

AIRPLANE CHARACTERISTICS & PERFORMANCE

BUREAU OF AERONAUTICS, NAVY DEPT

COLUMN NUMBER		1	2	3	4
LOADING CONDITION		COMBAT	COMBAT	COMBAT	FIGHTER
GROSS WEIGHT	LBS.	12575	12575	12575	One 150 gal. Tank External
EMPTY WEIGHT - ACTUAL -	LBS.	9207			
FUEL/OIL	GALS.	250/16	250/16	250/16	400/19
FIXED GUNS/AMMUNITION		6-.50 cal./2400 rds.			
FLEXIBLE GUNS/AMMUNITION		None			
ENGINE POWER USED FOR PERFORMANCE		COMBAT	MILITARY	NORMAL	NORMAL
WING LOADING	LBS./SQ.FT.	37.6	37.6	37.6	40.8
POWER LOADING ①	LBS./BHP.	6.4	7.6	8.1	8.8
V-MAX, SEA LEVEL	MPH.	314	311	297	283
V-MAX./CRITICAL ALT.	MPH./FT.	372/18000	373/23400	368/24100	348/23900
V-STALL, GROSS WEIGHT ②	MPH.	87.2	87.2	87.2	90.8
V-STALL, WITHOUT FUEL ②	MPH.	81.8	81.8	81.8	82.4
TIME-TO-CLIMB -10000 FT-	MIN.	3.2	3.6	4.2	4.7
TIME-TO-CLIMB -20000 FT-	MIN.	7.0	7.6	8.7	10.0
SERVICE CEILING	FT.	38800	38800	38100	36600
TAKE-OFF DISTANCE -CALM-	FT.	640	640	640	780
TAKE-OFF DISTANCE -15 KN-	FT.	418	418	418	519
TAKE-OFF DISTANCE -25 KN-	FT.	294	294	294	372
TAKE-OFF DISTANCE -50 FT. OBST.	FT.				
TAKE-OFF TIME	SECONDS				
RATE OF CLIMB -SL-	FT./MIN.	3250	3110	2510	2210
MAX. RANGE / V-AV. ③	ST. MI./MPH.			955/160	1340/161
RANGE / V-AV. -60% NBP-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 ④	N MI.			120	140/135
ENGINE / PROP GEAR RATIO		P & W R-2800-10W (2:1)			
ENGINE RATING BHP/RPM/ALT.	COMBAT	MILITARY	NORMAL	TAKE-OFF	
	2250/2700/3.L.	2000/2700/3.L.-1700	1675/2550/3.L.-5500	2000/1700	
	2075/2700/1800	1755/2700/5400	1570/2550/7200		
	2135/2700/12400	1800/2700/15700	1625/2550/16750		
	1965/2700/14600	1640/2700/18100	1530/2550/18200		
	1975/2700/16900	1640/2700/21000	1550/2550/22000		
SEE PAGE 3					
TANKAGE IN GALLONS		OIL	FUEL	OFFENSIVE ARMAMENT	
AUX. FIXED	PROTECTED	19	250	FUSelage - external - alternate with droppable tanks	
	UNPROTECTED			Bombs: 1-2000#, 1-1600#, F-1000#, or 1-500#	
	TOTAL - FIXED INTERNAL	19	250	Torpedoes: 1 MK13-3	
	DROPPABLE			Rockets: 1-11.75" A.R.	
	DROPPABLE -FUSelage-		150		
NOTE	WINGS - 2 @ 100		200	WINGS - external - alternate with droppable tanks	
	TOTAL	19	600	Bombs: 2-1000#, 2-500#, 2-250#, or 6-100#	
	STATUTE MILES USED-EXCEPT-RADIUS IS GIVEN IN NAUTICAL MILES & KNOTS			Rockets: 2-11.75" A.R.	
① BHP AT MAX. CRIT. ALT	WINGS - on MK3-2 rocket launchers				
② STALL - WITHOUT POWER	Rockets - 6-11.75", or 6-5" AR				
③ AT 1500' ALTITUDE					

SUPERSEDES 1 NOVEMBER 1944

DATE 1 OCTOBER 1945

NAVAL AIRCRAFT (Rev. 2-44)

AIRPLANE CHARACTERISTICS & PERFORMANCE

BUREAU OF AERONAUTICS, NAVY DEPT.

COLUMN NUMBER		5	6	7	8
LOADING CONDITION		BOMBER 1-1000# One 150 gal. Tank External	TORPEDO 1MK13-3	ROCKET 1-11.75"AR Two 100 gal. Tanks External	ROCKET 6-5"RVAR One 150 gal. Tank External
GROSS WEIGHT	LBS.	14632	14760	15248	14496
EMPTY WEIGHT - ACTUAL -	LBS.	9207			
FUEL/OIL	GALS.	400/19	250/16	450/19	400/19
FIXED GUNS/AMMUNITION		6-.50 cal/2400 rds.			
FLEXIBLE GUNS/AMMUNITION		None			
ENGINE POWER USED FOR PERFORMANCE		NORMAL	NORMAL	NORMAL	NORMAL
WING LOADING	LBS./SQ.FT.	43.8	44.2	45.6	43.4
POWER LOADING (1)	LBS./BHP	9.4	9.5	9.8	9.4
V-MAX SEA LEVEL	MPH	271	269	265	269
V-MAX / CRITICAL ALT.	MPH / FT.	331/23700	325/23600	323/23600	329/23600
V-STALL GROSS WEIGHT (2)	MPH	94.0	94.4	96.0	96.0
V-STALL WITHOUT FUEL (2)	MPH	86.0	89.4	87.0	87.7
TIME-TO-CLIMB -10000FT.-	MIN.	5.4	5.9	5.8	5.3
TIME-TO-CLIMB -20000FT.-	MIN.	11.5	12.9	12.6	11.4
SERVICE CEILING	FT.	35100	33600	34400	35300
TAKE-OFF DISTANCE -CALM-	FT.	943	965	1070	922
TAKE-OFF DISTANCE -15 KN-	FT.	638	656	733	622
TAKE-OFF DISTANCE -25KN-	FT.	466	479	540	452
TAKE-OFF DISTANCE -50 FT. OBST.	FT.				
TAKE-OFF DISTANCE	SECONDS				
RATE OF CLIMB -SL-	FT./MIN.	1950	1800	1810	1980
MAX. RANGE / V-AV. (3)	ST. MI. / MPH	1170/159	630/180	1240/162	1175/161
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.	310	95	365	305

PERFORMANCE IS BASED ON - FLIGHT TEST OF F6F-3 AIRPLANE

RANGE & RADIUS ARE BASED ON FLIGHT TEST OF F6F-5 AIRPLANE FUEL CONSUMPTION DATA INCREASED BY 5 PERCENT TO CONFORM WITH PAST EXPERIENCE.

