

AIRPLANE CHARACTERISTICS & 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.	21523	21523	21523	22578
EMPTY WEIGHT	-Actual- LBS.	15906			
FUEL / OIL	GALS.	426/28	426/28	426/28	576/32
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.	47.3	47.3	47.3	49.6
POWER LOADING ①	LBS./BHP.	5.8	6.7	7.4	7.8
V-MAX. SEA LEVEL	MPH.	363	354	330	322
V-MAX./CRITICAL ALT.	MPH./FT.	422/20600	412/22700	401/23200	389/23000
V-STALL GROSS WEIGHT ②	MPH.	84.9	84.9	84.9	87.5
V-STALL WITHOUT FUEL ②	MPH.	80.2	80.2	80.2	80.6
TIME-TO-CLIMB -10000FT-	MIN.	2.2	2.5	3.1	3.4
TIME-TO-CLIMB -20000FT-	MIN.	5.2	5.8	7.0	7.6
SERVICE CEILING	FT.	40000	39600	39000	38200
TAKE-OFF DISTANCE -CALM-	FT.	571	571	571	646
TAKE-OFF DISTANCE -15 KN-	FT.	369	369	369	422
TAKE-OFF DISTANCE -25 KN-	FT.	257	257	257	297
TAKE-OFF DISTANCE -50 FT. OBST.	FT.				
TAKE-OFF TIME	SECONDS				
RATE OF CLIMB -SL-	FT./MIN.	4600	4220	3270	3050
MAX. RANGE / V-AV. ③	ST. MI. / MPH.			1115/182	1410/180
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.			90	245

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/SL-8500'	2100/2800/SL	
	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	426	Wings (External on faired Mk51-7 bomb-racks)
	UNPROTECTED				Bombs - (alternate with wing droppable tanks)
	TOTAL - FIXED INTERNAL		42	426	2-1000#, 2-500#, 2-250#, 6-100#, 2-650#, 2-325#
	DROPPABLE - Wings - 2 at 150			300	
	DROPPABLE - Fuselage - 1 at 150 or 1 at 300			(150) 300	Fuselage (External on flush D-7 shackle) Bombs - (Alternate with fuselage droppable tank)
TOTAL		42	1026	1-2000#	
NOTE	STATUTE MILES USED-EXCEPT-RADIUS IS GIVEN IN NAUTICAL MILES & KNOTS				Torpedo - (alternate with fuselage droppable tank)
	① BHP AT MAX. CRIT. ALT.				1 Mk13-3
	② STALL-WITH POWER				NOTE - 8-100# or 8-250# bombs may be carried on the 8 Mk9-1 racket launchers
	③ AT 1500' ALTITUDE (MANUAL LEAN)				*See Page 2

SUPERSEDES 1 MAY 1944

DATE 1 MARCH 1946

MODEL F7F-IN

NAVAER-15198 (Rev. 9-44)

AIRPLANE CHARACTERISTICS & 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.	23543	25852	25523	24695
EMPTY WEIGHT -Actual- LBS.	15906			
FUEL/OIL GALS.	726/40	726/40	426/28	726/40
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.	51.7	56.8	56.1	54.2
POWER LOADING ① LBS./BHP	8.1	8.9	8.8	8.5
V-MAX. SEA LEVEL MPH.	322	294	296	307
V-MAX./ CRITICAL ALT. MPH./ FT.	389/23000	351/22700	354/22700	369/22800
V-STALL. GROSS WEIGHT ② MPH.	89.4	93.6	93.1	91.6
V-STALL. WITHOUT FUEL ② MPH.	80.7	85.4	88.2	83.2
TIME-TO-CLIMB -10000FT.- MIN.	3.6	4.3	4.2	3.9
TIME-TO-CLIMB -20000FT.- MIN.	8.1	9.8	9.6	8.9
SERVICE CEILING FT.	37500	35600	35800	36500
TAKE-OFF DISTANCE -CALM- FT.	724	955	923	859
TAKE-OFF DISTANCE -15 KN.- FT.	477	644	619	576
TAKE-OFF DISTANCE -25KN.- FT.	339	466	448	418
TAKE-OFF DISTANCE -50 FT. OBST. FT.				
TAKE-OFF DISTANCE SECONDS				
RATE OF CLIMB -SL- FT./ MIN.	2870	2430	2490	2650
MAX. RANGE / V-AV. ③ ST. MI. / MPH.	1740/182	1390/179	800/181	1560/178
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.	400	355	70	380

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

RANGE & RADIUS ARE BASED ON PRELIMINARY A.E.J.

