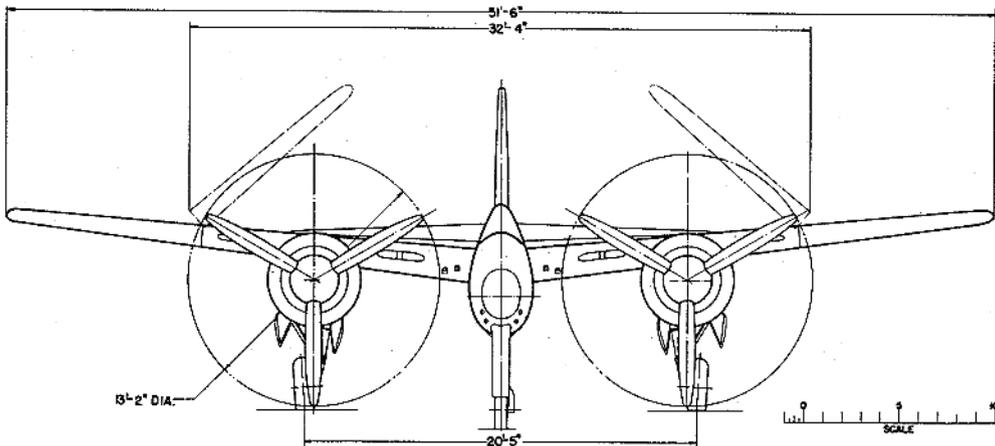
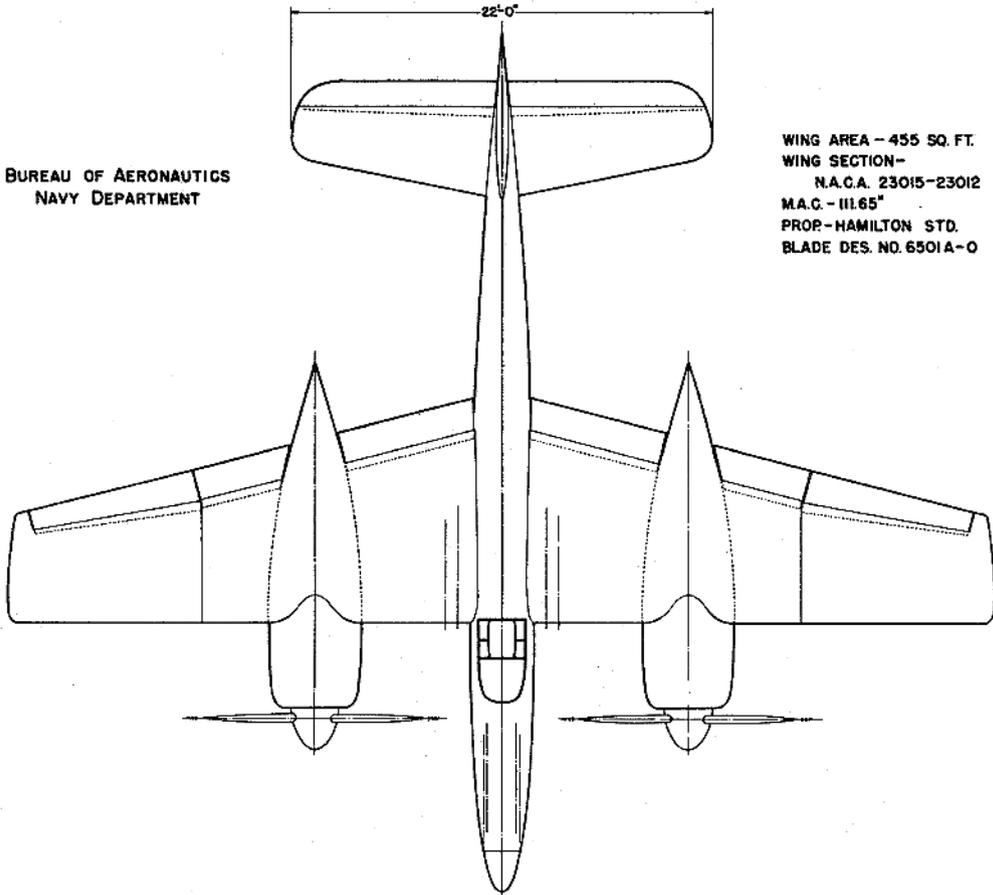
V <sub>max</sub> /S.L.	- 376	-COMBAT POWER
V <sub>max</sub> /ACA	- 438/20800	-COMBAT POWER
R/C-S.L.	- 4640	-COMBAT POWER
T.O. - 25Kn	- 255 Ft.	
Range - 1500 Ft.	- 990/185	



○ 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. - 111.65"  
PROP - HAMILTON STD.  
BLADE DES. NO. 6501A-0



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. RADIO OPERATOR AFT | 100 LBS. |
| 5. OIL TANKS          | 57 LBS.  |
| 6. OIL COOLERS        | 44 LBS.  |
| 7. SELF-SEALING CELLS | 442 LBS. |