*COMBAT CONDITION: Fuselage bomb shackles & "T" bracing, faired wing bomb-racks and sway bracing aboard. Rocket launchers not aboard. Addition of 6 MK5-2 rocket launchers reduces Vmax/S.L. by 4 mph at Combat Power.

CLEAN CONDITION: Combat Condition with all racks, shackles, and bracing removed, at combat power Vmax/S.L. - 321; Vmax - 384 mph/18000 ft.

ROCKET CONDITION: Col. 7-11.75" AR on fuselage; droppable tanks on wings Col. 8 - Rockets suspended from MK5-2 rocket launchers.

FERRY CONDITION: Armor & Armament removed; Gross Weight - 12132, Fuel = 400 gals. Max. Range = 1540 st. mi./149 mph at 1500 ft.

NOTE: MK 4 fuselage shackles & T-bracing, faired MK51-7 wing bomb-racks and sway-bracing aboard in all conditions except CLEAN.

Rocket launchers carried on rocket condition only.

Water available for approximately 15 min. at combat power.

Cols. 4, 5, & 8 - 150 gal. tank carried on fuselage

AIRPLANE CHARACTERISTICS & PERFORMANCE

BUREAU OF AERONAUTICS, NAVY DEPT.

FIGHTER COMBAT RADIUS FORMULA NO. F-1-CONDITIONS NOS. - 3 to 8

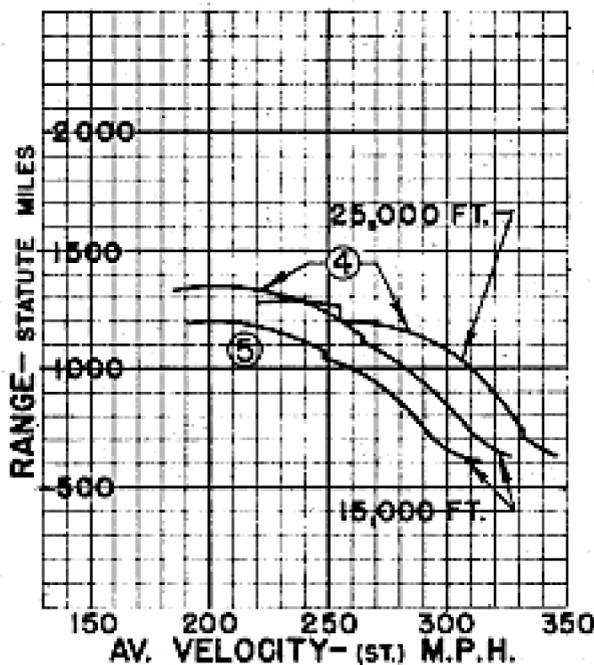
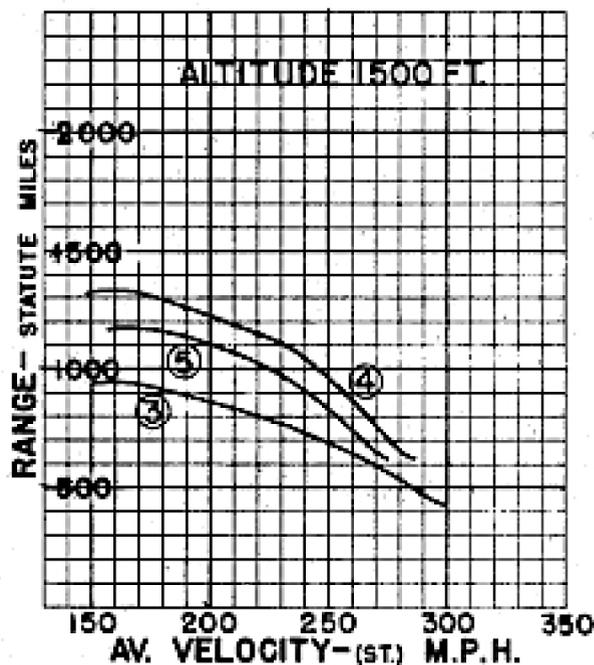
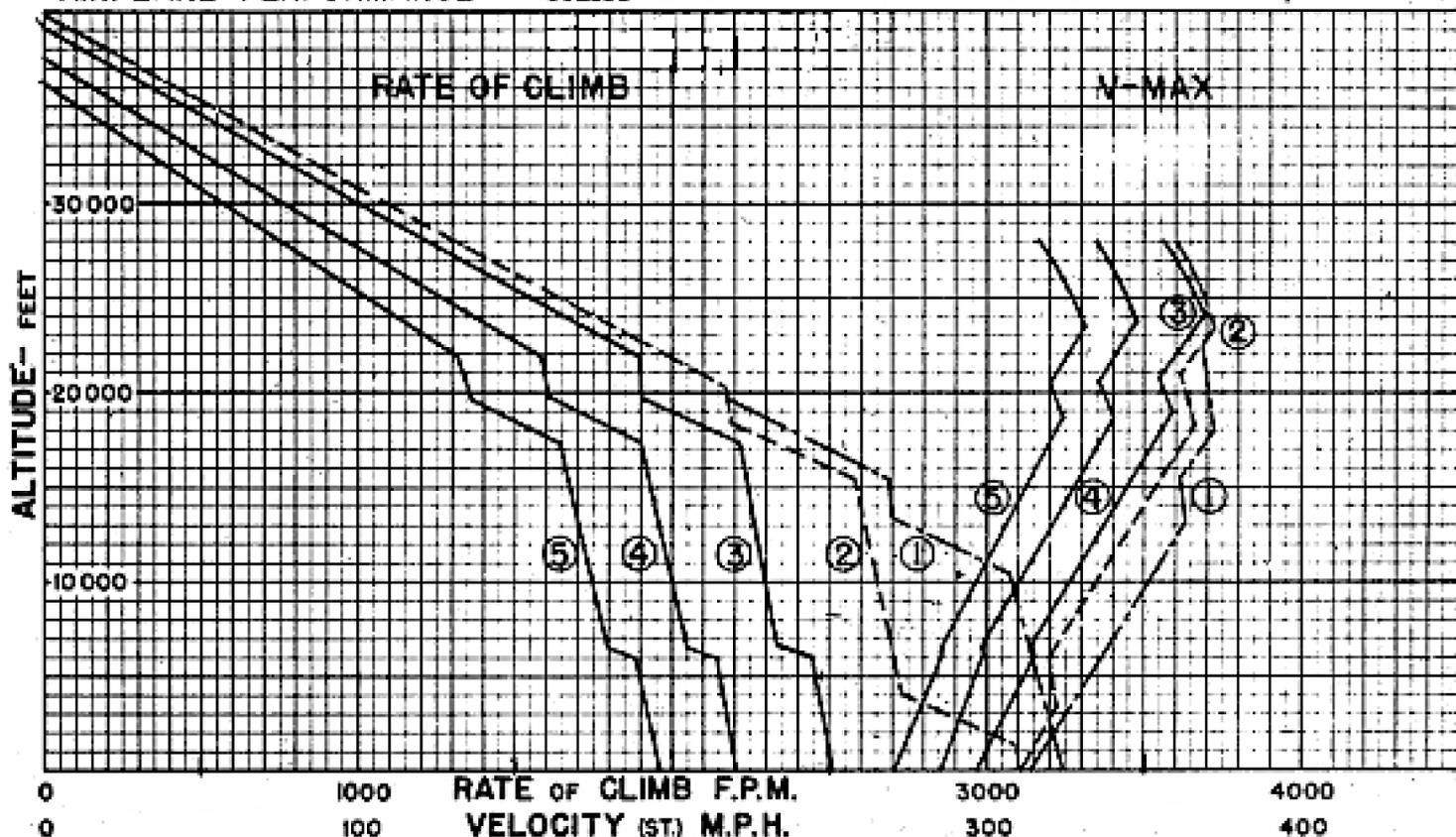
RADIUS = CLIMB + CRUISE-OUT + CRUISE BACK