FUEL CONSUMPTION DATA INCREASED

BY 15 PERCENT TO CONFORM WITH PAST EXPERIENCE.

*COMBAT CONDITION: Two MK51-7 wing bomb racks and sway bracings 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)-

V_{max}/S.L. - 359 decreased 4 mph
V_{max}/ACA - 417/20600 decreased 5 mph

CLEAN CONDITION: Combat condition with all bomb racks and sway bracing removed
V_{max}/S.L. - 370 mph; V_{max} - 430/20700 (combat power)

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

FERRY CONDITION: Armor, Armament, Radar removed; Gross weight - 23172#, Fuel 1026 gals., Max. Range - 1500 ft. 2455 st.mi./172 mph

CONDITION 6 : Two 150 Gal. wing tanks.

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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
TAKE-OFF	at	at	Vel. for	FIRE	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.	ROCKETS	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.

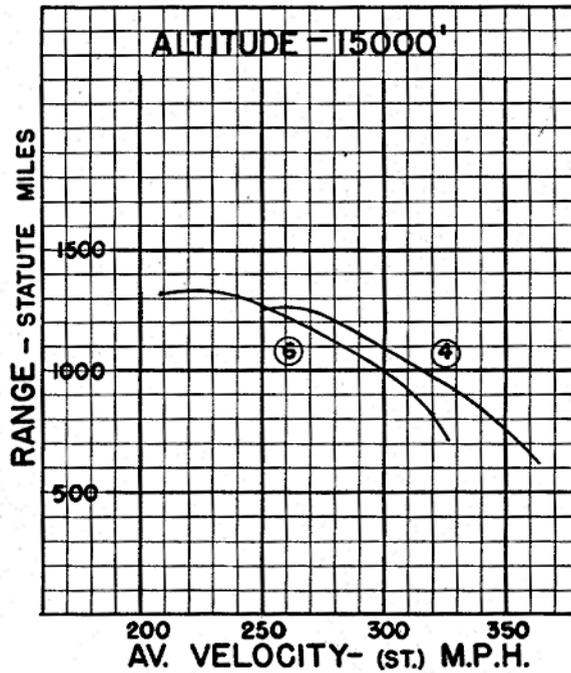
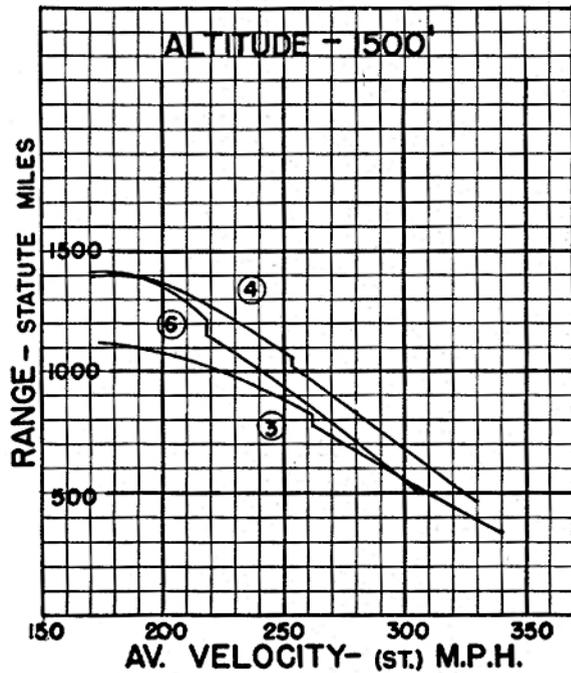
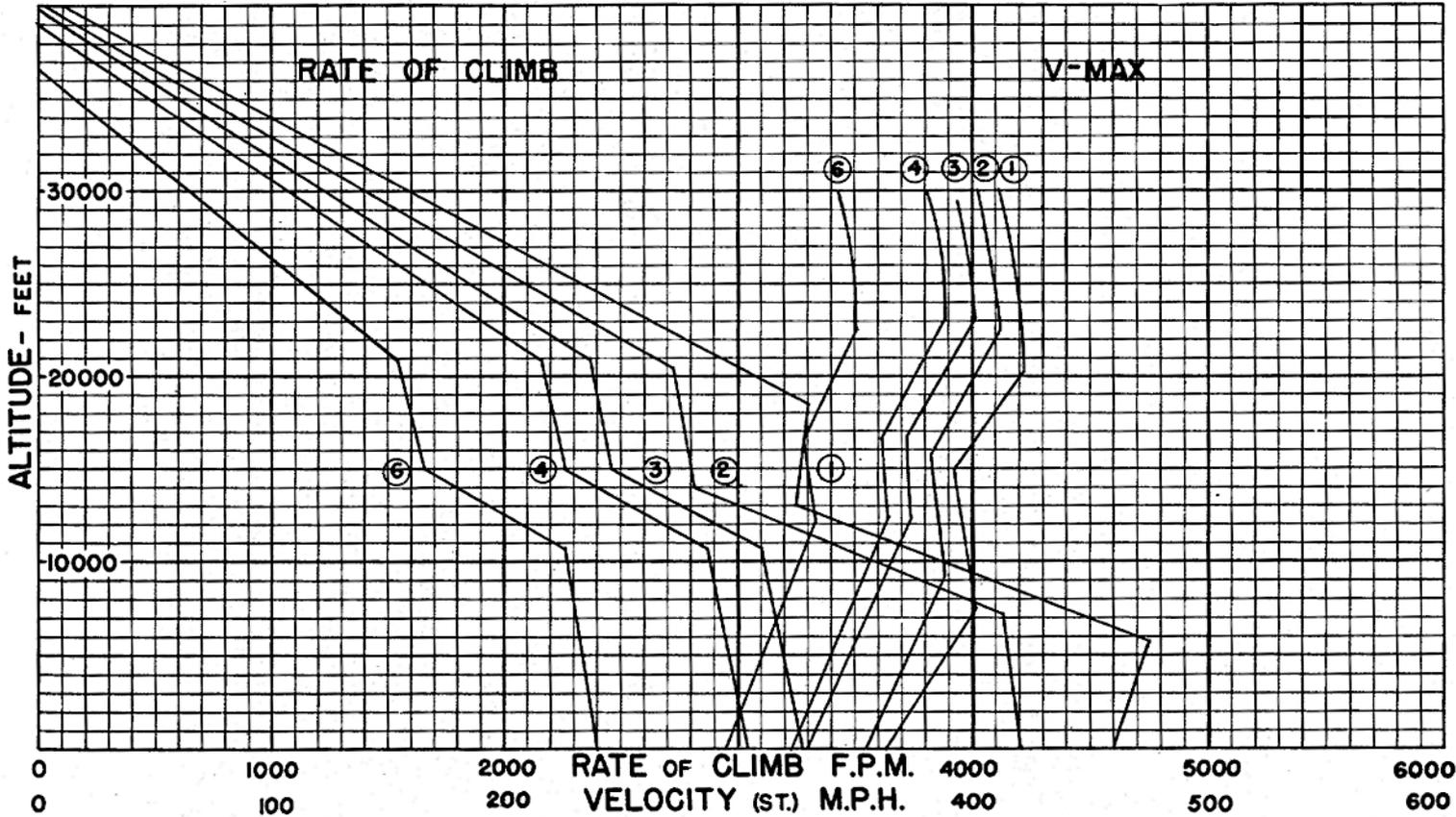
Installation of 4-50cal/1200rds in lieu of 4-20mm/800rds in wing decreases gross weight 385# and for the combat condition

Vmax/S.L.	- 377	- COMBAT POWER
Vmax/ACA	-439/20800	- COMBAT POWER
R/C-S.L.	- 4710	- COMBAT POWER
T.O. 25 Kn	- 241 Ft	-
Range-1500 Ft	-1140/184	-

AIRPLANE PERFORMANCE

NAVAER - 1335 B

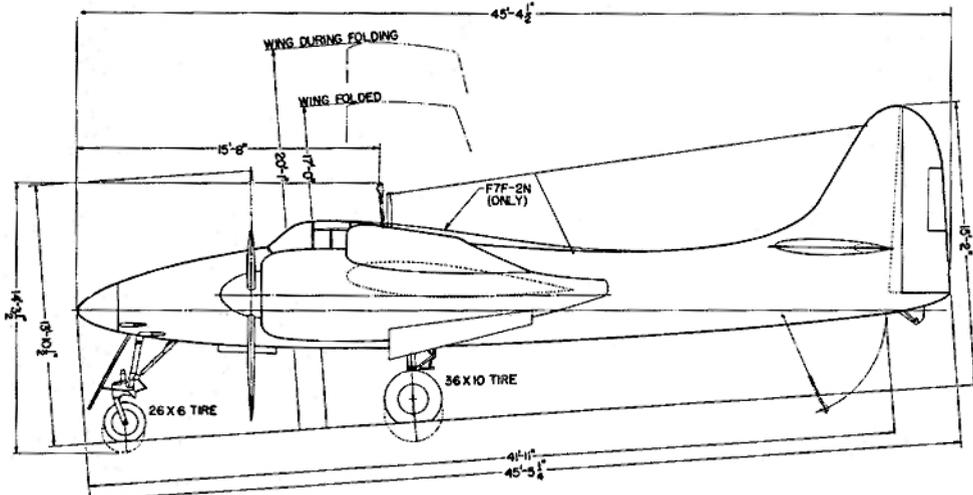
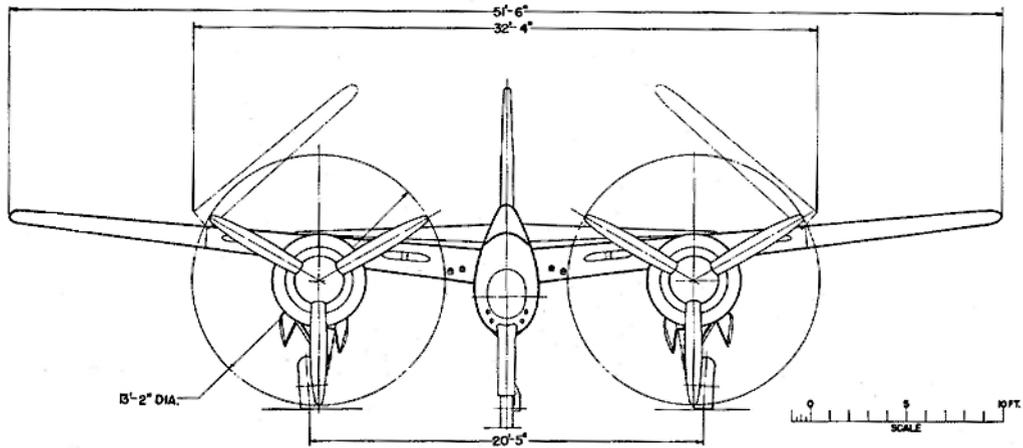
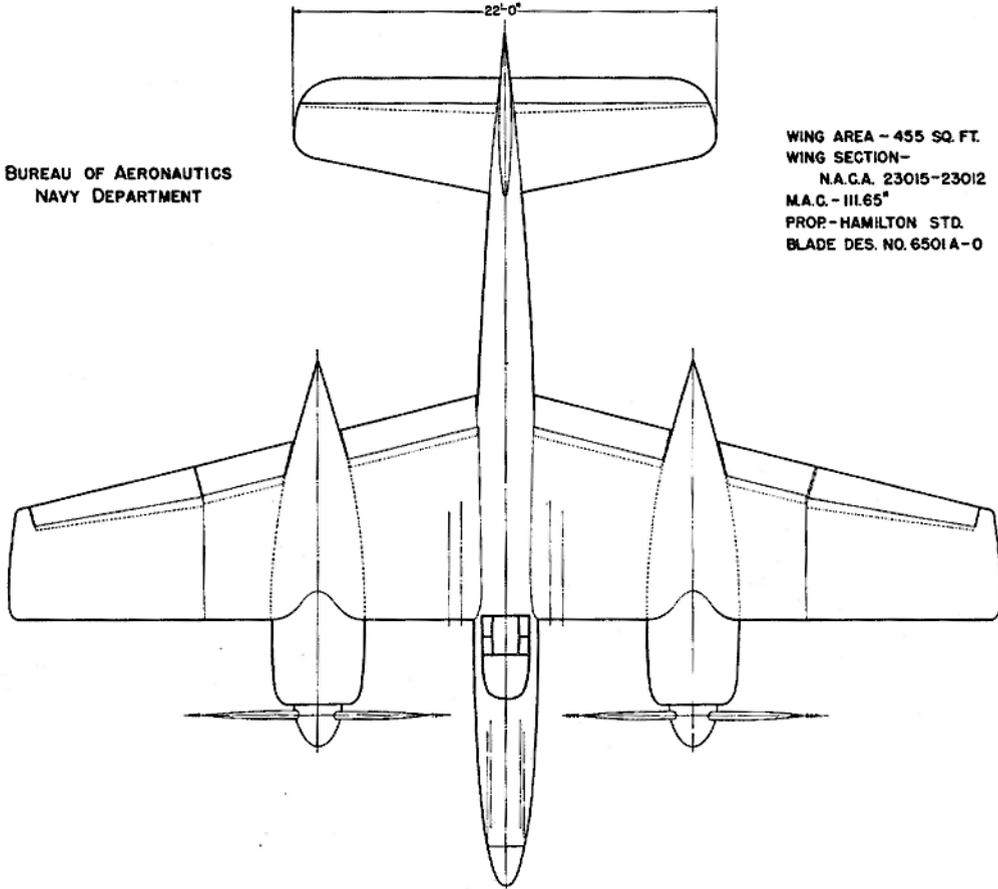
BUREAU OF AERONAUTICS, NAVY DEPT.