WARM-UP	RENDZVOUS	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 Rich.	Max. Range Auto Lean.	ROCKETS	10 min. Mil. Fr. and descend	Auto Lean.	Max. Range Auto Lean.

NOTE: (1) Engine ratings are AEL ratings. These ratings do not conform to engine data obtained from P6F flight test. The flight test data are used in performance calculations.

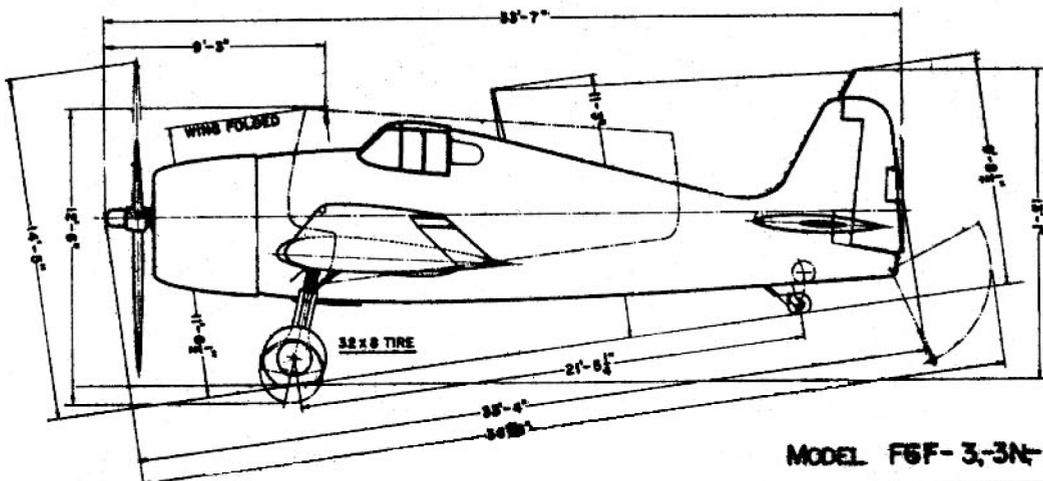
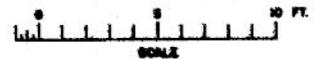
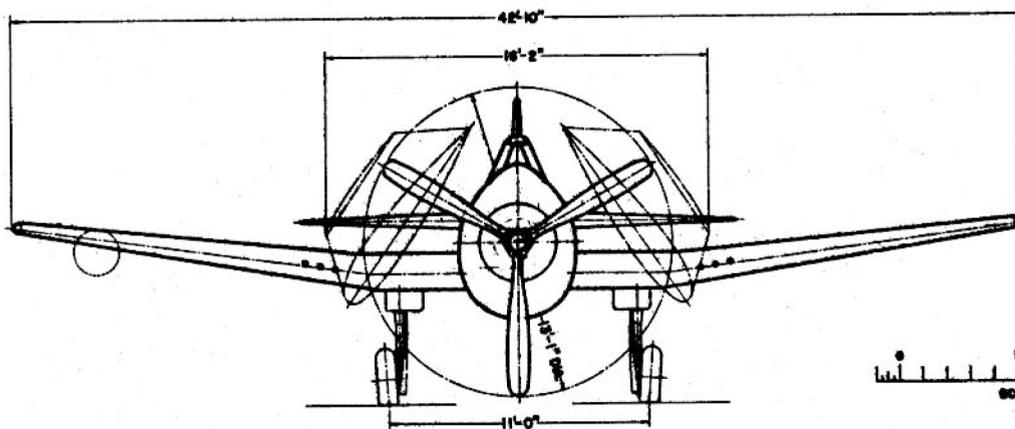
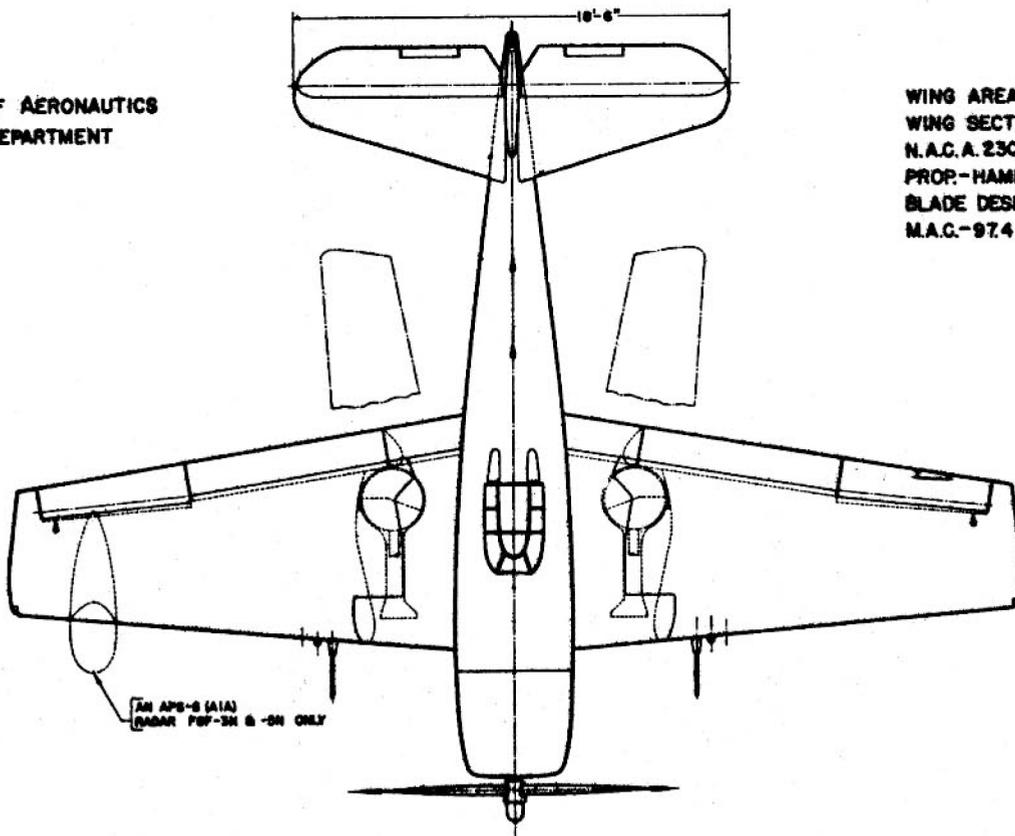
(2) Ramped engine ratings for performance from flight test clean condition.