○ 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. 6501 A-0

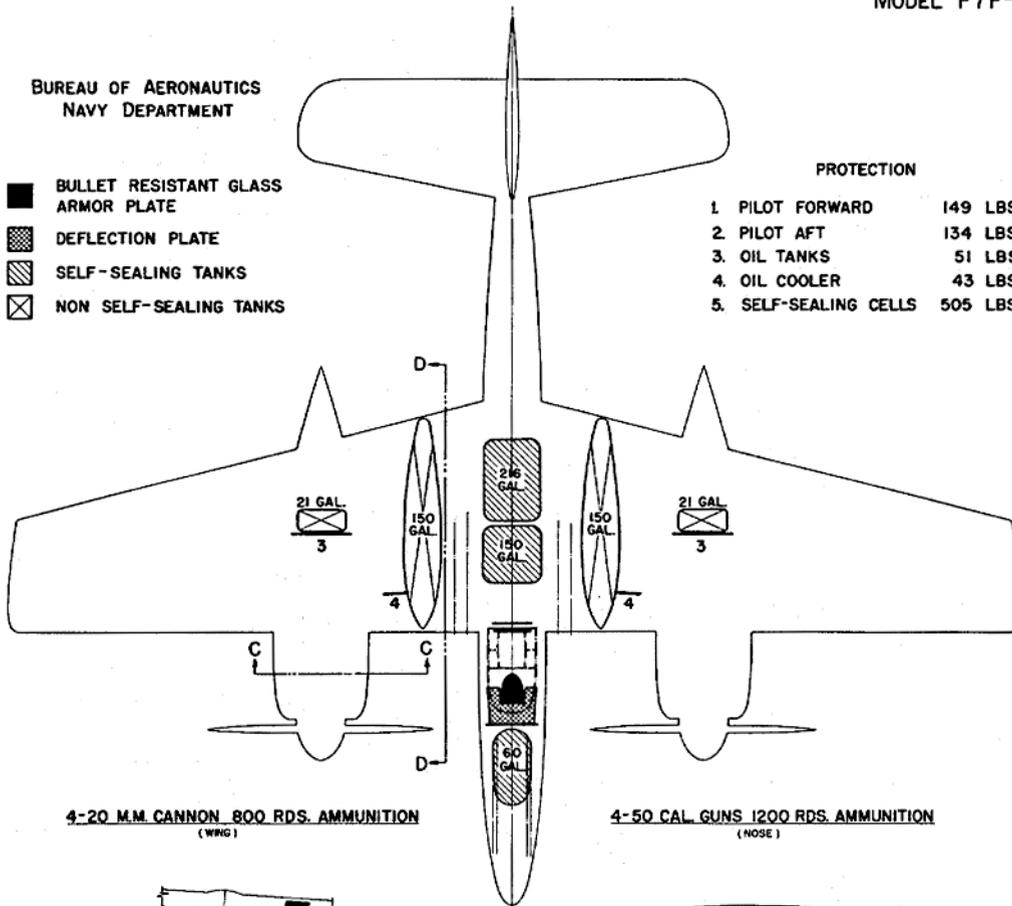


BUREAU OF AERONAUTICS
NAVY DEPARTMENT

-  BULLET RESISTANT GLASS ARMOR PLATE
-  DEFLECTION PLATE
-  SELF-SEALING TANKS
-  NON SELF-SEALING TANKS

PROTECTION

- | | |
|-----------------------|----------|
| 1. PILOT FORWARD | 149 LBS. |
| 2. PILOT AFT | 134 LBS. |
| 3. OIL TANKS | 51 LBS. |
| 4. OIL COOLER | 43 LBS. |
| 5. SELF-SEALING CELLS | 505 LBS. |



4-20 M.M. CANNON 800 RDS. AMMUNITION
(WING)

4-50 CAL. GUNS 1200 RDS. AMMUNITION
(NOSE)