COMBAT	MILITARY	NORMAL	TAKE-OFF
2030/2700/3.L.	1960/2700/3.L.-3400	1710/2550/3.L.-6200	2000/2700/3.L.
2110/2700/13100	1790/2700/6100	1690/2550/6500 -19000	
1930/2700/15700	1840/2700/18200	1580/2550/20800-24100	
1940/2700/18000	1660/2700/21000		
	1670/2700/23400		



○ LOADING CONDITION COLUMN NUMBER

WING AREA - 334 SQ. FT.
WING SECTION -
N.A.C.A. 23015.6-23009
PROP. - HAMILTON STD. C.S.
BLADE DESIGN NO. 6501A-0
M.A.C.-974



MODEL F6F-3, -3N, -5, -5N

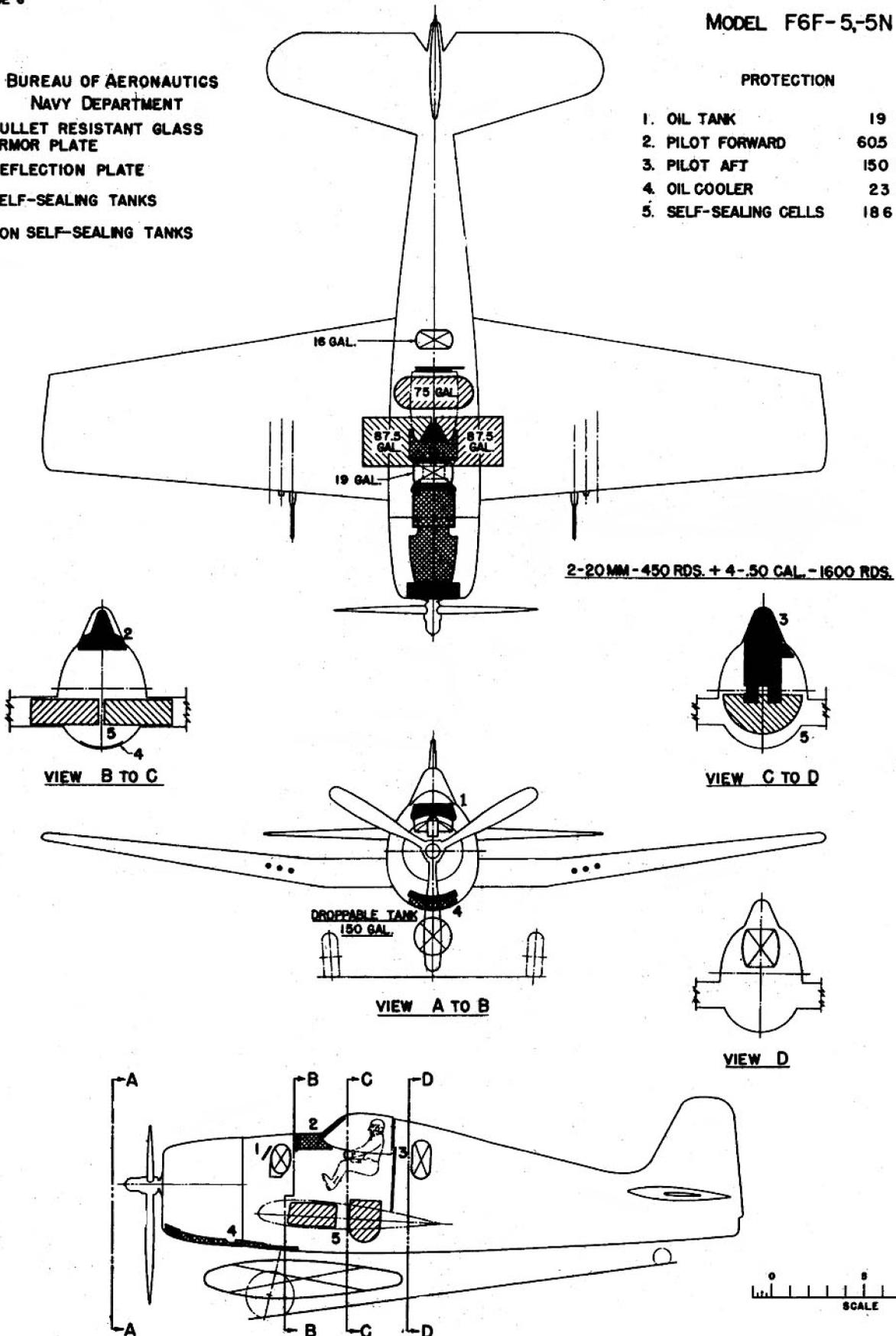
MODEL F6F-5,5N

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

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

PROTECTION

- | | |
|-----------------------|----------|
| 1. OIL TANK | 19 LBS. |
| 2. PILOT FORWARD | 605 LBS. |
| 3. PILOT AFT | 150 LBS. |
| 4. OIL COOLER | 23 LBS. |
| 5. SELF-SEALING CELLS | 186 LBS. |



COLUMN NUMBER		1	2	3	4
LOADING CONDITION		FIGHTER	FIGHTER	FIGHTER	FIGHTER ONE TANK EXTERNAL
GROSS WEIGHT	LBS.	11381	11381	12186	13221
EMPTY WEIGHT (ACTUAL)	LBS.	9042			
FUEL/OIL	GALS.	182/13	182/13	250/18	400/19
FIXED GUNS/AMMUNITION		6-.50 Cal./1200 rds.		6-.50 Cal./2400 rds.	
FLEXIBLE GUNS/AMMUNITION		None			
ENGINE POWER USED FOR PERFORMANCE		MILITARY	NORMAL	NORMAL	NORMAL
WING LOADING	LBS/SQFT.	34.1	34.1	36.5	39.6
POWER LOADING ①	LBS/BHP.	6.9	7.3	7.9	8.5
V-MAX. SEA LEVEL	MPH.	324	304	303	294
V-MAX. AIRPLANE CRIT. ALT.	MPH.	376/22800	374/23700	373/23700	359/23700
V-STALL. GROSS WEIGHT. ②	MPH.	80.6	80.6	83.4	86.9
V-STALL. WITHOUT FUEL ②	MPH.	76.6	76.6	78.1	78.6
TIME-TO-CLIMB -15000FT.-	MIN.	6.0	6.9	7.7	9.0
TIME-TO-CLIMB -25000FT.-	MIN.	11.3	12.5	14.0	16.5
SERVICE CEILING	FT.	38400	38500	37500	36100
TAKE-OFF DISTANCE -CALM-	FT.	579	579	680	843
TAKE-OFF DISTANCE -15 KN-	FT.	380	380	453	570
TAKE-OFF DISTANCE -25 KN-	FT.	270	270	327	419
TAKE-OFF TIME	SECONDS.				
MAX. RANGE /V-AV. ③	STMI/MPH.		820/177	1085/179	1620/177
BOMBING RADIUS /V-AV.-20% R-	NMI/KN.				
BOMBING RADIUS /V-AV.-33% R-	NMI/KN.				
PATROL RADIUS /V-AV.-20% R-	NMI/KN.				
PATROL RADIUS /V-AV.-33% R-	NMI/KN.				
SCOUT. RADIUS	NMI.				
COMBAT RADIUS	NMI.			123	371
ENGINE /PROP.GEAR RATIO		P.W.F. R-2800-10 (2:1)			
Engine Rating BHP/RPM/ALT	NORMAL	1675/2550/SL-5500	MILITARY	2000/2700/SL-1700	TAKE-OFF
		1570/2550/7200		1755/2700/5400	
		1625/2550/16750		1800/2700/15700	
		1530/2550/18200		1640/2700/18100	
		1550/2550/22000		1650/2700/21000	
2000/2700					

STATUTE MILES USED-EXCEPT-RADIUS IS GIVEN IN NAUTICAL MILES & KNOTS

NOTE ① BHP AT MAX.CRIT.ALT. ② STALL-WITHOUT POWER ③ AT 5000' ALTITUDE

	TANKAGE IN GALLONS	OIL	FUEL	OFFENSIVE ARMAMENT
FIXED	PROTECTED	19	250	
	UNPROTECTED			
	TOTAL-INCL PROT.	19	250	
INCREASE-REMOVED PROTECTION (Not removable)				
AUX.	DROPPABLE One Fuselage Tank-		150	
	DROPPABLE Unprotected			
PROTECTED+UNPROTECTED+DROPPABLE.		19	400	073

REMARKS-

SUPERSEDES 8/4/42

DATE-1 JULY 1943

PAGE-1

MODEL-F6F-3

NAVAER
AIRPLANE CHARACTERISTICS & PERFORMANCE

BUREAU OF AERONAUTICS-NAVY DEPT.

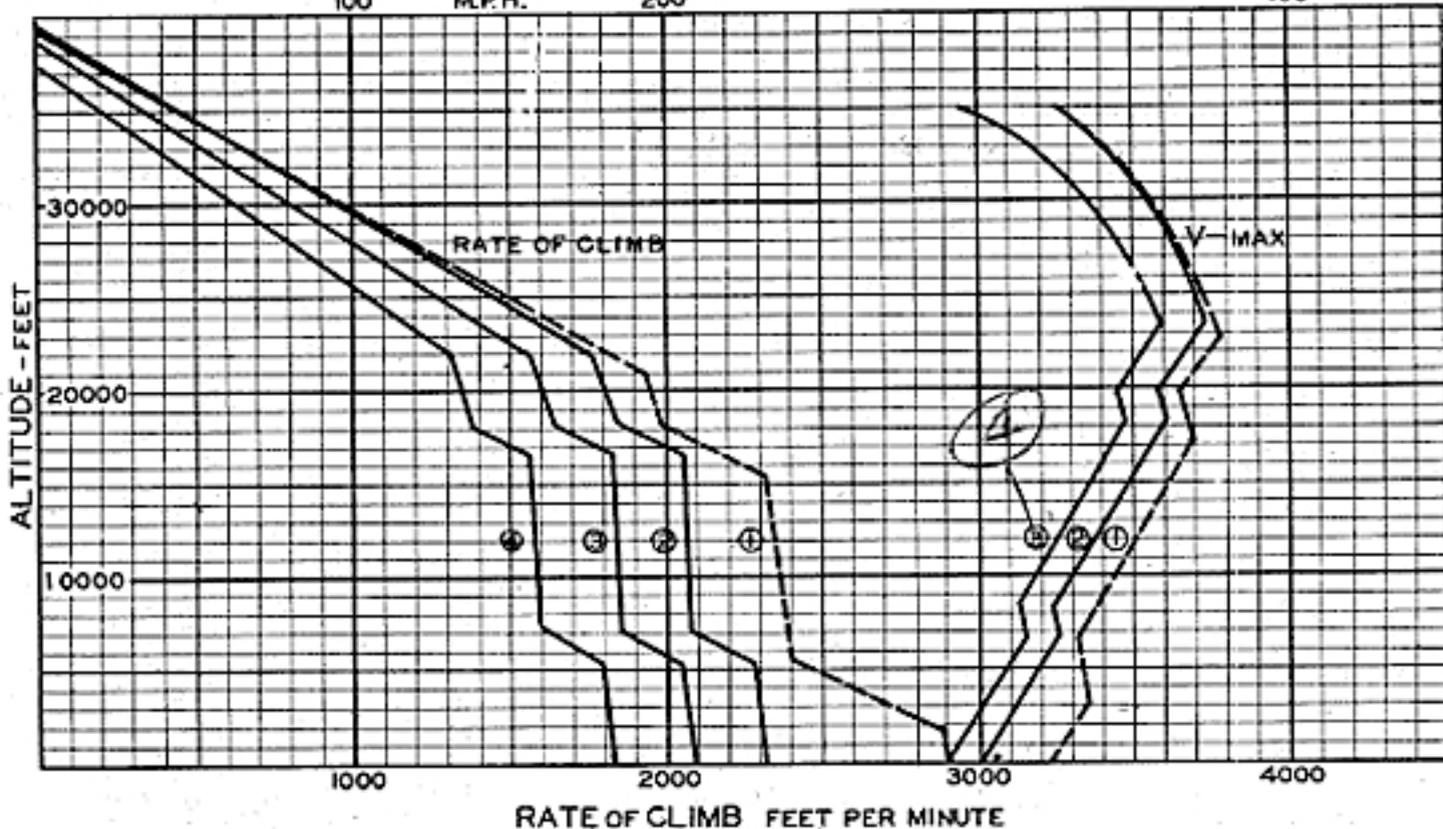
COLUMN NUMBER				
	LOADING CONDITION			
	GROSS WEIGHT LBS.			
	EMPTY WEIGHT LBS.			
	FUEL/OIL GALS.			
	FIXED GUNS/AMMUNITION			
	FLEXIBLE GUNS/AMMUNITION			
	ENGINE POWER USED FOR PERFORMANCE			
	WING LOADING LBS/SQFT.			
	POWER LOADING ① LBS/BHP.			
	V-MAX. SEA LEVEL MPH.			
	V-MAX. AIRPLANE CRIT. ALT. MPH.			
	V-STALL. GROSS WEIGHT. ② MPH.			
	V-STALL. WITHOUT FUEL ② MPH.			
	TIME-TO-CLIMB -10000FT.- MIN.			
	TIME-TO-CLIMB -20000FT.- MIN.			
	SERVICE CEILING FT.			
	TAKE-OFF DISTANCE -CALM- FT.			
	TAKE-OFF DISTANCE -15 KN- FT.			
	TAKE-OFF DISTANCE -25 KN- FT.			
	TAKE-OFF TIME SECONDS.			
	MAX RANGE/V-AV ③ ST.MI/MPH.			
	BOMBING RADIUS/V-AV-20% R- NMI/KN.			
	BOMBING RADIUS/V-AV-33% R- NMI/KN.			
	PATROL RADIUS/V-AV-20% R- NMI/KN.			
	PATROL RADIUS/V-AV-33% R- NMI/KN.			
	SCOUT. RADIUS NMI.			
	COMBAT RADIUS NMI.			

PERFORMANCE IS BASED ON- Prototype Flight Test

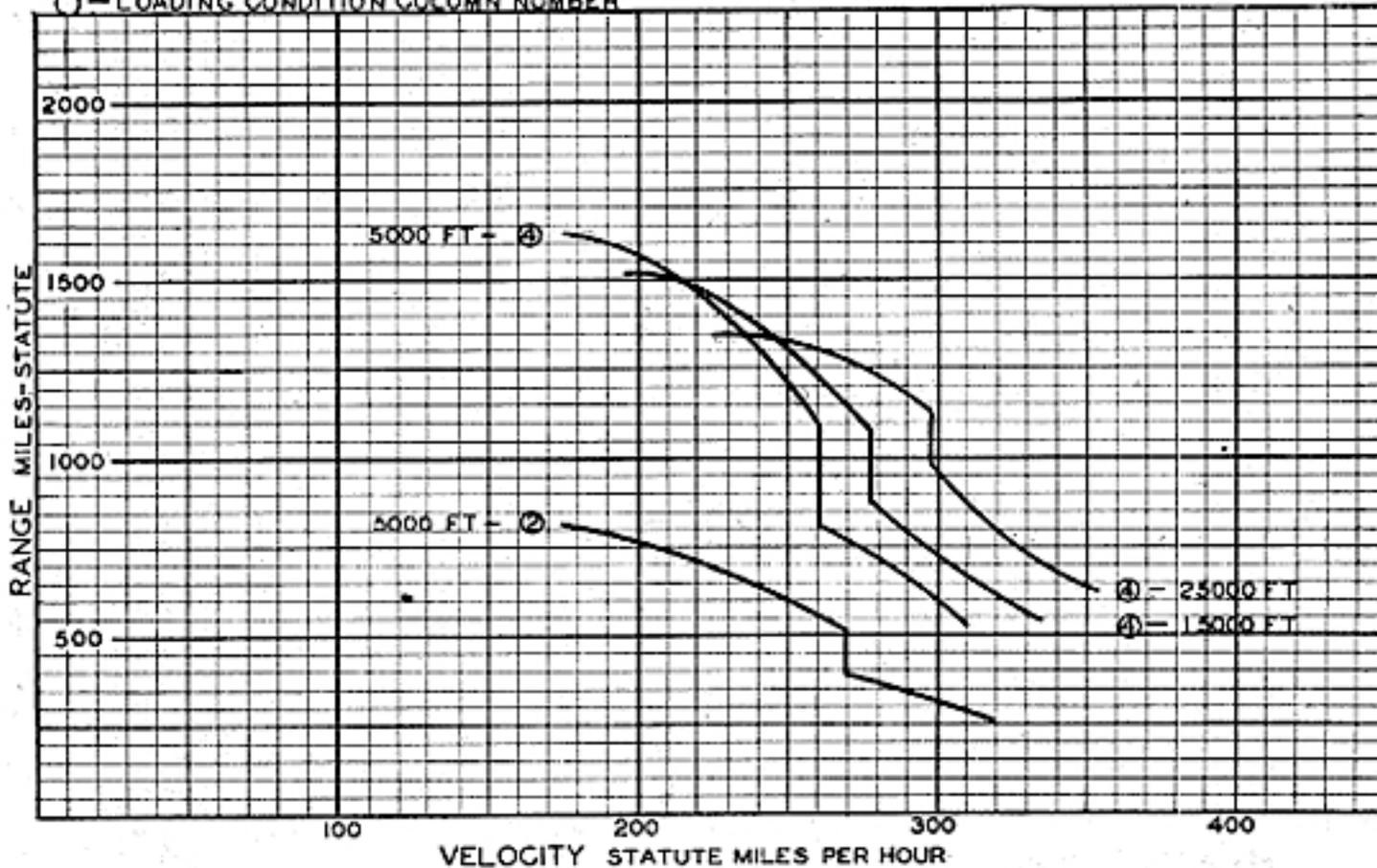
RANGE & RADIUS ARE BASED ON Engine Requirement FUEL CONSUMPTION DATA INCREASED BY 15 PERCENT TO CONFORM WITH PAST EXPERIENCE.

Practical combat radius is based on 20 min. warm-up and idling; 1 min. take-off; 10 min. rendezvous at 60% normal sea level power (n.s.p.) and auto-rich; climb to 15000' at 60% n.s.p. and auto-lean unless auto-rich is required for cooling; cruise-out at 15000' at V for max. range and auto-lean; drop bombs and external tanks; 20 min. combat at 15000' at full military power; descent, cruise-back at sea level at V for max. range and auto-lean; 60 min. rendezvous, landing and reserve at V for max. range and auto-lean. Radius includes distance covered in climb, but not in descent.

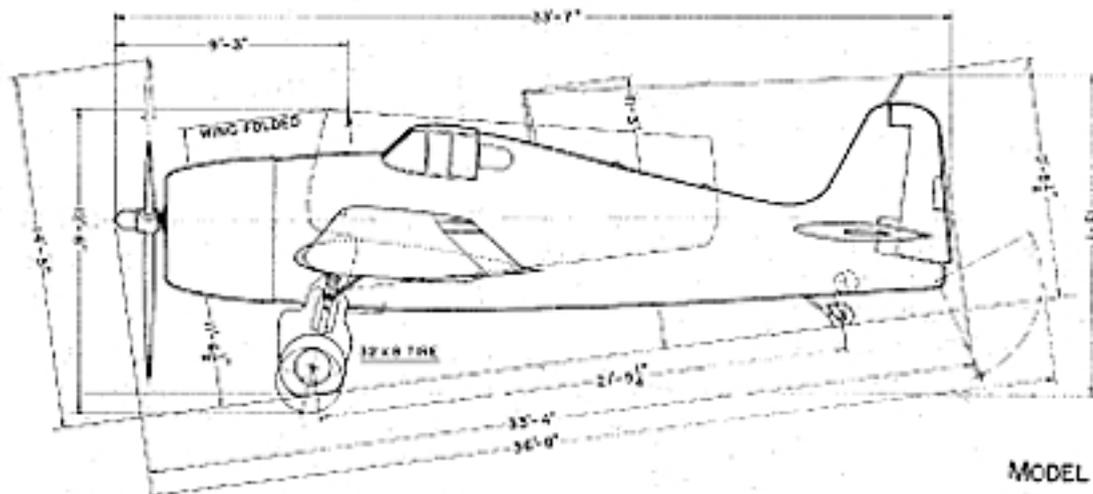
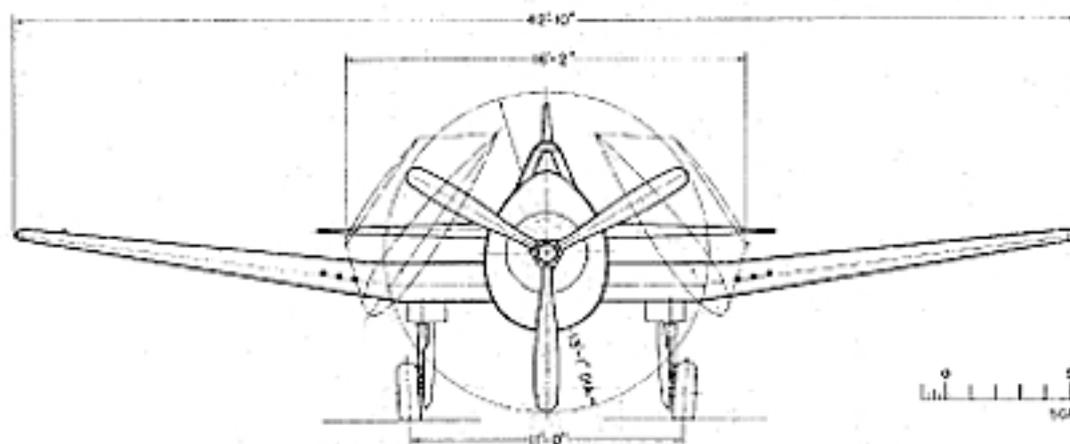
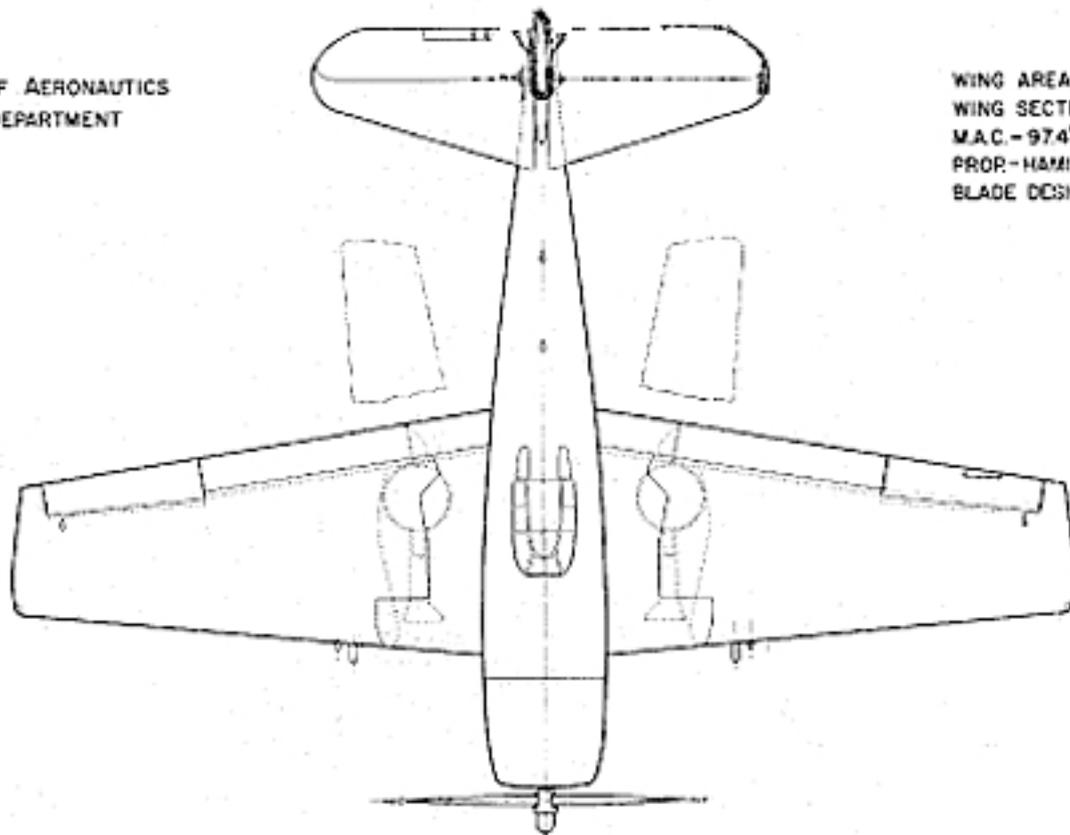
Contract Changes thru R-1 and Service Changes thru #12 are incorporated.



○ - LOADING CONDITION COLUMN NUMBER



WING AREA - 334 SQ. FT.
WING SECTION - N.A.C.A. 23000
M.A.C. - 97.4"
PROP. - HAMILTON STD. C.S.
BLADE DESIGN NO. 6501A-0



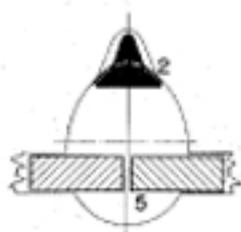
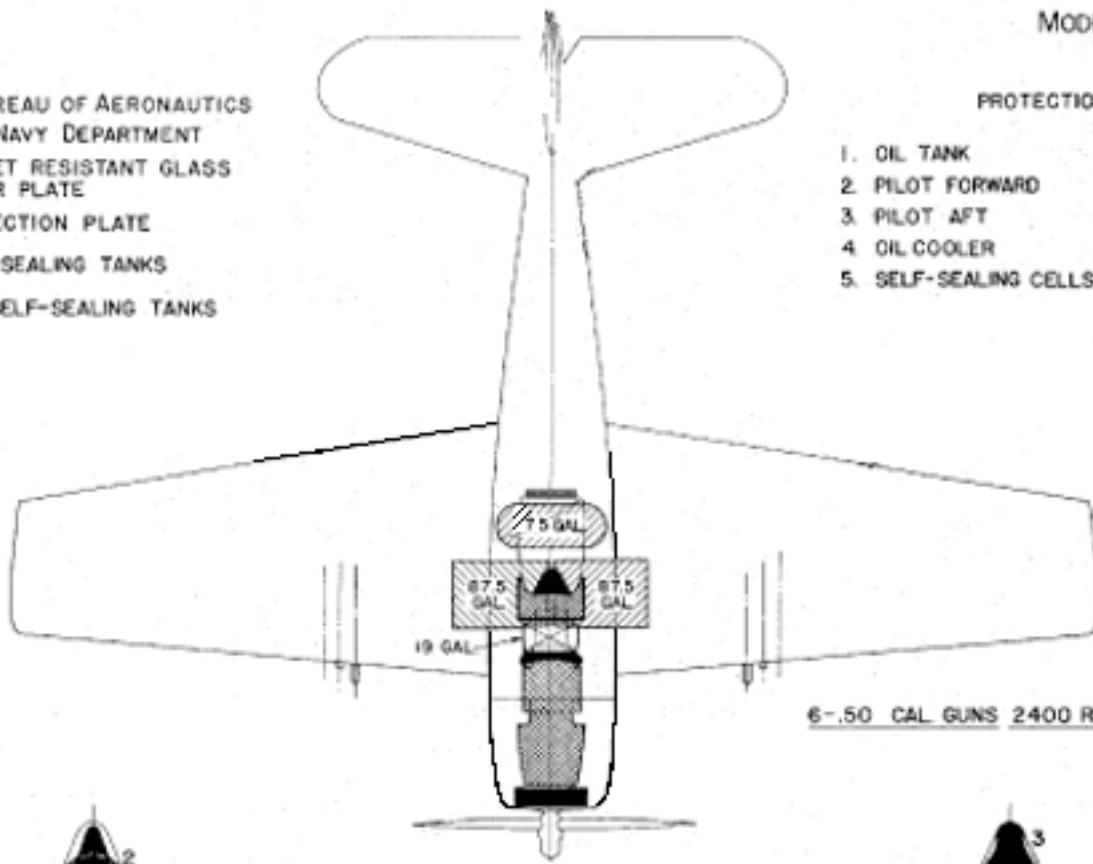
MODEL F6F-3

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

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

PROTECTION

- | | |
|-----------------------|----------|
| 1. OIL TANK | 19 LBS. |
| 2. PILOT FORWARD | 62 LBS. |
| 3. PILOT AFT | 103 LBS. |
| 4. OIL COOLER | 28 LBS. |
| 5. SELF-SEALING CELLS | 244 LBS. |



VIEW B TO C



VIEW C



VIEW A TO B

